CLINICAL GUIDELINES

Chiropractic Services

Version 1.0
Effective February 14, 2020

Clinical guidelines for medical necessity review of chiropractic services.
© 2019 eviCore healthcare. All rights reserved.



Please note the following:

CPT Copyright 2020 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association.

© 2019 eviCore healthcare. All Rights Reserved.

Table of Contents

CHIRO-1.0: Covered Services and Exclusions 5
CHIRO-1.1: Chiropractic Covered Services 6
CHIRO-1.2: Chiropractic Coverage Exclusions 7
CHIRO-2.0: Cervical Conditions (Disc-Radicular) 8
CHIRO-2.1: Brachial Neuritis or Radiculitis NOS 9
CHIRO-2.2: Brachial Plexus Lesions 20
CHIRO-2.3: Cervicobrachial Syndrome 28
CHIRO-2.4: Degeneration of Cervical Intervertebral Disc 37
CHIRO-2.5: Displacement of Cervical Intervertebral Disc Without Myelopathy 46
CHIRO-3.0: Cervical Conditions (Non-specific) 57
CHIRO-3.1: Cervicalgia 58
CHIRO-3.2: Cervical Segmental and Somatic Dysfunction 66
CHIRO-3.3: Cervical Spondylosis Without Myelopathy 74
CHIRO-3.4: Cervical Sprain and Strain 82
CHIRO-3.5: Torticollis 91
CHIRO-4.0: Headaches 99
CHIRO-4.1: Cervicocranial Syndrome 100
CHIRO-4.2: Headache 101
CHIRO-4.3: Migraine Without Aura 107
CHIRO-4.4: Migraine With Aura 114
CHIRO-4.5: Unspecified Migraine Headache 121
CHIRO-5.0: Lower Extremity Conditions 128
CHIRO-5.1: Achilles Tendinitis 129
CHIRO-5.2: Sprain and Strain of Knee and Leg 134
CHIRO-5.3: Sprain and Strain of the Hip and Thigh 139
CHIRO-5.4: Sprain-Strain of Ankle 146
CHIRO-5.5: Tibialis Tendonitis 152
CHIRO-6.0: Lumbosacral Conditions (Disc-Radicular) 157
CHIRO-6.1: Degeneration of Lumbar or Lumbosacral Intervertebral Disc 158
CHIRO-6.2: Displacement of Lumbar Intervertebral Disc Without Myelopathy 168
CHIRO-6.3: Lumbosacral Radiculitis 179
CHIRO-6.4: Post-Laminectomy Syndrome, Lumbar Region 190
CHIRO-6.5: Sciatica 201
CHIRO-6.6: Spinal Stenosis, Lumbar 212
CHIRO-7.0: Lumbosacral Conditions (Non-Specific) 223
CHIRO-7.1: Disorder of Sacrum 224
CHIRO-7.2: Lumbago 232
CHIRO-7.3: Lumbar Segmental and Somatic Dysfunction 241
CHIRO-7.4: Lumbar Spondylosis 249
CHIRO-7.5: Lumbar Sprain/Strain 258
CHIRO-7.6: Lumbosacral (joint/ligament), Sprain and Strain 268
CHIRO-7.7: Pelvic Segmental and Somatic Dysfunction 277

© 2019 eviCore healthcare. All Rights Reserved.

400 Buckwalter Place Boulevard, Bluffton, SC 29910 (800) 918-8924 www.eviCore.com

CHIRO-7.8: Sacral Segmental and Somatic Dysfunction 285
CHIRO-7.9: Sacroiliac Ligament Sprain 293
CHIRO-7.10: Sacroiliitis 302
CHIRO-8.0: Neuromusculoskeletal Conditions (Non-specific) 311
CHIRO-8.1: Congenital Spondylolisthesis 312
CHIRO-8.2: Sequela of a Sprain/Strain Injury 322
CHIRO-8.3: Myalgia 323
CHIRO-8.4: Other Specified Dorsopathies 330
CHIRO-8.5: Pain in Limb 331
CHIRO-8.6: Scoliosis 338
CHIRO-8.7: Muscle Spasm 346
CHIRO-8.8: Fasciitis 353
CHIRO-8.9: Neuralgia 359
CHIRO-9.0: Thoracic Conditions (Disc Radicular) 360
CHIRO-9.1: Displacement of Thoracic Intervertebral Disc Without Myelopathy 361
CHIRO-10.0: Thoracic Rib Cage Conditions (Non-specific) 369
CHIRO-10.1: Pain in Thoracic Spine 370
CHIRO-10.2: Rib Cage Segmental and Somatic Dysfunction 376
CHIRO-10.3: Sprain and Strain of Ribs 382
CHIRO-10.4: Thoracic Segmental and Somatic Dysfunction 388
CHIRO-10.5: Thoracic Sprain/Strain 395
CHIRO-11.0: Upper Extremity Conditions 403
CHIRO-11.1: Acromioclavicular Sprain 404
CHIRO-11.2: Adhesive Capsulitis of the Shoulder 410
CHIRO-11.3: Carpal Tunnel Syndrome 417
CHIRO-11.4: Disorders of Bursae and Tendons in Shoulder Region 422
CHIRO-11.5: Lateral Epicondylitis 427
CHIRO-11.6: Medial Epicondylitis 432
CHIRO-11.7: Sprain and Strain of the Shoulder and Upper Arm 437
CHIRO-11.8: Strain Rotator Cuff 443
CHIRO-12.0: Chiropractic Care Guidelines for Children Aged 0-14 449
CHIRO-13.0: Diagnosis Codes 450

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-1.0: Covered Services and Exclusions

CHIRO-1.1: Chiropractic Covered Services	**6**
CHIRO-1.2: Chiropractic Coverage Exclusions	**7**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-1.1: Chiropractic Covered Services

Covered Chiropractic Services are those within the scope of chiropractic care that are supportive or necessary to help patients achieve the physical state enjoyed before an injury or illness, and that are determined by eviCore to be medically necessary, are authorized by eviCore healthcare, and are generally furnished for the diagnosis and/or treatment of a neuromusculoskeletal condition associated with an injury or illness, including the following:

- Examinations
- Manipulation
- Adjunctive Physiotherapy
- Emergency Services

Medically Necessary Chiropractic Services

- To be considered reasonable and necessary the following conditions must each be met:
  - Services are for the treatment of a covered injury, illness or disease.
  - There is strong evidence supporting the services as effective and appropriate treatment for the condition.
  - The clinical documentation must establish the individual's current condition and medical need for services.
  - Treatments are expected to result in significant, measurable, progressive improvement in a reasonable and generally predictable period of time. The improvement potential must be significant in relation to the extent and duration of the therapy required.
  - The complexity of the patient's condition must require the judgment and knowledge of a licensed qualified clinician. Services for conditions that do not require care under a qualified clinician are not skilled and are not considered reasonable or necessary services, even if they are performed by a qualified professional.
  - The amount, frequency, and duration of the services must be reasonable under accepted standards of practice. For these purposes, "generally acceptable standards of practice" means standards that are based on credible scientific evidence published in the peer-reviewed literature generally recognized by the relevant healthcare community, specialty society evidence-based guidelines or recommendation.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-1.2: Chiropractic Coverage Exclusions

The following are not covered under the plan:

- Services provided by a non-participating chiropractor, except for emergencies, or as authorized by the health plan
- Services provided outside of the health plan's service area, except for emergencies
- Services that are not pre-authorized, except for initial visits or emergencies
- Services incurred prior to the beginning or after the end of coverage
- Services that exceed the maximum covered visits for the benefit year
- Charges incurred for missed appointments
- Educational programs
- Pre-employment, school entrance, or athletic physical exams
- Services for conditions arising out of employment, including self-employment or covered under any workers' compensation act or law
- Services for any bodily injury arising from or sustained in an automobile accident that is covered under an automobile insurance policy
- Charges for which the patient is not legally required to pay
- Services rendered by a person who ordinarily resides in the patient's home or who is related to the patient by marriage or blood
- Services for preventive, maintenance, or wellness care
- Drugs, vitamins, nutritional supplements, or herbs
- Experimental or investigational services
- Services not medically necessary as determined by eviCore
- Vocational, stroke, or long-term rehabilitation
- Hypnotherapy, behavior training, sleep therapy, or biofeedback
- Rental or purchase of durable medical equipment (DME)
- Treatment primarily for purposes of weight control
- Lab services
- Thermography, hair analysis, heavy metal screening, or mineral studies
- Transportation costs, including ambulance charges
- Inpatient services
- Manipulation under anesthesia
- Services related to diagnosis and treatment of jaw joint or TMJ disorders
- Treatment of non-neuromusculoskeletal disorders
- Advanced diagnostic services, such as MRI, CT, EMG, SEMG, and NCV

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.0: Cervical Conditions (Disc-Radicular)

CHIRO-2.1: Brachial Neuritis or Radiculitis NOS	**9**
CHIRO-2.2: Brachial Plexus Lesions	**20**
CHIRO-2.3: Cervicobrachial Syndrome	**28**
CHIRO-2.4: Degeneration of Cervical Intervertebral Disc	**37**
CHIRO-2.5: Displacement of Cervical Intervertebral Disc Without Myelopathy	**46**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.1: Brachial Neuritis or Radiculitis NOS

Synonyms

- Cervical Radiculitis
- Radicular syndrome of upper limbs

Definition

Neurogenic pain following the distribution of one, or less commonly, more cervical nerve root(s). Condition may be accompanied by upper extremity numbness, weakness, or hyporeflexia, and may be due to cervical disc herniation (typically in younger patients), or foraminal encroachment, or spinal stenosis (typically in older patients).

History

Patient history may include:

- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications, other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals

- Rule out red flags (requires medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Myelopathy; spinal cord injury, tumor; Cerebrovascular Accident
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of a new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Cancer	Cause of symptoms (metastatic or primary)
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection

Presentation

Patient may report trauma or insidious onset. Presentation of patient will vary according to the anatomical cause of neuritis/radiculitis.

Subjective Findings

- Pain, numbness, tingling, and/or paresthesias in the upper extremity following cervical nerve root distribution
- Complaints of weakness in the upper extremity, such as with grip strength
- Lack of upper extremity coordination, and difficulty with fine manipulation tasks, including handwriting
- Improves with rest
- Placing hand on top of head may provide relief by decreasing tension on irritated cervical nerve
- Headaches and neck pain may accompany upper extremity pain

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck condition.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection - spine, shoulder, elbow, wrist
- Palpation of bony and soft tissue - spine, shoulder, elbow, wrist
- Range of motion - spine, shoulder, elbow, wrist
- Motion palpation of spine
- Orthopedic testing - spine, shoulder, elbow, wrist
- Neurologic testing
- Vascular insufficiency testing (e.g. carotid auscultation)

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs, and refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

Findings of Brachial Neuritis

- Cervical ROM restrictions may be present
- Muscle spasms in corresponding myotomes may be present
- Nerve root tension signs (shoulder depression) are typically positive but may be absent in cases involving a free fragment of disc tissue
- Foraminal compression may cause radiating upper extremity pain
- Extension with rotation of cervical spine may cause shoulder or arm pain
- Dejerine's triad may be positive
- Dural tension signs may be present
- Extremity symptoms and findings, if present, follow nerve root pattern
- Sensory abnormalities in a dermatomal pattern may be present

© 2019 eviCore healthcare. All Rights Reserved.

- Loss of reflex may be present
- Motor power weakness of upper extremity may be present
- Decreased upper extremity girth may be present

Neurologic Testing	C5 nerve root (C4/5 disc)	C6 nerve root (C5/6 disc)	C7 nerve root (C6/7 disc)
Sensation	Deltoid region	Dorsolateral aspect of thumb and index finger	Index, middle fingers, and dorsum of hand
Motor	Deltoid, biceps	Biceps, wrist extensors	Triceps, wrist flexors
Deep Tendon Reflex	Biceps	Brachioradialis	Triceps

Differential Diagnoses

- Myocardial ischemia (refer for evaluation if suspected)
- Demyelinating conditions (symptoms, intensity and location vary)
- Myelopathy (trunk or leg dysfunction, gait disturbance, bowel or bladder dysfunction, signs of upper motor neuron involvement)
- Thoracic outlet syndrome (positive TOS orthopedic testing)
- Peripheral nerve entrapment (Phalen's test, Tinel's test at elbow and wrist)
- Adhesive capsulitis of shoulder with referred cervical pain (restricted active and passive shoulder motion)
- Rotator cuff disorder with referred cervical pain (significant pain with shoulder circumduction motions)
- Signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of the spinal cord, which should be evaluated medically.

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic examination. The diagnosis of brachial neuritis or radiculitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

An EMG study or an MRI/CT scan may be helpful in identifying a nerve root lesion. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points) [20].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1]

Minimization of the rotary component and force applied with osseous cervical manipulation is recommended. Prior to osseous manipulation, the patient should be questioned regarding reproduction of upper extremity complaints, or increase in pain when placed in pre-stress position. Mild mobilization of the cervical spine may be attempted before administering manipulation in patients with disc lesions. Reproduction of upper extremity complaints or increase in pain with either indicates that caution should be taken. The use of a low force technique, such as an Activator™, may be considered.

Chiropractic Manipulative Treatment may be used to increase spinal motion and correct biomechanical function. Depending on the pain level, modalities to address pain may be utilized, and if muscular spasms are present, soft tissue mobilization may be indicated. Postural exercises are utilized to improve the anatomical alignment of the spine, followed by cervical stabilization exercises. Cervical traction (manual or mechanical) may be utilized to decrease pain and peripheral symptoms. As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks at a treatment frequency commensurate with severity of the condition.[4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency. [4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency if more treatment is necessary. [4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency.[4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant, measurable functional improvement ➢ Significant, measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity occurs,
- Signs of demyelinating condition, tumor, or infection are present.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Cervical isometric exercises
- Aerobic conditioning
- Heat applications or cold packs, if needed, to relieve discomfort/stiffness
- Brief use of cervical collar, if necessary, in the acute stages to limit motion

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Côté P, Hogg-Johnson S, Cassidy J, Carroll L, Frank J, Bombardier C. Early aggressive care and delayed recovery from whiplash: Isolated finding or reproducible result?. Arthritis & Rheumatism. 2007;57(5):861-868. doi:10.1002/art.22775.
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
14. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
15. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
16. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
17. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
18. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
19. Heckmann J, Lang C, Zöbelein I, Laumer R, Druschky A, Neundörfer B. Herniated Cervical Intervertebral Discs with Radiculopathy. J Spinal Disord. 1999;12(5):396-401. doi:10.1097/00002517-199912050-00008.
20. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
21. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
23. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
24. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
25. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
26. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
27. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
28. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
29. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
30. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
31. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004
32. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
33. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
34. Saal J, Saal J, Yurth E. Nonoperative Management of Herniated Cervical Intervertebral Disc With Radiculopathy. Spine. 1996;21(16):1877-1883. doi:10.1097/00007632-199608150-00008.
35. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
36. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
37. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
38. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.

© 2019 eviCore healthcare. All Rights Reserved.

39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.2: Brachial Plexus Lesions

Synonyms
- Cervical rib syndrome
- Scalenus anticus syndrome
- Costoclavicular syndrome
- Thoracic outlet syndrome

Definition
Condition characterized by pain in the neck and shoulder, numbness and/or tingling of the fingers, and weakening of the hand. This collection of symptoms is often described as Thoracic Outlet Syndrome (TOS). Condition is caused by compression of the neural and/or vascular structures of the brachial plexus.

History
Pain, numbness and/or tingling, and heaviness of the involved upper extremity are common complaints reported by a patient with TOS. Often, the symptoms are vague and generalized. The entire extremity may be involved; additionally, neck pain and headaches may be reported concomitantly.

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, ligament tear, tendon rupture
Fever, severe pain	Possible infection
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection
Cancer history	Cause of symptoms (metastatic or primary)
Discoloration of hand/fingers	Vascular occlusion, shunt emboli (dialysis patients)
Exertional symptoms, history of cardiac disease	Anginal equivalent

© 2019 eviCore healthcare. All Rights Reserved.

Presentation

Symptoms may begin insidiously after repetitive or stressful activity, such as prolonged computer keyboard use, or mechanical and overhead work. Trauma, such as an automobile accident with occurrence of a whiplash injury also has been associated with onset of TOS with a frequency of up to 23%. Sports activities, especially throwing and swimming, have been implicated as well; symptoms may be similar to those of a clavicular fracture, with a delayed onset from hours to weeks.

Autonomic phenomena (e.g., cold hands, blanching, swelling) may also be reported. Proximity of the stellate ganglion to the first rib articulation, which is often dysfunctional or restricted in TOS, has been postulated as a cause.

Subjective Findings

- Pain in the neck and shoulder
- Numbness/tingling in the fingers
- Weakness in grip strength
- Cold hands
- Swelling in the hands
- Heaviness involving the upper extremity

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic testing
- Neurologic testing

© 2019 eviCore healthcare. All Rights Reserved.

Findings of Brachial Plexus Lesion

Careful neurological and musculoskeletal examination is essential to diagnose TOS adequately. Often, the most important aspect of the physical examination is to diagnose or rule out other problems of the neck and arm.

The mainstay of the physical examination diagnosis of TOS involves the so-called stress tests (or provocative maneuvers). Sensitivity and specificity of these tests have been low in the studies on TOS completed to date. Different techniques for performing and interpreting these tests are discussed in the literature and vary even more in the bedside clinical situation.

The most common tests are:
Adson maneuvers, where the head is placed in extension and side bending while the patient takes a deep breath and holds it, followed by rotation to stretch or tether the plexus and/or artery by the anterior and middle scalenes. The maneuver is held for 15-30 seconds while the clinician observes for onset of symptoms and obliteration of the pulse. Symptoms have been reported both to the side of bending, and more commonly, to the side away from the bending. If the symptoms are reported on the side of bending, then this finding overlaps with the Spurling sign, commonly used to assist in the diagnosis of cervical radiculopathy. Some examiners ask the patient to pull the head forward while maintaining the test position, causing the anterior scalene to contract against the plexus to enhance the stress effect.

Hyperabduction of the involved arm can also be used to stress the outlet; however, this maneuver often causes symptoms and loss of pulse even in normal individuals and may be misleading. The area of compression with this maneuver is considered more distal, and frequently located at the anterior humeral head and plexus, with tethering under the pectoralis minor muscle.

Costoclavicular bracing (military maneuver) closes the space between the clavicle and first rib and may reproduce symptoms.

Focal stress tests involve applying pressure directly to the anterior scalene, or upper segment of the pectoralis minor. These tests are considered positive if symptoms are reproduced within 15-30 seconds. In addition, some authors have noted a positive Tinel sign (percussing over the plexus) as diagnostic for TOS.

Elevated arm stress test (EAST) has been noted to be highly sensitive for TOS. The upper extremity is held in the "stick-em-up" position with the arms abducted and elbows flexed (both at 90°) for 3 minutes while the patient simultaneously and vigorously flexes and extends the fingers (grasp and release). This test is considered positive if the patient cannot complete the full 3 minutes. Unfortunately, this test is challenging even for individuals without neurovascular symptoms to complete; thus, it may have limited practical usefulness in most clinical situations. In one study, over 80% of patients with carpal tunnel syndrome (CTS) presenting to an electrodiagnostic medicine laboratory had a positive EAST.

Careful observation for asymmetry of the upper chest wall may reveal clavicular irregularity consistent with prior fracture. A non-tender hard mass over the middle third of the clavicle often is noted. Deformity from displaced fracture (with or without

© 2019 eviCore healthcare. All Rights Reserved.

nonunion) or exuberant callus could be responsible for direct compression of the plexus. Pressure on the clavicle can reproduce or aggravate symptoms, especially when nonunion is present; motion can be detected between the fragments.

Differential Diagnoses

- Cervical myelopathy
- Cervical radiculopathy
- Double crush syndrome (thoracic outlet syndrome and compression at another distal or proximal site)
- Paget-von Schroetter syndrome, effort syndrome (spontaneous venous thrombosis, primary deep venous thrombosis of the upper extremity)
- Pancoast (apical lung) tumor
- Shoulder tendonitis, bursitis, impingement
- Shoulder (glenohumeral) instability
- Raynaud syndrome
- Ulnar neuropathy (cubital tunnel syndrome, Guyon canal syndrome)

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic examination. The diagnosis of a brachial plexus lesion does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results. If orthopedic testing provides positive results with "stress tests", a minimum cervical radiographic series can be helpful in identifying a cervical rib, or an elevated first rib.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points) [20].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

The goal of chiropractic care is to reduce pain and inflammation, aid stretching and strengthening, and assist in a gradual return to activity. Modalities to reduce pain and inflammation are, therefore, appropriate.

- Modalities with deep heat (i.e., ultrasound), electric stimulation, superficial heat (i.e., Hydrocollator packs), stretching exercises, postural correction exercises, and strength and endurance exercises are all useful or necessary components of TOS treatment.
- Ultrasound is the preferred modality as it is capable of heating deep muscular and soft tissue structures, which is essential to increase elasticity and facilitates effective stretching and/or manipulation, especially for the scalenes and pectoralis minor muscles. Ideally, ultrasound should be performed immediately before the stretching or manual treatment, since the deep tissues cool (from 41-42°C back to 37°C) within 20-30 minutes.
- Caudal rib mobilization for the first and second ribs may be helpful in reducing symptoms.
- Mobilization and manipulation procedures are indicated, and often necessary to release tight contracted/restricted vertebral segments and soft tissue (myofascial) regions, especially anterior/middle scalenes and pectoralis minor muscle entrapment sites.
- Frequency of care should be commensurate with the severity of the condition; frequency of chiropractic care should decrease with improvement of condition.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

The following table contains benchmarks for clinical outcomes that support the medical necessity for continued treatment beyond the time frames listed:[4]

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if condition does not progress as expected.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises, neurotension stretches
- Progression to therapeutic exercise—strengthening exercises
- Hot packs/cold packs, if needed, to relieve discomfort

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
2. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003
3. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
4. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
5. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
6. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
7. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
8. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
9. Côté P, Hogg-Johnson S, Cassidy J, Carroll L, Frank J, Bombardier C. Early aggressive care and delayed recovery from whiplash: Isolated finding or reproducible result?. Arthritis & Rheumatism. 2007;57(5):861-868. doi:10.1002/art.22775.
10. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
11. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
12. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
13. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
14. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
15. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
16. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
17. Heckmann J, Lang C, Zöbelein I, Laumer R, Druschky A, Neundörfer B. Herniated Cervical Intervertebral Discs with Radiculopathy. J Spinal Disord. 1999;12(5):396-401. doi:10.1097/00002517-199912050-00008.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
25. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
26. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
27. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
28. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
29. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
30. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
31. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
32. Saal J, Saal J, Yurth E. Nonoperative Management of Herniated Cervical Intervertebral Disc With Radiculopathy. Spine. 1996;21(16):1877-1883. doi:10.1097/00007632-199608150-00008.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.3: Cervicobrachial Syndrome

Synonyms
None

Definition
Condition related to pain in the arm and cervical origin.

History
Patient history may include:
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications, other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic)
- Response to prior treatment

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident, myelopathy, spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of a new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Cancer	Cause of symptoms (metastatic or primary)
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection

© 2019 eviCore healthcare. All Rights Reserved.

Presentation
Varies, may result from traumatic onset or overuse syndrome.

Subjective Findings
- Pain, numbness and/or tingling, and heaviness of involved upper extremity.
- Symptoms are often vague and generalized—entire extremity may be involved; additionally, neck pain and headaches are reported concomitantly.
- Symptoms may begin insidiously after repetitive or stressful activity, such as prolonged computer keyboard use or mechanical and overhead work. Trauma, such as an automobile accident with occurrence of a whiplash injury, also has been associated with the onset.
- Autonomic phenomena (e.g., cold hands, blanching, swelling) also may be reported.

Functional Assessment
Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Goal of Examination
Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck pain.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Vascular insufficiency testing (e.g. carotid auscultation)

© 2019 eviCore healthcare. All Rights Reserved.

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs, and refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

Findings of Cervicobrachial Syndrome

- Often antalgic so as to minimize symptoms
- ROM restrictions
- Extremities symptoms and findings, if present, follow nerve root pattern—sensory abnormalities in dermatomal pattern; loss of reflex may be present; motor power weakness of upper extremity in a myotomal distribution; decreased upper extremity girth may be present.

Neurologic Testing	C5 nerve root (C4/5 disc)	C6 nerve root (C5/6 disc)	C7 nerve root (C6/7 disc)
Sensation	Deltoid region	Dorsolateral aspect of thumb and index finger	Index, middle fingers, and dorsum of hand
Motor	Deltoid, biceps	Biceps, wrist extensors	Triceps, wrist flexors
Deep Tendon Reflex	Biceps	Brachioradialis	Triceps

Differential Diagnoses

- Myocardial ischemia (refer for evaluation if suspected)
- Thoracic outlet syndrome (positive TOS orthopedic test)
- Peripheral nerve entrapment (Phalen's test, Tinel's test at elbow and wrist)
- Adhesive capsulitis of shoulder with referred cervical pain (restricted active and passive shoulder motion)
- Rotator cuff disorder with referred cervical pain (significant pain with shoulder circumduction motions)
- Signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of spinal cord, which should be evaluated medically.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic examination. The diagnosis of cervicobrachial syndrome does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

An EMG study or an MRI/CT scan may be helpful in identifying a nerve root lesion. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2) [20].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1]

Minimization of the rotary component and force applied with osseous cervical manipulation is recommended. Prior to osseous manipulation, the patient should be questioned regarding reproduction of upper extremity complaints, or increase in pain when placed in pre-stress position. Mild mobilization of the cervical spine may be attempted before administering manipulation in patients with disc lesions. Reproduction of upper extremity complaints or increase in pain with either indicates that caution should be taken. The use of a low force technique, such as an Activator™, may be considered.

Chiropractic Manipulative Treatment may be used to increase spinal motion and correct biomechanical function. Depending on the pain level, modalities to address pain may be utilized, and if muscular spasms are present, soft tissue mobilization may be indicated. Postural exercises are utilized to improve the anatomical alignment of the spine, followed by cervical stabilization exercises. Cervical traction (manual or mechanical) may be utilized to decrease pain and peripheral symptoms. As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks at a treatment frequency commensurate with the severity of the condition.[4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with the severity of the condition. [4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency that is commensurate with severity of the condition. [4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralized between week nine and week twelve, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity occurs,
- Signs of demyelinating condition, tumor, or infection occur.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice/postural exercises
- Cervical isometric exercises, cervical stabilization exercises, stretching exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Use of cervical pillow while sleeping
- Brief use of cervical collar, if necessary, in the acute stages to limit motion
- Home cervical traction may be beneficial

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Côté P, Hogg-Johnson S, Cassidy J, Carroll L, Frank J, Bombardier C. Early aggressive care and delayed recovery from whiplash: Isolated finding or reproducible result?. Arthritis & Rheumatism. 2007;57(5):861-868. doi:10.1002/art.22775.
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
14. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
15. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
16. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
17. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
18. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
19. Heckmann J, Lang C, Zöbelein I, Laumer R, Druschky A, Neundörfer B. Herniated Cervical Intervertebral Discs with Radiculopathy. J Spinal Disord. 1999;12(5):396-401. doi:10.1097/00002517-199912050-00008.
20. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
21. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
23. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
24. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
25. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
26. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
27. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
28. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
29. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
30. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
31. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
32. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
33. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
34. Saal J, Saal J, Yurth E. Nonoperative Management of Herniated Cervical Intervertebral Disc With Radiculopathy. Spine. 1996;21(16):1877-1883. doi:10.1097/00007632-199608150-00008.
35. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
36. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
37. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
38. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.4: Degeneration of Cervical Intervertebral Disc

Synonyms
Degeneration of cervicothoracic intervertebral disc.

Definition
Degeneration of Cervical Intervertebral Disc is commonly due to age-related changes. However, this condition may also be affected by lifestyle, genetics, smoking, nutrition, and physical activity. Circumferential tears form in the posterolateral annulus after repetitive use. Several circumferential tears coalesce into radial tears, which progress into radial fissures. Loss of disc height occurs with subsequent peripheral annular bulging. Proteoglycans and water escape through fissures formed from nuclear degradation, resulting in further thinning of the disc space. Vertebral sclerosis and osteophytic formation ultimately follow.

History
Patient history may include:
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.
- Gather information that leads to a prognosis and selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of a new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Cancer	Cause of symptoms (metastatic or primary)
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection

Presentation

Condition is usually associated with an insidious onset of pain. Patients may report prior history of several episodes of neck and/or arm pain, and/or history of neck or head trauma. Patients may report morning pain/stiffness that decreases with motion, but is aggravated by excessive motions or strenuous activity.

Subjective Findings

- Pain and stiffness in the neck
- Pain typically worse with motion
- Pain referred from disc to upper limb usually is nondermatomal
- Vibrational stress from driving also exacerbates discogenic pain

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck pain.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection (including postural evaluation)
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Vascular insufficiency testing (e.g. carotid auscultation)

Findings of Degeneration of Cervical Intervertebral Disc

- May relate tenderness to palpation in lateral portions of neck and along spinous processes.
- May demonstrate ROM restrictions in cervical spine; electrical shock-like sensations down arms and/or legs with cervical flexion may indicate myelopathy, or a disorder of the central nervous system, which requires medical evaluation.
- Nerve root tension signs (shoulder depression) may be positive.
- Foraminal compression may cause radiating upper extremity pain.
- Extension with rotation of cervical spine may cause shoulder or arm pain.
- Dejerine's triad may be positive.
- Signs of upper motor neuron involvement may suggest compression of spinal cord, which should be evaluated medically.

Differential Diagnoses

- Metastatic tumor (awakened by constant and severe night pain that is not relieved by changing position, especially when there is a known or suspected history of cancer)
- Spinal cord tumor
- Syringomyelia (superficial abdominal reflexes absent, insensitive to pain)
- Cervical vertebral instability (due to rheumatoid arthritis or following significant
- recent trauma)

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic examination. The diagnosis of cervical disc degeneration does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results. A basic cervical radiographic series must include AP, APOM and lateral views. Oblique views may be appropriate if neurological deficits are present, and are typically considered after exposing and reviewing a basic 3-view cervical series.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[20].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1]

Based on the findings of the initial evaluation, the patient's symptoms may include pain, postural dysfunction, loss of motion, neurologic signs, and subsequent loss of ADL's. Based on these findings, treatment may include modalities to decrease pain, postural exercises, ROM exercises, stretching exercises, manual techniques, such as joint mobilization, soft tissue mobilization and cervical manual traction, and strengthening exercises, such as cervical stabilization exercises. Mechanical traction may also be useful. Home program would reflect these treatments. Treatment frequency depends on the severity of the reported subjective findings and objective findings. Treatment frequency is expected to decrease as patient's condition improves. As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

The following table contains benchmarks for clinical outcomes that support the medical necessity for continued treatment beyond the time frames listed:[4]

© 2019 eviCore healthcare. All Rights Reserved.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week sixteen, whichever occurs first

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity is present,
- Signs of myelopathy occur,
- Signs of a demyelinating condition, tumor or infection are present,
- Increasing neurological signs are present: increasing upper extremity numbness/tingling, increasing upper extremity weakness, decreasing upper extremity reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Self-Management Techniques

- Postural advice
- Cervical exercises such as isometrics, stabilization exercises, stretching
- Aerobic conditioning, such as walking or swimming
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Use of a cervical pillow while sleeping may be helpful
- Home traction, if helpful
- Use of tennis balls (or other appropriate device) for trigger point work such as suboccipitals, upper trapezius, rhomboids

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Côté P, Hogg-Johnson S, Cassidy J, Carroll L, Frank J, Bombardier C. Early aggressive care and delayed recovery from whiplash: Isolated finding or reproducible result?. Arthritis & Rheumatism. 2007;57(5):861-868. doi:10.1002/art.22775.
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
14. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
15. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
16. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
17. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
18. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
19. Heckmann J, Lang C, Zöbelein I, Laumer R, Druschky A, Neundörfer B. Herniated Cervical Intervertebral Discs with Radiculopathy. J Spinal Disord. 1999;12(5):396-401. doi:10.1097/00002517-199912050-00008.
20. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
21. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
23. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634
24. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
25. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
26. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
27. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
28. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
29. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
30. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
31. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
32. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
33. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
34. Saal J, Saal J, Yurth E. Nonoperative Management of Herniated Cervical Intervertebral Disc With Radiculopathy. Spine. 1996;21(16):1877-1883. doi:10.1097/00007632-199608150-00008.
35. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
36. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
37. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
38. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-2.5: Displacement of Cervical Intervertebral Disc Without Myelopathy

Synonyms
- Cervical disc herniation
- Herniated nucleus pulposus in cervical spine

Definition
Cervical nerve root irritation as a result of cervical disc pathology. Pain follows distribution of one, or less commonly, more than one cervical nerve root. Pain may be accompanied by numbness, weakness, or hyporeflexia in the effected upper extremity.

