Cigna Medical Coverage Policy

Subject **Stretch Devices for Joint Stiffness and Contractures**

Effective Date **8/15/2014**
Next Review Date **8/15/2015**
Coverage Policy Number **0135**

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Coverage Policy

Coverage for stretch devices is subject to the terms, conditions and limitations of the applicable benefit plan's Durable Medical Equipment (DME) benefit and schedule of copayments. Please refer to the applicable benefit plan document to determine benefit availability and the terms, conditions and limitations of coverage. Under many benefit plans, coverage for DME is limited to the lowest-cost alternative.

If coverage for stretch devices is available, the following conditions of coverage apply.

Cigna covers the use of a low-load prolonged-duration stretch (LLPS) device/dynamic stretch device (HCPCS code E1825) as medically necessary for treatment of an extensor tendon injury of the finger.

Cigna does not cover the use of a low load prolonged-duration stretch (LLPS) device for any other condition or for any joint other than a finger joint (HCPCS codes E1800, E1802, E 1805, E1810, E1812, E1815, E1830, E1840) because it is considered experimental, investigational or unproven.

Cigna does not cover the use of ANY of the following devices for any indication because each is considered experimental, investigational or unproven:

- static progressive (SP) stretch device (HCPCS codes E1801, E1806, E1811, E1816, E1818, E1821, E1831, E1841)
- patient-actuated serial stretch (PASS) device (HCPCS code E1399)

- jaw stretch device (HCPCS codes E1700, E1701, E1702)

General Background

Joint stiffness or contracture may be caused by immobilization following surgery, disease, or trauma. Joint contracture is associated with reduced range of motion (ROM) due to structural changes in non-bony tissues, including muscles, tendons, ligaments and skin. Elastic connective tissue is replaced with inelastic fibrous material that is resistant to stretching, resulting in joint dysfunction. Treatments used to prevent and treat joint stiffness and contractures include manual joint mobilization by a physical therapist, application of casts at regular intervals (serial casting), static splinting, and continuous passive motion (CPM). These techniques involve the mechanical elongation of soft tissues for varying time periods. Stretch induces an immediate, transient increase in joint ROM and reduces resistance to passive joint movement, although the lasting effects are less well understood. Various types of mechanical stretch devices have been proposed for use in the rehabilitation of numerous joints, including the shoulder, neck, back, elbow, wrist, finger, knee, ankle and toe (ECRI, 2009, Katalinic, 2010).

U.S. Food and Drug Administration (FDA)

Mechanical stretching devices are classified by the FDA as Class I medical devices. Class I devices have the least amount of regulatory control; manufacturers of these devices are exempt from premarket notification procedures and are not required to provide safety and effectiveness data prior to marketing. Numerous mechanical stretch devices have been developed, and are generally categorized as static progressive (SP) stretch devices, low-load, prolonged-duration stretch (LLPS) devices, and actuated serial stretch (PASS) devices. Jaw stretch devices include the Therabite® Jaw Motion Rehabilitation System™ (Atos Medical, West Allis, WI) and the OraStretch™ Press Jaw Motion Rehab System™ (CranioRehab, Inc., Denver, CO)

Literature Review

Low-Load Prolonged-Duration Stretch (LLPS) Devices/Dynamic Splinting Systems

LLPS devices permit active and passive motion with elastic traction within a limited range. The devices maintain a set level of tension by incorporated springs.

Available low-load, prolonged-duration stretch (LLPS) devices include:

- Dynasplint System® (Dynasplint Systems, Inc., Severna Park, MD)
- Ultraflex (Ultraflex Systems, Pottstown, PA)
- Pro-glide™ Dynamic ROM devices (DeRoyal®, Powell, TN)
- Advance Dynamic ROM® devices (Empi, St. Paul, MN)
- SaeboStretch® (Saebo, Charlotte, NC)

Finger: Chester et al. (2002) conducted a prospective, randomized controlled trial to compare the post- surgical impact of two rehabilitation regimens in 54 patients with finger extensor tendon division in zones IV–VIII. Patients were randomized to receive early active mobilization combined with static splinting (Group I, n=19, 29 injured digits) or to LLPS using the Dynasplint system (Group II, n=17, 29 injured digits). At four weeks, Total Active Motion (TAM) was significantly improved for Group II (87%) compared to Group I (77%) (p=0.02). The median flexion deficit was significantly lower for Group II than for Group I (25° vs. 45°, respectively, p=0.002). These differences were not maintained, however. At three months follow-up, TAM was 100% for Group I and 98% for Group II, and median flexion deficit was 0° for both groups.

