



CLINICAL GUIDELINES

CMM-201: Facet Joint Injections/Medial Branch Blocks

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eviCore healthcare Clinical Decision Support Tool Diagnostic Strategies: This tool addresses common symptoms and symptom complexes. Requests for individuals with atypical symptoms or clinical presentations that are not specifically addressed will require physician review. Consultation with the referring physician, specialist and/or individual's Primary Care Physician (PCP) may provide additional insight.

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Clinical guidelines for medical necessity review of Comprehensive Musculoskeletal Management Services.

Definitions

- **Facet (zygapophyseal) joints:** paired, diarthrodial synovial joints located between the superior and inferior articular pillars in the posterior spinal column, innervated by medial branch nerves, from C2 -3 to L 5 – S1. The articulations between occiput – atlas (C1) and the atlas (C1) and the axis (C2) and below L5 – S1 (sacrum) are not facet joints.
- **Facet Level:** the zygapophyseal joint or the two medial branch (MB) nerves that innervate that zygapophyseal joint. Each level has a pair of facet joints: one on the right side and one of the left side of the spine.
- **Facet Joint Injections/medial branch blocks:** the injection of local anesthetic and possibly a corticosteroid in the facet joint capsule or along the nerves supplying the facet joints from C2-3 to L5-S1. The injection/block applies directly to the facet joint(s) blocked and not to the number of nerves blocked that innervate the facet joint(s). Even though either procedure can be used to diagnose facet joint pain, a medial branch block is generally considered more appropriate.
- **Positive response** (to a diagnostic facet joint injection/medial branch block): at least 80% relief of facet mediated pain for at least the expected minimum duration of the effect of the local anesthetic used. A response to the first two injection(s) must be documented.
- **Session** refers to a time period, which includes all procedures (i.e., medial branch block (MBB), intra-articular facet joint injection, and radiofrequency ablation (RFA)) performed during one day.

General Guidelines

This guideline only applies to injections of an anesthetic, corticosteroid, and/or contrast agent and does not apply to injections of biologics (e.g., platelet rich plasma, stem cells, amniotic fluid, etc.) and/or any other injectates that are not in scope of eviCore's management. The injections must be for facet mediated pain and not for other indications that are not in scope for management (i.e. third occipital nerve (TON) injection/nerve block for cervicogenic headaches).

- The determination of medical necessity for the performance of facet joint injections/medial branch blocks is always made on a case-by-case basis.
- Facet joint injections/medial branch blocks should only be performed for neck pain or low back pain in the absence of an untreated radiculopathy (with the exception of radiculopathy caused by a facet joint synovial cyst).
- Only one invasive modality or procedure will be performed on the same date of service.
- A diagnostic facet joint injection/medial branch block may be performed to determine whether spinal pain originates in the facet joint or nerves innervating the facet joint.
 - ◆ A second diagnostic facet joint injection/medial branch block must be performed to confirm the validity of the positive response (i.e., at least 80% relief) of the initial injection **and** should only be performed with the intent that if successful, a

radiofrequency joint denervation/ablation procedure (facet neurotomy, facet rhizotomy) would be considered as an option at the diagnosed level(s).

- Following a spinal fusion, a diagnostic facet joint injection/medial branch block may be performed immediately above or below the fused level if a prior injection/block was negative.
- More than two (2) facet injections/medial branch blocks at the same level are considered to be therapeutic rather than diagnostic.
- It may be necessary to perform the facet joint injection/medial branch block at the same facet joint level(s) bilaterally. However, no more than three (3) facet joint levels should be injected during the same session/procedure.
- Facet joint injections/medial branch blocks are not without risk and can expose patients to potential complications that may be increased when a patient is sedated. As a result, when performing facet joint injections/medial branch blocks, the use of supplemental sedation in addition to local anesthesia is not required and not recommended.

