

Static Upper Extremity Orthoses

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Introduction

Static upper extremity orthoses (braces) are addressed by this guideline, including: shoulder, shoulder-elbow, shoulder-elbow-wrist-hand, elbow, elbow-wrist-hand, elbow-wrist-hand-finger, wrist-hand-finger, wrist-hand, hand-finger, and finger.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Criteria

Pre-Fabricated Static Upper Extremity Orthoses

A pre-fabricated static upper extremity orthosis is considered medically necessary in an individual with limited upper extremity joint range of motion or joint stiffness due to **any** of the following:

- Injury or surgery
- Compression of peripheral nerves in the limb
- Arthritis
- Inflammation of the tendons around the joint
- Muscle weakness in the limb
- Contracture of a joint
- Spasticity

Custom Fabricated Static Upper Extremity Orthoses

A custom fabricated static upper extremity orthosis is considered medically necessary in an individual when the basic coverage criteria listed for a prefabricated upper extremity orthosis is met and **any** of the following criteria are met:

- The individual is unable to be fitted with a pre-made orthosis.
- The condition requiring the orthosis is anticipated to be permanent or of long-standing duration beyond six months.
- The individual has an upper extremity deformity that necessitates a custom-made orthosis to fit properly.

Not Covered

Prophylactic static upper extremity bracing is considered not medically necessary.

Replacement Criteria

Same or Similar Durable Medical Equipment

- Duplication of the same or similar orthoses within the same case is considered not medically necessary.

A replacement orthosis is considered medically necessary when **all** of the following apply:

- The individual has been seen recently by their provider and has a documented care plan that includes the use of the orthosis.
- There is clinical documentation of **any** of the following:
 - The individual is no longer able to wear the orthosis because of growth or a change in physical condition.
 - The orthosis has been lost or stolen.
 - The orthosis is broken, unable to be repaired, and no longer under warranty.

Evidence Discussion

Veltman et al. (2015) conducted a systematic review including eight studies (one randomized trial and seven cohort studies) involving 232 individuals to evaluate non-operative treatment options for posttraumatic elbow stiffness. Static progressive splinting was evaluated in 160 individuals with an average improvement of 36°. Dynamic splinting was evaluated in 72 individuals with an average improvement of 37°. The investigators concluded that both dynamic orthoses and static progressive splinting demonstrated good results for the treatment of elbow stiffness regardless of etiology. The authors recommended to continue non-operative treatment with dynamic or static bracing for 12 months or until lack of progression in range of elbow motion.

A 2017 systematic review by Chen et al. evaluated the use of static progressive orthoses for individuals with posttraumatic upper extremity joint stiffness and found that these devices consistently improved passive range of motion across multiple joints. Reported gains varied by study but generally reflected meaningful improvements over treatment periods that commonly ranged from several weeks to months. The authors noted that static progressive orthoses delivered low load, prolonged stretch that could be titrated over time, and they emphasized that these devices were typically worn in the home as part of a structured rehabilitation program. Despite overall positive outcomes, the review identified several limitations across the included literature. Many studies relied on small sample sizes, heterogeneous injury patterns, inconsistent wear schedules, and variable outcome measures, which restricted the ability to compare results or determine optimal dosing parameters. A lack of high-quality randomized designs further limited the strength of the conclusions. Nonetheless, the authors concluded that static progressive orthoses represented an effective, feasible option for improving joint motion in individuals with upper extremity stiffness, particularly when used within a home-based rehabilitation context.

A 2023 systematic review conducted by Karjalainen et al. reviewed eight trials involving 523 hands and evaluated nocturnal wrist splinting versus no treatment in individuals with carpal tunnel syndrome (CTS). The authors concluded that splinting modestly improved short-term symptoms and hand function (less than three months); however, only low-certainty evidence suggested that the benefits may continue on a long term basis. However, the authors noted that splinting is a relatively inexpensive intervention with no significant long-term harms; thus, small effects could justify its use, specifically when individuals elect to pursue conservative management of CTS.

A 2023 follow-up study of the INSTinCTS (INjection vs SplinTing in Carpal Tunnel Syndrome) trial reported by Burton et al. compared the effects of corticosteroid injection and night splinting for the initial management of mild-to-moderate CTS. The study evaluated symptoms, resource use, and the need for carpal tunnel surgery over a 24 month period. The authors found that subsequent referral for surgery was more frequent in individuals assigned initially to an injection; however, the generalizability of this finding was limited by the inconsistent use of repeat injections or prolonged splinting as well as the percent of individuals lost to follow-up.

Huisstede et al. (2018) conducted a systematic review including 39 studies to evaluate the effectiveness of conservative and postsurgical interventions for trigger finger, Dupuytren disease, and De Quervain disease. The authors found moderate evidence supporting the effectiveness of a thumb splint when used with corticosteroid injections and post surgery when treating De Quervain tendonitis but not trigger finger. However, the authors noted that more high-quality randomized trials are needed to further evaluate the effectiveness of interventions for trigger finger, Dupuytren disease, and De Quervain disease.