Cetin et al. (2001) conducted a prospective uncontrolled study of 37 patients (74 digits) with repaired flexor tendon injuries to determine the functional results following a postoperative regimen of early mobilization using LLPS combined with passive and active early mobilization. LLPS was accomplished by the use of a modified Kleinert splint with a palmar pulley. Outcomes were assessed using the TAM system and the Buck-Gramcko system. Follow-up continued for 12.9 ± 5.4 weeks. Results were reported as excellent in 73%, good in 24%, and fair in 1.5% of fingers.

Khandwala et al. (2000) conducted a randomized controlled trial to evaluate postoperative rehabilitation techniques in patients with complete divisions of the extensor tendons in Verdan's zones five and six. Patients were randomly assigned to postoperative rehabilitation using LLPS and active mobilization (Group 1, n=50) or to

palmar block SP splinting and active mobilization (Group II, n=50). Outcomes were assessed using two evaluation tools; a system proposed by Miller, and the TAM classification of the American Society for Surgery of the Hand {Kleinert and Verdan]. At eight weeks, there was no significant difference in outcomes between the two groups. Excellent TAM was achieved by 50% of the patients in Group I and 49% of the patients in Group II. Good TAM was achieved by 48% and 46% of patients in groups I and II, respectively. Miller's assessment demonstrated good or excellent results in 95% of patients in Group I and 93% of patients in Group II.

A case series by Crosby et al. (1999) evaluated dynamic splinting and tendon mobilization immediately following surgical repair of extensor tendon lacerations (30 patients, 50 lacerations). All patients were treated with early passive motion and dynamic splinting. Patients received therapy two to five times weekly until strength was fully regained. Of 50 tendons, 45 regained full excursion within an average time of nine weeks. All patients regained at least 93% of their predicted strength within 9-12 weeks. There were no limitations of flexion, with all patients able to make a full fist. Within approximately 12 weeks, all fingers regained over 90% of normal grip strength.

Other indications: Lindenhovius et al. (2012) conducted a randomized controlled trial to compare SP and dynamic splinting in the treatment of post-traumatic elbow stiffness. Patients were randomized to SP splinting using a JAS device (n=35) or dynamic splinting using a Dynasplint (n=31). Elbow function was measured at three, six, and twelve months. The average Disabilities of the Arm, Shoulder and Hand (DASH) score (dynamic vs. static) was 50 vs. 45 points at enrollment, 32 vs. 25 points at six months ($p<0.05$), and 28 vs. 26 points at twelve months ($p=0.61$). The authors acknowledged limitations of this study, including the fact that less than 80% of enrolled patients were evaluated at planned follow-up times. In addition, because of the lack of a control group, it cannot be determined whether the use of either splint resulted in improved outcomes compared to self assisted elbow stretching.

Lord et al. conducted a randomized controlled trial to determine the efficacy of dynamic splinting in treating patients with postoperative hallux limitus (n=50). The study included patients with limited range of motion (ROM) of the first MTP joint (contracture) within two months of surgery (n=18) and those presenting with preexisting postoperative HL contracture (n=32). Patients in the control group (n=23) received standard care, including analgesics and NSAIDS, orthotics, and home stretching exercises. Those in the experimental group (n=25) received the standard care plus treatment with the Metatarsophalangeal Dynasplint System. At eight weeks, patients in the experimental group showed a mean 32 degree change in AROM extension, compared to a mean 10 degree change in the control group ($p<0.001$). Greater improvement was seen for patients treated within two months of surgery. The impact of this increased ROM on patient outcomes in terms of pain and functional improvement was not reported.