History
Patient history may include:
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and selection of appropriate interventions

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
New onset of headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Cancer	Cause of symptoms (metastatic or primary)
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection

Presentation

Typical patient is between 25-50 years of age. Chance of disc herniation after age 40 decreases as the nucleus pulposus dehydrates. Often, there is a history of trauma involving the extremes of extension, flexion, and/or rotation of neck; no aggravating event in 50% of patients.

Subjective Findings

- Pain and stiffness in the neck
- Depending on whether primarily motor or sensory involvement is present, radicular pain may be deep, dull, and achy or sharp, burning, and electric
- Often associated with numbness or pain that may reach to the distal ends of the upper extremity
- May complain of weakness in upper extremity, such as with grip strength
- Upper extremity symptoms may predominate
- Patients may present with distal limb numbness and proximal weakness in addition to pain
- Midline disc protrusions may involve both extremities
- May be better with rest
- Placing the hand on top of the head may provide relief by decreasing tension on the irritated cervical nerve
- Headaches may accompany pain

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck pain.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs, and refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

© 2019 eviCore healthcare. All Rights Reserved.

Findings of Cervical Intervertebral Disc Syndrome

- Often antalgic
- ROM restrictions
- Nerve root tension signs (shoulder depression) are typically positive but may be absent in cases involving a free fragment of disc tissue
- Foraminal compression may cause radiating upper extremity pain
- Extension with rotation of cervical spine may cause shoulder or arm pain
- Dejerine's triad may be positive
- Dural tension signs
- Extremities symptoms and findings, if present, follow nerve root pattern—sensory abnormalities in dermatome; loss of reflex; motor power weakness of upper extremity; decreased upper extremity girth may be present; signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of spinal cord, which should be evaluated medically.

Neurologic Testing	C5 nerve root (C4/5 disc)	C6 nerve root (C5/6 disc)	C7 nerve root (C6/7 disc)
Sensation	Deltoid region	Dorsolateral aspect of thumb and index finger	Index, middle fingers, and dorsum of hand
Motor	Deltoid, biceps	Biceps, wrist extensors	Triceps, wrist flexors
Deep Tendon Reflex	Biceps	Brachioradialis	Triceps

Differential Diagnoses

- Myocardial ischemia (refer for evaluation if suspected)
- Thoracic outlet syndrome (positive TOS orthopedic test)
- Peripheral nerve entrapment (Phalen's test, Tinel's test at elbow and wrist)
- Adhesive capsulitis of shoulder with referred cervical pain (restricted active and passive shoulder motion)
- Rotator cuff disorder with referred cervical pain (significant pain with shoulder circumduction motions)

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic examination. The diagnosis of cervical disc displacement does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

An EMG study or an MRI/CT scan may be helpful in identifying a nerve root lesion. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[20].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1]

Minimization of the rotary component, and force applied with osseous cervical manipulation is recommended. Prior to osseous manipulation, patient should be questioned regarding reproduction of upper extremity complaints, or increase in pain when placed in pre-stress position. Mild mobilization of the cervical spine may be attempted before administering manipulation in patients with disc lesions. Reproduction of upper extremity complaints or increase in pain with either indicates that caution should be taken. The use of a low force technique, such as an Activator™, may be considered.

Chiropractic Manipulative Treatment may be used to increase spinal motion and correct biomechanical function. Depending on the pain level, modalities to address pain may be utilized, and if muscular spasms are present, soft tissue mobilization may be indicated. Postural exercises are utilized to improve the anatomical alignment of the spine, followed by cervical stabilization exercises. Cervical traction (manual or mechanical) may be utilized to decrease pain and peripheral symptoms. As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks with treatment frequency commensurate with severity of the condition.[4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency. [4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency if more treatment is necessary. [4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at treatment frequency commensurate with severity of the condition. [4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency. [4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted at the end of week eight, continue for up to an additional month at a decreasing frequency. [4]
- If further significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency.[4]
- By the end of week twelve, the patient should be prepared for release to a self-management program.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity is apparent,
- Signs of demyelinating condition, tumor or infection are apparent,
- Progressive neurologic signs/symptoms are present: increasing upper extremity numbness/tingling, increasing upper extremity weakness, decreasing upper extremity reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice/postural exercises
- Cervical isometric exercises, cervical stabilization exercises, stretching exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Use of cervical pillow while sleeping
- Brief use of cervical collar, if necessary, in the acute stages to limit motion
- Home cervical traction

Alternative Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Côté P, Hogg-Johnson S, Cassidy J, Carroll L, Frank J, Bombardier C. Early aggressive care and delayed recovery from whiplash: Isolated finding or reproducible result?. Arthritis & Rheumatism. 2007;57(5):861-868. doi:10.1002/art.22775.
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
14. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
15. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
16. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
17. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
18. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
19. Heckmann J, Lang C, Zöbelein I, Laumer R, Druschky A, Neundörfer B. Herniated Cervical Intervertebral Discs with Radiculopathy. J Spinal Disord. 1999;12(5):396-401. doi:10.1097/00002517-199912050-00008.
20. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
21. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries? J Athl Train. 2004;39(3):278-279.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
23. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
24. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
25. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
26. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
27. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
28. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
29. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
30. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
31. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
32. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
33. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
34. Saal J, Saal J, Yurth E. Nonoperative Management of Herniated Cervical Intervertebral Disc With Radiculopathy. Spine. 1996;21(16):1877-1883. doi:10.1097/00007632-199608150-00008.
35. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
36. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
37. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
38. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.0: Cervical Conditions (Non-specific)

CHIRO-3.1: Cervicalgia	**58**
CHIRO-3.2: Cervical Segmental and Somatic Dysfuncion	**66**
CHIRO-3.3: Cervical Spondylosis Without Myelopathy	**74**
CHIRO-3.4: Cervical Sprain and Strain	**82**
CHIRO-3.5: Torticollis	**91**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.1: Cervicalgia

Synonyms

- Pain in neck
- Cervicodynia

Definition

Cervicalgia is a term used for pain in the cervical area. This condition is nonspecific in origin and/or nature, can be acute or chronic in nature, and is generally not used to describe episodes that involve radicular symptoms.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Unexplained weight loss	Cancer
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection
Open wound in the area of the primary region of complaint	Infection

Presentation

Usually insidious onset of pain. May report prior history of episodic neck pain.

Subjective Findings

- Pain and stiffness in neck; pain typically worse with motion
- Headaches may accompany the neck pain
- Awareness of some level of neck discomfort or limitations in motion

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Cervicalgia includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the cervical spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the cervical spine
    - Functional movement(s) involving the cervical spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (circumferential measurements of the upper extremities when indicated)
- Palpable areas of tenderness along the cervical spine region corresponding to hypertonicity of the cervical muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Cervical disc herniation (typically, neurologic abnormality and radicular pain)
- Dislocation of the cervical spine (significant trauma, greater than 3 mm. loss of contact between contiguous segments)
- Fracture of cervical spine (history, abnormal radiograph)
- Inflammatory arthritides, such as rheumatoid arthritis (history, radiographic findings)
- Cervical spine tumor or infection (night pain, weight loss, history of cancer, fever)

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of cervicalgia does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[37] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[18].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[4]If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice, postural exercises
- Flexibility exercises
- Cervical stabilization exercises, isometrics
- Aerobic conditioning, such as walking or swimming
- Heat applications, cold packs, if needed, to relieve discomfort/stiffness
- Use of a cervical pillow while sleeping may be helpful

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
13. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
14. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
15. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
16. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
17. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
25. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
26. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
27. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
28. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
29. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
30. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
31. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
32. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.2: Cervical Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic lesion—cervical
- Segmental dysfunction—cervical
- Somatic dysfunction—cervical
- Subluxation—cervical

Definition

Condition is associated with an abnormal or altered functional relationship between contiguous cervical vertebrae.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Prolonged steroid use	Osteoporosis, Compression fracture
Intravenous drug abuse, alcoholism and/or diabetic	Infection
Immune-compromised state	Infection
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior or current history of cancer	Malignancy
Pain that is worse with recumbency or worse at night and or unrelated to movement	Malignancy
Fever or recent bacterial infection	Infection
Open wound in the area of the primary region of complaint	Infection

Presentation

Often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. There may be prior history of trauma to the involved region. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings

Pain and/or stiffness in the region of the affected joints/segments.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint. Assess the risk of cerebrovascular accident prior to cervical manipulation.

Note: Diseases that may refer pain to cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Vascular insufficiency testing (e.g. carotid auscultation)

Objective Criteria

Cervical segmental and/or somatic dysfunction includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the cervical spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the cervical spine
    - Functional movement(s) involving the cervical spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (circumferential measurements of the upper extremities when indicated)
- Palpable areas of tenderness along the cervical spine region corresponding to hypertonicity of the cervical muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental **and/**or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, **and** other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[37] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[18].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks with a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition.[4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management [4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of in subjective complaints
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Cervical exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Acupuncture
- Massage
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
13. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
14. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
15. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
16. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
17. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
25. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
26. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
27. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
28. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
29. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
30. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
31. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
32. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.3: Cervical Spondylosis Without Myelopathy

Synonyms

- Cervical or cervicodorsal arthritis
- Cervical or cervicodorsal osteoarthritis
- Cervical or cervicodorsal spondyloarthritis

Definition

Condition consisting of degenerative joint disease affecting the cervical vertebrae, intervertebral discs, and surrounding ligaments and connective tissue, sometimes with pain or paresthesia radiating down the arm.

History

The onset of symptoms is usually insidious. Occasionally, acute exacerbations may be brought on by excessive activity such as reading or painting a ceiling with the neck in extension. Trauma, e.g., a fall or rear-end collision, may also precipitate an acute exacerbation.

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

© 2019 eviCore healthcare. All Rights Reserved.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of a new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Unexplained weight loss	Cancer
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection
Open wound in the area of the primary region of complaint	Infection

Presentation

Usually patient reports an insidious onset of pain, or prior history of several episodes of neck, and/or arm pain, and/or history of neck or head trauma. There may be morning pain/stiffness that decreases with motion, but is aggravated by excessive motions or strenuous activity.

Subjective Findings

- Pain and stiffness in the neck
- Pain typically worse with motion
- May report crepitus with certain cervical motions, particularly circumduction
- Headaches may accompany pain
- Upper extremity pain (unilateral or bilateral) may occur with lateral recess stenosis and nerve root entrapment

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck pain.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection (including postural evaluation)
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Cervical Spondylosis without Myelopathy includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the cervical spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the cervical spine
    - Functional movement(s) involving the cervical spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (circumferential measurements of the upper extremities when indicated)
- Palpable areas of tenderness along the cervical spine region corresponding to hypertonicity of the cervical muscles AND

© 2019 eviCore healthcare. All Rights Reserved.

- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Differential Diagnoses

- Metastatic tumor (awakened by constant and severe night pain that is not relieved by changing position, especially when there is a known or suspected history of cancer)
- Spinal cord tumor
- Syringomyelia (superficial abdominal reflexes absent, insensitive to pain)
- Cervical vertebral instability (due to rheumatoid arthritis or following significant recent trauma)

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of cervical spondylosis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[37] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[18].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks with a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition.[4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated during weeks five through eight, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and Introduce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable functional improvement ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity occurs,
- Signs of myelopathy occur,
- Signs of demyelinating condition, tumor or infection occur, or
- Increasing neurological signs occur (increasing upper extremity numbness/tingling, increasing upper extremity weakness, or decreasing upper extremity reflexes).

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Cervical exercises such as isometrics, stabilization exercises, or stretching
- Aerobic conditioning, such as walking or swimming
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Cervical pillow while sleeping
- Home traction
- Use of tennis balls (or other appropriate device) for trigger point work, such as suboccipitals, upper trapezius, rhomboids

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
13. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
14. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
15. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
16. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
17. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48
25. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
26. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
27. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
28. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
29. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
30. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004
31. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
32. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.4: Cervical Sprain and Strain

Synonyms

- Whiplash
- Cervical acceleration/deceleration syndrome
- Cervical anterior longitudinal sprain/strain
- Atlanto-axial sprain
- Atlanto-occipital sprain

Definition

Condition involving non-radicular neck pain that may extend into the trapezius region. Condition occurs either suddenly or following a trauma that may be either instantaneous or repetitive.

- Strain
  - Overstretching or tearing of a muscle or tendon.
- Sprain
  - Overstretching or tearing of ligamentous tissue.

Classification

Tendon and ligament injuries are classified as:

- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.

© 2019 eviCore healthcare. All Rights Reserved.

- A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
- **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movement.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of a new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Prior or current history of cancer	Cause of symptoms (metastatic or primary)
Intravenous drug abuse, alcoholism and/or diabetic	Side effect or withdrawal phenomenon
Immunosuppression, HIV, Immunosuppressive Drugs	Infection
Prolonged steroid use	Osteoporosis, Compression fracture
Open wound in the area of the primary region of complaint	Infection
Unexplained weight loss	Tumor; infection; metabolic or endocrine disorder

© 2019 eviCore healthcare. All Rights Reserved.

Presentation

- Strain
  - Overexertion in some static or dynamic activity; over stretching; or contusion. Pain is worse with initial activity; rest typically relieves the pain.
- Sprain
  - Chronic manifestations involve prolonged periods of postural abuse. Acute onset may involve a sudden motion or poor body mechanics while performing an activity.

Subjective Findings

- Strain
  - Pain and stiffness in a muscle/tendon group.
- Sprain
  - Pain and stiffness in the affected area.
    - Neck pain located anywhere from the occiput to cervicothoracic junction, and towards the shoulders along the distribution of the trapezii.
    - Motion of the head and neck is typically painful.
    - Headaches originating from the cervical region or occiput may accompany the neck pain.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors to the neck pain.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic and neurologic testing if complaints radiate to back or upper extremities
- Assess the risk of cerebrovascular accident prior to cervical manipulation
- Vascular insufficiency testing (e.g. carotid auscultation)

Findings of Cervical Sprain/Strain

- Strain
  - Inspection negative for visible deformity
  - Tenderness, spasm, and possible swelling in the muscle or tendon upon palpation
  - Limited cervical motion is common and typically more painful on active motion
  - Pain on isometric contraction or active motion of the involved muscle
  - Neurological exam is usually normal
- Sprain
  - Inspection negative for visible deformity
  - Tenderness +2 or greater in the immediate area of the involved joint(s)
  - Localized spasm and/or swelling in the tissues directly adjacent to the region
  - Limited cervical motion is common and particularly more painful on end range
  - Pain intensified by passive motion of the involved joint(s)
  - Neurological exam is usually normal

Objective Criteria

Cervical Sprain/Strain includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the cervical spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the cervical spine
    - Functional movement(s) involving the cervical spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (circumferential measurements of the upper extremities when indicated)
- Palpable areas of tenderness along the cervical spine region corresponding to hypertonicity of the cervical muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Cervical disc herniation (typically neurologic abnormality and radicular pain)
- Dislocation of the cervical spine (significant trauma, greater than 3 mm. loss of contact between contiguous segments)
- Fracture of cervical spine (history, abnormal radiograph)
- Inflammatory arthritides, such as rheumatoid arthritis (history, radiographic findings)
- Cervical spine tumor or infection (night pain, weight loss, history of cancer, fever)

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[37] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[18].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks with a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following during weeks four through eight, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Introduce self-management techniques
5-8	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity,
- Signs of demyelinating condition, tumor or infection.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Isometric cervical exercises
- Aerobic activity
- Cold/heat applications
- Use of cervical pillow
- Cervical support, as appropriate

Alternatives to Chiropractic Management

- Acupuncture
- Massage
- Medication
- Physiatry
- Physical Therapy
- Osteopathic Manipulation
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
13. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
14. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
15. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
16. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
17. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
25. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
26. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
27. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
28. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
29. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
30. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
31. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
32. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-3.5: Torticollis

Synonyms

- Idiopathic Spasmodic Torticollis
- Involuntary Contractions Of Neck Muscles
- Focal Dystonia
- Congenital Torticollis
- Acquired Torticollis
- Acute Wryneck
- Painful Neck Spasms
- Cervical Muscle Spasm
- Tonic Head Deviation
- Clonic Head Movements
- Head Torsion
- Spasmodic Torticollis
- Contracture Of Neck

Definition

Torticollis is a condition that causes the neck to involuntarily twist to one side, secondary to contraction of the neck muscles. The ear is tilted toward the contracted muscle, and the chin is facing the opposite direction.

Torticollis is derived from the Latin tortus, meaning twisted, and collum, meaning neck. Symptom is of diverse conditions; some of which include congenital problems, trauma, and infections.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

© 2019 eviCore healthcare. All Rights Reserved.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to the avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Unexplained weight loss	Cancer
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection
Open wound in the area of the primary region of complaint	Infection

Presentation

Acute onset, this condition may or may not be precipitated by acute trauma.

Subjective Findings

- Pain and/or stiffness in the neck
- Limited mobility

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index (NDI). The NDI has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for neck conditions.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Diseases that may refer pain to the cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic and neurologic testing if complaints radiate to back or upper extremities
- Vascular insufficiency testing (e.g. carotid auscultation)

Objective Criteria

Torticollis includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) flexibility
  - Reproduction of pain correlated with the cervical spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the cervical spine
    - Functional movement(s) involving the cervical spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (circumferential measurements of the upper extremities when indicated)
- Palpable areas of tenderness along the cervical spine region corresponding to hypertonicity of the cervical muscles AND

© 2019 eviCore healthcare. All Rights Reserved.

- Evidence of significant pain and/or functional limitation necessitating skilled intervention.
- Additional Findings
  - Antalgic head posture

Radiographs

The clinical decision involving cervical spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of torticollis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

An EMG study or an MRI/CT scan may be helpful in identifying a nerve root lesion. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[37] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[18].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks with a treatment frequency commensurate with the severity of the condition.
- If there is measurable improvement in function and subjective complaints after two weeks, continue for up to two additional weeks.[4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective complaints
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of upper extremity is apparent,
- Signs of demyelinating condition, tumor, or infection are apparent.

Informed consent regarding risk for vertebrobasilar accident with cervical manipulation is recommended prior to commencement of treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice—avoid prolonged awkward or rigid positions
- Isometric cervical exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Acupuncture
- Physical Therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
10. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
13. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
14. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
15. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
16. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
17. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
18. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
19. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
20. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
21. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.

© 2019 eviCore healthcare. All Rights Reserved.

22. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
23. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
24. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48
25. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
26. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
27. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
28. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
29. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
30. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
31. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
32. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
33. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
34. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
35. Verhagen A, Scholten-Peeters G, van Wijngaarden S, de Bie R, Bierma-Zeinstra S. Conservative treatments for whiplash. Cochrane Database of Systematic Reviews. 2004.
36. Vernon H, Humphreys K, Hagino C. Chronic Mechanical Neck Pain in Adults Treated by Manual Therapy: A Systematic Review of Change Scores in Randomized Clinical Trials. J Manipulative Physiol Ther. 2007;30(3):215-227. doi:10.1016/j.jmpt.2007.01.014.
37. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
38. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.0: Headaches

CHIRO-4.1: Cervicocranial Syndrome	**100**
CHIRO-4.2: Headache	**101**
CHIRO-4.3: Migraine Without Aura	**107**
CHIRO-4.4: Migraine With Aura	**114**
CHIRO-4.5: Unspecified Migraine Headache	**121**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.1: Cervicocranial Syndrome

Synonyms

- Barre-Lieou syndrome
- Posterior cervical sympathetic syndrome

Definition

Cervicocranial Syndrome is a dysfunction in the posterior cervical sympathetic nervous system; and, an extremely rare condition that is not well researched. The condition is not commonly recognized in medical or chiropractic literature. The National Institutes of Health provides additional information under its **Genetic and Rare Disease Information Center**.

This diagnosis is commonly misused by chiropractors to describe a cervicogenic headache. If this is the case, refer to Headache guideline for a description of the Chiropractic Evaluation and Management of this condition.

References

1. Pearce, J: Barre-Lieou “syndrome”. Journal of Neurology Neurosurgery and Psychiatry. 2004;75:319.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.2: Headache

Synonyms
Pain in head NOS

Definition
Condition involves pain in the head region. Pain is a constant, tight, pressing, or band-like sensation in the frontal, temporal, occipital, or parietal area (with frontal and temporal regions most common).

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Risk assessment (e.g. carotid auscultation) for cerebrovascular accident prior to cervical manipulation.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Direct trauma to the head with loss of consciousness (LOC)	Subdural hematoma; epidural hematoma; fracture
Nuchal rigidity and/or positive Brudzinski's or Kernig's sign	Subarachnoid hemorrhage; meningitis
Bladder dysfunction associated with onset of neck pain	Myelopathy; spinal cord injury
Associated dysphasia	Cerebrovascular accident; myelopathy; spinal cord injury
Associated cranial nerve or central nervous system (CNS) signs/symptoms	Tumor; intracranial hematoma
Onset of new headache	Tumor; infection; vascular cause (older patients, also consider temporal arteritis; glaucoma)
Comorbidities of rheumatoid arthritis, seronegative arthritides, Down's syndrome	Atlanto-axial instability due to associated transverse ligament laxity
Cancer	Cause of symptoms (metastatic or primary)
Alcoholism, drug abuse	Side effect or withdrawal phenomenon
Immune-compromised state	Infection

© 2019 eviCore healthcare. All Rights Reserved.

Presentation

Other considerations

- Giant cell arteritis
- Arteriosclerotic headache
- Hypertension
- Tumors
- Herpetic neuralgia
- Trigeminal neuralgia
- Glaucoma
- Subdural hematoma
- Sinus headaches

Subjective Findings

Symptoms consist of dull, generalized head pain. Pain tends to start at the posterior portion of the head and move anteriorly. Muscles of the cervical spine, scalp, jaw, and temporal regions are commonly involved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint. Assess the risk of cerebrovascular accident prior to cervical manipulation.

Note: Diseases that may refer pain to and from the head and cervical spine include: brain lesions, CAD, dental disease, esophageal disease, upper airway disease, infection, and lymphadenopathy.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Evaluation of the following muscles:
  - Temporalis
  - SCM
  - Anterior scalenes
  - Posterior scalenes
  - Sub-occipitalis
  - Upper trapezius
  - Levator scapula
  - Cervical erectors
- Orthopedic and neurologic testing of the cervical spine, spinal nerves, cranial nerves
- Vascular insufficiency testing (e.g. carotid auscultation)

© 2019 eviCore healthcare. All Rights Reserved.

Findings of Headache

- Typically, tenderness at the cervical muscles and suboccipital region
- Associated soft tissue may be shortened with degrees of muscle hypertonicity
- Range of motion typically limited asymmetrically
- Joint fixation upon motion palpation
- Orthopedic and neurological testing is typically unremarkable

Differential Diagnoses

- Onset of symptoms may be acute or gradual
- Symptoms are generally recurrent
- As many as 40% of teenagers and adults are affected by headaches

Radiographs

The clinical decision involving radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of headache does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Informed consent regarding risk for vertebrobasilar accident with cervical manipulation is recommended prior to commencement of treatment.
- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition.
- If there is measurable improvement in function and subjective complaints after two weeks, continue for up to two additional weeks at a decreasing treatment frequency that is commensurate with the severity of the condition.[4]
- If there is no improvement following the initial two weeks, reassess for other possible causes or complicating factors. Consider different adjustive/manipulative technique and/or referral for co-management. [4]If the patient is not asymptomatic or near asymptomatic at the end of the second two-week trial or has reached a plateau, refer to an appropriate health care provider to explore other treatment alternatives.
- Total treatment duration should not exceed eight weeks.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant Measurable Functional Improvement
5-8	➢ One follow-up, then discharge

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Isometric cervical exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Mobilization (physical therapist)
- Acupuncture
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Boline P, Kassak K, Bronfort G, Nelson C, Anderson A. spinal manipulation vs. amitriptyline for the treatment of chronic tension-type headaches: a randomized clinical trail. Manipulative Physiologic Therapeutics. 1995;18(3):148-154.
6. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
7. Bronfort G, Assendelft W, Evans R, Haas M, Bouter L. Efficacy of spinal manipulation for chronic headache: A systematic review. J Manipulative Physiol Ther. 2001;24(7):457-466. doi:10.1016/s0161-4754(01)99423-0.
8. Brønfort G, Haas M, Evans R, Goldsmith C, Assendelft W, Bouter L. Non-invasive physical treatments for chronic/recurrent headache. Cochrane Database of Systematic Reviews. 2004.
9. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
10. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
11. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
12. Chaibi A, Benth J, Tuchin P, Russell M. Chiropractic spinal manipulative therapy for migraine: a three-armed, single-blinded, placebo, randomized controlled trial. Eur J Neurol. 2016;24(1):143-153. doi:10.1111/ene.13166.
13. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
14. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
15. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
19. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
20. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
21. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.

© 2019 eviCore healthcare. All Rights Reserved.

22. Haas M, Spegman A, Peterson D, Aickin M, Vavrek D. Dose response and efficacy of spinal manipulation for chronic cervicogenic headache: a pilot randomized controlled trial. The Spine Journal. 2010;10(2):117-128. doi:10.1016/j.spinee.2009.09.002.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
26. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
27. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
28. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
29. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
30. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
31. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
32. McCrory D, Penzien D, Hasselblad V, Gary R. evidence report: behavioral and physical therapy for tension-type and cervicogenic headache. Foundation for chiropractic education and research. 2001.
33. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
34. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
35. Pearce J. Barre-Lieou "syndrome." Journal of Neurology, Neurosurgery & Psychiatry. 2004;75:319.
36. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
37. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
38. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.3: Migraine Without Aura

Synonyms
Common Migraine

Definition
Common Migraine Headache is a dominantly inherited disorder characterized by varying degrees of recurrent vascular-quality headache, photophobia, sleep disruption, and depression, which may or may not be preceded by an aura.

History
- Attacks usually occur while awake.
- Nausea and vomiting usually occur later in attack.
- Photophobia and/or phonophobia are also commonly associated with the headache.
- About 60% of people who experience Migraine Headaches report a prodrome.
- The following symptoms are typical of the prodrome:
  - Food cravings
  - Constipation or diarrhea
  - Mood changes—depression, irritability
  - Muscle stiffness, especially in the neck
  - Fatigue
  - Increased frequency of urination

Common migraine headaches are not associated with auras. About 75% of migraine headaches are of the 'common' type.

Red Flags
The following symptoms reported by patients require physician referral or co-management:
- Sudden onset of severe headache with no prior history—subarachnoid hemorrhage; meningitis
- Vomiting without nausea—increased intracranial pressure
- Suspicion of drug or alcohol dependence—side effect or withdrawal phenomenon
- Persistent or severe headache in a child—tumor; encephalitis; meningitis
- Headaches associated with other neurological signs or symptoms (e.g., diplopia, loss of sensation, weakness, ataxia), or those of unusually abrupt onset.
- Headaches that are persistent (especially beyond 72 hours), that first occur after the age of 55, or that develop after a head injury or major trauma.
- Headaches that are associated with a stiff neck or fever.

Subjective Findings
A typical migraine headache is throbbing or pulsatile in nature. Initially, it is unilateral and localized in the frontotemporal and ocular area, and then builds up over a period of one to two hours, progressing posteriorly and becoming diffuse. It can last from several hours to an entire day. Pain intensity is moderate to severe and tends to intensify even with routine physical activity.

© 2019 eviCore healthcare. All Rights Reserved.

Objective Findings

- Measure blood pressure, pulse rate, temperature
- Inspection of posture (forward head carriage, rounded shoulders)
- Palpate temporal arteries
- Palpate cervical spine for muscle spasm, trigger points, segmental dysfunction
- Perform cervical ROM
- Auscultate carotid arteries
- Percussion of sinuses
- Neurological examination for focal signs or asymmetric reflexes; test cranial nerves

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the headache.

Note: Diseases that may refer pain to the head include: brain lesions, cervical spine conditions, dental disease, and vascular conditions.

Specific Aspects of Examination

- Cognitive changes, such as confusion, drowsiness or giddiness may be an indication of meningitis, encephalitis, subarachnoid hemorrhage, or other space occupying lesion
- Nuchal rigidity may be an indication of meningitis or subarachnoid hemorrhage
- Headache associated with diastolic blood pressure greater than 110 mm.Hg.—uncontrolled hypertension
- Persistent or severe headache in a child—tumor
- Articular derangements such as rheumatoid arthritis or similar autoimmune disease, joint instability or hypermobility particularly of the atlanto-axial joint
- History of infection as indicated by a fever greater than 100, constant low-grade fever, joint infection
- Signs or symptoms of cerebrovascular insufficiency
- Recent loss of consciousness or blow to the head; positive cranial nerve exam

Radiographs

The clinical decision involving radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of migraine headache does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1]

- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4] If the patient is not asymptomatic or near asymptomatic at the end of the second two-week trial or has reached a plateau, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

Natural History without Treatment

Most migraine sufferers manage their headaches without conventional medical advice and generally treat their attacks with over-the-counter medication.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

Instruct patient to avoid dietary triggers, such as chocolate, aged cheeses and meats, wine and beer (e.g., sulfites), caffeine, onions, nuts and peanut butter, dairy products, baked goods, and citrus fruits. Be aware of other potential triggers, such as allergic reactions, bright lights, loud noises, physical or mental stress, changes in sleep patterns, smoking or exposure to tobacco smoke, missed meals, and hormonal fluctuations.

Alternatives to Chiropractic

- Acupuncture
- Biofeedback
- Stress Management
- Yoga
- Meditation
- Exercise
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Boline P, Kassak K, Bronfort G, Nelson C, Anderson A. spinal manipulation vs. amitriptyline for the treatment of chronic tension-type headaches: a randomized clinical trail. Manipulative Physiologic Therapeutics. 1995;18(3):148-154.
6. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
7. Bronfort G, Assendelft W, Evans R, Haas M, Bouter L. Efficacy of spinal manipulation for chronic headache: A systematic review. J Manipulative Physiol Ther. 2001;24(7):457-466. doi:10.1016/s0161-4754(01)99423-0.
8. Brønfort G, Haas M, Evans R, Goldsmith C, Assendelft W, Bouter L. Non-invasive physical treatments for chronic/recurrent headache. Cochrane Database of Systematic Reviews. 2004.
9. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
10. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
11. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
12. Chaibi A, Benth J, Tuchin P, Russell M. Chiropractic spinal manipulative therapy for migraine: a three-armed, single-blinded, placebo, randomized controlled trial. Eur J Neurol. 2016;24(1):143-153. doi:10.1111/ene.13166.
13. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
14. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
15. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
19. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
20. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
21. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.

© 2019 eviCore healthcare. All Rights Reserved.

22. Haas M, Spegman A, Peterson D, Aickin M, Vavrek D. Dose response and efficacy of spinal manipulation for chronic cervicogenic headache: a pilot randomized controlled trial. The Spine Journal. 2010;10(2):117-128. doi:10.1016/j.spinee.2009.09.002.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
26. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
27. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
28. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
29. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
30. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
31. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
32. McCrory D, Penzien D, Hasselblad V, Gary R. evidence report: behavioral and physical therapy for tension-type and cervicogenic headache. Foundation for chiropractic education and research. 2001.
33. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
34. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
35. Pearce J. Barre-Lieou "syndrome." Journal of Neurology, Neurosurgery & Psychiatry. 2004;75:319.
36. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
37. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
38. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.4: Migraine With Aura

Synonyms
Classical Migraine

Definition
Classical Migraine Headache is a dominantly inherited disorder characterized by varying degrees of recurrent vascular-quality headache, photophobia, sleep disruption, and depression, which is usually preceded by an aura.