Indications

Initial Diagnostic Facet Joint Injection/Medial Branch Block

- An initial diagnostic facet joint injection/medial branch block is considered **medically necessary** to determine whether chronic neck or back pain is of facet joint origin when **ALL** of the following criteria are met:
 - ◆ Pain has persisted for at least 3 months
 - ◆ In the past 3 months, pain has persisted despite at least four (4) weeks of conservative treatment (e.g., exercise, physical therapy, chiropractic care, or medications to include nonsteroidal anti-inflammatory drugs [NSAIDs], or analgesics), unless contraindicated and the reason(s) for contraindication(s) is/are documented in the medical record
 - ◆ Clinical findings and imaging studies suggest no other obvious cause of the pain (e.g., central spinal stenosis with neurogenic claudication/myelopathy; foraminal stenosis or disc herniation with concordant radicular pain/radiculopathy; infection; tumor; fracture; pseudoarthrosis; or, pain related to spinal instrumentation)
 - ◆ The spinal motion segment is not posteriorly fused

Second Diagnostic Facet Joint Injections/ Medial Branch Block

- A second diagnostic facet joint injection/medial branch block, performed to confirm the validity of the clinical response to the initial facet joint injection, is considered **medically necessary** when **ALL** of the following criteria are met:
 - ◆ Administered at the same level as the initial block
 - ◆ The initial diagnostic facet joint injection produced a positive response (i.e., at least 80% relief of facet mediated pain for at least the expected minimum duration of the effect of the local anesthetic)
 - ◆ A radiofrequency joint denervation/ablation procedure is being considered (unless the individual is not a candidate)

Subsequent Therapeutic Facet Joint Injections/Medial Branch Blocks

- Subsequent facet joint injections/medial branch blocks as an alternative treatment to a radiofrequency ablation/neurotomy is considered **medically necessary no sooner than six (6) months from when the prior facet joint injection/medial branch block was performed when **ALL** of the following criteria are met:
 - ◆ Previous facet joint injections/medial branch blocks resulted in at least 50% pain relief for at least twelve (12) weeks following the facet joint injection/medial branch block
 - ◆ The individual is not a candidate for a radiofrequency joint denervation/ablation procedure due to **ONE** of the following:
 - Established spinal pseudoarthrosis at the spinal level intended for treatment
 - Implanted electrical device (i.e. cardiac pacemaker, cardiac defibrillator, dorsal column stimulator, dorsal root ganglion stimulator, peripheral neurostimulator, cranial neurostimulator, implantable programmable drug pump)**

Intra-Articular Facet Joint Injection

- An intra-articular facet joint injection performed with synovial cyst aspiration, in addition to a transforaminal epidural steroid injection, is considered **medically necessary** when **BOTH** of the following criteria are met:
 - ◆ Advanced diagnostic imaging studies (e.g., MRI, CT, CT myelogram) confirm compression or displacement of the corresponding nerve root by a facet joint synovial cyst
 - ◆ Clinical correlation with the individual's signs and symptoms of radicular pain or radiculopathy, based on history and physical examination.

Non-Indications

Not Medically Necessary

- Performance of a facet joint injection/medial branch block is considered **not medically necessary** when performed for **ANY** of the following indications:
 - ◆ Without the use of fluoroscopic or CT guidance

- ◆ In the presence of an untreated radiculopathy (with the exception of radiculopathy caused by a facet joint synovial cyst)
- ◆ When a radiofrequency joint denervation/ablation procedure (i.e., facet neurotomy, facet rhizotomy) is not being considered (unless the individual is not a candidate)
- ◆ The facet joint injection is performed at a fused posterior spinal motion segment
- ◆ On the same day of service when performing other injections (e.g., epidural steroid, sacroiliac)
- ◆ Performance of injections/blocks on more than three (3) contiguous spinal joint levels (with the exception of an intervening fused segment)
- ◆ For repeat therapeutic facet joint injections/medial branch blocks in the absence of at least 50% pain relief for at least twelve (12) weeks
- ◆ Additional diagnostic facet joint injection/medial branch blocks at the same level(s) as a prior successful radiofrequency denervation/ablation procedure
- ◆ Injection/nerve block of the atlanto-occipital articulation and/or atlanto-axial articulation
- ◆ Clinical findings and imaging studies suggest other obvious cause of the pain (e.g., central spinal stenosis with neurogenic claudication/myelopathy; foraminal stenosis or disc herniation with concordant radicular pain/radiculopathy; infection; tumor; fracture; pseudoarthrosis; or, pain related to spinal instrumentation)

Experimental, Investigational, and/or Unproven (EIU)

- Performance of a facet joint injection/medial branch block is considered **experimental, investigational, and/or unproven (EIU)** when performed for **ANY** of the following indications:
 - ◆ When using injectates other than an anesthetic, corticosteroid, and/or contrast agent (e.g., biologics [platelet rich plasma, stem cells, amniotic fluid]), administered alone or in combination
 - ◆ Unless performed as a second confirmatory block, all injections subsequent to the initial injection (i.e., therapeutic injections)
 - ◆ When performed under ultrasound guidance

Procedure (CPT®) Codes

This guideline relates to the CPT® code set below. Codes are displayed for informational purposes only. Any given code's inclusion on this list does not necessarily indicate prior authorization is required.