Berlet et al. (2002) conducted a prospective study of 13 patients with plantar fasciitis to evaluate the effectiveness of the Ankle Dorsiflexion Dynasplint. All patients had plantar fasciitis recalcitrant to first-line treatment of anti-inflammatory medication, Achilles stretching program, and a viscoelastic heel orthoses. VAS pain assessment and the Mayo clinical scoring system for the evaluation of plantar fasciitis were completed pre-splinting and following one month of splint use. Patients used the splint for an average of 95% of weekly sleeping hours. The average pre-splinting VAS pain score was 44 ± 20 and the Mayo score was 51 ± 12. The average VAS score at one month post-splinting was 35 ± 21, and the Mayo score was 60 ± 18. Pre and post-treatment scores on the selected measurement tools did not reach levels of significance ($p=.12$). At one month, 75% of patients reported improvement in symptoms. At six months, all patients who had achieved improvement maintained their satisfaction with the night splint. Interference with sleep numbness in the toes was reported by 65% and 27% of patients, respectively. The authors stated that a randomized study with a comparison between different dorsiflexion splint designs is warranted to determine if patient compliance and clinical results are related to specific design modifications.

Steffan et al. (1995) conducted a nonrandomized comparative study to determine the effectiveness of using LLPS vs. a standard program of passive ROM for the treatment of bilateral knee contractures of 10° or greater in 28 nursing home residents. For each patient, both legs received passive ROM twice each week, and in addition, one leg of each patient received LLPS using the Dynasplint system for three hours per day, five days per week. ROM and torque measurements were assessed monthly for six months to evaluate knee extension. Only 18 patients completed the study. At six months, there was no difference in outcomes between the legs receiving LLPS and those receiving passive ROM and manual stretching alone. **Level of evidence: 3**

Summary- Low-Load Prolonged-Duration Stretch (LLPS) Devices/Dynamic Splinting Systems:

Most of the available evidence evaluates the use of LLPS in the rehabilitation of finger injuries. Although the use of LLPS devices may not improve joint mobility beyond what can be achieved through a standard rehabilitation program, there is adequate evidence that the use of these devices in the rehabilitation of extensor tendon injuries may allow earlier achievement of rehabilitation goals, including earlier improvement in range of motion and grip strength. There is inadequate evidence to demonstrate improved outcomes with the use of LLPS devices for other joints and conditions, however.

Static Progressive (SP) Stretch Devices
SP stretch devices hold the joint in a set position, while allowing manual modification of the joint angle, and may allow active motion without resistance. The device does not exert stress on the tissue unless the angle is set to the joint's limitation. This type of device allows a limited range of passive or active motion, but the motion is free and does not provide elastic traction.

Available static progressive (SP) stretch devices include:

- Joint Active Systems (JAS) Static Progressive Stretch devices (finger, wrist, elbow, shoulder, knee, ankle) (Joint Active Systems, Inc., Effington, IL)
- JAS Pronation/Supination device

Finger: Bruner et al. (2003) conducted a retrospective review to evaluate the efficacy of SP splinting as an adjunct to active mobilization following extensor tendon repair in Verdan's zones V to VII (n= 85 patients, 87 extensor tendon injuries). On the second post-operative day, a thermoplastic dorsal forearm splint was applied to hold the wrist in 30° extension and the metacarpophalangeal (MCP) joints in 10° hyperextension. The splint allowed active flexion of the MCP joints to 15 or 30°, depending on the intraoperative tension of the tendon repair. The allowed ROM was increased to 90° over the course of five weeks, in defined weekly steps. Active extension of the distal interphalangeal and proximal interphalangeal joints began in the fourth week, and the splint was removed at five weeks. Results were assessed at a mean follow-up of 21 months (range 5–39 months) using three grading systems (Geldmacher, Miller, and Kleinert). Results were considered to be excellent or good in 94% of the patients, and fair in the remainder of patients.