History
- Attacks usually occur while awake.
- Nausea and vomiting usually occur later in attack.
- Photophobia and/or phonophobia are also commonly associated with the headache.
- About 60% of people who experience Migraine Headaches report a prodrome.
- The following symptoms are typical of the prodrome:
  - Food cravings
  - Constipation or diarrhea
  - Mood changes—depression, irritability
  - Muscle stiffness, especially in the neck
  - Fatigue
  - Increased frequency of urination

Classical migraine headaches exhibit an aura. A migraine aura is a complex of neurological symptoms that may precede or accompany the headache phase, or may occur in isolation. Auras have a wide range of symptoms, which include:
- Visual—flashing lights, wavy lines, spots, partial loss of sight, blurry vision
- Olfactory hallucinations—smelling odors that are not there
- Tingling or numbness of the face or extremities on the side where the headache develops
- Difficulty finding words and/or speaking
- Confusion
- Vertigo
- Partial paralysis
- Auditory hallucinations
- Decrease in, or loss of hearing
- Reduced sensation
- Hypersensitivity to feel and touch

© 2019 eviCore healthcare. All Rights Reserved.

Red Flags

The following symptoms reported by patients require physician referral or co-management:

- Sudden onset of severe headache with no prior history—subarachnoid hemorrhage; meningitis
- Vomiting without nausea—increased intracranial pressure
- Suspicion of drug or alcohol dependence—side effect or withdrawal phenomenon
- Persistent or severe headache in a child—tumor; encephalitis; meningitis
- Headaches associated with other neurological signs or symptoms (e.g., diplopia, loss of sensation, weakness, ataxia), or those of unusually abrupt onset.
- Headaches that are persistent (especially beyond 72 hours), that first occur after the age of 55, or that develop after a head injury or major trauma.
- Headaches that are associated with a stiff neck or fever.

Subjective Findings

A typical migraine headache is throbbing or pulsatile in nature. Initially, it is unilateral and localized in the frontotemporal and ocular area, and then builds up over a period of one to two hours, progressing posteriorly and becoming diffuse. It can last from several hours to an entire day. Pain intensity is moderate to severe and tends to intensify even with routine physical activity.

Objective Findings

- Measure blood pressure, pulse rate, temperature
- Inspection of posture (forward head carriage, rounded shoulders)
- Palpate temporal arteries
- Palpate cervical spine for muscle spasm, trigger points, segmental dysfunction
- Perform cervical ROM
- Auscultate carotid arteries
- Percussion of sinuses
- Neurological examination for focal signs or asymmetric reflexes; test cranial nerves

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the headache.

Note: Diseases that may refer pain to the head include: brain lesions, cervical spine conditions, dental disease, and vascular conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Specific Aspects of Examination

- Cognitive changes, such as confusion, drowsiness or giddiness may be an indication of meningitis, encephalitis, subarachnoid hemorrhage, or other space occupying lesion
- Nuchal rigidity may be an indication of meningitis or subarachnoid hemorrhage
- Headache associated with diastolic blood pressure greater than 110 mm.Hg.—uncontrolled hypertension
- Persistent or severe headache in a child—tumor
- Articular derangements such as rheumatoid arthritis or similar autoimmune disease, joint instability or hypermobility particularly of the atlanto-axial joint
- History of infection as indicated by a fever greater than 100, constant low-grade fever, joint infection
- Signs or symptoms of cerebrovascular insufficiency
- Recent loss of consciousness or blow to the head; positive cranial nerve exam

Radiographs

The clinical decision involving radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of migraine headache does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, **and** other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4]
- If the patient is not asymptomatic or near asymptomatic at the end of the second two-week trial or has reached a plateau, refer to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Some reduction of subjective findings ➢ Measurable functional improvement
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

Natural History Without Treatment

Most migraine sufferers manage their headaches without conventional medical advice, and generally treat their attacks with over-the-counter medication.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

Instruct patient to avoid dietary triggers, such as chocolate, aged cheeses and meats, wine and beer (e.g., sulfites), caffeine, onions, nuts and peanut butter, dairy products, baked goods, and citrus fruits. Be aware of other potential triggers, such as allergic reactions, bright lights, loud noises, physical or mental stress, changes in sleep patterns, smoking or exposure to tobacco smoke, missed meals, and hormonal fluctuations.

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives to Chiropractic

- Acupuncture
- Biofeedback
- Stress Management
- Yoga
- Meditation
- Exercise
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Boline P, Kassak K, Bronfort G, Nelson C, Anderson A. spinal manipulation vs. amitriptyline for the treatment of chronic tension-type headaches: a randomized clinical trail. Manipulative Physiologic Therapeutics. 1995;18(3):148-154.
6. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
7. Bronfort G, Assendelft W, Evans R, Haas M, Bouter L. Efficacy of spinal manipulation for chronic headache: A systematic review. J Manipulative Physiol Ther. 2001;24(7):457-466. doi:10.1016/s0161-4754(01)99423-0.
8. Brønfort G, Haas M, Evans R, Goldsmith C, Assendelft W, Bouter L. Non-invasive physical treatments for chronic/recurrent headache. Cochrane Database of Systematic Reviews. 2004.
9. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
10. BRONFORT G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis*1. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
11. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
12. Chaibi A, Benth J, Tuchin P, Russell M. Chiropractic spinal manipulative therapy for migraine: a three-armed, single-blinded, placebo, randomized controlled trial. Eur J Neurol. 2016;24(1):143-153. doi:10.1111/ene.13166.
13. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
14. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
15. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
19. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
20. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
21. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.

© 2019 eviCore healthcare. All Rights Reserved.

22. Haas M, Spegman A, Peterson D, Aickin M, Vavrek D. Dose response and efficacy of spinal manipulation for chronic cervicogenic headache: a pilot randomized controlled trial. The Spine Journal. 2010;10(2):117-128. doi:10.1016/j.spinee.2009.09.002.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
26. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
27. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
28. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
29. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
30. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
31. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
32. McCrory D, Penzien D, Hasselblad V, Gary R. evidence report: behavioral and physical therapy for tension-type and cervicogenic headache. Foundation for chiropractic education and research. 2001.
33. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
34. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
35. Pearce J. Barre-Lieou "syndrome." Journal of Neurology, Neurosurgery & Psychiatry. 2004;75:319.
36. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
37. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
38. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-4.5: Unspecified Migraine Headache

Synonyms
Migraine

Definition
Unspecified Migraine Headache is a dominantly inherited disorder characterized by varying degrees of recurrent vascular-quality headache, photophobia, sleep disruption, and depression, which may or may not be preceded by an aura.

History
- Attacks usually occur while awake.
- Nausea and vomiting usually occur later in attack.
- Photophobia and/or phonophobia are also commonly associated with the headache.
- About 60% of people who experience Migraine Headaches report a prodrome.
- The following symptoms are typical of the prodrome:
  - Food cravings
  - Constipation or diarrhea
  - Mood changes, e.g., depression, irritability
  - Muscle stiffness, especially in the neck
  - Fatigue
  - Increased frequency of urination

Some migraine headaches exhibit an aura. A migraine aura is a complex of neurological symptoms that may precede, or accompany the headache phase, or may occur in isolation. Auras have a wide range of symptoms, which include:
- Visual—flashing lights, wavy lines, spots, partial loss of sight, blurry vision
- Olfactory hallucinations—smelling odors that are not there
- Tingling or numbness of the face or extremities on the side where the headache develops
- Difficult finding words and/or speaking
- Confusion
- Vertigo
- Partial paralysis
- Auditory hallucinations
- Decrease in or loss of hearing
- Reduced sensation
- Hypersensitivity to feel and touch

© 2019 eviCore healthcare. All Rights Reserved.

Red Flags

The following symptoms reported by patients require physician referral or co-management:

- Sudden onset of severe headache with no prior history—subarachnoid hemorrhage; meningitis
- Vomiting without nausea—increased intracranial pressure
- Suspicion of drug or alcohol dependence—side effect or withdrawal phenomenon
- Persistent or severe headache in a child—tumor; encephalitis; meningitis
- Headaches associated with other neurological signs or symptoms (e.g., diplopia, loss of sensation, weakness, ataxia), or those of unusually abrupt onset.
- Headaches that are persistent (especially beyond 72 hours), that first occur after the age of 55, or that develop after a head injury or major trauma.
- Headaches that are associated with a stiff neck or fever.

Subjective Findings

A typical migraine headache is throbbing or pulsatile in nature. Initially, it is unilateral and localized in the frontotemporal and ocular area, and then builds up over a period of one to two hours, progressing posteriorly, and becoming diffuse. It can last from several hours to an entire day. Pain intensity is moderate to severe and tends to intensify even with routine physical activity.

Objective Findings

- Measure blood pressure, pulse rate, temperature
- Inspection of posture (forward head carriage, rounded shoulders)
- Palpate temporal arteries
- Palpate cervical spine for muscle spasm, trigger points, segmental dysfunction
- Perform cervical ROM
- Auscultate carotid arteries
- Percussion of sinuses
- Neurological examination for focal signs or asymmetric reflexes; test cranial nerves

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the headache.

Note: Diseases that may refer pain to the head include: brain lesions, cervical spine conditions, dental disease, and vascular conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Specific Aspects of Examination

- Cognitive changes, such as confusion, drowsiness or giddiness may be an indication of meningitis, encephalitis, subarachnoid hemorrhage, or other space occupying lesion
- Nuchal rigidity may be an indication of meningitis or subarachnoid hemorrhage
- Headache associated with diastolic blood pressure greater than 110 mm.Hg.—uncontrolled hypertension
- Persistent or severe headache in a child—tumor
- Articular derangements such as rheumatoid arthritis or similar autoimmune disease, joint instability or hypermobility particularly of the atlanto-axial joint
- History of infection as indicated by a fever greater than 100, constant low-grade fever, joint infection
- Signs or symptoms of cerebrovascular insufficiency
- Recent loss of consciousness or blow to the head; positive cranial nerve exam

Radiographs

The clinical decision involving radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of migraine headache does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, **and** other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[39] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1]

- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a frequency that is commensurate with the severity of the condition. [4]If the patient is not asymptomatic or near asymptomatic at the end of the second two-week trial or has reached a plateau, refer to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

Natural History Without Treatment

Most migraine sufferers manage their headaches without conventional medical advice, and generally treat their attacks with over-the-counter medication.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

Avoid dietary triggers, such as chocolate, aged cheeses and meats, wine and beer (e.g., sulfites), caffeine, onions, nuts, peanut butter, dairy products, baked goods, and citrus fruits. Be aware of other potential triggers, such as allergic reactions, bright lights, loud noises, physical or mental stress, changes in sleep patterns, smoking or exposure to tobacco smoke, missed meals, and hormonal fluctuations.

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives to Chiropractic

- Biofeedback
- Stress Management
- Yoga
- Meditation
- Exercise
- Acupuncture
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Aker P, Gross A, Goldsmith C, Peloso P. Conservative management of mechanical neck pain: systematic overview and meta-analysis. BMJ. 1996;313(7068):1291-1296. doi:10.1136/bmj.313.7068.1291.
3. Aprill C, Bogduk N. The Prevalence of Cervical Zygapophyseal Joint Pain; A First Approximation. Spine. 1992;17(7):744-747. doi:10.1097/00007632-199207000-00003.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Boline P, Kassak K, Bronfort G, Nelson C, Anderson A. spinal manipulation vs. amitriptyline for the treatment of chronic tension-type headaches: a randomized clinical trail. Manipulative Physiologic Therapeutics. 1995;18(3):148-154.
6. Bolton J, Humphreys B, van Hedel H. Validity of Weekly Recall Ratings of Average Pain Intensity in Neck Pain Patients. J Manipulative Physiol Ther. 2010;33(8):612-617. doi:10.1016/j.jmpt.2010.08.009.
7. Bronfort G, Assendelft W, Evans R, Haas M, Bouter L. Efficacy of spinal manipulation for chronic headache: A systematic review. J Manipulative Physiol Ther. 2001;24(7):457-466. doi:10.1016/s0161-4754(01)99423-0.
8. Brønfort G, Haas M, Evans R, Goldsmith C, Assendelft W, Bouter L. Non-invasive physical treatments for chronic/recurrent headache. Cochrane Database of Systematic Reviews. 2004.
9. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
10. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
11. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
12. Chaibi A, Benth J, Tuchin P, Russell M. Chiropractic spinal manipulative therapy for migraine: a three-armed, single-blinded, placebo, randomized controlled trial. Eur J Neurol. 2016;24(1):143-153. doi:10.1111/ene.13166.
13. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
14. Conlin A, Teasell R, Bhogal S, Sequeira K. Treatment of Whiplash-Associated Disorders - Part I: Non-Invasive Interventions. Pain Research and Management. 2005;10(1):21-32. doi:10.1155/2005/503704.
15. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Gross A, Hoving J, Haines T et al. Cervical overview group, Manipulation and Mobilisation for Mechanical Neck Disorders. Cochrane Database Systematic Reviews. 2004.
19. Gross A, Kay T, Paquin J et al. Exercises for mechanical neck disorders. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd004250.pub5.
20. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001
21. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.

© 2019 eviCore healthcare. All Rights Reserved.

22. Haas M, Spegman A, Peterson D, Aickin M, Vavrek D. Dose response and efficacy of spinal manipulation for chronic cervicogenic headache: a pilot randomized controlled trial. The Spine Journal. 2010;10(2):117-128. doi:10.1016/j.spinee.2009.09.002.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Carragee E, van der Velde G et al. Treatment of neck pain: noninvasive interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Journal of manipulative and physiologic therapeutics. 2009;32(2):s1441-1475.
26. Hurwitz E, Morgenstern H, Harber P, Kominski G, Yu F, Adams A. A Randomized Trial of Chiropractic Manipulation and Mobilization for Patients With Neck Pain: Clinical Outcomes From the UCLA Neck-Pain Study. Am J Public Health. 2002;92(10):1634-1641. doi:10.2105/ajph.92.10.1634.
27. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
28. Kjellman G, Skargen E, Oberg B. A critical analysis of randomised clinical trials on neck pain and treatment efficacy: a review of the literature. Scand J Rehabil Med. 1999;31(3):139.152.
29. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
30. Martínez-Segura R, Fernández-de-las-Peñas C, Ruiz-Sáez M, López-Jiménez C, Rodríguez-Blanco C. Immediate Effects on Neck Pain and Active Range of Motion After a Single Cervical High-Velocity Low-Amplitude Manipulation in Subjects Presenting with Mechanical Neck Pain: A Randomized Controlled Trial. J Manipulative Physiol Ther. 2006;29(7):511-517. doi:10.1016/j.jmpt.2006.06.022.
31. Masaracchio M, Cleland J, Hellman M, Hagins M. Short-Term Combined Effects of Thoracic Spine Thrust Manipulation and Cervical Spine Nonthrust Manipulation in Individuals With Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;43(3):118-127. doi:10.2519/jospt.2013.4221.
32. McCrory D, Penzien D, Hasselblad V, Gary R. evidence report: behavioral and physical therapy for tension-type and cervicogenic headache. Foundation for chiropractic education and research. 2001.
33. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
34. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
35. Pearce J. Barre-Lieou "syndrome." Journal of Neurology, Neurosurgery & Psychiatry. 2004;75:319.
36. Rothwell D, Bondy S, Williams J. Chiropractic Manipulation and Storke: a population-based case-control study. Stroke. 2001;32(5):1054-1060.
37. Saavedra-Hernandez M, Arroyo-Morales M, Cantarero-Vilanueva I et al. Short-term effects of spinal thrust joint manipulation in patients with chronic neck pain: a randomized clinical trial. Journal of Orthopaedic & Sports Physical Therapy. 2013;27(6):504-512.
38. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
39. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
40. Young W. Cervical Spondylitic myelopathy: a common cause of spinal cord dysfunction in older persons. Am Fam Physician. 2000;62(5):1064-70.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.0: Lower Extremity Conditions

CHIRO-5.1: Achilles Tendinitis	**129**
CHIRO-5.2: Sprain and Strain of Knee and Leg	**134**
CHIRO-5.3: Sprain and Strain of the Hip and Thigh	**139**
CHIRO-5.4: Sprain-Strain of Ankle	**146**
CHIRO-5.5: Tibialis Tendonitis	**152**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.1: Achilles Tendinitis

Definition

Achilles tendinitis is usually related to overuse, lack of adequate heel height, or unaccustomed use; results in microscopic tears in Achilles tendon leading to an inflammatory response. In some cases there will be a peritendinous inflammation that does not generally progress to degenerative tendinosis (nor rupture). In other situations, there will be clinical inflammation, but objective pathologic evidence for cellular inflammation is lacking—in these conditions the term tendinosis is more appropriate. Non-insertional tendinitis occurs proximal to retrocalcaneal bursa. Insertional tendinitis is localized to the calcaneal tendon insertion. With this condition, pain is related to contact between the posterior calcaneus and Achilles tendon. Haglund's deformity may be related to condition. Localized calcification within the Achilles tendon can be a cause of insertional tendonitis.

History

Specific Aspects of History

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, compartment syndrome
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Lower extremity deep vein thrombosis
Immune-compromised state	Infection
Multiple joint involvement	Rheumatologic diseases
Diabetes	Neuropathy

Presentation

Condition involves a complaint of acute or chronic heel pain; often worse with activity.

Subjective Findings

- Tenderness and pain at the Achilles tendon
- Stiffness that gradually eases as the tendon is warmed up
- Pain after activity that gradually worsens
- Radiating or localized pain along the tendon during, and/or after running

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic and neurologic testing if neurologic signs are present

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

© 2019 eviCore healthcare. All Rights Reserved.

Findings of Achilles Tendinitis

- Pain and swelling over the Achilles tendon
- Localized tenderness on squeezing tendon
- Deep palpation will elicit tenderness
- Palpable nodularity in tender aspect of the tendon
- Pain is produced or increased with forced passive dorsiflexion, resistance to active plantar flexion, or both
- Weakness is evidenced by inability to raise up on toes (decreased MMT of plantar flexion)
- Crepitus may be present

Differential Diagnoses

- Partial tear of Achilles tendon
- Gout
- Spondyloarthropathies

Radiographs

The clinical decision involving a radiographic series of the heel is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of Achilles tendinitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[19] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[10].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - The severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

Goal of chiropractic is to reduce pain and inflammation, aid stretching and strengthening, and assist in gradual return to activity. Manipulation and modalities to reduce pain and inflammation are, therefore, appropriate. Cross friction massage at the site of injury can help stimulate healing.

- Treatment frequency should be commensurate with the severity of the condition.
- Functional status & activity level should be assessed at the onset of care
- Patient education in rest/reduction of strenuous activities, as well as identification of a causative factor and correction of faulty technique should be emphasized:
- Instruction in proper warm-up and cool-down
- Instruction in appropriate footwear
- Instruction in the use of a temporary heel lift
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If patient does not improve with trial of chiropractic treatment or has reached a plateau, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 25% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ 75% improvement in subjective findings ➢ 75% increase in range of motion ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One to two additional visits, then discharge ➢ Reinforce self-management techniques

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises, stretching calf musculature
- Progression to therapeutic exercise—strengthening exercises
- Hot packs/cold packs, if needed, to relieve discomfort

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Medication
- Surgery (as last resort)
- Cortisone injection

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Clement D, Taunton J, Smart G. Achilles tendinitis and peritendinitis: Etiology and treatment. Am J Sports Med. 1984;12(3):179-184. doi:10.1177/036354658401200301.
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
8. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
9. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
10. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
11. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
12. Jackson B, Schwane J, Starcher B. Effect of ultrasound therapy on the repair of Achilles tendon injuries in rats. Medicine & Science in Sports & Exercise. 1991;23(2):171-176. doi:10.1249/00005768-199102000-00005.
13. James S, Bates B, Osternig L. Injuries to runners. Am J Sports Med. 1978;6(2):40-50. doi:10.1177/036354657800600202.
14. Kohne E, Jones A, Korporaal C, Price J, Brantingham J, Globe G. A prospective, single-blinded, randomized, controlled clinical trial of the effects of manipulation on proprioception and ankle dorsiflexion in chronic recurrent ankle sprain. Journal of the American Chiropractic Association. 2007;44:7-17.
15. López-Rodríguez S, de-las-Peñas C, Alburquerque-Sendín F, Rodríguez-Blanco C, Palomeque-del-Cerro L. Immediate Effects of Manipulation of the Talocrural Joint on Stabilometry and Baropodometry in Patients With Ankle Sprain. J Manipulative Physiol Ther. 2007;30(3):186-192. doi:10.1016/j.jmpt.2007.01.011.
16. Miklovic T, Donovan L, Protzuk O, Kang M, Feger M. Acute lateral ankle sprain to chronic ankle instability: a pathway of dysfunction. Phys Sportsmed. 2017;46(1):116-122. doi:10.1080/00913847.2018.1409604.
17. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
18. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
19. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.2: Sprain and Strain of Knee and Leg

Synonyms

- Trick knee
- Bum knee

Definition

Knee injuries can take the form of a sprain or a strain.

- Sprain
  - Results from suddenly stretching or tearing ligaments that hold the knee together.
- Strain
  - Injury to muscles or tendons that connect muscles to bones.

History

Key features of the patient history for this condition include:

- Prior trauma
- Bilateral pain
- Night pain
- Excessive running or bicycling
- Overuse
- Absence of trauma
- Instability
- Give-way weakness

Location of Pain	Loss of Motion	Swelling
Medial Lateral Subpatellar Posterior	Flexion Extension	Redness and heat

Specific Aspects of History

- Rule out red flags (require medical management) i.e. infection, arthridities, gout other autoimmune disorders, juvenile arthritis, rheumatoid arthritis.
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, Torn meniscus, cruciate ligament tears (anterior and posterior)
Infection	Cellulitis, Osteomyelitis

Presentation

- Sprain
  - is usually caused by an accident, such as tripping, falling, or twisting the knee.
- Strain
  - is usually a result from overuse, sudden stops or starts, or an athletic injury.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

Typically, there will be pain, tenderness, swelling, or bruising of the injured area. If injury is serious, it may be difficult moving the knee.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue and distal pulses
- Range of motion: active and passive
- Strength testing
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Goal of Examination

Determine which anatomical structure is involved:

- Anterior drawer testing also evaluates soundness of the ACL.
- Employ tibial sag test to distinguish disorders of ACL from those of PCL.
- McMurray testing substantiates meniscal disorders.
- Assess knee joint stability by applying various stresses to the joint.
- Excessive joint motion (laxity) indicates an injury.
- Appearance of soft or mushy end point versus a healthy hard (e.g., abrupt increase in joint stiffness) end point implies possible ligament damage.
- Functional status & activity level should be assessed at the onset of care.

Differential Diagnoses

- Baker cyst
- Bursitis
- Knee dislocation
- Meniscal tear
- Osteochondral fracture (osteochondritis dissecans and osteonecrosis)
- Patellar dislocation
- Patellar fracture
- Patellar tendon rupture

Radiographs

The clinical decision involving a radiographic series of the knee and/or leg is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[19] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - The severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goals of chiropractic care include: pain relief, restoration of motion, restoration of strength and function.

- Physiotherapeutic modalities to decrease pain and inflammation are appropriate in the acute phase.
- Next phase of treatment will utilize chiropractic manipulation and exercise to restore motion and normalize strength.[15,7]
- As functional improvement continues, the patient should be transitioned to a home program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Treatment frequency should be commensurate with the severity of the condition.
- As the condition improves, treatment frequency should continue to decrease, and the patient should be transitioned to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Significant measurable functional improvement ➢ Reinforce self-management techniques (see below)
5-8	➢ Continued reduction of pain ➢ Significant measurable functional improvement ➢ Continued increase in range of motion ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau, or
- Atrophy of the lower extremity becomes evident.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Instruction in home exercise program for ROM and strengthening
- Cold packs, if needed, to relieve discomfort

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Surgery
- Medication
- Physiatry
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Brosseau L, Casimiro L, Milne S et al. Deep transverse friction massage for treating tendinitis. Cochrane Database System Review. 2002.
5. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
6. DePalma B, Prentice W. Rehabilitation of groin, hip and thigh injuries. Rehabilitation techniques in sports medicine. 1999;3:411-443.
7. Dwyer L, Parkin-Smith G, Brantingham J et al. Manual and Manipulative Therapy in Addition to Rehabilitation for Osteoarthritis of the Knee: Assessor-Blind Randomized Pilot Trial. J Manipulative Physiol Ther. 2015;38(1):1-21.e2. doi:10.1016/j.jmpt.2014.10.002.
8. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. James S, Bates B, Osternig L. Injuries to runners. Am J Sports Med. 1978;6(2):40-50. doi:10.1177/036354657800600202.
15. Jayaseelan D, Scalzitti D, Palmer G, Immerman A, Courtney C. The effects of joint mobilization on individuals with patellofemoral pain: a systematic review. Clin Rehabil. 2018;32(6):722-733. doi:10.1177/0269215517753971.
16. Miklovic T, Donovan L, Protzuk O, Kang M, Feger M. Acute lateral ankle sprain to chronic ankle instability: a pathway of dysfunction. Phys Sportsmed. 2017;46(1):116-122. doi:10.1080/00913847.2018.1409604.
17. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
18. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
19. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.3: Sprain and Strain of the Hip and Thigh

Synonyms
Groin Strain

Definition
Condition is used to describe hip adductor injuries. Hip adductor injuries occur most commonly, when there is a forced push-off (side-to-side motion). High forces occur in adductor tendons when an athlete must shift direction suddenly in the opposite direction. As a result, the adductor muscles contract to generate opposing forces.

Improper management of acute adductor strains or returning to play before pain-free sport-specific activities can be performed may lead to chronic injury.

History
Groin pain represents a number of different diagnoses; all differential diagnoses should be kept in mind when assessing a patient. Obtain information about the mechanism of injury and loss of function, as well as the location, quality, duration, and severity of pain. Aggravating and alleviating factors should also be noted.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.

Red Flag	Possible Consequence or Cause
Severe trauma	Ligament tear, pelvic fracture; avascular necrosis
Fever, severe pain	Infection
Loss of distal pulse, severe pain beginning 12-24 hours after trauma	Compartment syndrome
Diabetes	Neuropathy
Multiple joint involvement	Rheumatologic diseases
Unilateral edema	Deep vein thrombosis
Skin rash in dermatomal pattern	Shingles
Constipation, bloody stools, unexplained weight loss	Colon or pelvic organ cancer
Groin pain	Inguinal hernia, pelvic pathology
Pain with urination, hematuria	UTI; renal stone
Cancer	Cause of symptoms (metastatic or primary)
Discoloration of leg or foot, pain with ambulation	Arterial occlusion
History of Steroid Use	Avascular Necrosis
Immune-compromised state	Infection

© 2019 eviCore healthcare. All Rights Reserved.

Specific Aspects of History

Location

Usually, pain is described at the site of adductor longus tendon proximally, especially with rapid adduction of the thigh. As an injury becomes more chronic, pain may radiate distally along the medial aspect of the thigh and/or proximally toward the rectus abdominis.

- Exercise-induced medial thigh pain over the area of adductors, especially after kicking and twisting, may indicate obturator neuropathy.
- Pain at the symphysis pubis or scrotum may be more consistent with osteitis pubis.
- Conjoined tendon lesions present as pain that radiates upward into the rectus abdominis or laterally along the inguinal ligament. Exquisite tenderness is present at site of the injury.

Quality

Acute injuries are described as a sudden ripping or stabbing pain in the groin. Chronic injuries are described as a diffuse dull ache.

Duration

Initial intense pain lasts less than a second; initial pain is soon replaced with an intense dull ache.

Severity of pain

Pain severity varies among patients.

Loss of function

True loss of function is not observed unless a Grade 3 tear is present. In the case of a severe tear, loss of hip adduction occurs. Loss of function should also alert physician/therapist to possible nerve involvement (obturator nerve entrapment).

Mechanism of injury

Rapid adduction of hip against an abduction force (e.g., changing direction suddenly in tennis), acute forced abduction that puts an unusual stretch on tendon (e.g., a rugby tackle), and a sudden acceleration in sprinting are the most common mechanisms of injury.

Presentation

A common cause of condition has been attributed to forceful abduction of the thigh during an intentional adduction. This type of motion may occur when an athlete attempts to kick a ball and meets resistance from an opposing player who is trying to kick the ball in the opposite direction. To a lesser extent, jumping also can cause injury to the adductor muscles, but more commonly, involves the hip flexors. Overstretching of adductor muscles is a less common etiology.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

Generally, symptoms are diffuse with typical complaints of pain and stiffness in the groin region, especially with activity.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue and distal pulses
- Range of motion: active and passive
- Orthopedic and neurologic testing if neurologic signs are present
- MMT

Specific Aspects of Examination

Physical findings can help distinguish adductor strains from other causes of groin pain such as the following:

- Iliopsoas strain
  - Hip flexion against resistance is painful. Tenderness is difficult to localize because insertion of the iliopsoas is deep.
- Osteitis pubis
  - Tenderness of the symphysis pubis and possible loss of full rotation of one or both hip joints are noted.
- Conjoined tendon lesions (i.e., sportsman's hernia)
  - Exquisite tenderness upon palpation at the inguinal canal. Having patient cough reproduces pain.
- Obturator neuropathy
  - Adductor muscle weakness, muscle spasm, and paresthesia over the medial aspect of the distal thigh may be present. Loss of adductor tendon reflex with preservation of other muscle stretch reflexes often is observed. A positive Howship-Romberg sign (medial knee pain induced by forced hip abduction, extension, and internal rotation) sometimes is observed.

Findings of Adductor Strain

Acute adductor strain commonly occurs at the musculotendinous junction.

- Tenderness, swelling, and ecchymosis can be observed at the superior medial thigh.
- Sometimes, a defect in muscle can be palpated.
- Pain is noted with resisted adduction and full passive abduction of hip.
- Pure hip adductor strain can be distinguished from combination injuries involving hip flexors (i.e., iliopsoas, rectus femoris) by having the patient lie in a supine position.
- If more discomfort is reproduced with resistive adduction when the knee and hip are extended, than if the hip and knee are flexed, a pure hip adductor strain can be assumed.

Radiographs

The clinical decision involving a radiographic series of the hip and/or thigh is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

© 2019 eviCore healthcare. All Rights Reserved.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Differential Diagnoses

- Bursitis and tendinitis injuries
- Somatic conditions (urological disorders, gastrointestinal disorders, STD's, and gynecological complaints)
- Joint conditions (sacroiliac dysfunction and acetabular labral tear and degenerative joint disease
- Bone conditions (Avulsion fracture, stress fracture of femoral neck, and Legg-Calve-Perthes disease, slipped capital femoral epiphysis, osteitis pubis)
- Neuralgia and nerve entrapment
- Sportsman's or inguinal hernia
- Rectus femoris tendinitis

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Lower Extremity Functional Scale (LEFS**) with a score of 64 or less (minimum detectable change 9 points)[18] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

Goal of chiropractic care is to restore normal joint relationships, reduce pain and inflammation, aid stretching and strengthening, and assist in gradual return to activity. Therefore, physical therapy modalities to reduce pain and inflammation are appropriate in the acute phase.