CPT®	Code Description/Definition
64490	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic, single level
+64491	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; second level (List separately in addition to code for primary procedure)
+64492	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure)
64493	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral, single level
+64494	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral, second level (List separately)
+64495	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with image guidance (fluoroscopy or CT), lumbar or sacral, third and any additional level(s) (List separately)
CPT®	Codes Considered Experimental, Investigational or Unproven (EIU)
0213T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; single level
+0214T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; second level (List separately in addition to code for primary procedure)
+0215T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, cervical or thoracic; third and any additional level(s) (List separately in addition to code for primary procedure)
0216T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; single level
+0217T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; second level (List separately in addition to code for primary procedure)
+0218T	Injection(s), diagnostic or therapeutic agent, paravertebral facet (zygapophyseal) joint (or nerves innervating that joint) with ultrasound guidance, lumbar or sacral; third and any additional level(s) (List separately in addition to code for primary procedure)

This list may not be all inclusive and is not intended to be used for coding/billing purposes. The final determination of reimbursement for services is the decision of the health plan and is based on the individual's policy or benefit entitlement structure as well as claims processing rules.

References

1. Airaksinen O, Brox J, Cedraschi C, et al. On behalf of the COST B13 Working Group on Guidelines for Chronic Low Back Pain. Chapter 4: European guidelines for the management of chronic nonspecific low back pain. *Eur Spine J*. 2006;15(Supplement 2): S192-S300.
2. Allen TL, Tatli Y, Lutz, GE. Fluoroscopic percutaneous lumbar zygoapophyseal joint cysts rupture: a clinical outcome study. *Spine*. 2009 May;9(5): 387-95.
3. American Medical Association. *Current Procedural Terminology: CPT 2008*, Professional Edition. AMA Press, 2007.
4. American College of Occupational and Environmental Medicine. *Occupational Medicine Practice Guideline*, 2nd Ed. 2008.
5. Bland J. Anatomy and biomechanics. In: *Disorders of the Cervical Spine*. Philadelphia. WB Saunders, 1987; 9–63.
6. Bogduk N. A narrative review of intra-articular corticosteroid injections for low back pain. *Pain Med*. 2005;6(4):287-296.
7. Boswell M, Colson J, Sehgal N, et al. A systematic review of therapeutic facet joint interventions in chronic spinal pain. *Pain Physician*. 2007; 10:229-253.
8. Boswell M, Colson J, Spillane W. Therapeutic Facet Joint Interventions in Chronic Spinal Pain: A Systematic Review of Effectiveness and Complications. *Pain Physician*. 2005; 8:101-114.
9. Boswell MV, Manchikanti L, Kaye AD, et al. A best-evidence systematic appraisal of the diagnostic accuracy and utility of facet (zygapophysial) joint injections in chronic spinal pain. *Pain Physician*. 2015;18: E497-E533.
10. Boswell M, Shah R, Everett C, et al. Interventional techniques in the management of chronic spinal pain: evidence-based practice guidelines. *Pain Physician*. 2005;8(1):1-47.