A retrospective study by Ip and Chow (1997) evaluated static progressive stretch for rehabilitation of finger extensor tendon injuries following surgical repair. On postoperative day two a palmar wrist slab was applied, with the wrist in 30° extension. An active rehabilitation program was initiated, which included a combination of physical therapist-guided exercises and active flexion. The splint was adjusted periodically, and removed on day 35. Using Dargan's evaluation system, there were 97% excellent results for the thumb and 93% excellent and good results for the fingers.

Other indications: Muller et al. (2013) conducted a systematic review and meta-analysis to compare the effectiveness of dynamic, static or static progressive (SP) bracing in patients with traumatic or postoperative elbow stiffness (13 studies, 247 patients). The mean improvement in range of motion during treatment was 38º ± 10 º (95% CI, 39.5 º-41.8 º). Dynamic bracing resulted in the largest relative improvement in ROM, with an increase of 46 º ±10 º (95% CI, 43.2-48.9.) The increase in ROM was slightly lower with SP splints, at 40 º ± 10 º (95% CI, 38.1 º-41.5 º). Static splints demonstrated the least improvement, at 34 º ± 6 º (95% CI, 31.9-35.6). Results in gain in flexion showed similar results, with dynamic stretching resulting in the highest improvement and static splinting, the lowest improvement. Gains in extension were highest with dynamic splinting and lowest with SP splinting. The authors recommended the use of SP bracing as a first line treatment, since the outcomes of dynamic, SP and static bracing are within one standard deviation of each other, and the patient-friendly protocol for SP stretching may improve compliance. The authors noted that, given the paucity of high-quality randomized controlled trials on elbow bracing, the results are subject to bias. There was significant heterogeneity among the included studies due to differences in treatment regimens. The inclusion criteria varied significantly between studies, and there was no clear-cut definition of stiffness. None of the studies systematically assessed patient compliance.

A case series by Ulrich et al. (2010) evaluated the use of static progressive stretch with the JAS splint for treatment of post-traumatic elbow contractures (n=37). Treatment consisted of thirty minute treatment sessions performed one to three times daily for a mean of 10 weeks (range 2-22 weeks). The mean gain in range of motion was 26° (range, 2°-60°). Gains of motion were noted in 35 of 37 elbows. At final follow-up, 35 of 37

patients had overall satisfaction scores of 8 points or higher on a scale of one to ten. Two patients reported satisfaction scores of 2 points; both developed shoulder problems and decreased range of motion.

Bonutti et al. (2010) conducted a case series to evaluate the use of static progressive stretch using a JAS knee device for treatment of refractory knee stiffness/arthrofibrosis following total knee arthroplasty. All patients had failed standard postoperative physical therapy interventions. Patients participated in one treatment session per day for the first 5 days, increasing to three sessions per day as tolerated. At a median of seven weeks (range, 3–16 weeks) the median increase in range of motion was 25° (range 8–82°). The median gain in knee active flexion was 19° (range 5–80°).

In an earlier series, Bonutti et al. (2008) evaluated the use of SP stretch using the JAS Knee device in 41 consecutive patients with refractory knee stiffness. Patients were given instructions in placement of the device and adjustment of the angle until a gentle stretch was felt. As in the 2010 series, patients underwent one treatment session per day for the first five days, and increased the frequency as tolerated to a maximum of three sessions per day. At a mean of nine weeks of use (range 3–27 weeks), the total arc of motion increased by a mean of 33° (range 0–85°). Patients gained a mean of 9° of extension (range -14–30°), and a mean of 24° of flexion (range 1–80°). These changes were statistically significant ($p<0.001$). The mean satisfaction score was 7.6 points (range 0–10). Three patients were dissatisfied with the device.