- Initial management of an adductor injury should include protection, rest, ice, compression, and elevation (PRICE).
- Painful activities should be avoided.
- Use of crutches during the first few days may be indicated to relieve pain.
- Patient education consists of rest/reduction of strenuous activities, as well as identification of the causative factor. Correction of faulty technique is also important.
- The next phase of treatment should utilize chiropractic manipulation[14] and exercise to restore motion and normalize strength.
- As functional improvement continues, the patient should transition to a home program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Treatment frequency should be commensurate with the severity of the condition.
- As the condition improves, treatment frequency should continue to decrease and the patient should transition to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Significant measurable functional improvement ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau, or
- Atrophy of lower extremity becomes evident.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Trunk stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Acupuncture
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Brosseau L, Casimiro L, Milne S et al. Deep transverse friction massage for treating tendinitis. Cochrane Database System Review. 2002.
5. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
6. DePalma B, Prentice W. Rehabilitation of groin, hip and thigh injuries. Rehabilitation techniques in sports medicine. 1999;3:411-443.
7. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. James S, Bates B, Osternig L. Injuries to runners. Am J Sports Med. 1978;6(2):40-50. doi:10.1177/036354657800600202.
14. Jayaseelan D, Scalzitti D, Palmer G, Immerman A, Courtney C. The effects of joint mobilization on individuals with patellofemoral pain: a systematic review. Clin Rehabil. 2018;32(6):722-733. doi:10.1177/0269215517753971.
15. Miklovic T, Donovan L, Protzuk O, Kang M, Feger M. Acute lateral ankle sprain to chronic ankle instability: a pathway of dysfunction. Phys Sportsmed. 2017;46(1):116-122. doi:10.1080/00913847.2018.1409604.
16. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
17. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
18. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.4: Sprain-Strain of Ankle

Synonyms

- Twisted Ankle
- Rolled Ankle

Definition

Injury to the lateral ankle ligaments is the most common ankle sprain. Lateral ankle ligaments are responsible for resistance against inversion and internal rotation stress. The anterior talofibular ligament (ATFL) is the most commonly injured, followed by the calcaneofibular ligament (CFL). The posterior talofibular ligament (PTFL) is rarely injured. Medial supporting ligaments are the superficial and deep deltoid ligaments, responsible for resistance to eversion and external rotation stress, and are less commonly injured.

If left untreated, ankle sprains can lead to chronic instability and impairment. Prognosis for ankle sprains is inversely proportional to severity and grade of injury, age of patient, and recurrence rate. Younger patients and those with previous sprains have a worse prognosis. See West Point Ankle Sprain Grading System below.

- Sprain
  - Results from suddenly stretching or tearing ligaments that hold ankle together.
- Strain
  - Injury to muscles or tendons that connect muscles to bones.

History

Typically, plantar flexion and inversion of the foot occur, perhaps as the result of uneven terrain or landing on the foot of another athlete. Overloading the peroneal muscles also may play a role. Invariably, ankle sprains involve trauma.

- Forced external rotation of the ankle results in a syndesmotic, or high, ankle sprain. These injuries occur less frequently than inversion injuries, but they are more disabling and require prolonged recovery periods.
- Recurrent ankle sprains or chronic lateral instability are consequences of Grade III ankle sprains.

Specific Aspects of History

- Rule out red flags (require medical management) i.e. infection, arthridities, gout other autoimmune disorders, juvenile arthritis, rheumatoid arthritis.
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, ligament tears
Infection	Cellulitis, Osteomyelitis

© 2019 eviCore healthcare. All Rights Reserved.

Presentation

The condition typically presents with swelling, ecchymosis, severe pain, and inability to bear weight or ambulate on the ankle.

Subjective Findings

Typically, there will be pain, tenderness, swelling, or bruising of the injured area. If injury is serious, it may be difficult moving the ankle.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue and distal pulses
- Range of motion: active and passive
- Strength testing
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Goal of Examination

- Inspection
- Localized swelling
- Diffused ecchymosis
- Gait Analysis
- Assistive device
- Palpation of bony and soft tissue
- Tenderness at the site of lesion
- Joint effusion
- Skin temperature
- Range of motion: active and passive
- Ankle (dorsiflexion, plantar flexion, inversion, eversion)
- Knee (flexion, extension)
- Orthopedic
- Test for ankle stability
- Anterior Drawer Test
- Talar Tilt Test
- Fibular compression test (Squeeze Test)
- Neurologic testing
- Non contributory
- Do not test heel walking or toe walking during acute phase

West Point Ankle Sprain Grading System

Criterion	Grade 1	Grade 2	Grade 3
Location of tenderness	ATFL	ATFL, CFL	ATFL, CFL, PTFL
Edema, ecchymosis	Slight local	Moderate local	Significant diffuse
Weight-bearing ability	Full or partial	Difficult without crutches	Impossible without significant pain
Ligament damage	Stretched	Partial tear	Complete tear
Instability	None	None or slight	Definite

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Fractures
- Tendon injuries
- Radicular pathology
- Crystalline deposition diseases: gout and pseudogout (Chondrocalcinosis)

Radiographs

The clinical decision involving a radiographic series of the ankle is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[17] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[9].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

Goals of chiropractic care include: pain relief, restoration of motion, restoration of strength and function.

- Physiotherapeutic modalities to decrease pain and inflammation are appropriate in the acute phase.
- The next phase of treatment will utilize chiropractic manipulation[18] and exercise to restore motion and normalize strength.
- Functional status & activity level should be assessed at the onset of care
- As functional improvement continues, the patient should be transitioned to a home program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- Treatment frequency should be commensurate with the severity of the condition.
- As the condition improves, treatment frequency should continue to decrease, and the patient should be transitioned to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Significant measurable functional improvement ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- Improvement does not meet the above guidelines or improvement has reached a plateau, or
- Atrophy of the lower extremity becomes evident.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Instruction in a home exercise program for ROM and strengthening
- Cold packs, if needed, to relieve discomfort

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Surgery
- Medication
- Physiatry
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
7. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
8. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
9. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
10. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
11. James S, Bates B, Osternig L. Injuries to runners. Am J Sports Med. 1978;6(2):40-50. doi:10.1177/036354657800600202.
12. Kohne E, Jones A, Korporaal C, Price J, Brantingham J, Globe G. A prospective, single-blinded, randomized, controlled clinical trial of the effects of manipulation on proprioception and ankle dorsiflexion in chronic recurrent ankle sprain. Journal of the American Chiropractic Association. 2007;44:7-17.
13. López-Rodríguez S, de-las-Peñas C, Alburquerque-Sendín F, Rodríguez-Blanco C, Palomeque-del-Cerro L. Immediate Effects of Manipulation of the Talocrural Joint on Stabilometry and Baropodometry in Patients With Ankle Sprain. J Manipulative Physiol Ther. 2007;30(3):186-192. doi:10.1016/j.jmpt.2007.01.011.
14. Miklovic T, Donovan L, Protzuk O, Kang M, Feger M. Acute lateral ankle sprain to chronic ankle instability: a pathway of dysfunction. Phys Sportsmed. 2017;46(1):116-122. doi:10.1080/00913847.2018.1409604.
15. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
16. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
17. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.
18. Weerasekara I, Osmotherly P, Snodgrass S, Marquez J, de Zoete R, Rivett D. Clinical Benefits of Joint Mobilization on Ankle Sprains: A Systematic Review and Meta-Analysis. Arch Phys Med Rehabil. 2018;99(7):1395-1412.e5. doi:10.1016/j.apmr.2017.07.019.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-5.5: Tibialis Tendonitis

Synonyms
Tibialis (anterior/posterior) tendinitis

Definition
Condition involves tendons that are subjected to chronic stress. Condition may eventually become inflamed and painful; and occasionally develop from a single precipitating event such as an ankle sprain. More frequently there is an underlying biomechanical problem that predisposes patient for injury upon activity.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, ligament tears
Fever, severe pain	Infection
Sensory changes	Tarsal tunnel syndrome
Diabetes; paresthesias in stocking glove distribution	Neuropathy; B12 deficiency, hypothyroidism, lead poisoning
Multiple joint involvement	Rheumatologic diseases, gout
History of high impact activities	Stress fractures
Severe pain, numbness within 12-24 hours following trauma	Compartment syndrome
Cancer	Cause of symptoms (metastatic or primary)
Discoloration of leg or foot; exertional foot or calf pain	Arterial occlusion; vascular insufficiency
Immune-compromised state	Infection

Presentation
Presentation will vary somewhat, depending on the specific tendon involved. Anterior tibialis tendonitis is the least common, and has been associated with a history of downhill running. Posterior tibialis tendonitis frequently results when biomechanical forces of pes planus and excessive pronation are present. Peroneal tendonitis tends to develop when pes cavus and excessive supination are present. The latter two have also been associated with leg length differences. Complete rupture of the posterior tibialis will result in a fallen longitudinal arch.

Subjective Findings
- Complaints of loss of function due to pain
- Localized tenderness over the affected tendon
- May complain of ankle feeling “unstable”

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Examination

- History
- Inspection
- Palpation of bony and soft tissue and distal pulses
- Range of motion: active and passive
- MMT
- Orthopedic and neurologic testing if neurologic signs are present

Findings of Tibialis Tendonitis

- Diffuse swelling and warmth may be present over affected tendon
- Restricted motion is common, with pain on AROM and resistance
- Localized tenderness on palpation
- Weakness in toe raises due to difficulty stabilizing midfoot

Differential Diagnoses

- Ligament sprain
- Ankle capsulitis/synovitis
- Avascular necrosis
- Subtalar tarsal coalition
- Retrocalcaneal bursitis

Radiographs

The clinical decision involving a radiographic series is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis tibialis tendinitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[20] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - The severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goal of chiropractic is to reduce pain and inflammation, aid stretching and strengthening, and assist in gradual return to activity.

- Initial phase is aimed towards reduction of inflammation, thus manipulation and modalities to reduce pain and inflammation are appropriate.
- Functional status & activity level should be assessed at the onset of care
- Treatment frequency should be commensurate with the severity of the condition.
- Perform assessment for stretching and strengthening of lower extremity.
- Patient education in rest/reduction of strenuous activities, as well as identification of causative factor and correction of faulty technique (e.g., instruction in proper warm-up and cool-down, instruction in appropriate footwear) is included in rehabilitation program.
- Biomechanical factors may be addressed by orthotics or footwear, and aggravating factors must be assessed.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in subjective findings ➢ 30-50% increase in range of motion ➢ Significant measurable functional improvement ➢ Reinforce self-management techniques (see below)
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Significant measurable functional improvement ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options, if:

- There is suspicion of tendon rupture
- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Signs or symptoms of circulatory disturbance,
- Development of atrophy or other neurological symptoms in lower extremity.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- PRICE (protection, rest, ice, compression, and elevation)
- Home ROM exercises
- Progression to therapeutic exercise: strengthening exercises
- Cold packs, if needed, to relieve discomfort

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Medication
- Surgery
- Immobilization if necessary
- Steroid injection
- Acupuncture

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Brosseau L, Casimiro L, Milne S et al. Deep transverse friction massage for treating tendinitis. Cochrane Database System Review. 2002.
5. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
6. Clement D, Taunton J, Smart G. Achilles tendinitis and peritendinitis: Etiology and treatment. Am J Sports Med. 1984;12(3):179-184. doi:10.1177/036354658401200301.
7. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. Jackson B, Schwane J, Starcher B. Effect of ultrasound therapy on the repair of Achilles tendon injuries in rats. Medicine & Science in Sports & Exercise. 1991;23(2):171-176. doi:10.1249/00005768-199102000-00005.
14. James S, Bates B, Osternig L. Injuries to runners. Am J Sports Med. 1978;6(2):40-50. doi:10.1177/036354657800600202.
15. Kohne E, Jones A, Korporaal C, Price J, Brantingham J, Globe G. A prospective, single-blinded, randomized, controlled clinical trial of the effects of manipulation on proprioception and ankle dorsiflexion in chronic recurrent ankle sprain. Journal of the American Chiropractic Association. 2007;44:7-17.
16. López-Rodríguez S, de-las-Peñas C, Alburquerque-Sendín F, Rodríguez-Blanco C, Palomeque-del-Cerro L. Immediate Effects of Manipulation of the Talocrural Joint on Stabilometry and Baropodometry in Patients With Ankle Sprain. J Manipulative Physiol Ther. 2007;30(3):186-192. doi:10.1016/j.jmpt.2007.01.011.
17. Miklovic T, Donovan L, Protzuk O, Kang M, Feger M. Acute lateral ankle sprain to chronic ankle instability: a pathway of dysfunction. Phys Sportsmed. 2017;46(1):116-122. doi:10.1080/00913847.2018.1409604.
18. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
19. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
20. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.0: Lumbosacral Conditions (Disc-Radicular)

CHIRO-6.1: Degeneration of Lumbar or Lumbosacral Intervertebral Disc	**158**
CHIRO-6.2: Displacement of Lumbar Intervertebral Disc Without Myelopathy	**168**
CHIRO-6.3: Lumbosacral Radiculitis	**179**
CHIRO-6.4: Post-Laminectomy Syndrome, Lumbar Region	**190**
CHIRO-6.5: Sciatica	**201**
CHIRO-6.6: Spinal Stenosis, Lumbar	**212**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.1: Degeneration of Lumbar or Lumbosacral Intervertebral Disc

Synonyms
None

Definition
Condition associated with recurrent, episodic, chronic low back pain and stiffness, occasionally accompanied by sciatica. Disc degeneration is a function of the aging process, but can be accelerated by factors, such as trauma, heredity, infection, and use of tobacco. It is believed that loss of disc height loosens formerly tight ligaments, allowing tears to occur in the annulus with sliding and twisting motions that occur due to loosened ligaments. These tears then contribute to chronic, recurrent low back pain.

History
Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

© 2019 eviCore healthcare. All Rights Reserved.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct Blow to the back in young Adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Onset of pain is usually insidious. Patient may report a prior history of episodic low back pain, occasionally accompanied by sciatica.

Subjective Findings

- Pain and stiffness in lower back lasting over a period of time greater than three months
- Pain typically worse with motion
- Stiffness upon arising from a seated position
- May report history of occasional sciatica, but lower back symptoms predominate
- Essentially constant awareness of some level of back discomfort or limitations in motion

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

Objective Criteria

Degeneration of Lumbar or Lumbosacral Intervertebral Disc includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND

© 2019 eviCore healthcare. All Rights Reserved.

- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Osteoporosis and compression fractures (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection in disc or bone (fever, history of IV drug use, history of severe pain)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Metastatic disease, myeloma, lymphoma (pathologic fracture, severe night pain)
- Spinal tuberculosis (lower socioeconomic groups, AIDS)
- Depression

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbar disc degeneration does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Degenerative joint disease may be observed with this procedure. Possible findings include: osteophyte formation, sclerosing of articular surfaces, and facetal arthrosis. Generally, there is poor correlation between the extent of radiological changes and clinical signs and symptoms.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - The severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks with frequency of treatment commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue for up to two additional weeks at a deceased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]Attempt a return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

© 2019 eviCore healthcare. All Rights Reserved.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Introduce self-management techniques (active care)
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques (active care)
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain are apparent,
- Presence of pathological fracture or obvious deformity are apparent,
- Saddle anesthesia, loss of major motor function, or bowel or bladder dysfunction are apparent,
- Abdominal pulsations are apparent.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning, such as walking or swimming
- Heat applications, if needed, to relieve discomfort/stiffness

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Acupuncture
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.

© 2019 eviCore healthcare. All Rights Reserved.

43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.2: Displacement of Lumbar Intervertebral Disc Without Myelopathy

Synonyms

- Lumbago or Sciatica due to displacement of lumbar intervertebral disc
- Neuritis or Radiculitis due to displacement or rupture of lumbar intervertebral disc

Definition

Condition involving displacement of lumbar intervertebral disc causing impingement of the contents of nucleus pulposus on surrounding neuronal structures. Displacement may cause pain in localized lumbar structures, and may cause development of neurologic symptoms in areas supplied by affected nerve root(s).

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements. Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct Blow to the back in young Adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Typical patient is between 25-60 years of age. Activity precipitating pain typically involves bending, twisting, and/or lifting. No aggravating event in 50% of patients. Usually reports history of several or more resolved low back pain episodes previous to this onset.

Subjective Findings

- Pain and stiffness in lower back
- Often associated with numbness, pain, and/or weakness that may reach to distal ends of lower extremities
- Extremity symptoms may predominate
- Midline disc protrusions may involve both extremities
- Type and radiation of pain vary
- Worse with prolonged sitting, standing, bending, stooping, lifting
- Better with rest

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the low back pain.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Note: 98% of all disc lesions are located at L4/5 or L5/S1.

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs; if so, then refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

© 2019 eviCore healthcare. All Rights Reserved.

Objective Criteria

Displacement of Lumbar Intervertebral Disc without Myelopathy includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Neurologic Testing	L4 nerve root (L3/4 disc)	L5 nerve root (L4/5 disc)	S1 nerve root (L5/S1 disc)
Sensation	Medial foot	Lateral lower leg and dorsum of foot	Posterior calf or lateral foot
Motor	Anterior tibialis (dorsiflexion); heel walking	Extensor hallicus longus (dorsiflexion of great toe); heel walking	Peroneus Longus and Brevis (Eversion of foot); toe walking
Deep Tendon Reflex	Patella		Achilles

Differential Diagnoses

- Metastatic tumor (awakened by constant and severe night pain, not relieved by changing position, especially when there is a known or suspected history of cancer)

Spinal cord tumorRadiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbar intervertebral disc displacement does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

An EMG study or an MRI/CT scan may be helpful in identifying a nerve root lesion. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks at a treatment frequency that is commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time.[22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques
9-12	➢ The patient should be approaching maximum therapeutic benefit. The treatment *frequency should continue to decrease with improvement.*

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency. [22,4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Increasing neurologic signs/symptoms: increasing lower extremity numbness/tingling, increasing lower extremity weakness, increasing lower extremity pain, and/or decreasing lower extremity deep tendon reflexes are all indications for a referral to the an appropriate health care provider.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi:10.1258/jrsm.99.4.192.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.

© 2019 eviCore healthcare. All Rights Reserved.

43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.3: Lumbosacral Radiculitis

Synonyms
- Lumbosacral neuritis
- Radicular syndrome of lower limbs

Definition
Condition associated with neurogenic pain following distribution of one, or less commonly, more lumbar nerve root(s) due to mechanical pressure and inflammation of lower lumbar nerve roots. Condition may be accompanied by lower extremity numbness, weakness, or hyporeflexia, and additionally, may be due to lumbar disc herniation (typically younger patients) or bony mechanical pressure of lower lumbar nerve root(s) (typically in older patients).

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct Blow to the back in young Adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Patient may report trauma or an insidious onset; onset of lower back symptoms is often sudden. Sitting, coughing, or sneezing will often exacerbate patient's symptoms. Pain referral to anterior thigh, or posterior thigh may be reported (depending on affected nerve root).

Subjective Findings

- Pain, numbness, tingling, paresthesia in lower extremity following lumbar nerve root distribution
- Complaints of weakness in lower extremity
- Midline disc protrusions may involve both extremities
- Better with rest
- Flexing knee may provide relief by decreasing tension on irritated lumbar nerve

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs; if so, then refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

© 2019 eviCore healthcare. All Rights Reserved.

Objective Criteria

Lumbosacral Radiculitis includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Note: Approximately 5% of lumbar radiculopathies involve L4 nerve root; 67%, L5 nerve root; and 28%, S1 nerve root.

Neurologic Testing	L4 nerve root (L3/4 disc)	L5 nerve root (L4/5 disc)	S1 nerve root (L5/S1 disc)
Sensation	Medial foot	Lateral lower leg and dorsum of foot	Posterior calf or lateral foot
Motor	Anterior tibialis (dorsiflexion); heel walking	Extensor hallicus longus (dorsiflexion of great toe); heel walking	Peroneus Longus and Brevis (Eversion of foot); toe walking
Deep Tendon Reflex	Patella	-	Achilles

Signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of the spinal cord, which should be evaluated medically.

Differential Diagnoses

- Extraspinal nerve entrapment (due to abdominal or pelvic mass)
- Cauda equina syndrome (saddle anesthesia, bladder or bowel dysfunction, bilateral involvement)
- Myelopathy due to thoracic disc herniation
- Demyelinating disease
- Lateral femoral cutaneous nerve entrapment (lateral thigh, sensory only, reverse SLR or femoral nerve stretch test)
- Trochanteric bursitis (no nerve root tension signs, pain on lateral thigh/leg, exquisite tenderness to palpation over trochanter)

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbosacral radiculitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results. If the condition is caused by a soft tissue structure, x-rays may be normal. Basic lumbar radiographic series must include AP and lateral views.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.

  As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks with treatment frequency commensurate with severity of the condition.[22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency. [22,4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Continued reduction of subjective findings ➢ Significant measurable functional improvement ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Increasing neurologic signs/symptoms: increasing lower extremity numbness/tingling, increasing lower extremity weakness, increasing lower extremity pain, and/or decreasing lower extremity deep tendon reflexes are all indications for a referral to the an appropriate health care provider.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Brief use of lumbar support, if necessary, in the acute stages to limit motion

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.

© 2019 eviCore healthcare. All Rights Reserved.

21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.4: Post-Laminectomy Syndrome, Lumbar Region

Synonyms
None

Definition
Condition that results following a laminectomy procedure in the lumbar spine region; typically, a laminectomy is performed in an effort to correct lumbar spinal stenosis.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Patient reports a history of a lumbar laminectomy.

Note: Criteria for performing a lumbar laminectomy has been a source of controversy. Retrospective reviews of the appropriateness of this procedure have reported that anywhere from 23-38% were inappropriate.

Subjective Findings

- Continued pain and stiffness in the lower back
- Often associated with numbness, pain, and/or weakness that may reach to the distal ends of the lower extremities
- Extremity symptoms may predominate
- Type and radiation of pain vary
- Worse with prolonged sitting, standing, bending, stooping, lifting

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to lower back pain.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.
One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs; if so, then refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

© 2019 eviCore healthcare. All Rights Reserved.

Objective Criteria

Post Laminectomy Syndrome includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Neurologic Testing	L4 nerve root (L3/4 disc)	L5 nerve root (L4/5 disc)	S1 nerve root (L5/S1 disc)
Sensation	Medial foot	Lateral lower leg	Posterior calf or lateral foot
Motor	Anterior tibialis (dorsiflexion); heel walking	Dorsiflexion of great toe (extensor hallicus longus); heel walking	Plantar flexion of great toe or foot; toe walking
Deep Tendon Reflex	Patella		Achilles

Differential Diagnoses

- Metastatic tumor (awakened by constant and severe night pain that is not relieved by changing position, especially when there is a known or suspected history of cancer).
- Spinal cord tumor.
- Gather information that leads to a prognosis, and the selection of appropriate interventions.

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

© 2019 eviCore healthcare. All Rights Reserved.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks with treatment frequency commensurate with severity of the condition.[22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4] If applicable, the pain distribution should be centralizing or centralized.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

with Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency. [22,4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Significant measurable functional improvement ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of lower extremity,
- Signs of demyelinating condition, tumor or infection,
- Increasing neurologic signs/symptoms: increasing lower extremity numbness/tingling, increasing lower extremity weakness, increasing lower extremity pain, and/or decreasing lower extremity deep tendon reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.

© 2019 eviCore healthcare. All Rights Reserved.

43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.5: Sciatica

Synonyms
Neuralgia or neuritis of sciatic nerve

Definition
Condition associated with neurogenic pain following the distribution of the sciatic nerve due to mechanical pressure and inflammation of the nerve. Condition may be accompanied by lower extremity numbness, weakness, or hyporeflexia.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct Blow to the back in young Adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Patient may report trauma, or an insidious onset; onset of lower back symptoms is often sudden. Sitting, coughing, and/or sneezing will often exacerbate patient's symptoms. Pain referral to the posterior thigh is common.

Subjective Findings

- Pain, numbness, tingling, paresthesias in the lower extremity following sciatic nerve distribution
- Complaints of weakness in the lower extremity
- Midline disc protrusions may involve both extremities
- Better with rest
- Flexing knee may provide relief by decreasing tension on irritated nerve

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs; if so, then refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

Objective Criteria

Sciatica includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range-of-motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine

© 2019 eviCore healthcare. All Rights Reserved.

  - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Note: Approximately 5% of lumbar radiculopathies involve L4 nerve root; 67%, L5 nerve root; and 28%, S1 nerve root.

Differential Diagnoses

- Extraspinal nerve entrapment (due to abdominal or pelvic mass)
- Cauda equina syndrome (saddle anesthesia, bladder or bowel dysfunction, bilateral involvement)
- Myelopathy due to thoracic disc herniation
- Demyelinating disease
- Lateral femoral cutaneous nerve entrapment (lateral thigh, sensory only, reverse SLR or femoral nerve stretch test)
- Trochanteric bursitis (no nerve root tension signs, pain on lateral thigh/leg, exquisite tenderness to palpation over trochanter)

Neurologic Testing	L4 nerve root (L3/4 disc)	L5 nerve root (L4/5 disc)	S1 nerve root (L5/S1 disc)
Sensation	Medial foot	Lateral lower leg and dorsum of foot	Posterior calf or lateral foot
Motor	Anterior tibialis (dorsiflexion); heel walking	Extensor hallicus longus (dorsiflexion of great toe); heel walking	Peroneus Longus and Brevis (Eversion of foot); toe walking
Deep Tendon Reflex	Patella		Achilles

Signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of the spinal cord, which should be evaluated medically.

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of sciatica does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks at a treatment frequency commensurate with severity of the condition.[22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency. [22,4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralize ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
13-16	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week sixteen, whichever occurs first.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Increasing neurologic signs/symptoms: increasing lower extremity numbness/tingling, increasing lower extremity weakness, increasing lower extremity pain, and/or decreasing lower extremity deep tendon reflexes are all indications for a referral to an appropriate health care provider.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Brief use of lumbar support, if necessary, in the acute stages to limit motion

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. . doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.

© 2019 eviCore healthcare. All Rights Reserved.

43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-6.6: Spinal Stenosis, Lumbar

Synonyms
None

Definition
Condition caused by a narrowing of the spinal canal, usually present with pain or weakness in extremities on walking, and may be mistaken for intermittent claudication due to vascular disease. Size of canal may be small since birth, due to some congenital or developmental factors in certain individuals. Later in life when degenerative changes occur, canal is further narrowed by osteophytes from facet joints and the vertebral body, thickening of the posterior longitudinal ligament or ligamentum flavum, or retrolisthesis of the vertebral body secondary to narrowing of disc space.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct Blow to the back in young Adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Osteoporosis
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Symptoms start gradually and usually occur in males over age 45-50.

- History may be vague
- Patient may complain of weakness, pain, tingling, or numbness of one or both legs after walking
- Legs feel heavy or rubbery
- May be some pain in the gluteal region or legs, and sitting or standing with the spine flexed relieves symptoms
- May take much longer to resume walking for someone with spinal stenosis than with vascular disease
- Some patients may complain of pain radiating down the sciatic nerve distribution

Subjective Findings

- Pain, numbness, tingling, paresthesias in the lower extremity following lumbar nerve root distribution
- May complain of weakness in the lower extremity
- Better with rest
- Flexing spine may provide relief by decreasing pressure on lumbar nerve root

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Lumbar Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Specific Aspects of Examination

- Determine whether there are signs of an upper motor neuron lesion (UMNL) or a lower motor neuron lesion (LMNL).
- Suspect a central nervous system disorder in patients exhibiting UMNL signs; if so then refer to an appropriate health care provider immediately.
- If a single regional weakness is identified, attempt to localize the problem by associating any deficits in motor or sensory function with their corresponding spinal nerve level(s).
- If the site of the lesion cannot be clearly differentiated upon history and examination, referral to an appropriate health care provider is warranted for further evaluation.
- Weakness associated with a neuromotor or central nervous system disease should be referred for medical management.

© 2019 eviCore healthcare. All Rights Reserved.

Objective Criteria

Spinal Stenosis includes the following clinical findings:

- Neurological examination may demonstrate:
  - Abnormal sensation
  - Neural tension signs
  - Diminished motor strength
  - Abnormal deep tendon reflexes (DTR)
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Muscle atrophy may be present (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Neurologic Testing	L4 nerve root (L3/4 disc)	L5 nerve root (L4/5 disc)	S1 nerve root (L5/S1 disc)
Sensation	Medial foot	Lateral lower leg and dorsum of foot	Posterior calf or lateral foot
Motor	Anterior tibialis (dorsiflexion); heel walking	Extensor hallicus longus (dorsiflexion of great toe); heel walking	Peroneus Longus and Brevis(Eversion of foot); toe walking
Deep Tendon Reflex	Patella		Achilles

Note: Signs of upper motor neuron involvement (clonus, hyperreflexia, Babinski reflex) may suggest compression of the spinal cord, which should be evaluated medically.

Differential Diagnoses

- Extraspinal nerve entrapment (due to abdominal or pelvic mass)
- Cauda equina syndrome (saddle anesthesia, bladder or bowel dysfunction, bilateral involvement)
- Myelopathy due to thoracic disc herniation
- Demyelinating disease
- Lateral femoral cutaneous nerve entrapment (lateral thigh, sensory only, reverse SLR or femoral nerve stretch test)
- Trochanteric bursitis (no nerve root tension signs, pain on lateral thigh/leg, exquisite tenderness to palpation over trochanter)
- Gathering of information that leads to a prognosis, and the selection of appropriate interventions
- Disc protrusion
- Herniated nucleus pulposus
- Peripheral vascular disease
- Spondylolisthesis

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbar spinal stenosis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[29].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,45]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.

© 2019 eviCore healthcare. All Rights Reserved.

Without Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage case conservatively for two weeks at a treatment frequency commensurate with severity of the condition.[22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition if more treatment is necessary. [22,4] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized to back ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

© 2019 eviCore healthcare. All Rights Reserved.

With Firm Neurologic Signs (significant motor weakness and/or muscle atrophy):

- Manage conservatively for two weeks at a treatment frequency commensurate with severity of the condition. [22,4]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and the pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated, pain distribution continues to centralize or is centralized, and improvement in neurologic findings is noted during weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks nine through twelve and the pain distribution is centralized by the end of week twelve, continue for up to an additional month at a decreasing frequency. [22,4]
- By the end of week sixteen, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in findings ➢ Pain distribution continues to centralize or is centralized ➢ Reinforce self-management techniques ➢ Improvement in neurologic findings
9-12	➢ 75% improvement in subjective findings ➢ Significant measurable functional improvement ➢ Reinforce self-management techniques
13-16	➢ The patient should be approaching maximum therapeutic benefit. The treatment *frequency should continue to decrease with improvement.*

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of lower extremity,
- Signs of demyelinating condition, tumor or infection,
- Increasing neurologic signs/symptoms: increasing lower extremity numbness/tingling, increasing lower extremity weakness, increasing lower extremity pain, and/or decreasing lower extremity deep tendon reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice, instruction in proper body mechanics
- Lumbar stabilization exercises, flexibility exercises, as indicated
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Brief use of lumbar support, if necessary, in the acute stages to limit motion

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physiatry
- Medication
- Physical Therapy
- Surgery
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
28. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
29. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
30. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
31. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
32. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
33. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
34. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
35. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
36. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
37. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
38. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
39. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
40. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
41. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
42. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.

© 2019 eviCore healthcare. All Rights Reserved.

43. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
44. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
45. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
46. Saal J, Saal J. Nonoperative Treatment of Herniated Lumbar Intervertebral Disc with Radiculopathy. Spine. 1989;14(4):431-437. doi:10.1097/00007632-198904000-00018.
47. Santilli V, Beghi E, Finucci S. Chiropractic manipulation in the treatment of acute back pain and sciatica with disc protrusion: a randomized double-blind clinical trial of active and simulated spinal manipulations. The Spine Journal. 2006;6(2):131-137. doi:10.1016/j.spinee.2005.08.001.
48. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
49. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
50. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
51. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
52. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
53. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.0: Lumbosacral Conditions (Non-Specific)

CHIRO-7.1: Disorder of Sacrum	**224**
CHIRO-7.2: Lumbago	**232**
CHIRO-7.3: Lumbar Segmental and Somatic Dysfunction	**241**
CHIRO-7.4: Lumbar Spondylosis	**249**
CHIRO-7.5: Lumbar Sprain/Strain	**258**
CHIRO-7.6: Lumbosacral (joint/ligament), Sprain and Strain	**268**
CHIRO-7.7: Pelvic Segmental and Somatic Dysfunction	**277**
CHIRO-7.8: Sacral Segmental and Somatic Dysfunction	**285**
CHIRO-7.9: Sacroiliac Ligament Sprain	**293**
CHIRO-7.10: Sacroiliitis	**302**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.1: Disorder of Sacrum

Definition

Condition is an abnormal or altered functional relationship between contiguous joints involving the sacrum.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Past history of other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements. Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Often arises from a "non-specific onset." Some form of acute or chronic postural abnormality is often involved. Prior history of trauma to involved region is possible. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain or capsulitis.