11. Boswell M, Trescot A, Datta S, et al. American Society of Interventional Pain Physicians. Interventional techniques: evidence-based practice guidelines in the management of chronic spinal pain. *Pain Physician*. 2007;10(1):7-111.
12. Carette S, Marcoux S, Truchon R, et al. A Controlled Trial of Corticosteroid Injections into Facet Joints for Chronic Low Back Pain. *NEJM*. 1991;325(14):1002-1007. doi:10.1056/nejm199110033251405.
13. Chou R. Subacute and chronic low back pain: nonsurgical interventional treatment. *UpToDate*. 2009.
14. Chou R, Atlas SJ, Stanos SP, Rosenquist RW. Nonsurgical Interventional Therapies for Low Back Pain. *Spine*. 2009;34(10):1078-1093. doi:10.1097/brs.0b013e3181a103b1.
15. Chou R, Loeser JD, Owens DK, et al. Interventional Therapies, Surgery, and Interdisciplinary Rehabilitation for Low Back Pain. *Spine*. 2009;34(10):1066-1077. doi:10.1097/brs.0b013e3181a1390d.
16. Civelek E, Cansever T, Kabatas S, et al. Comparison of effectiveness of facet joint injection and radiofrequency denervation in chronic low back pain. *Turk Neurosurg*. 2012; 22:200-206.
17. Cohen SP, Doshi TL, Constantinescu OC, et al. Effectiveness of Lumbar Facet Joint Blocks and Predictive Value before Radiofrequency Denervation. *Anesthesiology*. 2018;129(3):517-535. doi:10.1097/aln.0000000000002274.
18. Cohen S, Raja S. Pathogenesis, diagnosis, and treatment of lumbar zygapophysial (facet) joint pain. *Anesthesiology*. 2007; 106:591-614.
19. Dreyfuss P, Dreyer S. NASS. Lumbar zygapophysial (facet) joint injections. *Spine J*. 2003;3(3 Suppl):50S-59S.
20. Dreyfuss P, Kaplan M, Dreyer S, ed. Lennard T. *Zygapophysial Joint Injection Techniques in the Spinal Axis. Procedures in Clinical Practice*. Second Edition. Hanley and Belfus Inc. Philadelphia. 2000, page 276.
21. Friedly J, Chan L, Deyo R. Increases in lumbosacral injections in the Medicare population: 1994 to 2001. *Spine*. 2007;32(16):1754-1760.
22. Friedrich K, Nemec S, Peloschek P, et al. The prevalence of lumbar facet joint edema in patients with low back pain. *Skeletal Radiol*. 2007;36(8):755-760.
23. Fritz J, Niemeyer T, Clasen S, et al. Management of chronic low back pain: rationales, principles, and targets of imaging-guided spinal injections. *Radiographics*. 2007;27(6):1751-1771.
24. Fuchs S, Erbe T, Fischer H, Tibesku C. Intraarticular hyaluronic acid versus glucocorticoid injections for nonradicular pain in the lumbar spine. *J Vasc Interv Radiol*. 2005; 16:1493-1498.
25. Fuchs S, Erbe T, Fischer HL, Tibesku CO. Intraarticular hyaluronic acid versus glucocorticoid injections for nonradicular pain in the lumbar spine. *J Vasc Interv Radiol*. 2005; 16:1493-1498.
26. Geilhorn A, Katz J, Suri P. Osteoarthritis of the spine; the facet joints. *Nat Rev Rheum*. 2013; 9(4): 216–224.
27. Hancock M, Maher C, Latimer J, et al. Systematic review of tests to identify the disc, SIJ or facet joint as the source of low back pain. *Eur Spine J*. 2007;16(10):1539-1550.
28. IPM Guidelines. An Update of Comprehensive Evidenced-Based Guidelines for Interventional Techniques in Chronic Spinal Pain. Part 2: Guidance and Recommendations. *Pain Physician*. 2013; 16: S49–S283.
29. Kennedy DJ, Huynh L, Wong J, et al. Corticosteroid Injections into Lumbar Facet Joints. *Am J Phys Med Rehabil*. 2018;97(10):741-746. doi:10.1097/phm.0000000000000960.
30. Kirpalani D, Mitra R. Cervical facet joint dysfunction: a review. *Arch Phys Med Rehabil*. 2008;89(4):770-774.