Doornberg et al. (2006) conducted a retrospective review (n=37) to evaluate SP elbow splinting using a JAS splint in patients with elbow stiffness after trauma who were no longer achieving gains in motion with a standard exercise program. Three patients were treated following the injury, 14 were treated following operative treatment of the injury, and 12 were treated after a secondary operative release. Splinting was started on an average of 55 days after injury or operative treatment (range 15–200 days). Patients used the splints for an average of four months (range 1–9 months). The splinting protocol was patient- and therapist-specific and varied substantially; however, the general approach included 30 minutes of splinting in each direction (flexion and extension), three times per day. Prior to splinting, the average flexion was 107˚ (range 85–150˚), average flexion contracture was 35˚ (range 5–90), and average arc of motion was 71˚ (range 0–100˚). The authors reported statistically significant improvement in flexion, flexion contracture, and arc of motion at an average follow-up of 11 months (range 2–28 months). The average post-treatment arc was 110˚, (range 20–150˚), average flexion was 130˚ range 90–155˚), and average flexion contracture was 20˚ (range 0–70˚).

In a prospective, nonrandomized study, Hewitt and Shakespeare (2001) compared the effectiveness of two postoperative rehabilitation regimes following unilateral total knee arthroplasty (TKA). Patients were assigned to a regimen of SP flexion (Group 1, n=86) or to a regimen of static extension splinting combined with physical therapist-guided flexion exercises (Group 2, n=74). In Group 1, the operative knee was placed in a 90° splint that remained in place overnight. On the first postoperative day, the knee was placed on the 90° splint for ten minutes every two hours, followed by ten minutes of passive extension combined with leg exercises. In Group 2, the operative knee was placed in an immobilizer splint that remained in place overnight. On the first postoperative day, patients participated in three physical therapy treatments in which the knee was flexed as far as possible, and leg exercises were encouraged. At six weeks, the average maximum flexion and ROM were higher in group I than in Group II (104.83° vs. 92.04°, p=0.0037; and 99.94° vs. 92.04°, p=0.00027, respectively). No differences were observed in wound problems, analgesic requirements, or blood loss.

Summary: Static Progressive (SP) Stretch Devices
There is insufficient evidence to determine whether the use of SP stretch devices results in improved outcomes. The published literature consists primarily of case series. Without a comparator group, it is not possible to determine whether the addition of SP stretch devices results in improved joint mobility beyond that which would have been achieved with standard physical therapy and mobilization techniques.

Patient-Actuated Serial Stretch (PASS) Devices
PASS devices provide a low-to high-level load to the joint using pneumatic (Extensionators [ERMI} or hydraulic (Flexionators [ERMI} systems that are adjusted by the patient. PASS devices are custom-fitted and are available for the ankle, elbow, knee, and shoulder. A customized treatment protocol and training in use of the device are provided to the patient.

Available patient-actuated serial stretch (PASS) devices include:

- ERMI Knee Extensionator®, ERMI Knee/Ankle Flexionator®, ERMI Shoulder Flexionator®, ERMI MPJ Extensionator®, ERMI Elbow Extensionator®, (ERMI, Inc., Atlanta, GA)

Branch et al. (2003) conducted a prospective uncontrolled study to determine the effectiveness of a PASS rehab regimen using an ERMI Knee/Ankle Flexionator® in 34 patients who had failed a six-week regimen of conventional physical therapy. Patients had developed knee contractures following ACL injury (n=14), peripatellar injury (n=7), fracture (n=4) and unspecified causes (n=9). PASS was administered four to eight times each day for 15 minutes. Treatment duration ranged from two to twelve weeks. The authors reported that 74% of patients regained full ROM, and 91.2% of patients regained functional knee ROM.

There is insufficient evidence in the published medical literature to demonstrate the safety, efficacy, and long-term outcomes of the use of patient-actuated serial stretch (PASS) for the treatment of joint stiffness or contractures or to determine whether the use of these devices results in outcomes comparable to those achieved with established rehabilitation methods.