Subjective Findings

Pain and/or stiffness in the sacral region.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Schober test, and measuring chest expansion should be used to r/o ankylosing spondylitis

Objective Criteria

Disorder of Sacrum includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving sacral radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of this sacral condition does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Return to normal activity within four weeks should be attempted.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in the subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Massage
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.2: Lumbago

Synonyms

- Low back pain
- Lumbalgia
- Low back syndrome

Definition

Lumbago is a low back pain, nonspecific in origin and/or nature; and, can be acute or chronic in nature.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression medication	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Usually insidious onset of pain, may report prior history of episodic low back pain.

Subjective Findings

- Pain typically worse with motion
- Stiffness upon arising from a seated position
- Constant awareness of some level of back discomfort or limitations in motion may be reported
- Pain and stiffness in the low back

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Lumbago includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Osteoporosis and compression fractures (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection in disc or bone (fever, history of IV drug use, history of severe pain)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Metastatic disease, myeloma, lymphoma (pathologic fracture, severe night pain)
- Spinal tuberculosis (lower socioeconomic groups, AIDS)
- Depression

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbago does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing typically is not a consideration, unless patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,422]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain,
- Presence of pathological fracture,
- Obvious deformity,
- Saddle anesthesia,
- Loss of major motor function,
- Bowel or bladder dysfunction,
- Abdominal pain,
- Visceral dysfunction,
- Increasing neurologic signs/symptoms: increasing LE weakness, increasing LE pain, increasing LE numbness/tingling, and decreasing LE reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice, instruction in proper body mechanics
- Flexibility exercises
- Lumbar stabilization exercises
- Aerobic conditioning, such as walking or swimming
- Heat applications, cold packs, if needed, to relieve discomfort/stiffness

Alternative Management

- Osteopathic Manipulation
- Acupuncture
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.3: Lumbar Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic Lesion—lumbar
- Nonallopathic Lesion—Lumbosacral region
- Segmental dysfunction—lumbar
- Somatic dysfunction—lumbar
- Subluxation—lumbar

Definition

Condition is associated with an abnormal or altered functional relationship between contiguous lumbar vertebrae.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the spine	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night and/or unrelated to movement	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, alcoholism and/or diabetes	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. There may be prior history of trauma to involved region. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings

Condition is associated with pain and/or stiffness in the region of affected joints/segments.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Lumbar segmental and/or somatic dysfunction includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental and/or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Massage
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. Doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.4: Lumbar Spondylosis

Synonyms

- Lumbar degenerative joint disease
- Lumbar arthritis

Definition

Condition that can present with low back pain and stiffness due to degenerative changes of the osseous structures of the lumbar spine that may result in narrowing or stenosis of the spinal canal or intervertebral foramen in the lumbar region. Occasionally, condition may also present with radicular pain into lower extremity; narrowing may be caused by osteophytes and /or buckling or protrusion of the interlaminar ligaments.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior physical therapy response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Condition usually starts with an insidious onset of pain. Patient may report prior history of low back, and/or leg pain, and/or history of low back trauma. Patient may also report morning pain/stiffness that decreases with motion, but is aggravated by excessive motions or strenuous activity.

Subjective Findings

- Pain and stiffness in the low back
- Pain typically worse with motion
- May report crepitus with certain low back motions
- Non-dermatomal lower extremity pain (unilateral or bilateral) may occur with lateral recess stenosis and nerve root entrapment

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the neuromusculoskeletal system for possible causes or contributing factors of the low back pain.Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection (including postural evaluation)
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Lumbar Spondylosis includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Metastatic tumor; awakened by constant and severe night pain that is not relieved by changing position, especially when there is a known or suspected history of cancer
- Spinal cord tumor
- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Osteoporosis and compression fractures (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection in disc or bone (fever, history of IV drug use, history of severe pain)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lumbar spondylosis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Atrophy of lower extremity is apparent,
- Signs of myelopathy are apparent,
- Signs of demyelinating condition, tumor or infection are apparent,
- Increasing neurological signs are apparent: increasing LE numbness/tingling, increasing LE weakness, decreasing LE reflexes.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbar exercises, such as isometrics, stabilization exercises, stretching
- Aerobic conditioning, such as walking or swimming
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Home traction, if helpful

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.

© 2019 eviCore healthcare. All Rights Reserved.

21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.

© 2019 eviCore healthcare. All Rights Reserved.

42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.5: Lumbar Sprain/Strain

Synonyms
None

Definition
Patients often complain of non-radicular low back pain that may extend into the buttocks. Onset of symptoms occurs either suddenly, or following a trauma; may be either instantaneous or repetitive. Pain and spasm is typically localized in the lumbar musculature. Spinal motion, particularly flexion, usually is painful and decreased.

- Strain
  - Overstretching or tearing of a muscle or tendon.
- Sprain
  - Overstretching or tearing of ligamentous tissue.

Classification
Tendon and Ligament injuries are classified as.

- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.

© 2019 eviCore healthcare. All Rights Reserved.

- **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

- Sprain
  - Overexertion of the back in some static or dynamic activity; overstretching; or contusion. Back pain is worse with initial activity and rest typically relieves the pain. Trauma may precipitate the condition.
- Strain
  - Chronic manifestations typically involves prolonged periods of postural abuse. Acute onset typically involves a sudden motion or poor body mechanics while performing an activity. Trauma may precipitate the condition.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Sprain
  - Pain and stiffness in the lumbar area.
- Strain
  - Pain and stiffness in a muscle/tendon group of the lumbar region.

Low back pain may radiate into the buttocks. The need to frequently shift position is often present. Patient may have difficulty standing upright.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

Goal of Lumbar Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

© 2019 eviCore healthcare. All Rights Reserved.

Objective Criteria

Lumbar Sprain/Strain includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Lumbar vertebral body fracture (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection (fever)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Myeloma (night sweats)

Radiographs

The clinical decision involving lumbar spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt a return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]

© 2019 eviCore healthcare. All Rights Reserved.

- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following during weeks four through eight and more care is necessary, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Introduce self-management techniques
5-8	➢ Additional and significant and measurable functional improvement ➢ Additional and significant and measurable improvement in subjective findings ➢ Reinforce self-management techniques
9-12	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain,
- Presence of pathological fracture,
- Obvious deformity,
- Saddle anesthesia,
- Loss of major motor function,
- Bowel or bladder dysfunction,
- Abdominal pain,
- Visceral dysfunction.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Self-Management Techniques

- Postural advice, postural exercises
- Lumbar exercises such as: lumbar stabilization exercises, flexibility exercises
- Aerobic conditioning, such as walking or swimming
- Cold/heat applications, if needed, to relieve discomfort/stiffness
- Home lumbar traction, if helpful

Alternatives to Chiropractic Management

- Acupuncture
- Medication
- Osteopathic Manipulation
- Physiatrist
- Physical Therapy
- Massage
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.6: Lumbosacral (joint/ligament), Sprain and Strain

Synonyms
None

Definition
Condition involving non-radicular, lower posterolateral back pain that may extend into the buttocks or groin. Condition occurs either suddenly or following a trauma, which may be either instantaneous or repetitive.

- Strain
  - Overstretching or tearing of a muscle or tendon.
- Sprain
  - Overstretching or tearing of ligamentous tissue.

Classification
Tendon and Ligament injuries are classified as

- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History
Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.

© 2019 eviCore healthcare. All Rights Reserved.

- **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back or pelvis in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

- Strain
  - Overexertion of the pelvic girdle in some static or dynamic activity; overstretching; or contusion. Pain is worse with initial activity and rest typically relieves the pain. Trauma may precipitate condition.
- Sprain
  - Chronic manifestations typically involve prolonged periods of postural abuse. Acute onset typically involves a sudden motion, or poor body mechanics while performing an activity. Trauma may precipitate condition.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

Low back pain that may diffusely radiate into the buttocks or groin on the affected side. Patient may have a need to frequently shift position, and have difficulty standing upright.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Lumbosacral Sprain/Strain includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine

© 2019 eviCore healthcare. All Rights Reserved.

  - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Lumbar vertebral body and pelvic fracture (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection (fever)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Myeloma (night sweats)

Radiographs

The clinical decision involving lumbosacral region radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt a return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following during weeks four through eight, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Introduce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Reinforce self-management techniques
9-12	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain,
- Presence of pathological fracture,
- Obvious deformity,
- Saddle anesthesia,
- Loss of major motor function,
- Bowel or bladder dysfunction,
- Abdominal pain,
- Visceral dysfunction.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest and ice in the acute phase followed by a program of progressive strengthening exercises beginning within one to two weeks of first treatment
- Heat applications, if needed, to relieve discomfort/stiffness after the acute phase
- Postural advice
- Lumbar and Sacroiliac stabilization exercises
- Aerobic conditioning

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.7: Pelvic Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic lesion—hip or pubic region
- Segmental dysfunction—hip or pubic region
- Somatic dysfunction—hip or pubic region
- Subluxation—hip or pubic region

Definition

Condition consisting of an abnormal or altered functional relationship involving the pelvis.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the spine in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior or current history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. There may be prior history of trauma to the involved region. Condition may be a sequela of, and secondary to, another primary diagnosis, such as sprain, strain, or capsulitis.

Subjective Findings

Condition involves pain and/or stiffness in the region of the affected joints/segments.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Pelvic segmental and/or somatic dysfunction includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving a radiographic series of the pelvis is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental and/or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbopelvic stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Acupuncture
- Massage
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e7.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.8: Sacral Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic lesion—sacralcoccygeal, or sacroiliac region
- Segmental dysfunction—sacralcoccygeal, or sacroiliac region
- Somatic dysfunction—sacralcoccygeal, or sacroiliac region
- Subluxation—sacralcoccygeal, or sacroiliac region

Definition

Condition involving an abnormal or altered functional relationship involving the sacrum.

History

Patient history should include:

- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back or pelvis in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior or current history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

Often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. There may be a prior history of trauma to the involved region. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings

Complaints of pain and/or stiffness in the region of affected joints/segments are common.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Sacral segmental and/or somatic dysfunction includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving a radiographic series of the sacral region is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental and/or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Lumbosacral stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Massage
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.9: Sacroiliac Ligament Sprain

Synonyms
None

Definition
Condition involving non-radicular lower posterolateral back pain that may extend into the buttocks or groin and occurs either suddenly or following a trauma, which may be either instantaneous or repetitive.

Sprain
Overstretching or tearing of ligamentous tissue.

Classification
Ligament injuries are classified as:
- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

© 2019 eviCore healthcare. All Rights Reserved.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back or pelvis in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

- Sprain
  - Chronic manifestations typically involve prolonged periods of postural abuse. Acute onset typically involves sudden motion or poor body mechanics while performing an activity. Trauma may precipitate condition.

Subjective Findings

- Sprain
  - Pain and stiffness in the sacroiliac area. Condition involves pain that may diffusely radiate into the buttocks or groin on the affected side. Often patient has a need to frequently shift position, and has difficulty standing upright.

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Sacroiliac Ligament Sprain includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)

© 2019 eviCore healthcare. All Rights Reserved.

- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Lumbar vertebral body and pelvic fracture (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection (fever)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Myeloma (night sweats)

Radiographs

The clinical decision involving a radiographic series of this region is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sacroiliac ligament sprain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain,
- Presence of pathological fracture,
- Obvious deformity,
- Saddle anesthesia,
- Loss of major motor function,
- Bowel or bladder dysfunction,
- Abdominal pain,
- Visceral dysfunction.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest and ice in the acute phase followed by a program of progressive strengthening exercises beginning within 1-2 weeks of first treatment
- Heat applications, if needed, to relieve discomfort/stiffness after the acute phase
- Postural advice
- Lumbar and Sacroiliac stabilization exercises
- Aerobic conditioning

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. Doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.

© 2019 eviCore healthcare. All Rights Reserved.

21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.

© 2019 eviCore healthcare. All Rights Reserved.

42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-7.10: Sacroiliitis

Synonyms
Inflammation of sacroiliac joint NOS

Definition
Sacroiliitis is an inflammation of the sacroiliac joint. All patients with sacroiliitis will have sacroiliac joint pain— this symptom can be overlooked because of the patient's refusal to move due to the pain.

Diagnosis is commonly misused by some chiropractors to describe a sacroiliac sprain/strain. If this is the case, refer to Sacroiliac Ligament Sprain for a description of the Chiropractic Evaluation and Management of this condition.

History
Patient history should include:
- Documentation of pain level using a validated pain scale (VAS/NRS) and its frequency
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)
- Episode Type
  - A **New Episode** is defined by the absence of clinical care within the past twelve weeks upon initiation of care.
  - A **Recurrent Episode** is defined by an exacerbation since cessation of care of a condition that was previously diagnosed and treated by a given provider within any twelve-month period.
  - **Continuation of Care** is defined by the need for ongoing, skilled clinical management of a condition where care has been initiated within the past twelve weeks.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Identify fear avoidance beliefs and behaviors that may lead to avoidance of activities and/or movements.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back or pelvis in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Open wound in the area of the primary region of complaint	Infection
Abdominal Pulsations – May be associated with back pain	Abdominal Aortic Aneurysm

Presentation

In most cases of sacroiliitis, there is a diffuse pattern of back and pelvic pain that mimic each other. Patients with SI inflammation will generally complain of low back, buttock, and thigh pain. Typically, pain becomes worse when sitting for prolonged period of time.

Conditions that can predispose patients to sacroiliitis include trauma, pregnancy, infections of the skin, osteomyelitis, urinary tract infection, endocarditis and drug addiction. This type of infection is seen with some frequency in intravenous drug users.

Subjective Findings

Patients exhibit low back pain that may diffusely radiate into the buttocks or groin on the affected side. Often there is a need to frequently shift position; and may have difficulty standing upright.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Oswestry Disability Index. The Oswestry survey has been studied in peer-reviewed scientific literature, and it has been proven to be a valid, reliable, and responsive measure for low back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Objective Criteria

Sacroiliitis includes the following clinical findings:

- Negative neurological examination, which may be evidenced by:
  - Normal sensation
  - Absence of neural tension signs
  - Normal motor strength
  - Normal deep tendon reflexes (DTR)
  - Absence of pathological reflexes (clonus, hyperreflexia) AND
- Impaired range of motion (ROM) / flexibility
  - Reproduction of pain correlated with the lumbar spine region upon any one (1) of the following:
    - Active and/or passive range of motion of the lumbar spine
    - Functional movement(s) involving the lumbar spine related to activities of daily living (ADLs) AND
- Absence of muscle atrophy (calf measurement when indicated)
- Palpable areas of tenderness along the lumbar spine region corresponding to hypertonicity of the lumbar muscles AND
- Evidence of significant pain and/or functional limitation necessitating skilled intervention.

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Extraspinal causes (ovarian cyst, kidney stone, pancreatitis, ulcer)
- Lumbar vertebral body and pelvic fracture (major trauma, or minor trauma in elderly/osteoporotic patient)
- Infection (fever)
- Inflammatory arthritides (family history, patient age/sex, morning stiffness)
- Myeloma (night sweats)

Radiographs

The clinical decision involving a radiographic series of this region is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of sacroiliitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Note: Sclerosis or obliteration of the SI joint can be seen in older patients. X-rays usually are normal in young patients with ankylosing spondylitis (AS), while the joint can appear fused in older patients.

Joint widening with erosive and sclerotic changes at the bony margins is suggestive of sacroiliitis.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[30].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[1,5,46]

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[22,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [22,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [22,4]
- Attempt to return to normal activity within four weeks.If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following during weeks four through eight, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [22,4]
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
9-12	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Referral Guidelines

Refer patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau,
- Fever, chills, unexplained weight loss, significant night time pain,
- Presence of pathological fracture,
- Obvious deformity,
- Saddle anesthesia,
- Loss of major motor function,
- Bowel or bladder dysfunction,
- Abdominal pain,
- Visceral dysfunction,
- Suspicion of the presence of inflammatory arthritis.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest and ice in the acute phase followed by a program of progressive strengthening exercises beginning within one to two weeks of first treatment
- Heat applications, if needed, to relieve discomfort/stiffness after the acute phase
- Postural advice
- Lumbar and Sacroiliac stabilization exercises
- Aerobic conditioning

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Furlan A, Brosseau L, Imamura M, Irvin E. Massage for Low-back Pain: A Systematic Review within the Framework of the Cochrane Collaboration Back Review Group. Spine. 2002;27(17):1896-1910. doi:10.1097/00007632-200209010-00017.
20. Gausel A, Kjærmann I, Malmqvist S et al. Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial. BMC Pregnancy Childbirth. 2017;17(1). doi:10.1186/s12884-017-1528-9.
21. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.

© 2019 eviCore healthcare. All Rights Reserved.

22. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
23. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
24. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
25. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
26. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
27. Hayden J, van Tulder M, Malmivaara A, Koes B. Exercise therapy for treatment of non-specific low back pain. Cochrane Database of Systematic Reviews. 2005. doi:10.1002/14651858.cd000335.pub2.
28. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
29. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
30. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
31. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
32. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
33. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
34. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
35. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
36. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
37. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
38. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
39. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
40. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
41. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
42. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.

© 2019 eviCore healthcare. All Rights Reserved.

43. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
44. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b
45. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
46. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
47. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
48. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
49. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
50. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
51. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
52. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.0: Neuromusculoskeletal Conditions (Non-specific)

CHIRO-8.1: Congenital Spondylolisthesis	**312**
CHIRO-8.2: Sequela of a Sprain/Strain Injury	**322**
CHIRO-8.3: Myalgia	**323**
CHIRO-8.4: Other Specified Dorsopathies	**330**
CHIRO-8.5: Pain in Limb	**331**
CHIRO-8.6: Scoliosis	**338**
CHIRO-8.7: Muscle Spasm	**346**
CHIRO-8.8: Fasciitis	**353**
CHIRO-8.9: Neuralgia	**359**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.1: Congenital Spondylolisthesis

Synonyms
None

Definition
Condition resulting from congenital anomalies of the spine, allowing a spinal vertebra to slip forward on the vertebral segment below. Congenital spondylolisthesis is characterized by presence of dysplastic facet joints allowing forward translation of one vertebra relative to another. Orientation of facets in an axial or sagittal plane may allow for forward translation, producing undue stress on the pars, resulting in a fracture.

History
Patient history may include:
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic response to prior treatment)

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection

© 2019 eviCore healthcare. All Rights Reserved.

Presentation

Congenital spondylolisthesis (dysplastic type) occurs with a 2:1 female-to-male ratio with symptoms beginning around the adolescent growth spurt. These comprise about 14-21% of all cases of spondylolisthesis; these cases usually have no defect in the pars interarticularis.

The typical patient is between 10-18 years of age. Pain is felt in the lower back, buttocks and thighs and sometimes in the legs, feet, and toes.

There are two distinct types of pain:

- Dull
  - Ache in the lower back, buttocks, and thighs that is made worse by standing, bending, and various postural stresses.
- Severe
  - Pain radiates to the legs and feet and is burning or lancinating in type, made worse by coughing and sneezing, and associated in some cases with signs of involvement of the roots or cauda equina. Stiffness is also present, especially with forward bending. The spine often shows scoliosis and the patient has a "pelvic waddle" gait.
    - Symptoms often occur around the time of an adolescent growth spurt.
    - Some report acute onset of focal lower back pain during activity, while others have more insidious onset.
    - Radiating pain may extend to the buttocks or thigh.
    - Pain may be more significant and have mechanical characteristics with higher grades of spondylolisthesis.
    - In most cases, patients do not complain of symptoms suggesting neurologic deficit with lower grades of spondylolisthesis.
    - Radicular pain becomes more common with larger slips.
    - Complaints of radiating pain below the level of the knee associated with numbness and tingling in a dermatomal distribution would suggest the presence a radiculopathy resulting from either the foraminal stenosis that occurs with spondylolisthesis or a concomitant herniated disc.
    - Nerve root impingement from the fibrocartilaginous bar that forms at the site of the lysis may occur.
    - High grades of spondylolisthesis may present with neurogenic claudication or symptoms suggesting cauda equina impingement.
    - The patient's pain usually is provoked by activity, particularly back extension activities.
    - Patients with acute spondylolysis tend to demonstrate poor tolerance of activities requiring excessive spine loading, including running and jumping.
    - Sitting usually is better tolerated.
    - A large percentage of patients with spondylolysis are asymptomatic.
    - Progression of a spondylolisthesis also may occur without symptoms.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Low back pain, especially with hyperextension
- Stiffness in the low back with forward bending
- Poor posture
- Worse with prolonged standing, bending, stooping, lifting
- Better with sitting and lying down

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors.

Note: Extraspinal diseases that may refer pain to the back include: aortic aneurysm, colon cancer, endometriosis, hip disease, kidney disease, kidney stones, ovarian disease, pancreatitis, pelvic infections, tumors or cysts of the reproductive tract, uterine cancer.

One of the most serious causes of low back pain is malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Hamstring tightness is observed almost universally, even in low-grade spondylolisthesis
- Palpation of bony and soft tissue
- Lumbar spasm may be present
- A palpable step-off is noted with slips equal to or greater than grade 2
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Dermatomal weakness may be present if a radiculopathy or an element of stenosis is present

Findings of Congenital Spondylolisthesis

- Range of motion restrictions, especially with flexion and extension
- Paraspinal muscle spasm
- Hamstring spasm and tightness
- Scoliosis may be present
- L5 spinous process may be palpably prominent
- Step-like defect may be present
- Lumbar lordosis may be exaggerated
- “Pelvic waddle” gait
- Objective neurologic findings are often subtle, and may correspond to involvement of the first sacral nerve root or cauda equina involvement

© 2019 eviCore healthcare. All Rights Reserved.

Complications

The most common complication of spondylolisthesis of any type is nerve root impingement/radiculopathy at the level of spondylolisthesis. Spinal stenosis and cauda equina syndrome may occur when a significant slip has occurred. Disc degeneration occurs at the level of the spondylolisthesis faster than at other levels of the spine, increasing the risk of discogenic lower back pain.

Differential Diagnoses

- Metastatic tumor (awakened by constant and severe night pain that is not relieved by changing position, especially when there is a known or suspected history of cancer)
- Spinal cord tumor
- Syringomyelia (superficial abdominal reflexes absent, insensitive to pain)
- Gather information which leads to a prognosis and the selection of appropriate interventions

Radiographs

The clinical decision involving a radiographic series of the spine is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of congenital spondylolisthesis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

The most commonly used grading system for spondylolisthesis is the one proposed by Meyerding in 1947. The degree of slippage is measured as the percentage of distance the anteriorly translated vertebral body has moved forward relative to the superior end plate of the vertebra below. Classifications use the following grading system:

- **Grade 1**: 1- 25% slippage
- **Grade 2**: 26-50% slippage
- **Grade 3**: 51-75% slippage
- **Grade 4**: 76-100% slippage
- **Grade 5**: Greater than 100% slippage

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[15] or the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[50] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[27].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,43]

Once a diagnosis is determined, provide the patient with appropriate reassurance. A majority of patients respond favorably to manipulation of the sacroiliac joint or the facet joints of the lumbar segments above the site of spondylolisthesis. Special care should be taken with grade 3, 4, and 5 displacements with significant disc degeneration, as the stability of these conditions may be questionable.

- Functional status and activity level should be assessed at the onset of care.
- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[20,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [20,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [20,4]

© 2019 eviCore healthcare. All Rights Reserved.

- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [20,4]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following during weeks four through eight and more care is necessary, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [20,4] The pain distribution should be centralized by week eight.
- If the condition plateaus or if it has not progressed towards resolution by week twelve, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings
5-8	➢ Additional and significant and measurable functional improvement ➢ Additional and significant and measurable improvement in subjective findings ➢ Pain distribution centralized ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Self-Management Techniques

- Postural advice
- Lumbar stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037. doi:10.1371/journal.pone.0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2
19. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
20. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
21. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.

© 2019 eviCore healthcare. All Rights Reserved.

22. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
23. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
24. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
25. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
26. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
27. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
28. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
29. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
30. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
31. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
32. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
33. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
34. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
35. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
36. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
37. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
38. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
39. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
40. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
41. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

42. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
43. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
44. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
45. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
46. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
47. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
48. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2
49. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
50. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.2: Sequela of a Sprain/Strain Injury

Synonyms

- Late Effect of a Sprain/Strain

Definition

These codes describe a condition or complication that occurs as a direct result of a specified sprain-strain injury. These non-specific diagnoses alone do not adequately describe the patient's condition. For a description of the chiropractic evaluation and management of this type of complaint, refer to the appropriate guideline that best describes the specific condition(s) or complication(s) to be managed.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.3: Myalgia

Synonyms
Fibromyositis NOS

Definition
Inflammation/irritation of muscle tissue, associated with focal points of tender nodules, which may refer pain to other areas of the body when palpated.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection
Statin use	Rhabdomyolysis

Presentation
Often occurs in areas of muscles that previously experienced cumulative or sudden onset trauma. Subsequent acute manifestations typically are precipitated by exposure to cold, or by overstretching/overloading the same region of muscle. The condition is frequently seen in people with poor posture.

Subjective Findings
- Dull aching pains in the muscle rather than the joints
- Patient may complain of a diffuse area of pain/stiffness covering an area adjacent to main area of complaint
- May report "knots" or "bumps" in the involved muscles

© 2019 eviCore healthcare. All Rights Reserved.

Goals

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic and neurologic testing

Findings of Myalgia

- The involved muscle is generally resistant to stretching and limited by pain.
- Tender nodules or areas of ropiness are noted in involved muscle group.
- Nodular areas are tender to palpation and may elicit a "jump sign" or a "quickening reaction".
- Sensitized areas are generally called trigger points, and if active, palpation may lead to referral of pain.

Radiographs

The clinical decision involving a radiographic series is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of myalgia does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[46] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[11] or the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[41] or the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[14] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and

Expectation for functional improvement.Chiropractic Management

- The condition should be managed conservatively for two weeks.
- If at least 50% improvement is reported subjectively, and 50% increase in range of motion is observed following the first two weeks—continue for up to two additional weeks at a decreasing frequency.
- Total treatment duration should not exceed eight weeks.
- Frequency of care should be dependent on the severity of condition.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If patient is not asymptomatic, or near asymptomatic at the end of the second two week trial, or has reached a plateau, refer to an appropriate health care provider to explore other alternatives.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 50% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ Follow-up, then discharge

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Stretching exercises
- Aerobic conditioning exercises
- Heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical therapy with aggressive deep myofascial therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
2. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
3. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
4. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
5. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
6. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
7. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
8. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
9. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
10. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
11. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
14. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
15. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
19. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
20. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
21. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
26. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
27. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
28. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
29. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
30. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
31. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
32. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
33. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
34. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
35. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
36. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
37. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
38. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
39. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
40. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
41. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

42. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
43. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
44. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
45. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
46. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.4: Other Specified Dorsopathies

Definition

ICD-10 codes M53.81, M53.82, M53.83, M53.84, M53.85, M53.86, M53.87, M53.88, M53.9, M54.89, and M54.9 represent a variety of conditions, excluding those otherwise specified. For a description of the chiropractic evaluation and management of these conditions and similar ones, refer to the cervical, thoracic, or lumbar guideline that best approximates the reported condition.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.5: Pain in Limb

Synonyms
None

Definition
Diagnosis is reserved for limb pain involving “soft tissue” structures.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, ligament tears
Fever, severe pain	Infection
Sensory changes	Neurological condition
Diabetes; paresthesias in stocking glove distribution	Neuropathy; B12 deficiency, hypothyroidism, lead poisoning
Multiple joint involvement	Rheumatologic diseases, gout
History of high impact activities	Stress fractures
Severe pain, numbness within 12-24 hours following trauma	Compartment syndrome
Cancer	Cause of symptoms (metastatic or primary)
Discoloration of limb; exertional foot or calf pain	Arterial occlusion; vascular insufficiency
Immune-compromised state	Infection

Presentation
The condition occurs in areas of muscles, ligaments, fascia, or tendons in an extremity; these areas may have previously experienced cumulative or sudden onset trauma.

Subjective Findings
- Dull aching pains in soft tissue structures rather than the joints.
- The patient may complain of a diffuse area of pain/stiffness covering an area adjacent to main area of complaint.

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Muscle testing

Findings of Pain in Limb

- Involved areas are generally resistant to stretching and limited by pain.
- Tender nodules or areas of ropiness may be noted in involved area.
- Range of motion of the involved area may be limited.
- Orthopedic and neurologic testing typically is unremarkable.

Radiographs

The clinical decision involving a radiographic series of the affected limb is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of pain in a limb does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[13] or the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[41] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[22].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management[26,10]

- Manage this condition conservatively for two weeks with a treatment frequency commensurate with the severity of the condition.
- Functional status & activity level should be assessed at the onset of care
- If at least 50% improvement is reported subjectively, and 50% increase in range of motion is observed following the first two weeks—continue for up to two additional weeks at a decreasing frequency.
- If improvement following the initial two weeks is not at least 50%, reassess for other possible causes or complicating factors and consider different adjustive/manipulative technique.
- If patient is not asymptomatic, or near asymptomatic at the end of the second two week trial, or has reached a plateau, refer patient to an appropriate health care provider to explore other alternatives.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 50% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Self-Management Techniques

- Postural advice
- Stretching exercises
- Aerobic conditioning exercises
- Heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Brantingham J, Globe G, Pollard H, Hicks M, Korporaal C, Hoskins W. Manipulative Therapy for Lower Extremity Conditions: Expansion of Literature Review. J Manipulative Physiol Ther. 2009;32(1):53-71. doi:10.1016/j.jmpt.2008.09.013.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
5. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
6. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
7. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
8. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
9. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
10. Dwyer L, Parkin-Smith G, Brantingham J et al. Manual and Manipulative Therapy in Addition to Rehabilitation for Osteoarthritis of the Knee: Assessor-Blind Randomized Pilot Trial. J Manipulative Physiol Ther. 2015;38(1):1-21.e2. doi:10.1016/j.jmpt.2014.10.002.
11. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
12. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
13. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
14. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2
15. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
16. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
17. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
18. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
19. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
20. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.

© 2019 eviCore healthcare. All Rights Reserved.

21. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
22. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
23. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
24. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
25. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
26. Jayaseelan D, Scalzitti D, Palmer G, Immerman A, Courtney C. The effects of joint mobilization on individuals with patellofemoral pain: a systematic review. Clin Rehabil. 2018;32(6):722-733. doi:10.1177/0269215517753971.
27. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
28. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
29. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
30. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
31. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
32. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
33. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
34. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
35. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
36. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
37. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
38. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
39. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
40. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.

© 2019 eviCore healthcare. All Rights Reserved.

41. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
42. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
43. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
44. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.6: Scoliosis

Definition
Scoliosis is defined as a spinal curvature greater than 10 degrees in the coronal plane.

History
Most individuals present with a non-painful deformity. Scoliosis is often classified according to the age of the individual at onset (such as infantile, juvenile, or adolescent). The condition is more common in girls, and it typically progresses during periods of rapid growth between ages 11-14.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Fever, severe pain	Possible infection
Immune-compromised state	Infection
Cancer history	Cause of symptoms (metastatic or primary)
Discoloration of foot/toes	Vascular occlusion
Exertional symptoms, history of cardiac disease	Anginal equivalent

Presentation
Deformity or postural changes are often noted by the family or school nurse.

Subjective Findings
Initially, patients have a non-painful deformity. Pain syndromes may develop as posture worsens. Breathing complaints associated with decreases in cardiopulmonary efficiency occur in severe cases.