31. Lakemeier S, Lind M, Schultz W, Fuchs-Winkelmann S, Timmesfeld N, Foelsch C, Peterlein CD. A comparison of intraarticular lumbar facet joint steroid injections and lumbar facet joint radiofrequency denervation in the treatment of low back pain: A randomized, controlled, double-blind trial. *Anesth Analg*. 2013; 117:228-235.
32. Laslett M, McDonald B, Aprill C, et al. Clinical predictors of screening lumbar zygapophyseal joint blocks: development of clinical prediction rules. *Spine J*. 2006;6(4):370-379.
33. Laslett M, Oberg B, April C, McDonald B. Zygapophysial joint blocks in chronic low back pain: a test of Revel's model as a screening test. *BMC Musculoskelet Disord*. 2004; 16:5:43.
34. LCD - *Facet Joint Interventions for Pain Management (L38803)* effective 04/25/2021. CMS.gov. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=38803&ver=4>. Published 2022.
35. Lennard T, Vivian D, Walkowski S, Singla A. *Pain Procedures in Clinical Practice*. London: Elsevier Health Sciences; 2011.
36. Lilius G, Laasonen E, Myllynen P, Harilainen A, Gronlund G. Lumbar facet joint syndrome. A randomised clinical trial. *J Bone Joint Surg Br*. 1989;71-B(4):681-684. doi:10.1302/0301-620x.71b4.2527856.
37. Lord SM, Barnsley L, Bogduk N. Percutaneous radiofrequency neurotomy in the treatment of cervical zygapophysial joint pain: a caution. *Neurosurgery*. 1995; 36:732-9.
38. Manchikanti L, Abdi S, Atluri S, et al. An update of comprehensive evidence-based guidelines for interventional techniques of chronic spinal pain: Part II: Guidance and recommendations. *Pain Physician*. 2013;16: S49-S283.
39. Manchikanti L, Cash K, Pampati V, Fellows B. Influence of psychological variables on the diagnosis of facet joint involvement in chronic spinal pain. *Pain Physician*. 2008;11(2):145-160.
40. Manchikanti L, Damron K, Cash K, et al. Therapeutic cervical medial branch blocks in managing chronic neck pain: a preliminary report of a randomized, double-blind, controlled trial. *Pain Physician*. 2006;9(4):333-346.
41. Manchikanti L, Gharibo C, Gilligan C, et al. Comparison of the efficacy of saline, local anesthetics, and steroids in epidural and facet joint injections for the management of spinal pain: A systematic review of randomized controlled trials. *Surgical Neurology International*. 2015;6(5): S194-S235. doi:10.4103/2152-7806.156598.
42. Manchikanti L, Kaye AD, Boswell MV, et al. A systematic review and best evidence synthesis of the effectiveness of therapeutic facet joint interventions in managing chronic spinal pain. *Pain Physician*. 2015; 18: E535-E582.
43. Manchikanti L, Manchikanti K, Cash K, et al. Age-related prevalence of facet-joint involvement in chronic neck and low back pain. *Pain Physician*. 2008;11(1):67-75.
44. Manchikanti L, Kaye AD, Soin A, et al. Comprehensive Evidence-Based Guidelines for Facet Joint Interventions in the Management of Chronic Spinal Pain: American Society of Interventional Pain Physicians (ASIPP) Guidelines Facet Joint Interventions 2020 Guidelines. *Pain Physician*. 2020;23: S1-S127.
45. Manchikanti L, Manchikanti K, Manchukonda R, et al. Evaluation of lumbar facet joint nerve blocks in the management of chronic low back pain: preliminary report of a randomized, double-blind controlled trial. *Pain Physician*. 2007;10(3):425-40.
46. Manchikanti L, Manchukonda R, Pampati V, et al. Prevalence of facet joint pain in chronic low back pain in postsurgical patients by controlled comparative local anesthetic blocks. *Arch Phys Med Rehabil*. 2007;88(4):449-55.
47. Manchikanti L, Singh V, Falco F, et al. Lumbar facet joint nerve blocks in managing chronic facet joint pain: one-year follow-up of a randomized, double-blind controlled trial. *Pain Physician*. 2008;11(2):121-132.
48. Manchikanti L, Singh V, Falco FJE, Cash KA, Pampati V. Evaluation of lumbar facet joint nerve blocks in managing chronic low back pain: A randomized, double-blind, controlled trial with a 2-year follow-up. *Int J Med Sci*. 2010; 7:124-135.
49. Manchikanti L, Singh V, Falco FJE, Cash KA, Fellows B. Comparative outcomes of a 2-year follow-up of cervical medial branch blocks in management of chronic neck pain: A randomized, double-blind controlled trial. *Pain Physician*. 2010; 13:437-450.
50. Manchikanti L, Pampati V, Bakhit C, et al. Effectiveness of lumbar facet joint nerve blocks in chronic low back pain: A randomized clinical trial. *Pain Physician*. 2001; 4:101-117.
51. Manchikanti L, Singh V, Falco FJE, Cash KA, Pampati V, Fellows B. The role of thoracic medial branch locks in managing chronic mid and upper back pain: A randomized, double-blind, active control trial with a 2-year follow-up. *Anesthesiol Res Pract*. 2012; 2012:585806.
52. Manchukonda R, Manchikanti K, Cash K, et al. Facet joint pain in chronic spinal pain: an evaluation of prevalence and false-positive rate of diagnostic blocks. *J Spinal Disord Tech*. 2007;20(7):539-545.
53. McIntosh G, Hall H. Low back pain (chronic). *BMJ Clin Evidence*. London, UK. BMJ Pub Group: 2008.
54. Nordin M, Carragee E, Hurwitz L, et al; Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. Treatment of neck pain: injections and surgical interventions: results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. *Spine*. 2008;15;33(4 Suppl): S153-S169.
55. North American Spine Society (NASS). *NASS Coverage Policy Recommendation. Facet Joint Intervention*. Copyright © 2016 North American Spine Society.
56. Oliveira C, Maher C, Ferreira M et al. *Cochrane Database Syst Rev*. 2020; 4(CD013577):1-149. doi: 10.1002/14651858.CD013577.