Jaw Stretch Devices
Cohen et al. (2005) evaluated the use of Therabite in the early postoperative management of trismus in seven patients who underwent resection and reconstruction for head and neck cancer. Patients were given a Therabite device, instructed in its proper use, and began using the device within six weeks following surgery. All patients were instructed to perform six repetitions holding the mouth open for six seconds each time, six times daily. Maximum interincisor opening was measured by a gauge provided with the device at the start of use and at the most recent postoperative visit. Follow-up ranged from 12 to 48 weeks after surgery. The average maximum interincisor opening was 30 mm (range 21–38 mm) at the last visit, with an average gain of 10 mm (range 1–21 mm). Two patients were lost to follow-up. Four of five patients reported minimal or no limitation on overall quality of life relative to jaw opening. The authors concluded that the Therabite mechanical stretching device is effective and safe for the management of trismus in a select group of patients. These results cannot be generalized, however, due to the study design and small number of patients.

Maloney et al. (2002) conducted a randomized controlled trial that included 46 patients with TMJ disease. This study evaluated the use of Therabite and an intraoral appliance (n=17), the use of tongue depressors in conjunction with an intraoral appliance (n=12), and an intraoral appliance only (n=17). The Therabite group showed increased jaw mobility and decreased pain compared to the group using intraoral appliances alone. The use of tongue depressors had little effect. This trial was also very small, with unblinded evaluations and a follow-up period of only four weeks.

Published studies evaluating the use of the OraStretch System are lacking.

Systematic Review
A Cochrane systematic review (Katalinic et al., 2010) was conducted to evaluate the effects of stretch on contractures in people with, or at risk of, contractures. Studies that met the inclusion criteria (35 studies/1391 participants) evaluated interventions that aimed to maintain or increase the mobility of any synovial joint. To be included, the stretch needed to sustain the soft tissues in a lengthened position for a minimum of 20 seconds on more than one occasion. This was considered to be the minimum plausible period of stretch likely to affect joint mobility. Examples of stretch interventions that were eligible, based on these criteria, were sustained passive stretching, positioning, splinting and serial casting. No study performed stretch for more than seven months. In people with neurological conditions, there was moderate to high quality evidence to indicate that stretch does not have clinically important immediate short-term or long-term effects on joint mobility. The results were similar for people with non-neurological conditions. For all conditions, there is little or no effect of stretch on pain, spasticity, activity limitation, participation restriction, or quality of life. The authors concluded that stretch does not have clinically important effects on joint mobility in people with, or at risk of, contractures if performed for less than seven months. The effects of stretch performed for periods longer than seven months have not been investigated.

A systematic review of the effectiveness of physical therapy interventions for TMJ disorders concluded that the results of the review support the use of active and passive oral exercises as effective interventions to reduce symptoms, but more information on the exercise prescription is necessary to allow for replication in clinical settings. The authors advised that findings must be interpreted with caution, since most studies were of poor

methodological quality. The Therabite system is described in the review as a mechanical aid that provides passive stretch to the TMJ, but no recommendation for use of the device is made (McNeely, et al., 2006).

Harvey and Crosbie (2002) conducted a systematic review to determine whether stretching; either self-administered, administered manually by therapists, or by external devices such as splints, produces lasting increases in the mobility of joints not directly affected by surgery, trauma or disease process. The 13 included studies evaluated the use of stretching, with a median of eight stretch sessions, in patients without functionally significant contractures. Four studies were rated as moderate quality, and four were rated as poor quality. The studies rated as moderate suggested that regular stretching increases joint ROM (mean increase in ROM=8°, 95% CI 6°–9°) for at least one day after stretching cessation, and that the effects of stretching may be greater in muscle groups with limited extensibility. The authors stated that these findings require verification with high-quality studies, and that the lasing effects of intensive stretching programs or of stretching in people with functionally significant contracture have not yet been investigated with randomized studies.

Professional Societies/Organizations

A clinical practice guideline on the diagnosis and treatment of heel pain published by the American College of Foot and Ankle Surgeons includes a stepwise approach to treatment of plantar heel pain associated with plantar fasciitis, heel spur syndrome or plantar fasciosis. Recommendations for tier one treatment for a period of six weeks include foot padding and strapping, therapeutic orthotic insoles, cortisone injections, and Achilles and plantar fascia stretching. The second tier treatment options include continuation of tier one treatments, with consideration for additional therapies, including the use of night splints to maintain an extended length of the plantar fascia and gastroc-soleus complex. These are considered to be Grade B recommendations, indicating that these treatment options are supported by fair evidence (Thomas et al., 2010).