Functional Assessment
Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goals of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

- Rule out concurrent spinal pathologies
- Look for presence of neuromuscular disease
- Assess possibility of referred organ pain

Scope of Musculoskeletal Examination

- History including general demographics, growth and development
- Review of systems, including cardiopulmonary
- Inspection - gross symmetry, coordinated movement, posture and body mechanics
- Palpation of bony and soft tissue
- Strength
- Range of motion: active and passive
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Findings of Scoliosis

- In the case of a structural scoliosis, patient will show a curve that is not corrected by side bending. There is frequently a rotation of the involved vertebrae, resulting in a rib “hump” on the convex side of the curve (most easily viewed from behind in forward flexion).
- Rib “hump”
- Complains of muscular pain

Radiographs

The clinical decision involving a radiographic series of the spine is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of scoliosis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient’s history, subjective findings, objective findings, and other available diagnostic testing results. If evidence of a structural scoliosis is present and the patient has not yet reached skeletal maturity, the exposure of x-rays may be considered medically necessary. Please note that the spinal region to be exposed has to be symptomatic and the curvature in question must involve the symptomatic area.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[14] or the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[53] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[26].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management[1,5,43]

- Treatment of pain associated with scoliosis may include spinal manipulation and physiotherapeutic modalities.
- Instruction in a home exercise program is extremely important, as a home program will increase function and reduce the patient's dependence of passive treatments.
- Treatment of asymptomatic individuals is not considered medically necessary.
- Treatment of asymptomatic individuals is typically focused on "straightening" the scoliotic curve.
- Chiropractic manipulation utilized to correct a structural scoliotic curve is considered experimental and investigational.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. The use of self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[20,4]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [20,4]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [20,4]
- Attempt to return to normal activity within four weeks.

© 2019 eviCore healthcare. All Rights Reserved.

- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for an additional month at a decreasing frequency commensurate with improvement in patient's condition. [20,4]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement. ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first ➢ Reinforce self-management techniques

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options as follows:

- Having greater than a 25 degree curve and immature skeleton should be referred for orthotic bracing.
- With greater than 40 degree curve and immature skeleton or greater than 50 degree curve and mature skeleton should be referred for surgical consult.
- Developing thoracic lordosis should be referred for surgical consult.
- With onset of motor weakness, sensory abnormalities, loss of reflex, or signs of upper motor neuron involvement should be referred for medical evaluation.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

© 2019 eviCore healthcare. All Rights Reserved.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises, stretching
- Progression to therapeutic exercise—strengthening exercises, postural exercises
- Hot packs/cold packs, if needed, to relieve discomfort
- Bracing

Alternatives/Adjuncts to Chiropractic Management

- Acupuncture
- Osteopathic manipulation
- Physical Therapy
- Medication
- Orthotist
- Pain management/Injection therapy
- Surgery

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ailliet L, Rubinstein S, Hoekstra T, van Tulder M, de Vet H. Long-term trajectories of patients with neck pain and low back pain presenting to chiropractic care: A latent class growth analysis. European Journal of Pain. 2017;22(1):103-113. doi:10.1002/ejp.1094.
2. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
3. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6
4. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
5. Blanchette M, Stochkendahl M, Borges Da Silva R, Boruff J, Harrison P, Bussières A. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies. PLoS ONE. 2016;11(8):e0160037.
6. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
7. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
8. Bryans R, Decina P, Descarreaux M et al. Evidence-Based Guidelines for the Chiropractic Treatment of Adults With Neck Pain. J Manipulative Physiol Ther. 2014;37(1):42-63. doi:10.1016/j.jmpt.2013.08.010.
9. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
10. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
11. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
12. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
13. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
14. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
15. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
16. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
17. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
18. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
19. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
20. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
21. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.

© 2019 eviCore healthcare. All Rights Reserved.

22. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
23. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
24. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
25. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.
26. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
27. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
28. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
29. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
30. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
31. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
32. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
33. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
34. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
35. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
36. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
37. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
38. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
39. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
40. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
41. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

42. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
43. Rubinstein S, de Zoete A, van Middelkoop M, Assendelft W, de Boer M, van Tulder M. Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials. BMJ. 2019:l689. doi:10.1136/bmj.l689.
44. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
45. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
46. Stirling A, Howel D, Millner P, Sadiq S, Sharples D, Diskson R. Late-Onset Idiopathic Scoliosis in Children Six to Fourteen Years Old. A Cross-Sectional Prevalence Study*. The Journal of Bone & Joint Surgery. 1996;78(9):1330-6. doi:10.2106/00004623-199609000-00006.
47. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
48. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
49. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
50. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
51. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.7: Muscle Spasm

Synonyms
None

Definition
Spasm of the muscle tissue, associated with focal or diffuse points of tenderness that may produce local pain or may refer pain to other areas of the body when palpated.

History
A patient's history will vary according to the location of the chief complaint.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Saddle anesthesia	Cauda equina syndrome
Severe or progressive neurologic complaints	Cauda equina syndrome
Global or progressive motor weakness in the lower extremities	Cauda equina syndrome
Recent onset of bowel dysfunction or acute onset of bladder dysfunction in association with low back pain	Cauda equina syndrome
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression medication	Infection
Prolonged steroid use	Infection
Pain that does not change with change in position	Kidney disease

Presentation
Often occurs in areas of muscles that previously experienced cumulative or sudden onset trauma. Subsequent acute manifestations, typically, are precipitated by exposure to cold, or by overstretching/overloading the same region of muscle, frequently seen in people with poor posture.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Dull aching pains in the muscle rather than the joints
- May complain of a diffuse area of pain/stiffness covering an area adjacent to main area of complaint
- May report "knots" or "bumps" in the involved muscles

Goals of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing
- Muscle testing

Findings of Muscle Spasm is Present

- The involved muscle is generally resistant to stretching; limited by pain.
- Tender nodules or areas of ropiness are noted in the involved muscle group.
- Nodular areas are tender to palpation and may elicit a "jump sign" or a “quickening reaction."
- Sensitized areas are generally called trigger points, and if active, palpation may lead to referral of pain.

Radiographs

The clinical decision involving a radiographic series is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of muscle spasm does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient’s history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[49] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points) [11] or the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[44] or the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[14] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

- The condition should be managed conservatively for two weeks.
- Treatment frequency should be commensurate with the severity of the condition.
- If at least 50% improvement is reported subjectively, and 50% increase in range of motion is observed following the first two weeks—continue for up to two additional weeks at a decreasing frequency.
- Total treatment duration should not exceed eight weeks.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If improvement following initial two weeks is not at least 50%, reassess for other possible causes or complicating factors and consider different adjustive/manipulative technique.
- If the patient is not asymptomatic, or near asymptomatic, at the end of the second two week trial or has reached a plateau, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 50% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Stretching exercises
- Aerobic conditioning exercises
- Heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
2. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
3. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
4. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
5. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
6. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
7. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
8. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
9. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
10. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
11. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
14. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
15. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
19. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
20. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
21. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
26. "PLoS One. 2016 Aug 3;11(8):e0160037. doi: 10.1371/journal.pone.0160037. eCollection 2016.
27. Effectiveness and Economic Evaluation of Chiropractic Care for the Treatment of Low Back Pain: A Systematic Review of Pragmatic Studies.
28. Blanchette MA1, Stochkendahl MJ2, Borges Da Silva R3, Boruff J4, Harrison P4, Bussières A4,5,6.
29. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
30. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
31. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
32. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
33. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
34. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
35. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
36. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
37. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
38. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
39. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
40. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
41. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
42. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
43. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.

© 2019 eviCore healthcare. All Rights Reserved.

44. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.
45. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
46. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
47. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
48. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
49. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.8: Fasciitis

Synonyms
None

Definition
Condition associated with inflammation/irritation of fascia.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection

Presentation
Often occurs in areas of connective tissue that previously experienced cumulative or sudden onset trauma.

Subjective Findings
- Dull aching pains in the deep connective tissue rather than the joints.
- The patient may complain of a diffuse area of pain/stiffness covering an area adjacent to main area of complaint.

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Findings of Fasciitis

- Involved tissue is generally resistant to stretching, limited by pain.
- Tender nodules are noted in involved tissues.

Radiographs

The clinical decision involving a radiographic series is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of fasciitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[46] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[11] or the **Lower Extremity Functional Scale (LEFS)** with a score of 64 or less (minimum detectable change 9 points)[41] or the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[14] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[23].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

- The condition should be managed conservatively for two weeks.
- If at least 50% improvement is reported subjectively, and 50% increase in range of motion is observed following the first two weeks— continue for up to two additional weeks at a decreasing frequency.
- Total treatment duration should not exceed eight weeks.
- Frequency of care should be dependent on the severity of the condition.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If patient is not asymptomatic, or near asymptomatic, at the end of the second two week trial, or has reached a plateau, refer patient to an appropriate health care provider to explore other alternatives.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 50% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ Near asymptomatic ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One follow-up, then discharge

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Stretching exercises
- Aerobic conditioning exercises
- Heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Physiatry
- Medication
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Assendelft W, Morton S, Yu E, Suttorp M, Shekelle P. Spinal manipulative therapy for low back pain. A meta-analysis of effectiveness relative to other therapies. Journal of manipulative and physiologic therapeutics. 2003;138(11):871-881.
2. Aure O, Hoel Nilsen J, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain. Spine. 2003;28(6):525-531. doi:10.1097/01.brs.0000049921.04200.a6.
3. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
4. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
5. Carpenter D, Nelson B. Low back strengthening for the prevention and treatment of low back pain. Medicine & Science in Sports & Exercise. 1999;31(1):18-24. doi:10.1097/00005768-199901000-00005.
6. Cherkin D, Deyo R, Battié M, Street J, Barlow W. A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients with Low Back Pain. New England Journal of Medicine. 1998;339(15):1021-1029. doi:10.1056/nejm199810083391502.
7. Cherkin D, Sherman K, Deyo R, Shekelle P. A review of the evidence for the effectiveness, safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain. Ann Intern Med. 2003;138(11):898-906.
8. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
9. Clarke J, van Tulder M, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low-back pain with or without sciatica. Chochrane Database Systemic Review. 2007;(2).
10. Dagenais S, Gay R, Tricco A, Freeman M, Mayer J. Spinal Manipulation Therapy for Acute Low Back Pain. Spine Journal. 2010;10(10):918-940.
11. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
12. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
13. Ferreira M, Ferreira P, Latimer J, Herbert R, Maher C. Efficacy of spinal manipulative therapy for low back pain of less than three months' duration. J Manipulative Physiol Ther. 2003;26(9):593-601. doi:10.1016/j.jmpt.2003.08.010.
14. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
15. French S, Cameron M, Walker B, Reggars J, Esterman A. Superficial heat or cold for low back pain. Cochrane Database of Systematic Reviews. 2006. doi:10.1002/14651858.cd004750.pub2.
16. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
17. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
18. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
19. Haas M, Groupp E, Kraemer D. Dose-response for chiropractic care of chronic low back pain. The Spine Journal. 2004;4(5):574-583. doi:10.1016/j.spinee.2004.02.008.
20. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
21. Heymans M, van Tulder M, Esmail R, Bombardier C, Koes B. Back schools for non-specific low-back pain. Cochrane Database of Systematic Reviews. 2004. doi:10.1002/14651858.cd000261.pub2.

© 2019 eviCore healthcare. All Rights Reserved.

22. Hoiriis K, Pfleger B, McDuffie F et al. A Randomized Clinical Trial Comparing Chiropractic Adjustments to Muscle Relaxants for Subacute Low Back Pain. J Manipulative Physiol Ther. 2004;27(6):388-398. doi:10.1016/j.jmpt.2004.05.003.
23. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
24. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
25. Hurwitz E, Morgenstern H, Kominski G, Yu F, Chiang L. A Randomized Trial of Chiropractic and Medical Care for Patients With Low Back Pain. Spine. 2006;31(6):611-621. doi:10.1097/01.brs.0000202559.41193.b2.
26. Ianuzzi A, Khalsa P. Comparison of human lumbar facet joint capsule strains during simulated high-velocity, low-amplitude spinal manipulation versus physiological motions. The Spine Journal. 2005;5(3):277-290. doi:10.1016/j.spinee.2004.11.006.
27. Karjalainen K, Malmivaara A, van Tulder M et al. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Systems Review. 2003.
28. Khadikar A, Milne S, brosseau L et al. Transcutaneous electrical nerve stimulation (TENS) for chronic low-back pain. Cochrane Database Systems Review. 2005.
29. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
30. Kuzynski J, Schweiterman B, Columber K, Knupp D, Shaub L, Cook C. Effectiveness of physical therapist administered spinal manipulation for the treatment of low back pain: a systematic review of the literature. Spine. 2012;23(17):1875-1883.
31. Last A, Hulbert K. Chronic Low back pain: evaluation and management. J Chiropr Med. 2009;8(2):77-85.
32. Lawrence D, Meeker W, Branson R et al. Chiropractic Management of Low Back Pain and Low Back-Related Leg Complaints: A Literature Synthesis. J Manipulative Physiol Ther. 2008;31(9):659-674. doi:10.1016/j.jmpt.2008.10.007.
33. Licciardone J, Brimhall A, King L. Osteopathic manipulative treatment for low back pain: a systematic review and meta-analysis of randomized controlled trials. BMC Musculoskelet Disord. 2005;6(1). doi:10.1186/1471-2474-6-43.
34. Liddle S, Baxter D, Gracey J. Exercise and chronic low back pain: what works?. Pain. 2004;107(1):176-190. doi:10.1016/j.pain.2003.10.017.
35. Mohseni-Bandpei M, Stephenson R, Richardson B. Spinal manipulation in the treatment of low back pain: a review of the literature with particular emphasis on randomized controlled clinical trials. Physical Therapy Reviews. 1998;3(4):185-194. doi:10.1179/ptr.1998.3.4.185.
36. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
37. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
38. Patel A, Ogle A. Diagnosis and Management of Acute Low Back Pain. Am Fam Physician. 2000;6(1779):1789-1790.
39. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
40. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
41. The Lower Extremity Functional Scale (LEFS): Scale Development, Measurement Properties, and Clinical Application. Phys Ther. 1999. doi:10.1093/ptj/79.4.371.

© 2019 eviCore healthcare. All Rights Reserved.

42. United Kingdom back pain exercise and manipulation (UK BEAM) randomised trial: effectiveness of physical treatments for back pain in primary care. BMJ. 2004;329(7479):1377. doi:10.1136/bmj.38282.669225.ae.
43. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
44. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
45. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
46. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.
47. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-8.9: Neuralgia

Definition

Condition is an unspecified condition that exhibits pain extending along the course of one or more nerves. Refer to the corresponding area of involvement for details on the Chiropractic Evaluation and Management of the following neurological conditions:

- Brachial Neuritis or Radiculitis
- Cervicobrachial Syndrome
- Brachial Plexus Lesion
- Lumbosacral Radiculitis
- Sciatica
- Carpal Tunnel Syndrome

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-9.0: Thoracic Conditions (Disc Radicular)

CHIRO-9.1: Displacement of Thoracic Intervertebral Disc Without Myelopathy 361

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-9.1: Displacement of Thoracic Intervertebral Disc Without Myelopathy

Synonyms

- Thoracic herniated nucleus pulposus
- Disc protrusion or propulsion
- Slipped disc

Definition

Nerve root irritation as a result of thoracic disc pathology.

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Direct blow to the back in young adult	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse or immunosuppression	Infection
Prolonged steroid use	Infection

Presentation

Axial pain may be the predominant complaint. Axial pain is usually localized to the middle-to-lower thoracic region, but may radiate to the middle lumbar region as well. Patient usually describes this pain as being of mild to moderate intensity.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Pain and stiffness in the mid back.
- Patient may complain of radicular pain, often band-like, and often spans across the anterior chest wall.
- T10 dermatomal region most often is described as the focus of pain, irrespective of the level involved.
- Upper thoracic and lateral disc herniations most often precipitate radicular pain, and they may even cause concomitant axial pain.
- Patients with radicular symptoms often complain of sensory changes, including dysesthesias and paresthesias, and usually occur in a dermatomal or radicular distribution.
- Patients with central protrusions may present with myelopathic symptoms, such as increased muscle tone, hyperreflexia, abnormal gait, and urinary incontinence.
- Patients with lateral herniation may have symptoms of radiculopathy.

Other presentations must be considered in ruling out displacement of thoracic intervertebral disc:

- Patients with a large acute midline or paramedian disc herniation may cause classic spinal cord syndromes such as Brown-Sequard syndrome.
- Presentation may also mimic that of degenerative hip disease or renal disease; chest and abdominal pain suggests a mid thoracic herniation.
- Patient with an upper thoracic lesion could present with neck pain, upper extremity pain, or symptoms of Horner syndrome.
- Patient with thoracic intervertebral disc conditions pain may present with symptoms that could be confused with those of cervical degenerative disease, particularly if a T1 or T2 disc herniation is present.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

Goal of Examination

Rule out other possible causes.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Thoracic Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing

Results if Thoracic Intervertebral Disc Syndrome

- A patient with radicular symptoms may demonstrate decreased or altered sensation to light touch or pinprick in the dermatomes distal to the lesion. The clinician must establish a sensory level by testing sensory dermatomes and by correlating the results with the patient's complaints of dysesthesias and paresthesias.
- Spinal cord compression caused by the herniated disc may elicit upper motor neuron signs such as spasticity, hyperreflexia, positive Babinski sign (e.g., extension of the big toe at the metatarsophalangeal joint elicited by stroking lateral aspect of foot), and gait disturbances.
- The patient may also have weakness caused by compression of the spinal cord. Presence of a Hoffmann sign is demonstrated with the flicking of the terminal phalanx of middle finger, which results in reflex flexion of the distal phalanx of thumb, index, ring, and little fingers. This sign is not expected unless concomitant cervical pathology is present.
- Palpation or percussion of the spine may reproduce radicular symptoms. Although one cannot examine the function of muscles innervated by thoracic nerve roots because of their low specificity, having the patient sit upright and observing for any asymmetric contractions of the rectus abdominis may be helpful.
- One may test superficial abdominal reflexes to isolate an upper motor neuron lesion from this region. Superficial cremasteric reflex could be used to test the efferent T12 level and the afferent L1 - L2 levels.
- If ankle clonus is present, or if the plantar reflex is found to be positive, one must be wary of an upper motor lesion; the thoracic and thoracolumbar regions should be examined.
- In high thoracic herniations (T2 through T5), discerning thoracic disease from cervical disease may be difficult. A positive result with the Spurling compression test suggests a cervical pathology. Spurling test is a maneuver designed to exacerbate encroachment on a cervical nerve root by extending and rotating the patient's head toward the symptomatic side, followed by axial compression.

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving thoracic spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of thoracic intervertebral disc displacement does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[25] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[5] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

- Prior to manipulation, the patient should be questioned regarding reproduction of radicular complaints or increase in pain when placed in pre-stress position. Mild mobilization of the thoracic spine may be attempted before administering manipulation in patients with disc lesions. Reproduction of radicular complaints or increase in pain with either indicates that caution should be taken. The use of a low force technique, such as an Activator™, may be considered.
- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage case conservatively for two weeks at a treatment frequency commensurate with severity of the condition.[1,8]
- If after two weeks there is measurable improvement in function and subjective complaints, continue treatment at a frequency that is commensurate with the severity of the condition. Treatment modification, additional diagnostic procedures, or referral for co-management should be considered if there is no measurable improvement at this time. [1,8]
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated and pain distribution is centralizing or centralized following the initial four weeks, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [1,8] A home exercise program should be introduced.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated in weeks five through eight, continue for up to an additional month at a decreasing frequency that is commensurate with severity of the condition. [1,8] The pain should be centralized.
- By the end of week twelve, the patient should be prepared for release to a self-management program or referred for alternative treatment options.

© 2019 eviCore healthcare. All Rights Reserved.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective findings ➢ Pain distribution is centralizing or centralized ➢ Introduce self-management techniques
5-8	➢ Additional significant and measurable functional improvement ➢ Additional significant and measurable improvement in subjective findings ➢ Pain distribution is centralized ➢ Reinforce self-management techniques
9-12	➢ Gradual improvement leading toward resolution ➢ Reinforce self-management techniques ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached or by week twelve, whichever occurs first

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Trunk stabilization exercises
- Aerobic conditioning
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Acupuncture
- Physical therapy
- Physiatry
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
8. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
15. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
16. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
17. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
18. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.
19. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.

© 2019 eviCore healthcare. All Rights Reserved.

20. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
21. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
22. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
23. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
24. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
25. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.0: Thoracic Rib Cage Conditions (Non-specific)

CHIRO-10.1: Pain in Thoracic Spine	**370**
CHIRO-10.2: Rib Cage Segmental and Somatic Dysfunction	**376**
CHIRO-10.3: Sprain and Strain of Ribs	**382**
CHIRO-10.4: Thoracic Segmental and Somatic Dysfunction	**388**
CHIRO-10.5: Thoracic Sprain/Strain	**395**

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.1: Pain in Thoracic Spine

Synonyms
- Thoracalgia
- Mid back pain

Definition
Condition is a subjective finding often reported by individuals. There may be minimal or no objective findings on physical examination or diagnostic studies.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint.
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, immunosuppression and/or diabetic	Infection
Prolonged steroid use	Osteoporosis, compression fracture

Presentation
Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. Prior history of trauma to the involved region may be reported. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings
Complaints consist of pain and/or stiffness in the thoracic spine region.

© 2019 eviCore healthcare. All Rights Reserved.

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Thoracic Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic and
- Neurologic testing if complaints radiate in a dermatomal pattern.

Findings of Pain in Thoracic Spine

- Typically, tenderness is only at the affected spinal joints/segments.
- No complicating factors are identified.
- No suspicious and unexplainable exam findings are noted.
- Associated soft tissues may be shortened with degrees of muscle hypertonicity.
- Range of motion may be limited.
- Joint fixation detected with motion palpation.
- Orthopedic and neurological testing is typically unremarkable.

Radiographs

The clinical decision involving thoracic spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of thoracic pain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

© 2019 eviCore healthcare. All Rights Reserved.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[27] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[5] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[1,8]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [1,8]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [1,8]
- Attempt to return to normal activity within four weeks.

© 2019 eviCore healthcare. All Rights Reserved.

- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [1,8]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Referral Guidelines

Refer the patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau
- Fever, chills, unexplained weight loss, significant night time pain
- Presence of pathological fracture
- Obvious deformity

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Back stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Mobilization (physical therapist)
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192
7. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
8. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
15. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
16. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
17. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
18. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
19. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
20. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

21. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
22. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
23. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
24. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
25. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
26. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
27. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.2: Rib Cage Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic lesion (costochondral, costovertebral, or sternochondral)
- Segmental dysfunction (costochondral, costovertebral, or sternochondral)
- Somatic dysfunction (costochondral, costovertebral, or sternochondral)
- Subluxation (costochondral, costovertebral, or sternochondral)

Definition

Condition consisting of an abnormal or altered functional relationship at the costochondral, the costovertebral, or the sternochondral joint.

History

Patient history may include:

- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, immunosuppression and/or diabetic	Infection
Prolonged steroid use	Osteoporosis, compression fracture

© 2019 eviCore healthcare. All Rights Reserved.

Presentation
Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved. Condition may involve a prior history of trauma to the region, and may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings
Condition involves pain and/or stiffness in the region of the affected joints/segments.

Functional Assessment
Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing if complaints radiate in a dermatomal pattern

Findings of Rib Cage Segmental and/or Somatic Dysfunction
- Typically, tenderness is only at the affected spinal joints/segments
- Associated soft tissue may be shortened with degrees of muscle hypertonicity
- Range of motion typically limited asymmetrically
- Joint fixation upon motion palpation
- Orthopedic and neurological testing is typically unremarkable

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving a radiographic series of the rib cage is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental and/or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[27] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[5] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[1,8]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [1,8]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [1,8]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [1,8]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Back stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Mobilization (physical therapist)
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
8. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
15. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
16. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
17. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
18. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
19. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
20. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

21. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
22. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
23. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
24. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
25. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
26. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
27. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.3: Sprain and Strain of Ribs

Synonyms
Chondrocostal sprain/strain

Definition
Condition involving the soft tissue structures involving the chondrocostal joint, the costovertebral joint, or the sternochondral joint.

History
Patient history may include:
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, immunosuppression and/or diabetic	Infection
Prolonged steroid use	Osteoporosis, compression fracture

© 2019 eviCore healthcare. All Rights Reserved.

Presentation
Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved; there may be prior history of trauma to the involved region.

Subjective Findings
Pain and/or stiffness in the region of the affected joints/segments.

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic and neurologic testing if complaints radiate to upper or lower extremities

Findings of Rib Cage Sprain/Strain
- Typically, tenderness only at the affected spinal joints/segments.
- Associated soft tissue may be shortened with degrees of muscle hypertonicity.
- Range of motion typically limited asymmetrically.
- Joint fixation upon motion palpation.
- Orthopedic and neurological testing is typically unremarkable.

Radiographs
The clinical decision involving a radiographic series of the rib cage is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing
Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[27] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[5] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[1,8]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [1,8]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [1,8]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [1,8]

© 2019 eviCore healthcare. All Rights Reserved.

- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Back stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Mobilization (physical therapist)
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
8. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
15. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
16. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
17. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
18. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
19. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
20. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

21. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
22. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
23. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
24. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
25. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
26. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
27. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.4: Thoracic Segmental and Somatic Dysfunction

Synonyms

- Nonallopathic lesion—thoracic
- Segmental dysfunction—thoracic
- Somatic dysfunction—thoracic
- Subluxation—thoracic

Definition

Condition is associated with an abnormal or altered functional relationship between contiguous thoracic vertebrae.

History

Patient history may include:

- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals

- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night and/or unrelated to movement	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, alcoholism, and/or diabetic	Infection
Prolonged steroid use	Osteoporosis, compression fracture

© 2019 eviCore healthcare. All Rights Reserved.

Presentation
Condition often arises from a "non-specific onset." Some form of acute or chronic postural abuse is often involved; there may be prior history of trauma to the involved region. Condition may be a sequela of, and secondary to, another primary diagnosis such as sprain, strain, or capsulitis.

Subjective Findings
Pain and/or stiffness in the region of the affected joints/segments is commonly reported.

Functional Assessment
Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor.

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion
- Motion palpation of spine
- Orthopedic
- Neurologic testing if complaints radiate to lower extremities

Findings of Thoracic Segmental and/or Somatic Dysfunction
- Typically, tenderness is only at the affected spinal joints/segments
- Associated soft tissue may be shortened with degrees of muscle hypertonicity
- Range of motion typically limited asymmetrically
- Joint fixation upon motion palpation
- Orthopedic and neurological testing is typically unremarkable

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving a radiographic series of the thoracic spine is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of segmental and/or somatic dysfunction does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[27] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[5] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[12].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[1,8]
- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [1,8]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [1,8]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [1,8]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques
5-8	➢ The patient should be approaching maximum therapeutic benefit. The treatment frequency should continue to decrease with improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Back stabilization exercises
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Massage
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8.
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
8. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
9. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
10. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
11. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
12. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
13. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
14. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
15. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
16. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
17. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
18. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
19. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
20. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

21. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
22. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
23. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
24. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
25. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
26. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
27. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-10.5: Thoracic Sprain/Strain

Synonyms
None

Definition
Injury (repetitive or instantaneous) to the mid-back soft tissues with associated pain in the thoracic region.
- Strain
  - Overstretching or tearing of a muscle or tendon.
- Sprain
  - Overstretching or tearing of ligamentous tissue.

Classification
Tendon and ligament injuries are classified as:
- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History
Patient history may include:
- General demographics
- Occupation/employment
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including history of prior chiropractic and response to prior treatment)

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Gather information that leads to a prognosis and the selection of appropriate interventions.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Onset following minor fall or heavy lifting in elderly or osteoporotic patient	Fracture
Unexplained weight loss	Malignancy
Prior history of cancer	Malignancy
Pain that is worse with recumbency or worse at night	Malignancy
Fever or recent bacterial infection	Infection
Intravenous drug abuse, alcoholism and/or diabetic	Infection
Prolonged steroid use	Osteoporosis, Compression fracture
Immunosuppression, HIV, immunosuppressive drugs	

Presentation

- Strain
  - Over exertion of the back in some static or dynamic activity; overstretching; or contusion. Back pain is worse with initial activity, and typically, rest relieves the pain. Trauma may precipitate the condition.
- Sprain
  - Typically, chronic manifestations involve prolonged periods of postural abuse, and acute onset involves a sudden motion or poor body mechanics while performing an activity. Trauma may precipitate the condition.

Subjective Findings

- Strain
  - Pain and stiffness in a muscle/tendon group of the thoracic region.
- Sprain
  - Pain and stiffness in the thoracic area.
    - Persistent pain
    - Strain injuries are aggravated by motion or weight bearing
    - Sprain injuries are aggravated by the end-ranges of motion

Functional Assessment

Documentation of a patient's level of function is an important aspect of patient care. This documentation is required in order to establish the medical necessity of ongoing chiropractic treatment. The best way to document the patient's level of function is a patient-reported outcome assessment like the Neck Disability Index or the Oswestry Disability Index. These surveys have been studied in peer-reviewed scientific literature, and they have been proven to be a valid, reliable, and responsive measure for back conditions.

© 2019 eviCore healthcare. All Rights Reserved.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Extraspinal diseases that may refer pain to the thoracic spine include: aortic aneurysm, CAD, CHF, gall bladder disease, herpes zoster, hiatal hernia, kidney disease, pancreatic disease, peptic ulcer disease, rib lesions, spinal cord tumor

One of the most serious causes of spinal pain is a malignant tumor. Most malignant tumors are metastatic and some may cause bony collapse and paralysis. Cancers that most commonly metastasize to bone consist of adrenal, breast, kidney, lung, prostate, and thyroid.

Scope of Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion (Active and Passive)
- Motion palpation of spine
- Orthopedic testing
- Neurologic testing if complaints radiate in a dermatomal pattern

Findings of Thoracic Sprain/Strain

- Strain
  - Pain on isometric contraction or active motion of the involved thoracic musculature.
  - Tenderness and possible swelling in the muscle or tendon.
  - Neurological examination is normal if condition is sprain/strain (dermatomal altered sensation may be found if unilateral thoracic disc rupture).
- Sprain
  - Tenderness +2 or greater in the immediate area of the involved joint(s).
  - Localized spasm and/or swelling in the tissues of the thoracic region.
  - Pain is intensified by passive motion of the thoracic spine.
  - Isometric contraction is not usually painful.
  - Neurological examination is normal if condition is sprain/strain (dermatomal altered sensation may be found if unilateral thoracic disc rupture).

Differential Diagnoses

- Thoracic vertebral body fracture (major trauma, minor trauma in elderly or osteoporotic patient, pathological fracture)
- Herpetic neuralgia (vesicles present following nerve root path)
- Thoracic disc rupture (long tract signs, such as clonus, spasticity, gait disturbance, or numbness of both legs)
- Tumor (intense constant pain, severe night time pain)
- Extraspinal causes, such as from disease/disorder of the pancreas, heart or kidney

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving thoracic spine radiographs is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Neck Disability Index (NDI)** with a score of 16% or higher (minimal clinically important difference 10%)[26] or the **Oswestry Disability Index (ODI)** with a score of 20% or higher (minimal clinically important difference of 12.8% or 6.4 raw points)[4] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

- Chiropractic management should include appropriate patient education and reassurance, reactivation advice, and the promotion of self-efficacy.
- Home programs should be initiated with the first therapy session and must include ongoing assessments of compliance as well as upgrades to the program.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Use of a self-directed home therapy will facilitate the fading of treatment frequency. This should include a home exercise program.
- Passive care may be clinically indicated in the acute/subacute phase of treatment or during an acute exacerbation. However, the exclusive use of "passive modalities" (e.g., palliative care) has not demonstrated clinical efficacy in achieving functional restoration.
- Manage the condition for two weeks at a treatment frequency commensurate with the severity of the condition.[1,7]

© 2019 eviCore healthcare. All Rights Reserved.