A systematic review (Roll & Hardison, 2017) including 59 articles found that in individuals with rheumatoid arthritis, orthoses may improve dexterity in individuals with swan-neck deformity and functional outcomes with mallet finger. However, the authors did not find evidence supporting the effectiveness of orthoses for treatment of the boutonniere deformity.

Kjeken et al. (2011) reported on a randomized controlled trial including 70 individuals with hand osteoarthritis to evaluate assistive devices and splints as an effective treatment option. Thirty-five participants received provision of information and splints (experimental group) and 35 participants received information only (control group). Outcome measures included activity performance and satisfaction with performance, disease activity, pain, fatigue, and function. The results of the study demonstrated that the use of assistive devices and/or splints resulted in an improvement in activity performance and satisfaction with performance after a three-month follow-up in individuals with hand osteoarthritis.

Kjeken et al. (2011) conducted a systematic review to evaluate the effects of splinting and exercise programs in hand osteoarthritis. The authors identified two randomized trials which demonstrated that splints significantly reduced hand pain at three month follow-up. In addition, a combination of splints and daily exercises may reduce pain and stiffness and improve function. However, the design of the splint and exercise programs varied across the literature. In conclusion, the authors reported consistent evidence that splints reduce hand pain, but limited evidence for the effects of hand exercises and a combination of hand exercises and splints in hand osteoarthritis.

Harvey et al. (2017) performed a Cochrane systematic review including 18 studies involving 549 participants to examine the effectiveness of stretch in individuals with neurological and non-neurological conditions, such as burns, arthritis, spinal cord injury, stroke, and frailty. The types of interventions included stretch administered through positioning programs, splints, serial casting, or as part of manual therapy. Joint mobility data was evaluated to determine the short-term effects of the intervention defined as effects present up to one week after the final stretch intervention. The authors reported high-quality evidence that stretch does not have clinically worthwhile short-term effects on joint mobility. However, the authors identified limitations to the study, noting that the effectiveness of stretch administered for many months or years is unknown, as most studies included applied stretch for between four and twelve weeks.

Saal et al. (2017) performed a systematic review to determine the effects of interventions to prevent and treat disabilities in older individuals with contractures. Splints were examined in four studies, which revealed inconclusive results regarding joint mobility or spasticity. One of the four studies reported significant improvement in the passive range of motion in wrist extension after radial fracture; however, the authors noted that it remains unclear whether wearing splints over different lengths of time

affects spasticity after a stroke. Thus, the investigators reported inconclusive results regarding the use of splinting on joint mobility or spasticity due to joint contractures.

Jackman et al. (2014) performed a systematic review including six studies to determine the effectiveness of hand splinting for improving hand function in children with cerebral palsy (CP). The study identified 'non-functional hand splints' as devices designed for the primary purpose of improving outcomes in the body function and structure; for example, these devices could include a resting hand splint used to prevent or correct muscle contracture or a supination cast used to lengthen muscles or inhibit muscle tone. Of note, 'non-functional hand splints' may interfere with voluntary hand function and are therefore worn either at night or for short periods of time. The second type of hand splint identified in the study, 'functional hand splints,' are designed to improve outcomes in activity and participation, such as with activities of daily living (e.g., utensil holding while eating or handwriting). An example of a 'functional hand splint' includes a wrist cock-up splint designed to stabilize and position the wrist during activities. Five studies investigated 'non-functional hand splints' and one study investigated a 'functional hand splint'. The authors found moderate-quality evidence that the use of a non-functional hand splint in addition to physical therapy was more effective than therapy alone in children with spasticity caused by a neurological condition. However, the authors noted that the benefits of non-functional splints were diminished two to three months after splint wearing stopped. In addition, although the evidence supports a small, immediate benefit of functional hand splints, the authors noted that further research of higher methodological quality is needed.

The American College of Occupational and Environmental Medicine (ACOEM) (Hegmann et al., 2013) recommended elbow slings for nondisplaced and occult radial head fractures, dislocations, and severe elbow sprains. Casts are recommended for minimally displaced fractures and other elbow fractures. In addition, the consensus panel recommended elbow straps or braces for individuals with medial or lateral epicondylitis; cock-up wrist braces may be appropriate in severe cases or when elbow straps and braces are ineffective. The authors also recommended slings and splints for triceps or biceps tendinosis. Notably, the consensus panel recommended nocturnal elbow splinting for the prevention of flexion for individuals with ulnar neuropathy at the elbow. The treatment of individuals with pronator or radial tunnel syndrome was advised to be similar to treatment of ulnar neuropathy at the elbow.

A specialty practice guideline from the American Academy of Orthopaedic Surgeons (Graham et al., 2016) reported strong evidence that the use of immobilization (brace/splint/orthosis) should improve patient-reported outcomes in the treatment of CTS. However, the authors recommended against postoperative immobilization in individuals after carpal tunnel release, noting that post-operative splinting may be beneficial for some individuals.