There are no published professional society positions that specifically address the use of SP stretch devices, LLPS devices, PASS devices, or jaw stretch devices.

Use Outside the U.S.

No relevant information

Summary

Various methods may be employed in the prevention and rehabilitation of joint contractures, including manual joint mobilization by a physical therapist, massage, serial casting, and splinting. Mechanical stretch devices, including low load prolonged-duration stretch (LLPS) devices, static progressive (SP) stretch devices, and patient-actuated serial stretch (PASS), have also been used, usually as a component of a rehabilitation program. The evidence supporting the use of stretch devices is limited, however. Most of the published evidence for the use of LLPS has evaluated use in the rehabilitation of finger injuries. Although the use of LLPS devices may not improve mobility beyond what could be achieved through a standard rehabilitation program, there is adequate evidence that the use of these devices in the rehabilitation of extensor tendon injuries of the finger may allow earlier achievement of rehabilitation goals, including earlier improvement in range of motion and grip strength. There is inadequate evidence to demonstrate improved outcomes with the use of LLPS devices for other joints and conditions, however.

The evidence evaluating static progressive (SP) stretch devices and patient-actuated serial stretch (PASS) is even more limited, consisting primarily of case series with no comparator group. There are no well designed clinical trials that evaluate these devices compared to standard rehabilitation methods. It is not possible to determine based on the available evidence whether the addition of these devices, when used alone or as an adjunct to a physical therapy program, result in improved patient outcomes.

There are very few published studies that evaluate the use of jaw stretch device or of passive rehabilitation of the TMJ using any device. There is insufficient evidence in the peer-reviewed clinical literature to demonstrate the safety and efficacy of jaw stretch devices to provide passive rehabilitation as compared to traditional methods of treating jaw hypomobility.

Coding/Billing Information

Note: 1) This list of codes may not be all-inclusive.
2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement
3. ICD-10-CM Diagnosis Codes are for informational purposes only and are not effective until 10/01/2015.

Covered when medically necessary:

Low-load prolonged-duration stretch (LLPS) device/dynamic stretch device for treatment of an extensor tendon injury of the finger

HCPCS Codes	Description
E1820	Replacement soft interface material, dynamic adjustable extension/flexion device
E1825	Dynamic adjustable finger extension/flexion device, includes soft interface material

ICD-9-CM Diagnosis Codes	Description
718.44	Contracture of joint, hand
719.54	Stiffness of joint, not elsewhere classified, hand
816.00-816.13	Fracture of one or more phalanges of hand
834.00-834.12	Dislocation of finger
842.10-842.19	Sprains and strains of wrist and hand
959.5	Finger injury

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	Description
M24.541-M24.549	Contracture, hand
M25.641-M25.649	Stiffness of hand, not elsewhere classified
M84.441S	Pathological fracture, right hand, sequela
M84.442S	Pathological fracture, left hand, sequela
M84.443S	Pathological fracture, unspecified hand, sequela
M84.444S	Pathological fracture, right finger(s), sequela
M84.445S	Pathological fracture, left finger(s), sequela
M84.446S	Pathological fracture, unspecified finger(s), sequela
S61.009A-S	Unspecified open wound of unspecified thumb without damage to nail
S61.209A-S	Unspecified open wound of unspecified finger without damage to nail
S62.201A-S62.209S	Unspecified fracture of first metacarpal bone
S62.211A-S62.213S	Bennett's fracture
S62.221A-S62.226S	Rolando's fracture
S62.231A-S62.236S	Other fracture of base of first metacarpal bone
S62.241A-	Fracture of shaft of first metacarpal bone