- If there is measurable improvement in function and subjective complaints after two weeks, continue treatment for up to two additional weeks at a decreased frequency that is commensurate with the severity of the condition. [1,7]
- If there is no measurable improvement after two weeks, reassess for other possible causes or complicating factors. Consider a different adjustive/manipulative technique and/or referral for co-management. [1,7]
- Attempt to return to normal activity within four weeks.
- If significant and measurable improvement in levels of function and subjective complaints are demonstrated following the initial four weeks, continue for up to an additional month at a decreasing frequency commensurate with improvement in patient's condition. [1,7]
- If the condition plateaus or if it has not progressed towards resolution by week eight, refer the patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ Measurable functional improvement ➢ Some reduction of subjective findings
3-4	➢ Significant and measurable functional improvement ➢ Significant and measurable improvement in subjective complaints ➢ Reinforce self-management techniques Significant measurable functional improvement
5-8	➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Referral Guidelines

Refer patient to an appropriate health care provider for evaluation of alternative treatment options if:

- Improvement does not meet the above guidelines or improvement has reached a plateau
- Fever, chills, unexplained weight loss, significant night time pain occur
- Presence of pathological fracture is noted
- Obvious deformity is noted
- Loss of major motor function occurs
- Abdominal pulsations occur
- Visceral dysfunction occurs

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Thoracic extension exercises
- Aerobic conditioning, such as walking or bicycling
- Cold/heat applications, if needed, to relieve discomfort/stiffness

Alternatives to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical therapy
- Physiatry
- Medication
- Massage
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Baker G, Farabaugh R, Augat T, Hawk C. Algorithms for the chiropractic management of acute and chronic spine-related pain. Topics in integrative health care. 2012;3(4).
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
4. Davidson, M. and Keating, J. (2002). A Comparison of Five Low Back Disability Questionnaires: Reliability and Responsiveness. Physical Therapy, 82(1), pp.8-24. doi: 10.1093/ptj/82.1.8
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Giles L, Muller R. Chronic spinal pain: a randomized clinical trial comparing medication, acupuncture, and spinal manipulation. Spine. 2003;28(14):1490-1502.
7. Globe G, Farabaugh R, Hawk C et al. Clinical Practice Guideline: Chiropractic Care for Low Back Pain. J Manipulative Physiol Ther. 2016;39(1):1-22. doi:10.1016/j.jmpt.2015.10.006.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. Koumantakis G, Winstanley J, Oldham J. Thoracolumbar Proprioception in Individuals with and without Low Back Pain: Intratester Reliability, Clinical Applicability, and Validity. Journal of Orthopaedic & Sports Physical Therapy. 2002;32(7):327-335. doi:10.2519/jospt.2002.32.7.327.
14. Kroeling P, Gross A, Goldsmith C. A Cochrane Review of Electrotherapy for Mechanical Neck Disorders. Spine. 2005;30(21):E641-E648. doi:10.1097/01.brs.0000184302.34509.48.
15. Lau H, Wing Chiu T, Lam T. The effectiveness of thoracic manipulation on patients with chronic mechanical neck pain – A randomized controlled trial. Man Ther. 2011;16(2):141-147. doi:10.1016/j.math.2010.08.003.
16. MacDermid J, Walton D, Avery S et al. Measurement Properties of the Neck Disability Index: A Systematic Review. Journal of Orthopaedic & Sports Physical Therapy. 2009;39(5):400-C12. doi:10.2519/jospt.2009.2930.
17. Martínez-Segura R, de-la-Llave-Rincón A, Ortega-Santiago R, Cleland J, Fernández-de-las-Peñas C. Immediate Changes in Widespread Pressure Pain Sensitivity, Neck Pain, and Cervical Range of Motion After Cervical or Thoracic Thrust Manipulation in Patients With Bilateral Chronic Mechanical Neck Pain: A Randomized Clinical Trial. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(9):806-814. doi:10.2519/jospt.2012.4151.
18. Muller R, Giles L. Long-Term Follow-up of a Randomized Clinical Trial Assessing the Efficacy of Medication, Acupuncture, and Spinal Manipulation for Chronic Mechanical Spinal Pain Syndromes. J Manipulative Physiol Ther. 2005;28(1):3-11. doi:10.1016/j.jmpt.2004.12.004.
19. Niemistö L, Rissanen P, Sarna S, Lahtinen-Suopanki T, Lindgren K, Hurri H. Cost-effectiveness of Combined Manipulation, Stabilizing Exercises, and Physician Consultation Compared to Physician Consultation Alone for Chronic Low Back Pain: A Prospective Randomized Trial With 2-Year Follow-up. Spine. 2005;30(10):1109-1115. doi:10.1097/01.brs.0000162569.00685.7b.

© 2019 eviCore healthcare. All Rights Reserved.

20. Palmgren P, Sandström P, Lundqvist F, Heikkilä H. Improvement After Chiropractic Care in Cervicocephalic Kinesthetic Sensibility and Subjective Pain Intensity in Patients with Nontraumatic Chronic Neck Pain. J Manipulative Physiol Ther. 2006;29(2):100-106. doi:10.1016/j.jmpt.2005.12.002.
21. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
22. Skargren E, Carlsson P, Öberg B. One-Year Follow-up Comparison of the Cost and Effectiveness of Chiropractic and Physiotherapy as Primary Management for Back Pain. Spine. 1998;23(17):1875-1883. doi:10.1097/00007632-199809010-00016.
23. Vianin M. Psychometric properties and clinical usefulness of the Oswestry Disability Index. J Chiropr Med. 2008;7(4):161-163. doi:10.1016/j.jcm.2008.07.001.
24. Walker B, French S, Grant W, Green S. Combined chiropractic interventions for low-back pain. Cochrane Database of Systematic Reviews. 2010. doi:10.1002/14651858.cd005427.pub2.
25. Wasiak R, Kim J, Pransky G. The Association Between Timing and Duration of Chiropractic Care in Work-Related Low Back Pain and Work-Disability Outcomes. J Occup Environ Med. 2007;49(10):1124-1134. doi:10.1097/jom.0b013e31814b2e74.
26. Young B, Walker M, Strunce J, Boyles R, Whitman J, Childs J. Responsiveness of the Neck Disability Index in patients with mechanical neck disorders. The Spine Journal. 2009;9(10):802-808. doi:10.1016/j.spinee.2009.06.002.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.0: Upper Extremity Conditions

CHIRO-11.1: Acromioclavicular Sprain	404
CHIRO-11.2: Adhesive Capsulitis of the Shoulder	410
CHIRO-11.3: Carpal Tunnel Syndrome	417
CHIRO-11.4: Disorders of Bursae and Tendons in Shoulder Region	422
CHIRO-11.5: Lateral Epicondylitis	427
CHIRO-11.6: Medial Epicondylitis	432
CHIRO-11.7: Sprain and Strain of the Shoulder and Upper Arm	437
CHIRO-11.8: Strain Rotator Cuff	443

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.1: Acromioclavicular Sprain

Synonyms
None

Definition
Condition involves an injury to the ligaments of the acromioclavicular (AC) joint; this is a common injury to the shoulder (represents 40-50% of shoulder injuries). Injury often occurs with a blow to the tip of the shoulder; this type of injury may range from a minor ligamentous sprain to a major ligamentous disruption.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Determine OPQRST (Onset, Provocative/Palliative factors, Quality, Radiation/Referral pattern, Site [location], Timing of complaint).
- Functional status & activity level should be assessed at the onset of care.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, neurovascular compromise
Exertional, history of cardiac disease	Cardiac pain can radiate to the shoulder
Constant, relieved/worse with meals, positional, associated with fatty meals	Gastrointestinal diseases including cholelithiasis and perforated ulcer
Pleuritic pain, shortness of breath, associated with cough	Pulmonary diseases
Multiple joint involvement	Rheumatology diseases
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection

Presentation
Initially, the patient may experience acute generalized shoulder or trapezius pain, tenderness, and swelling. As these diffuse symptoms resolve, specific point tenderness over the AC joint is usually noted.

Subjective Findings
Shoulder pain is usually noted with specific movements (crossing the upper arm in front of the chest) or specific exercises (bench press and bar dips).

Goal of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: In the acute situation, it may be difficult to rule out a concomitant rotator cuff tear as active and passive shoulder abduction maneuvers are difficult to perform.

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Strength testing
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Results of Tests for Acromioclavicular Sprain

- Positive cross over test
- Passive shoulder abduction maneuvers may be difficult to perform
- Pain and tenderness are noted over the AC joint; if injury is severe, a step deformity may be present or pain may extend over the distal third of the clavicle.
- Negative testing for rotator cuff tear

Acromioclavicular sprains can be classified into three grades of injury according to the extent of involvement of the acromioclavicular and coracoclavicular ligaments:

- Type I (Mild Sprain)
  - Swelling and tenderness is localized at the AC joint. Pain is present on horizontal flexion. Acromioclavicular ligament and capsule are stretched but not torn and the coracoclavicular ligament is intact.
- Type II (Moderate Sprain)
  - Injury caused by a moderate force. Pain and tenderness are localized over the AC joint and laxity is present (a step deformity may be present). Acromioclavicular ligament and capsule are torn and the coracoclavicular ligament is stretched, but intact.
- Type III (Severe Sprain)
  - Injury caused by a severe force. Pain and tenderness are present over the AC joint and over the distal clavicle and coracoid process. The distal end of the clavicle is easily palpable and ballotable. There is complete dislocation of the attachments of the deltoid and trapezius muscles at the site of injury. The acromioclavicular ligament and capsule are ruptured rather than the coracoclavicular ligament.

Differential Diagnoses

- Adhesive Capsulitis
- Biceps Rupture
- Bicipital Tendonitis
- Cervical Disc Disease
- Cervical Spondylosis
- Cervical Sprain and Strain
- Complex Regional Pain Syndromes
- Myofascial Pain
- Osteoarthritis
- Rheumatoid Arthritis
- Rotator Cuff Disease
- Thoracic Outlet Syndrome

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

- The clinical decision involving a radiographic series of the **AC joint** is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of **a sprain** does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[6] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

The goals of chiropractic vary according to the severity of injury. Severe injuries should be referred out for orthopedic consultation. Mild and moderate injuries should address pain relief, restoration of motion, restoration of strength and function. Therefore, the use of physiotherapy modalities to decrease pain and inflammation are appropriate. Immobilization with a sling is optional for mild injuries based on the need for pain relief. Immobilization is recommended for moderate and severe injuries. An early introduction to active care techniques is vital. Treatment frequency should be commensurate with the severity of the condition. As the patient's subjective findings and objective findings improve, the patient should be treated less frequently and transitioned to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in subjective findings ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

If improvement does not meet the above guidelines or improvement has reached a plateau refer the patient to an appropriate health care provider to explore other treatment alternatives.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Instruction in a home exercise program for ROM and strengthening
- Cold packs, if needed, to relieve discomfort
- Nocturnal shoulder immobilization may be appropriate

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Surgery
- Medication
- Physiatry
- Acupuncture
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
4. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
7. Green S, Buchbinder R, Glazier R, Forbes A. Systematic review of randomised controlled trials of interventions for painful shoulder: selection criteria, outcome assessment, and efficacy. BMJ. 1998;316(7128):354-360. doi:10.1136/bmj.316.7128.354.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. McHardy A, Hoskins W, Pollard H, Onley R, Windsham R. Chiropractic Treatment of Upper Extremity Conditions: A Systematic Review. J Manipulative Physiol Ther. 2008;31(2):146-159. doi:10.1016/j.jmpt.2007.12.004.
14. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
15. Munday S, Jones A, Brantingham J, Globe G, Jensen M, Price J. A randomized, single-blinded, placebo-controlled trial to evaluate the efficacy of chiropractic shoulder girdle adjustment in the treatment of shoulder impingement syndrome. Journal of the American Chiropractic Association. 2007;44(8):6-15.
16. Savolainen A. Active or passive treatment for neck-shoulder pain in occupational health care? A randomized controlled trial. Occup Med (Chic Ill). 2004;54(6):422-424. doi:10.1093/occmed/kqh070.
17. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
18. Shaffer B. Painful Conditions of the Acromioclavicular Joint. Journal of the American Academy of Orthopaedic Surgeons. 1999;7(3):176-188. doi:10.5435/00124635-199905000-00004.
19. Speed C, Hazleman B. Shoulder Pain. BMJ Clin Evid. 2005;13:355-357.
20. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.2: Adhesive Capsulitis of the Shoulder

Synonyms
Frozen Shoulder Syndrome

Definition
Adhesive capsulitis (also commonly known as 'Frozen Shoulder Syndrome ‘) occurs when the capsule surrounding the humeral head becomes contracted; thereby limiting or preventing motion. Adhesive capsulitis has typically been classified into two forms—primary and secondary. In the primary or idiopathic form, no known precipitating event can be identified. The secondary form is associated with or attributable to other illnesses or events. The cause of adhesive capsulitis remains unknown, and the end result appears to be fibrotic thickening of the anterior capsule at the rotator interval. Onset of adhesive capsulitis is usually gradual. Three clinical stages of the disease are described as follows:

- Freezing stage
  - Characterized by the most severe pain, and a gradual diminution of articular volume.
- Frozen stage
  - Pain decreases gradually but without appreciable improvement in motion.
- Thawing stage
  - Marked by gradual return of motion. Motions that are most frequently limited are abduction and external rotation.

History
Key features of the patient history include:
- Sub-acute onset of unilateral shoulder pain with little to no trauma or overuse, a distinct component of night pain
- Marked limitation in shoulder movement

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, rotator cuff tear
Exertional, history of cardiac diagnosis	Cardiac pain can radiate to the shoulder
Constant, relieved/worse with meals, positional, associated with fatty meals	Gastrointestinal diseases including cholelithiasis
Pleuritic, shortness of breath, associated with cough	Pulmonary diseases
Multiple joint involvement	Rheumatology diseases
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection

Presentation

Disorder tends to affect women more than men; tends to occur in the fifth, sixth, and seventh decades of life; does not show a particular preference for handedness; and can on occasion become bilateral (up to 10%). There is a marked limitation in active and passive range of shoulder motion. All planes of motion seem to be affected, with external rotation and abduction being the most limited. In testing passive motion, the end point is firm but not quite as firm as with that of a bony block. Manual muscle testing of the rotator cuff muscles should reveal well-preserved muscle strength with little to no pain.

Subjective Findings

- Shoulder pain, which may radiate distally or proximally
- Pain with ROM
- Loss of ROM

Goal of Examination for Adhesive Capsulitis

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic and neurologic testing if neurologic signs are present

Findings of Adhesive Capsulitis

- Limited AROM and PROM of the affected shoulder
- MMT of the affected shoulder is strong and pain-free
- Patient presents with “capsular pattern”; most limited in external rotation, followed by abduction, followed by flexion, followed by internal rotation
- “Firm” end point

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Referred pain from cardiac, pulmonary, or gastrointestinal pathology
- Inflammatory diseases
- Infection
- Fracture
- Rotator cuff pathology
- Glenohumeral arthritis

Radiographs

The clinical decision involving a radiographic series of the shoulder is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of adhesive capsulitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[8] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[13].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

Chiropractic care for this condition utilizes modalities to ease pain and increase joint motion. Joint mobilization, manipulation, ROM/stretching exercises, strengthening exercises, and instruction in a home exercise program, all play a role in the suggested treatment protocol.[18,3] The effectiveness of passive physiotherapy modalities is currently in question. Accordingly, the focus of treatment should be active care with the aim of transitioning the patient to a home care program. Treatment frequency should be commensurate with the severity of the condition. As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency. Functional status & activity level should be assessed at the onset of care.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in subjective findings ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice
- Home ROM exercises, home self joint mobilization techniques
- Progression to therapeutic exercise—strengthening exercises
- Hot packs/cold packs, if needed, to relieve discomfort

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Acupuncture
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Çelik D, Kaya Mutlu E. Does adding mobilization to stretching improve outcomes for people with frozen shoulder? A randomized controlled clinical trial. Clin Rehabil. 2016;30(8):786-794. doi:10.1177/0269215515597294.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
6. Comparison of High-Grade and Low-Grade Mobilization Techniques in the Management of Adhesive Capsulitis of the Shoulder: Randomized Controlled Trial. Phys Ther. 2006:355-368. doi:10.1093/ptj/86.3.355.
7. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
8. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
9. Green S, Buchbinder R, Glazier R, Forbes A. Systematic review of randomised controlled trials of interventions for painful shoulder: selection criteria, outcome assessment, and efficacy. BMJ. 1998;316(7128):354-360. doi:10.1136/bmj.316.7128.354.
10. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
11. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
12. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
13. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
14. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
15. McHardy A, Hoskins W, Pollard H, Onley R, Windsham R. Chiropractic Treatment of Upper Extremity Conditions: A Systematic Review. J Manipulative Physiol Ther. 2008;31(2):146-159. doi:10.1016/j.jmpt.2007.12.004.
16. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
17. Munday S, Jones A, Brantingham J, Globe G, Jensen M, Price J. A randomized, single-blinded, placebo-controlled trial to evaluate the efficacy of chiropractic shoulder girdle adjustment in the treatment of shoulder impingement syndrome. Journal of the American Chiropractic Association. 2007;44(8):6-15.
18. Noten S, Meeus M, Stassijns G, Van Glabbeek F, Verborgt O, Struyf F. Efficacy of Different Types of Mobilization Techniques in Patients With Primary Adhesive Capsulitis of the Shoulder: A Systematic Review. Arch Phys Med Rehabil. 2016;97(5):815-825. doi:10.1016/j.apmr.2015.07.025.
19. Savolainen A. Active or passive treatment for neck-shoulder pain in occupational health care? A randomized controlled trial. Occup Med (Chic Ill). 2004;54(6):422-424. doi:10.1093/occmed/kqh070.
20. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.

© 2019 eviCore healthcare. All Rights Reserved.

21. Shaffer B. Painful Conditions of the Acromioclavicular Joint. Journal of the American Academy of Orthopaedic Surgeons. 1999;7(3):176-188. doi:10.5435/00124635-199905000-00004.
22. Speed C, Hazleman B. Shoulder Pain. BMJ Clin Evid. 2005;13:355-357.
23. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.3: Carpal Tunnel Syndrome

Synonyms
None

Definition
Carpal tunnel syndrome (CTS) is a compression neuropathy affecting the median nerve in the carpal tunnel leading to symptoms in the radial 3 1/2 digits, and possibly thenar muscle atrophy or fasciculation.

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic, primary or paraneoplastic), potential complications of chemotherapy
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection
Cold intolerance, fatigue, constipation	Hypothyroidism
Multiple joint involvement, unusual skin rashes, other vascular involvement	Rheumatologic diseases (e.g., Rheumatoid arthritis, Sjogren's Syndrome, Systemic Lupus Erythematosis, Polyarteritis nodosa)
Stocking-glove neurological involvement	Diabetes, alcoholism, B12 deficiency
Auto repair occupation, battery exposure	Lead poisoning
Hand/skull disproportionately large	Acromegaly

Presentation
Typically, patients present with a history of repetitive stress or overuse. Some anatomical wrist shapes may be predisposing features. The "square-shaped wrist" and wrists with a high ratio of thickness to width are commonly seen. Prior medical conditions, such as previous history of wrist fracture, diabetes, Rheumatoid arthritis, and acromegaly are associated with this condition. Condition is more commonly seen with females, pregnant women, older individuals, and those with an increased Body Mass Index.

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Wrist pain, frequently with proximal radiation
- Numbness and tingling in the hand
- Pain consisting of a “pins and needles” feeling at night, which frequently awakens the patient
- Weakness in grip or pinch
- Feeling of incoordination, clumsiness

Scope of Musculoskeletal Examination

- Inspection (including thenar eminence size and structure)
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Tingling in the median nerve distribution is induced by full flexion (or full extension for reverse Phalen) of the wrists for up to 60 seconds
- Apply firm pressure directly over the carpal tunnel, usually with the thumbs, for up to 30 seconds to reproduce symptoms
- Gentle tapping over the median nerve in the carpal tunnel region elicits tingling in the nerve's distribution
- Motor examination: Wasting and weakness of the median-innervated hand muscles (LOAF muscles) may be detectable

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Findings of Carpal Tunnel

May have:

- Decreased sensory testing (light touch) in the radial 3.5 digits, depending on severity;
- Decreased grip and pinch, depending on severity; and
- Reproduction of the chief complaint with the aforementioned maneuvers.

Differential Diagnoses

- Cervical radiculopathy
- Proximal nerve impingement
- Pregnancy

Radiographs

The clinical decision involving a radiographic series of the wrist is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of carpal tunnel syndrome does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient’s history, subjective findings, objective findings, and other available diagnostic testing results.

© 2019 eviCore healthcare. All Rights Reserved.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[7] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

The goal of chiropractic care is to reduce pain and inflammation, aid in stretching and strengthening of the involved structures, and assist in the gradual return to activity.

- Treatments such as ice massage, ultrasound, yoga, and joint mobilization have proven to be beneficial.
- Functional status & activity level should be assessed at the onset of care
- The patient should be educated in proper protection techniques to be used during all activities.
- The patient should be started on a home program.
- Wrist splints for use at night should be used to assist in eliminating extreme or awkward wrist motions, thereby, reducing stress on the structure within the carpal tunnel.
- Strengthening and stretching exercises should be started only when pain and paresthesias resolve.
- Retraining of proper positioning to avoid re-injury, and other factors in occupationally related overuse syndromes, is an important component of the overall treatment of the patient.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.

© 2019 eviCore healthcare. All Rights Reserved.

- Initially, a two to four week trial of treatment should be instituted. Frequency of treatment should be consistent with the severity of condition. If severity or frequency of symptoms decreases following the initial trial—continue treatment at a reduced frequency for a one month period before releasing patient to PRN care. If the patient does not improve with the trial of chiropractic treatment, or has reached a plateau, refer patient to an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in subjective findings ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises
- Progression to therapeutic exercise—strengthening exercises
- Use of wrist splint
- Yoga

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Medication
- Surgery
- Cortisone injection

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Ashworth N. Carpal Tunnel Syndrome. BMJ Clin Evid. 2005;13:319-322.
2. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
3. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
14. O'Connor D, Marshall S, Massy-Westropp N, Pitt V. Non-surgical treatment (other than steroid injection) for carpal tunnel syndrome. Cochrane Database of Systematic Reviews. 2003. doi:10.1002/14651858.cd003219.
15. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
16. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.
17. Sucher B. Palpatory diagnosis and manipulative management of carpal tunnel syndrome. J Am Osteopath Assoc. 1994;94(8):647. doi:10.7556/jaoa.1994.94.8.647.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.4: Disorders of Bursae and Tendons in Shoulder Region

Synonyms
None

Definition
Shoulder girdle bursitis is generally a secondary condition brought on by calcific tendonitis, or pathology of the rotator cuff. It can be primary in patients who have rheumatic illnesses or bacterial infections.

History
Key features of the patient's history include sub-acute onset of unilateral shoulder pain with little to no trauma or overuse, a distinct component of night pain, and marked limitation in shoulder movement.

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, rotator cuff tear
Exertional, history of cardiac diagnosis	Cardiac pain can radiate to the shoulder
Constant, relieved/worse with meals, positional, associated with fatty meals	Gastrointestinal diseases including cholelithiasis
Pleuritic, shortness of breath, associated with cough	Pulmonary diseases
Multiple joint involvement	Rheumatology diseases (Gout)
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection

Presentation
Usually there is no history of trauma, but may follow an injury or overuse (traumatic bursitis, hemorrhagic bursitis). Onset of pain develops over several hours, or the course of a day. Pain at rest, particularly at night, is characteristic. Active range of motion is limited, as is passive range of motion. Passive limitations are not in a capsular pattern.

Scope of Musculoskeletal Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic testing
- Neurologic testing if neurologic signs are present

© 2019 eviCore healthcare. All Rights Reserved.

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Referred pain to the shoulder can occur from cardiac, pulmonary, gastrointestinal pathology, or infection.

Findings of Bursitis of the Shoulder

- Limited AROM, especially in abduction, flexion, and external rotation, when compared with PROM
- Palpation is severely painful on the bursa
- Feeling of spongy swelling at the subacromial space, not present on the uninvolved shoulder
- Pain of bursitis is usually reproduced with passive abduction at 180 degrees, passive internal rotation and passive horizontal adduction

Differential Diagnoses

- Rheumatoid arthritis
- Osteoarthritis
- Fracture
- Ligamentous injury
- Tendonitis

Radiographs

The clinical decision involving a radiographic series of the shoulder is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of bursitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[6] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goals of chiropractic care include: pain relief, restoration of motion, restoration of strength and function.

- Physiotherapeutic modalities to decrease pain and inflammation are appropriate in the acute phase.
- Functional status & activity level should be assessed at the onset of care.
- The next phase of treatment will utilize chiropractic manipulation and exercise to restore motion and normalize strength.
- As functional improvement continues, the patient should be transitioned to a home program.
- Treatment frequency should be commensurate with the severity of the condition.
- As condition improves, treatment frequency should continue to decrease, and patient should be transitioned to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement

© 2019 eviCore healthcare. All Rights Reserved.

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Postural advice to remove compression in the subacromial area
- Home ROM exercises, home self joint mobilization techniques
- Progression to therapeutic exercise—strengthening exercises
- Cold packs, if needed, to relieve discomfort

Alternatives to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Acupuncture
- Medication
- Surgery
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
4. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
7. Green S, Buchbinder R, Glazier R, Forbes A. Systematic review of randomised controlled trials of interventions for painful shoulder: selection criteria, outcome assessment, and efficacy. BMJ. 1998;316(7128):354-360. doi:10.1136/bmj.316.7128.354.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. McHardy A, Hoskins W, Pollard H, Onley R, Windsham R. Chiropractic Treatment of Upper Extremity Conditions: A Systematic Review. J Manipulative Physiol Ther. 2008;31(2):146-159. doi:10.1016/j.jmpt.2007.12.004.
14. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
15. Munday S, Jones A, Brantingham J, Globe G, Jensen M, Price J. A randomized, single-blinded, placebo-controlled trial to evaluate the efficacy of chiropractic shoulder girdle adjustment in the treatment of shoulder impingement syndrome. Journal of the American Chiropractic Association. 2007;44(8):6-15.
16. Savolainen A. Active or passive treatment for neck-shoulder pain in occupational health care? A randomized controlled trial. Occup Med (Chic Ill). 2004;54(6):422-424. doi:10.1093/occmed/kqh070.
17. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
18. Shaffer B. Painful Conditions of the Acromioclavicular Joint. Journal of the American Academy of Orthopaedic Surgeons. 1999;7(3):176-188. doi:10.5435/00124635-199905000-00004.
19. Speed C, Hazleman B. Shoulder Pain. BMJ Clin Evid. 2005;13:355-357.
20. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.5: Lateral Epicondylitis

Synonyms
- Tennis Elbow
- Epitrochlear bursitis
- Epicondylitis

Definition
Condition involving inflammation of the muscles of the forearm, or their tendons near their origin on the humerus. Most often the origin of the Extensor Carpi Radialis Brevis (ECRB) displays an abnormal vascular proliferation and focal hyaline degeneration. Extensor Digitorum Communis (EDC) may also be involved in some cases. It is most common in the 4th decade. Typically, injury is caused by repetitive twisting the wrist or forearm. There may be a partial tear of the tendon fibers at or near their point of insertion on the humerus. Risk factors are forceful repetitive wrist or forearm movement.

History
Patient history may include:
- General demographics
- Occupation/employment
- Hand dominance
- Living environment
- History of current condition
- Functional status & activity level
- Medications
- Other tests and measurements (laboratory and diagnostic tests)
- Past history (including response to prior treatment)
- Functional status & activity level should be assessed at the onset of care

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Fever, severe pain	Possible infection
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection
Cancer history	Cause of symptoms (metastatic or primary)
Discoloration of hand/fingers	Vascular occlusion, shunt emboli (dialysis patients)
Exertional symptoms, history of cardiac disease	Anginal equivalent

© 2019 eviCore healthcare. All Rights Reserved.

Presentation
Condition involves a complaint of acute or chronic elbow pain; often complaint is worse with activity.

Subjective Findings
- Tenderness and pain at lateral epicondyle
- Pain is made worse by activities that require extending the wrist or holding an object in the hand with the wrist stiff
- Weak grasp
- Dropping items

Goals of Examination
Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Scope of Examination
- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic and neurologic testing if neurologic signs are present

Findings of Lateral Epicondylitis
- Tender to palpation over the lateral epicondyle. Greatest tension is elicited with the elbow in extension, forearm in pronation, and wrist in flexion
- Manual muscle testing of affected wrist extensors is weak and painful – especially extensor carpi radialis longus, extensor carpi radialis brevis, and extensor digitorum communis
- Weak grip and pinch test

Differential Diagnoses
- C6 or C7 cervical nerve root compression
- PIN syndrome entrapment at arcade of Frohse is recognized in approximately 5% of patients
- Radial nerve entrapment syndrome
- Radial head arthritis
- Posterolateral plica
- Remnant plicae may become inflamed because of repeated trauma and inflammation
- Resultant plicae may become entrapped in the radiocapitellar joint
- Posterolateral instability
- Olecranon bursitis
- Crystalline deposition such as gout and pseudogout (Chonrocalcinosis)

© 2019 eviCore healthcare. All Rights Reserved.

Radiographs

The clinical decision involving a radiographic series of the elbow is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of lateral epicondylitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[9] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[13].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goals of treatment are to reduce pain and inflammation, aid stretching and strengthening, and assist in gradual return to activity.

- Manipulation and modalities to reduce pain and inflammation are, therefore, appropriate.
- Treatment frequency should be commensurate with the severity of the condition.
- Patient education in rest/reduction of strenuous activities, early transition to an active care program, identification of causative factors, and correction of faulty technique are important areas of emphasis.
- Strengthening and stretching exercises will be started when pain becomes manageable.
- Retraining for proper positioning to avoid re-injury and other factors in occupationally related overuse syndromes is an important component of the overall therapy consult.
- Initiate two to four week trial of treatment.
- Frequency of treatment should be consistent with the severity of the condition.

© 2019 eviCore healthcare. All Rights Reserved.

- If severity or frequency of symptoms decreases following the initial trial—continue treatment at a reduced frequency for a one month period before releasing patient to PRN care.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If patient does not improve with the trial of chiropractic treatment or has reached a plateau, refer the patient an appropriate health care provider to explore other treatment alternatives.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 25% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ 75% improvement in subjective findings ➢ 75% increase in range of motion ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One to two additional visits, then discharge ➢ Reinforce self-management techniques

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises, stretching wrist extensor musculature
- Progression to therapeutic exercise: strengthening exercises
- Hot packs/cold packs, if needed, to relieve discomfort
- Use of strap to disperse forces transmitted to the extensor tendons
- Brace to disperse forces applied to the extensor tendons

Alternatives/Adjuncts to Chiropractic Management

- Acupuncture
- Osteopathic Manipulation
- Physical Therapy
- Medication
- Surgery (as last resort)
- Cortisone or local anesthetic injection

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Assendelft W, Green S, Buchbinder R, Struijs P, Smidt N. Tennis Elbow. BMJ Clin Evid. 2005;13:358-359.
2. Bisset L, Paungmali A, Vicenzino B, Beller E. A systematic review and metaanalysis of clinical trials on physical interventions for lateral epicondylalgia. Br J Sports Med. 2005;39(7):411-422.
3. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
4. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
5. Brosseau L, Casimiro L, Milne S et al. Deep transverse friction massage for treating tendinitis. Cochrane Database System Review. 2002.
6. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
7. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
8. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
9. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
10. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
11. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
12. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
13. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
14. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
15. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
16. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
17. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.6: Medial Epicondylitis

Synonyms
- Golfers Elbow
- Peritendonitis
- Epicondylitis

Definition
Condition involving inflammation of the muscles of the forearm, or their tendons, near their origin on the humerus; possibly due to overuse or degeneration. There may be a partial tear of the tendon fibers at or near their point of insertion on the humerus. Risk factors are forceful repetitive wrist or forearm movement.