Codes Addressed in This Guideline

The inclusion of any code in this table does not imply that the code is under management or requires prior authorization. Refer to the applicable health plan for management details. Prior authorization of a code listed in this table is not a guarantee of payment. The Certificate of Coverage or Evidence of Coverage policy outlines the terms and conditions of the member's health insurance policy.

HCPCS	Description
L3671	Shoulder orthosis, shoulder joint design, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3674	Shoulder orthosis, abduction positioning (airplane design), thoracic component and support bar, with or without non-torsion joint/ turnbuckle, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3677	Shoulder orthosis (SO), shoulder joint design, without joints, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3678	Shoulder orthosis, shoulder joint design, without joints, may include soft interface, straps, prefabricated, off-the-shelf
L3702	Elbow orthosis, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3720	Elbow orthosis, double upright with forearm/arm cuffs, free motion, custom fabricated
L3730	Elbow orthosis, double upright with forearm/arm cuffs, extension/ flexion assist, custom fabricated
L3740	Elbow orthosis, double upright with forearm/arm cuffs, adjustable position lock with active control, custom fabricated
L3760	Elbow orthosis, with adjustable position locking joint(s), prefabricated, item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3761	Elbow orthosis, with adjustable position locking joint(s), prefabricated, off-the-shelf

HCPCS	Description
L3763	Elbow wrist hand orthosis, rigid, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3764	Elbow wrist hand orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3765	Elbow wrist hand finger orthosis, rigid, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3766	Elbow wrist hand finger orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3806	Wrist hand finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, custom fabricated, includes fitting and adjustment
L3808	Wrist hand finger orthosis, rigid without joints, may include soft interface material; straps, custom fabricated, includes fitting and adjustment
L3807	Shoulder orthosis (SO), shoulder joint design, without joints, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3809	Wrist hand finger orthosis, without joint(s), prefabricated, off-the-shelf, any type
L3891	Addition to upper extremity joint, wrist or elbow, concentric adjustable torsion style mechanism for custom fabricated orthotics only, each
L3900	Wrist hand finger orthosis, dynamic flexor hinge, reciprocal wrist extension/ flexion, finger flexion/extension, wrist or finger driven, custom fabricated
L3901	Wrist hand finger orthosis, dynamic flexor hinge, reciprocal wrist extension/ flexion, finger flexion/extension, cable driven, custom fabricated
L3904	Wrist hand finger orthosis, external powered, electric, custom fabricated

HCPCS	Description
L3905	Wrist hand orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3912	Hand finger orthosis (hfo), flexion glove with elastic finger control, prefabricated, off-the-shelf
L3915	Wrist hand orthosis, includes one or more nontorsion joint(s), elastic bands, turnbuckles, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3916	Wrist hand orthosis, includes one or more nontorsion joint(s), elastic bands, turnbuckles, may include soft interface, straps, prefabricated, off-the-shelf
L3917	Hand orthosis, metacarpal fracture orthosis, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3918	Hand orthosis, metacarpal fracture orthosis, prefabricated, off-the-shelf
L3921	Hand finger orthosis, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3923	Hand finger orthosis, without joints, may include soft interface, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3924	Hand finger orthosis, without joints, may include soft interface, straps, prefabricated, off-the-shelf
L3929	Hand finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, prefabricated item that has been trimmed, bent, molded, assembled, or otherwise customized to fit a specific patient by an individual with expertise
L3930	Hand finger orthosis, includes one or more nontorsion joint(s), turnbuckles, elastic bands/springs, may include soft interface material, straps, prefabricated, off-the-shelf

HCPCS	Description
L3960	Shoulder elbow wrist hand orthosis, abduction positioning, airplane design, prefabricated, includes fitting and adjustment
L3961	Shoulder elbow wrist hand orthosis, shoulder cap design, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3962	Shoulder elbow wrist hand orthosis, abduction positioning, erb's palsey design, prefabricated, includes fitting and adjustment
L3967	Shoulder elbow wrist hand orthosis, abduction positioning (airplane design), thoracic component and support bar, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3971	Shoulder elbow wrist hand orthosis, shoulder cap design, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3973	Shoulder elbow wrist hand orthosis, abduction positioning (airplane design), thoracic component and support bar, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3975	Shoulder elbow wrist hand finger orthosis, shoulder cap design, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3976	Shoulder elbow wrist hand finger orthosis, abduction positioning (airplane design), thoracic component and support bar, without joints, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3977	Shoulder elbow wrist hand finger orthosis, shoulder cap design, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment
L3978	Shoulder elbow wrist hand finger orthosis, abduction positioning (airplane design), thoracic component and support bar, includes one or more nontorsion joints, elastic bands, turnbuckles, may include soft interface, straps, custom fabricated, includes fitting and adjustment

HCPCS	Description
L3980	Upper extremity fracture orthosis, humeral, prefabricated, includes fitting and adjustment
L3981	Upper extremity fracture orthosis, humeral, prefabricated, includes shoulder cap design, with or without joints, forearm section, may include soft interface, straps, includes fitting and adjustments

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