57. Park KD, Jee H, Nam HS, Cho SK, Kim HS, Park Y, Lim OK. Effect of medial branch block in chronic facet joint pain for osteoporotic compression fracture: one-year retrospective study. *Ann Rehabil Med*. 2013 Apr;37(2):191-201. doi: 10.5535/arm.2013.37.2.191. Epub 2013 Apr30.
58. Park SC, Kim KH. Effect of adding cervical facet joint injections in a multimodal treatment program for long-standing cervical myofascial pain syndrome with referral pain patterns of cervical facet joint syndrome. *J Anesth*. 2012; 26:738-745.
59. Patel J, Schneider B, Smith C on behalf of SIS Patient Safety Committee. Intraarticular Corticosteroid Injections and hyperglycemia. 10/4/17.
60. Resnick D, Choudhri T, Dailey A, et al. American Association of Neurological Surgeons/Congress of Neurological Surgeons. Guidelines for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 13: injection therapies, low-back pain, and lumbar fusion. *J Neurosurg Spine*. 2005;2(6):707-715.
61. Ribeiro LH, Furtado RN, Konai MS, et al. Effect of facet joint injection versus systemic steroids in low back pain: A randomized controlled trial. *Spine (Phila Pa 1976)*. 2013; 38:1995-2002.
62. Schneider G, Jull G, Smith A, Emery C, Faris P, Cook C, Frizzell B, Salo P. Derivation of a clinical decision guide in the diagnosis of cervical facet joint pain. *Arch Phys Med Rehabil*. 2014; 95(9): 1695-701.
63. Schuster N, Clements N, Suri P, Stojanovic M. Is this spine pain facetogenic? Addressing diagnostic myths. *Pain Medicine*. 2021; 22(S1): S31 – 35.
64. Sehgal N, Dunbar E, Shah R, Colson J. Systematic review of diagnostic utility of facet (zygapophysial) joint injections in chronic spinal pain: an update. *Pain Physician*. 2007;10(1):213-228.
65. Shah RD, Cappiello D, Suresh S. Interventional procedures for chronic pain in children and adolescents: a review of the current evidence. *World Institute of Pain*. 2016: 359-369.
66. Staal JB, Bie RD, Vet HCD, Hildebrandt J, Nelemans P. Injection therapy for subacute and chronic low-back pain. *Cochrane Database of Systematic Reviews*. 2008. doi: 10.1002/14651858.cd001824.pub3.
67. van Tulder M, Koes B, Seitsalo S, Malmivaara A. Outcome of invasive treatment modalities on back pain and sciatica: an evidence-based review. *Eur Spine J*. 2006; Suppl 1: S82-92.
68. Workloss Data Institute. Official Disability Guidelines. 2015.
69. Yun DH, Kim HS, Yoo SD, Kim DH, Chon JM, Choi SH, Hwang DG, Jung PK. Efficacy of ultrasonography-guided injections in patients with facet syndrome of the low lumbar spine. *Ann Rehabil Med*. 2012; 36:66-71.
70. Zakaria D, Skidmore B. *Facet joint injection as a diagnostic and therapeutic tool for spinal pain: a review of clinical and cost effectiveness*. [Technology Report number 77]. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2007.