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.
- Functional status & activity level should be assessed at the onset of care.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture
Fever, severe pain	Possible infection
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection
Cancer history	Cause of symptoms (metastatic or primary)
Discoloration of hand/fingers	Vascular occlusion, shunt emboli (dialysis patients)
Exertional symptoms, history of cardiac disease	Anginal equivalent
Multiple joint involvement, tophi	Rheumatological conditions, gout

Presentation
Condition involves a complaint of acute or chronic elbow pain; often complaint is worse with activity.

Subjective Findings
- Pain at medial epicondyle
- Pain is made worse by gripping, and resisted wrist flexion
- Weak grasp in severe cases
- Possible medial collateral ligament laxity

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Orthopedic and neurologic testing if neurologic signs are present
- MMT

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Findings of Medial Epicondylitis

- Tender to palpation over the medial epicondyle
- MMT of effected wrist flexors and elbow-wrist mechanism is weak
- Resisted wrist flexion and forearm pronation is painful

Differential Diagnoses

- Cervical nerve root compression
- Ulnar nerve entrapment syndrome
- May accompany lateral epicondylitis
- Crystalline deposition such as gout and pseudogout (Chonrocalcinosis)
- Acute or chronic infection
- Olecranon bursitis

Radiographs

The clinical decision involving a radiographic series of the elbow is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of medial epicondylitis does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

© 2019 eviCore healthcare. All Rights Reserved.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities) - Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[7] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goals of treatment are to reduce pain and inflammation, aid stretching and strengthening, and assist in a gradual return to activity.

- Manipulation and modalities to reduce pain and inflammation are, therefore, appropriate.
- Treatment frequency should be commensurate with the severity of the condition.
- Patient education in rest/reduction of strenuous activities, early transition to an active care program, identification of causative factors, and correction of faulty technique are important areas of emphasis.
- Strengthening and stretching exercises will be started when pain becomes manageable.
- Retraining for proper positioning to avoid re-injury and other factors in occupationally related overuse syndromes is an important component of the overall therapy consult.
- Initiate two to four week trial of treatment.
- Frequency of treatment should be consistent with the severity of the condition.
- If severity or frequency of symptoms decreases following the initial trial—continue treatment at a reduced frequency for a one month period before releasing patient to PRN care.
- As treatment progresses, one should see an increase in the active regimen of care, a decrease in the passive regimen of care, and a fading of treatment frequency.
- If patient does not improve with the trial of chiropractic treatment or has reached a plateau, refer the patient an appropriate health care provider to explore other treatment alternatives.

© 2019 eviCore healthcare. All Rights Reserved.

Week	Progress
0-2	➢ 50% improvement in subjective findings ➢ 25% increase in range of motion ➢ Significant measurable functional improvement
3-4	➢ 75% improvement in subjective findings ➢ 75% increase in range of motion ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ One to two additional visits, then discharge ➢ Reinforce self-management techniques

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Rest, reduce strenuous activities
- Home ROM exercises, stretching wrist musculature
- Progression to therapeutic exercise—strengthening exercises
- Hot packs/cold packs, if needed, to relieve discomfort
- Use of strap to disperse forces transmitted to the flexor tendons

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Acupuncture
- Physical Therapy
- Medication
- Pain management/Injection therapy
- Surgery (as last resort)

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Brosseau L, Casimiro L, Milne S et al. Deep transverse friction massage for treating tendinitis. Cochrane Database System Review. 2002.
4. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
5. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
6. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
7. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
14. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
15. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.7: Sprain and Strain of the Shoulder and Upper Arm

Synonyms
None

Definition
Condition involving localized pain in the shoulder and upper arm. Condition occurs either suddenly or following a trauma, which may be either instantaneous or repetitive.
- Strain
  - Overstretching or tearing of a muscle or tendon.
- Sprain
  - Overstretching or tearing of ligamentous tissue.

Classification
Tendon and ligament injuries are classified as
- Grade I (mild)
  - Mild injury that causes only stretching or microscopic tears in a tissue. Although these tiny tears can stretch the tissue, they do not significantly affect the stability of the injured joint.
- Grade II (moderate)
  - Injured tissue is partially torn, and there is some mild to moderate joint instability.
- Grade III (severe)
  - Tissue is either torn completely or avulsed (pulled away from the place where it attaches to bone), and there is significant joint instability. Surgical referral may be necessary.

History
Acute trauma is commonly the cause of shoulder/arm sprain/strains, however, repetitive motion may also be a factor.

Specific Aspects of History
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

© 2019 eviCore healthcare. All Rights Reserved.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, rotator cuff tear
Exertional, history of cardiac disease	Cardiac pain can radiate to the shoulder
Constant, relieved/worse with meals, positional, associated with fatty meals	Gastrointestinal diseases including cholelithiasis and perforated ulcer
Pleuritic pain, shortness of breath, associated with cough	Pulmonary diseases
Multiple joint involvement	Rheumatology diseases
Fever, severe pain	Possible infection
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state	Infection

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Muscle testing
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Specific Aspects of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

Note: Referred pain to the shoulder can occur from cardiac, pulmonary, gastrointestinal pathology, or infection.

Findings of Sprain and Strain of an Unspecified Site of the Shoulder and Upper Arm

- Range of motion may be limited due to pain or soft tissue restrictions in chronic cases
- Abnormal glenohumeral rhythm
- Pain with passive motion (sprain)
- Pain on resistance (strain)

© 2019 eviCore healthcare. All Rights Reserved.

Differential Diagnoses

- Adhesive Capsulitis
- Biceps Rupture
- Bicipital Tendinitis
- Cervical Disc Disease
- Cervical Myofascial Pain
- Cervical Spondylosis
- Cervical Sprain and Strain
- Complex Regional Pain Syndromes
- Fibromyalgia
- Myofascial Pain
- Osteoarthritis
- Rheumatoid Arthritis
- Thoracic Outlet Syndrome

Radiographs

The clinical decision involving a radiographic series of the shoulder or upper arm is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[6] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[11].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

© 2019 eviCore healthcare. All Rights Reserved.

Chiropractic Management

Goals of chiropractic care include: pain relief, restoration of motion, restoration of strength and function.

- Functional status & activity level should be assessed at the onset of care
- Physiotherapeutic modalities to decrease pain and inflammation are appropriate in the acute phase.
- Next phase of treatment will utilize chiropractic manipulation and exercise to restore motion and normalize strength.
- As functional improvement continues, patient should be transitioned to a home program.
- Treatment frequency should be commensurate with the severity of the condition.
- As condition improves, treatment frequency should continue to decrease, and patient should be transitioned to a self-management program.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in pain ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques (see below) ➢ Significant measurable functional improvement
5-8	➢ Continued reduction of pain ➢ Continued increase in range of motion ➢ Discharge the patient to elective care or to an appropriate health care provider for alternative treatment options when a plateau is reached, or by week eight, whichever occurs first

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Home ROM exercises, home self joint mobilization techniques
- Progression to therapeutic exercise: strengthening exercises
- Cold packs, if needed, to relieve discomfort

© 2019 eviCore healthcare. All Rights Reserved.

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Surgery
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
4. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
7. Green S, Buchbinder R, Glazier R, Forbes A. Systematic review of randomised controlled trials of interventions for painful shoulder: selection criteria, outcome assessment, and efficacy. BMJ. 1998;316(7128):354-360. doi:10.1136/bmj.316.7128.354.
8. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
9. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
10. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
11. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
12. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
13. McHardy A, Hoskins W, Pollard H, Onley R, Windsham R. Chiropractic Treatment of Upper Extremity Conditions: A Systematic Review. J Manipulative Physiol Ther. 2008;31(2):146-159. doi:10.1016/j.jmpt.2007.12.004.
14. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
15. Munday S, Jones A, Brantingham J, Globe G, Jensen M, Price J. A randomized, single-blinded, placebo-controlled trial to evaluate the efficacy of chiropractic shoulder girdle adjustment in the treatment of shoulder impingement syndrome. Journal of the American Chiropractic Association. 2007;44(8):6-15.
16. Savolainen A. Active or passive treatment for neck-shoulder pain in occupational health care? A randomized controlled trial. Occup Med (Chic Ill). 2004;54(6):422-424. doi:10.1093/occmed/kqh070.
17. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
18. Shaffer B. Painful Conditions of the Acromioclavicular Joint. Journal of the American Academy of Orthopaedic Surgeons. 1999;7(3):176-188. doi:10.5435/00124635-199905000-00004.
19. Speed C, Hazleman B. Shoulder Pain. BMJ Clin Evid. 2005;13:355-357.
20. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-11.8: Strain Rotator Cuff

Synonyms
None

Definition
The rotator cuff is made up of four (4) interrelated muscles arising from the scapula, and attaching to the tuberosities of the humerus. These four muscles are the supraspinatus muscle, the infraspinatus muscle, the teres minor muscle, and the subscapularis muscle. Their tendons form a continuous cuff around the humerus head that allows the cuff muscles to provide an infinite variety of moments to rotate, and adjust the humeral head within the glenoid fossa. This condition involves an injury to this group of muscles.

Goals
- Rule out red flags (require medical management).
- Identify comorbidities requiring medical management and those that affect chiropractic management.
- Determine if trauma-related; determine the nature and extent of the traumatic event.

Red Flag	Possible Consequence or Cause
Severe trauma	Fracture, rotator cuff tear
Exertional chest or arm pain, history of cardiac disease	Cardiac pain can radiate to the shoulder
Constant, relieved/worse with meals, positional, associated with fatty meals	Gastrointestinal diseases including cholelithiasis and perforated ulcer
Pleuritic pain, shortness of breath, associated with cough	Pulmonary diseases
Multiple joint involvement	Rheumatology diseases
Cancer history	Cause of symptoms (metastatic or primary)
Unilateral edema	Upper extremity deep vein thrombosis
Immune-compromised state, fever	Infection

Presentation
Presentation of the condition depends on a number of factors:
- Patient's age
- Shoulder pain in young overhead athletes suggests underlying shoulder instability.
- In older patients, degenerative rotator cuff disease or frozen shoulder is suggested by shoulder pain.
- What is the patient's occupation or sport? Repetitive overhead activities and sports predispose to rotator cuff tendinitis.
- Mechanism of injury
- Fall on an outstretched arm could indicate a dislocation of the glenohumeral joint or a fracture of the humeral neck
- Repetitive overhead motions can cause tendinitis and, in the long run, chronic degenerative changes
- Fall or a trauma on the tip of the shoulder can result in an acromioclavicular sprain

© 2019 eviCore healthcare. All Rights Reserved.

Subjective Findings

- Onset
  - Insidious slow onset may suggest tendinitis or osteoarthritis.
  - Sudden onset usually is due to a trauma causing a fracture, dislocation, or a rotator cuff tear.
- Location of pain
  - Pain located on the superior or lateral aspect of the shoulder suggests rotator cuff involvement.
  - Pain on the anterior aspect of the shoulder may result from bicipital tendinitis, an acromioclavicular sprain, or anterior instability.
  - Neck pain and radicular pain or paresthesias suggest a cervical spine disorder.
- Severity of pain
  - Acute burning pain could indicate an acute bursitis.
  - Intermittent dull pain may be due to a degenerative rotator cuff condition.
- Type of pain
  - Sharp burning pain suggests a neurologic origin.
  - Bone and tendon pain is deep, boring, and localized.
  - Muscle pain is dull and aching, not localized, and may be referred to other areas.
  - Vascular pain is aching, cramplike, poorly localized, and may be referred to other areas.
- Duration of Symptoms
  - Acute bursitis has a short-term evolution and responds well to nonsteroidal anti-inflammatory drugs (NSAIDs).
  - Rotator cuff condition will often involve a distinct mechanism of onset.
- Timing of pain
  - Predominantly night pain suggests frozen shoulder.
  - Morning pain and stiffness improved by activity may be caused by a synovitis.
  - Pain that increases with activity is usually the result of muscular involvement.
- Activities/positions that increase the pain
  - Pain increased by overhead activities or arm-length activities suggests rotator cuff involvement.
  - Pain increased when throwing is likely to be due to anterior instability.
  - Pain increased by lying on the affected shoulder may be caused by an acromioclavicular sprain.
- Constant vs. intermittent symptoms
  - Intermittent symptoms usually result from soft tissues or joint disorders.
  - Constant symptoms suggest a neurologic lesion.

Goal of Examination

Examine the musculoskeletal system for possible causes or contributing factors to the complaint.

© 2019 eviCore healthcare. All Rights Reserved.

Scope of Musculoskeletal Examination

- Inspection
- Palpation of bony and soft tissue
- Range of motion: active and passive
- Strength testing
- Orthopedic testing
- Neurologic testing if neurologic signs are present

Findings of Rotator Cuff Sprain

- ROM may be limited by pain, but will otherwise be unlimited.
- Pain and weakness with shoulder external rotation, internal rotation and abduction.
- Following tests are positive for impingement:
- Neer
- Hawkins-Kennedy
- Yocum
- Posterior impingement test
- The following tests that use resisted isometric contraction can positively identify involvement of the supraspinatus tendon:
- Jobe test
- Full can test
- The following tests that use resisted isometric contraction can positively identify involvement of the infraspinatus tendon:
- Infraspinatus isolation test
- Patte test
- No specific resisted isometric contraction tests are available for the teres minor tendon.
- The following tests that use resisted isometric contraction can positively identify involvement of the subscapular tendon:
- Gerber lift-off test
- Gerber push with force test
- The following tests that use resisted isometric contraction can positively identify involvement of the long head of the biceps tendon:
- Speed palm up test
- Yergason test

Differential Diagnoses

- Adhesive Capsulitis
- Biceps Rupture
- Bicipital Tendinitis
- Cervical Disc Disease
- Cervical Myofascial Pain
- Cervical Spondylosis
- Cervical Sprain and Strain
- Complex Regional Pain Syndromes
- Fibromyalgia
- Myofascial Pain

© 2019 eviCore healthcare. All Rights Reserved.

- Osteoarthritis
- Rheumatoid Arthritis
- Thoracic Outlet Syndrome

Radiographs

The clinical decision involving a radiographic series of the shoulder is based on medical necessity, as per the criteria for a radiographic exam. The diagnosis of a sprain or strain does not, in and of itself, compel radiographic evaluation. That determination requires an assessment of the patient's history, subjective findings, objective findings, and other available diagnostic testing results.

Advanced Diagnostic Testing

Advanced diagnostic testing may be a consideration if the patient does not respond to an initial trial of chiropractic care. If an advanced diagnostic procedure is medically necessary, consult the health plan for coverage details.

Requirements for Chiropractic Visits

- The following findings must be present to establish the medical necessity of chiropractic treatment:
  - Significant Functional Limitation (e.g. Activities of daily living, vocational activities): Practitioners are strongly encouraged to utilize validated, standardized assessment tools to quantify functional limitations. These include the **Disabilities of the Arm, Shoulder, and Hand (DASH)** or **QuickDASH** with a score of 11 or higher (minimal clinically important difference of 10 and 15 points respectively)[6] or the **Patient Specific Functional Scale (PSFS)** with combined average score of 7/10 or less for 3 items (minimum detectable change (90% CI) for average score = 2 points)[10].
  - Pain: limiting function and at least 3/10.
- Treatment frequency and duration must be based on the:
  - Severity of clinical findings,
  - Presence of complicating factors,
  - Natural history of the condition, and
  - Expectation for functional improvement.

Chiropractic Management

Goals of chiropractic care include pain relief, restoration of motion, restoration of strength and function.

- Functional status & activity level should be assessed at the onset of care
- Physiotherapeutic modalities to decrease pain and inflammation are appropriate in the acute phase.
- Next phase of treatment will utilize chiropractic manipulation and exercise to restore motion and normalize strength.
- As functional improvement continues, patient should be transitioned to a home program.
- Treatment frequency should be commensurate with the severity of the condition.
- As condition improves, treatment frequency should continue to decrease and patient should be transitioned to a self-management program.

© 2019 eviCore healthcare. All Rights Reserved.

Week	Progress
0-1	➢ Some reduction of pain ➢ Some improvement in range of motion ➢ Significant measurable functional improvement
2-4	➢ 50% improvement in subjective complaints ➢ 30-50% increase in range of motion ➢ Reinforce self-management techniques ➢ Significant measurable functional improvement
5-8	➢ 75% reduction of pain ➢ 50-75% increase in range of motion
9-12	➢ Reinforce self-management techniques ➢ Transition to a self-management program

Discharge Criteria

- Discharge occurs when reasonable functional goals and expected outcomes have been achieved.
- The patient is discharged when the patient/care-giver can continue management of symptoms with an independent home program.
- Treatment is discontinued when the patient is unable to progress towards outcomes because of medical complications, psychosocial factors or other personal circumstances.
- If the patient has been non-compliant with treatment as is evidenced by the clinical documentation and/or the lack of demonstrated progress, treatment will be deemed to be not medically necessary and the patient should be discharged from treatment.

Self-Management Techniques

- Instruction in home exercise program for ROM and strengthening
- Cold packs, if needed, to relieve discomfort
- Nocturnal shoulder immobilization may be appropriate

Alternatives/Adjuncts to Chiropractic Management

- Osteopathic Manipulation
- Physical Therapy
- Surgery
- Medication
- Pain management/Injection therapy

© 2019 eviCore healthcare. All Rights Reserved.

References

1. Bronfort G, Haas M, Evans R, Leininger B, Triano J. Effectiveness of manual therapies: the UK evidence report. Chiropr Osteopat. 2010;18(1). doi:10.1186/1746-1340-18-3.
2. Bronfort G. Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis. The Spine Journal. 2004;4(3):335-356. doi:10.1016/s1529-9430(03)00177-3.
3. Christensen K, Buswell K. Chiropractic outcomes managing radiculopathy in a hospital setting: a retrospective review of 162 patients. J Chiropr Med. 2008;7(3):115-125. doi:10.1016/j.jcm.2008.05.001.
4. Clarke H, McCann P. Acromioclavicular Joint Injuries. Orthopedic Clinics of North America. 2000;31(2):177-187. doi:10.1016/s0030-5898(05)70139-5.
5. Ernst E. A systematic review of systematic reviews of spinal manipulation. J R Soc Med. 2006;99(4):192-196. doi:10.1258/jrsm.99.4.192.
6. Franchignoni F, Vercelli S, Giordano A, Sartorio F, Bravini E, Ferriero G. Minimal Clinically Important Difference of the Disabilities of the Arm, Shoulder and Hand Outcome Measure (DASH) and Its Shortened Version (QuickDASH). Journal of Orthopaedic & Sports Physical Therapy. 2014;44(1):30-39. doi:10.2519/jospt.2014.4893.
7. Gregory D, Seto C, Worthy G, Shugart. Navigating evaluation treatment choices. American Academy of family physicians. 2008;78(7):835-842.
8. Grunnesjö M, Bogefeldt J, Svärdsudd K, Blomberg S. A Randomized Controlled Clinical Trial of Stay-Active Care Versus Manual Therapy in Addition to Stay-Active Care: Functional Variables and Pain. J Manipulative Physiol Ther. 2004;27(7):431-441. doi:10.1016/j.jmpt.2004.06.001.
9. Haas M, Groupp E, Panzer D, Partna L, Lumsden S, Aickin M. Efficacy of Cervical Endplay Assessment as an Indicator for Spinal Manipulation. Spine. 2003;28(11):1091-1096. doi:10.1097/01.brs.0000067276.16209.db.
10. Horn K, Jennings S, Richardson G, van Vliet D, Hefford C, Abbott J. The Patient-Specific Functional Scale: Psychometrics, Clinimetrics, and Application as a Clinical Outcome Measure. Journal of Orthopaedic & Sports Physical Therapy. 2012;42(1):30-D17. doi:10.2519/jospt.2012.3727.
11. Hubbard T, Denegar C. Does cryotherapy improve outcomes with soft tissue injuries?. J Athl Train. 2004;39(3):278-279.
12. McHardy A, Hoskins W, Pollard H, Onley R, Windsham R. Chiropractic Treatment of Upper Extremity Conditions: A Systematic Review. J Manipulative Physiol Ther. 2008;31(2):146-159. doi:10.1016/j.jmpt.2007.12.004.
13. Minkalis A, Vining R, Long C, Hawk C, de Luca K. A systematic review of thrust manipulation for non-surgical shoulder conditions. Chiropr Man Therap. 2017;25(1). doi:10.1186/s12998-016-0133-8.
14. Munday S, Jones A, Brantingham J, Globe G, Jensen M, Price J. A randomized, single-blinded, placebo-controlled trial to evaluate the efficacy of chiropractic shoulder girdle adjustment in the treatment of shoulder impingement syndrome. Journal of the American Chiropractic Association. 2007;44(8):6-15.
15. Savolainen A. Active or passive treatment for neck-shoulder pain in occupational health care? A randomized controlled trial. Occup Med (Chic Ill). 2004;54(6):422-424. doi:10.1093/occmed/kqh070.
16. Schonstein E, Kenny D, Keating J, Koes B, Herbert R. Work Conditioning, Work Hardening, and Functional Restoration for Workers With Back and Neck Pain: A Cochrane Systematic Review. Cochrane Database Systems. 2003.
17. Steuri R, Sattelmayer M, Elsig S et al. Effectiveness of conservative interventions including exercise, manual therapy and medical management in adults with shoulder impingement: a systematic review and meta-analysis of RCTs. Br J Sports Med. 2017;51(18):1340-1347. doi:10.1136/bjsports-2016-096515.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-12.0: Chiropractic Care Guidelines for Children Aged 0-14

This document serves as a guideline only; special circumstances may result in outcomes that are not reflected in the guidelines below.

- When eviCore's waiver program applies, children under the age of 15 are not eligible for a waiver.
- All chiropractic services must be medically necessary per eviCore's guidelines.
- The child's diagnosis must be for a covered neuromusculoskeletal (NMS) condition.

Age	Visits
0-6	Up to 6 medically necessary visits may be approved per calendar year; visits beyond the guideline maximum will be reviewed on a case by case basis.
7-14	Up to 8 medically necessary visits may be approved per calendar year; visits beyond the guideline maximum will be reviewed on a case by case basis.

Authorization is required as stated in the member's benefit comment. eviCore will only authorize care for approved NMS conditions. Systemic or organic conditions will not be authorized for reimbursement.

© 2019 eviCore healthcare. All Rights Reserved.

CHIRO-13.0: Diagnosis Codes

Cervical Conditions (Disc Radicular)	ICD-10 Codes
Brachial Neuritis or Radiculitis NOS	M54.11, M54.12, M54.13
Brachial Plexus Lesions	G54.0
Cervicobrachial Syndrome	M53.1
Degeneration of Cervical Intervertebral Disc	M50.31, M50.321, M50.322, M50.323, M50.33
Displacement of Cervical Intervertebral Disc Without Myelopathy	M50.11, M50.121, M50.122, M50.123, M50.13, M50.21, M50.221, M50.222, M50.223, M50.23, M50.81, M50.821, M50.822, M50.823, M50.83, M50.91, M50.921, M50.922, M50.923, M50.93
Cervical Conditions (Non-Specific)	**ICD-10 Codes**
Cervical Segmental and Somatic Dysfunction	M99.01
Cervical Spondylosis Without Myelopathy	M47.811, M47.812, M47.813
Cervical Sprain and Strain	S13.4XXA, S13.4XXD,S13.8XXA, S13.8XXD,S16.1XXA, S16.1XXD, S16.8XXA, S16.8XXD
Cervicalgia	M54.2
Torticollis	M43.6, G24.3
Headaches	**ICD-10 Codes**
Cervicocranial Syndrome	M53.0
Headache	R51, G44.201, G44.209
Migraine With Aura	G43.101, G43.109, G43.111, G43.119, G43.501, G43.509, G43.511, G43.519
Migraine Without Aura	G43.001, G43.009, G43.011, G43.019, G43.701, G43.709, G43.711, G43.719
Unspecified Migraine Headache	G43.901, G43.909, G43.911, G43.919, G43.801, G43.809, G43.811, G43.819

© 2019 eviCore healthcare. All Rights Reserved.

Lower Extremity Conditions	ICD-10 Codes
Achilles Tendinitis	M76.61, M76.62
Sprain and Strain of Knee and Leg	S83.401A, S83.401D, S83.402A, S83.402D, S83.411A, S83.411D, S83.412A, S83.412D, S83.421A, S83.421D, S83.422A, S83.422D, S83.511A, S83.511D, S83.512A, S83.512D, S83.521A, S83.521D, S83.522A, S83.522D, S83.61XA, S83.61XD, S83.62XA, S83.62XD, S83.8X1A, S83.8X1D, S83.8X2A, S83.8X2D, S86.211A, S86.211D, S86.212A, S86.212D, S86.311A, S86.311D, S86.312A, S86.312D, S86.811A, S86.811D, S86.812A, S86.812D
Sprain-Strain of Ankle	S93.411A, S93.411D, S93.412A, S93.412D, S93.421A, S93.421D, S93.422A, S93.422D, S93.431A, S93.431D, S93.432A, S93.432D, S93.491A, S93.491D, S93.492A, S93.492D, S96.811A, S96.811D, S96.812A, S96.812D
Sprain and Strain of Hip and Thigh	S73.111A, S73.111D, S73.112A, S73.112D, S73.121A, S73.121D, S73.122A, S73.122D, S73.191A, S73.191D, S73.192A, S73.192D, S76.011A, S76.011D, S76.012A, S76.012D, S76.111A, S76.111D, S76.112A, S76.112D, S76.211A, S76.211D, S76.212A, S76.212D, S76.311A, S76.311D, S76.312A, S76.312D, S76.811A, S76.811D, S76.812A, S76.812D, S76.091A, S76.091D, S76.092A, S76.092D
Tibialis Tendonitis	M76.811, M76.812, M76.821, M76.822

© 2019 eviCore healthcare. All Rights Reserved.

Lumbosacral Conditions (Disc Radicular)	ICD-10 Codes
Degeneration of Lumbar or Lumbosacral Intervertebral Disc	M51.36, M51.37
Displacement of Lumbar Intervertebral Disc Without Myelopathy	M51.16, M51.17, M51.26, M51.27, M51.86, M51.87
Lumbosacral Radiculitis	M54.16, M54.17, M54.18
Post-Laminectomy Syndrome, Lumbar Region	M96.1
Sciatica	G57.01, G57.02, G57.03, M54.31, M54.32, M54.41, M54.42
Spinal Stenosis, Lumbar	M48.061, M48.062, M48.07
Lumbosacral Conditions (Non-Specific)	**ICD-10 Codes**
Disorder of Sacrum	M53.3, M53.88
Lumbago	M54.5
Lumbar Segmental and Somatic Dysfunction	M99.03
Lumbar Spondylosis	M47.816, M47.817, M47.896, M47.897
Lumbar Sprain/Strain	S33.5XXA, S33.5XXD, S39.012A,S39.012D, S39.092A, S39.092D
Lumbosacral (joint/ligament), Sprain and Strain	S33.8XXA, S33.8XXD, S33.9XXA,S33.9XXD
Pelvic Segmental and Somatic Dysfunction	M99.05
Sacral Segmental and Somatic Dysfunction	M99.04
Sacroiliac Ligament Sprain/Strain	S33.6XXA, S33.6XXD
Sacroiliitis	M46.1

© 2019 eviCore healthcare. All Rights Reserved.

Neuromusculoskeletal Conditions (Non-Specific)	ICD-10 Codes
Congenital Spondylolisthesis	Q76.2
Late Effect of Sprain/Strain Injury	S13.4XXS, S13.8XXS, S16.1XXS, S16.8XXS, S23.3XXS, S23.41XS, S23.421S, S23.8XXS, S33.5XXS, S33.6XXS, S33.8XXS, S33.9XXS, S39.012S, S39.092S, S43.411S, S43.412S, S43.421S, S43.422S, S43.51XS, S43.52XS, S43.61XS, S43.62XS, S43.81XS, S43.82XS, S46.011S, S46.012S, S46.111S, S46.112S, S46.211S, S46.212S, S46.311S, S46.312S, S46.801S, S46.802S, S46.811S, S46.812S, S46.891S, S46.892S, S46.901S, S46.902S, S46.991S, S46.992S, S73.111S, S73.112S, S73.121S, S73.122S, S73.191S, S73.192S, S76.011S, S76.012S, S76.091S, S76.092S, S76.111S, S76.112S, S76.211S, S76.212S, S76.311S, S76.312S, S76.811S, S76.812S, S83.401S, S83.402S, S83.411S, S83.412S, S83.421S, S83.422S, S83.501S, S83.502S, S83.511S, S83.512S, S83.521S, S83.522S, S83.61XS, S83.62XS, 83.8X1S, S83.8X2S, S86.211S, S86.212S, S86.811S, S86.812S, S93.411S, S93.412S, S93.421S, S93.422S, S93.431S, S93.432S, S93.491S, S93.492S, S96.811S, S96.812S
Myalgia	M79.12, M79.18, M79.7
Other Symptoms Referable to the Back	M53.81, M53.82, M53.83, M53.84, M53.85, M53.86, M53.87, M53.88, M53.9, M54.89, M54.9
Pain in Limb	M25.511, M25.512, M25.521, M25.522, M25.531, M25.532, M25.541, M25.542, M25.551, M25.552, M25.561, M25.562, M25.571, M25.572, M79.601, M79.602, M79.604, M79.605, M79.621, M79.622, M79.631, M79.632, M79.641, M79.642, M79.644, M79.645, M79.651, M79.652, M79.661, M79.662, M79.671, M79.672, M79.674, M79.675

© 2019 eviCore healthcare. All Rights Reserved.

Scoliosis	M41.112, M41.113, M41.114, M41.115, M41.116, M41.117, M41.119, M41.122, M41.123, M41.124, M41.125, M41.126, M41.127, M41.129, M41.20, M41.22, M41.23, M41.24, M41.25, M41.26, M41.27, M41.30, M41.34, M41.35, M41.40, M41.41, M41.42, M41.43, M41.44, M41.45, M41.46, M41.47, M41.50, M41.52, M41.53, M41.54, M41.55, M41.56, M41.57, M41.80, M41.82, M41.83, M41.84, M41.85, M41.86, M41.87, M41.9, Q67.5, Q76.3
Muscle Spasm	M62.830, M62.831, M62.838
Fasciitis	M72.2, M72.8
Neuralgia	M79.2
Thoracic Conditions (Disc Radicular)	**ICD-10 Codes**
Displacement of Thoracic Intervertebral Disc Without Myelopathy	M51.24, M51.25, M51.14, M51.15, M51.84, M51.85, M54.14
Diagnosis	**ICD-10 Codes**
Pain in Thoracic Spine	M54.6
Rib Cage Segmental and Somatic Dysfunction	M99.08
Sprain and Strain of Ribs	S23.41XA, S23.41XD, S23.421A, S23.421D
Thoracic Segmental and Somatic Dysfunction	M99.02
Thoracic Sprain/Strain	S23.3XXA, S23.3XXD, S23.8XXA, S23.8XXD, S29.012A, S29.012D

© 2019 eviCore healthcare. All Rights Reserved.

Upper Extremity Conditions	ICD-10 Codes
Acromioclavicular Sprain	S43.51XA, S43.51XD, S43.52XA, S43.52XD
Adhesive Capsulitis of the Shoulder	M75.01, M75.02
Carpal Tunnel Syndrome	G56.01, G56.02, G56.03
Disorders of Bursae and Tendons in Shoulder Region	M75.51, M75.52, S46.801A, S46.801D, S46.802A, S46.802D, S46.891A, S46.891D, S46.892A, S46.892D, S46.901A, S46.901D, S46.902A, S46.902D
Lateral Epicondylitis	M77.11, M77.12
Medial Epicondylitis	M77.01, M77.02
Sprain and Strain of the Shoulder and Upper Arm	S43.411A, S43.411D, S43.412A, S43.412D, S43.61XA, S43.61XD, S43.62XA, S43.62XD, S43.81XA, S43.81XD, S43.82XA, S43.82XD, S46.111A, S46.111D, S46.112A, S46.112D, S46.211A, S46.211D, S46.212A, S46.212D, S46.311A, S46.311D, S46.312A, S46.312D, S46.811A, S46.811D, S46.812A, S46.812D
Strain Rotator Cuff	S43.421A, S43.421D, S43.422A, S43.422D, S46.011A, S46.011D, S46.012A, S46.012D

© 2019 eviCore healthcare. All Rights Reserved.