S62.246S	
S62.251A-S62.256S	Fracture of neck of first metacarpal bone
S62.291A-S62.299S	Other fracture of first metacarpal bone
S62.300A-S62.309S	Unspecified fracture of other metacarpal bone
S62.310A-S62.319S	Displaced fracture of base of other metacarpal bone
S62.320A-S62.329S	Displaced fracture of shaft of other metacarpal bone
S62.330A-S62.339S	Displaced fracture of neck of other metacarpal bone
S62.340A-S62.349S	Nondisplaced fracture of base of other metacarpal bone
S62.350A-S62.359S	Nondisplaced fracture of shaft of other metacarpal bone
S62.360A-S62.369S	Nondisplaced fracture of neck of other metacarpal bone
S62.390A-S62.399S	Other fracture of other metacarpal bone
S62.501A-S62.509S	Fracture of unspecified phalanx of thumb
S62.511A-S62.516S	Fracture of proximal phalanx of thumb
S62.521A-S62.526S	Fracture of distal phalanx of thumb
S62.600A-S62.609S	Fracture of unspecified phalanx of finger
S62.610A-S62.619S	Displaced fracture of proximal phalanx of finger
S62.620A-S62.629S	Displaced fracture of medial phalanx of finger
S62.630A-S62.639S	Displaced fracture of distal phalanx of finger
S62.640A-S62.649S	Nondisplaced fracture of proximal phalanx of finger
S62.650A-S62.659S	Nondisplaced fracture of medial phalanx of finger
S62.660A-S62.669S	Nondisplaced fracture of distal phalanx of finger
S62.90XA-S62.92XS	Unspecified fracture of unspecified wrist and hand
S63.101A-S63.106S	Unspecified subluxation and dislocation of thumb
S63.111A-S63.116S	Subluxation and dislocation of metacarpophalangeal joint of thumb
S63.121A-S63.126S	Subluxation and dislocation of unspecified interphalangeal joint of thumb
S63.131A-S63.136S	Subluxation and dislocation of proximal interphalangeal joint of thumb
S63.141A-S63.146S	Subluxation and dislocation of distal interphalangeal joint of thumb
S63.200A-S63.209S	Unspecified subluxation of other finger
S63.210A-	Subluxation of metacarpophalangeal joint of finger

S63.219S	
S63.220A-S63.229S	Subluxation of unspecified interphalangeal joint of finger
S63.230A-S63.239S	Subluxation of proximal interphalangeal joint of finger
S63.240A-S63.249S	Subluxation of distal interphalangeal joint of finger
S63.250A-S63.259S	Unspecified dislocation of other finger
S63.260A-S63.269S	Dislocation of metacarpophalangeal joint of finger
S63.270A-S63.279S	Dislocation of unspecified interphalangeal joint of finger
S63.280A-S63.289S	Dislocation of proximal interphalangeal joint of finger
S63.290A-S63.299S	Dislocation of distal interphalangeal joint of finger
S66.011A-S66.019S	Strain of long flexor muscle, fascia and tendon of thumb at wrist and hand level
S66.110A-S66.119S	Strain of flexor muscle, fascia and tendon of other and unspecified finger at wrist and hand level
S66.211A-S66.219S	Strain of extensor muscle, fascia and tendon of thumb at wrist and hand level
S66.310A-S66.319S	Strain of extensor muscle, fascia and tendon of other and unspecified finger at wrist and hand level
S66.411A-S66.419S	Strain of intrinsic muscle, fascia and tendon of thumb at wrist and hand level
S66.510A-S66.519S	Strain of intrinsic muscle, fascia and tendon of other and unspecified finger at wrist and hand level
S66.911A-S66.919S	Strain of unspecified muscle, fascia and tendon at wrist and hand level
S67.00XA-S67.02XS	Crushing injury of thumb
S67.10XA-S67.198S	Crushing injury of other and unspecified finger(s)
S67.90XA-S67.92XS	Crushing injury of unspecified part(s) of wrist, hand and fingers

Experimental/Investigational/Unproven/Not Covered:

ICD-9-CM Diagnosis Codes	**Description**
	All other codes

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	**Description**
	All other codes

<u>Low Load Prolonged Stretch (LLPS) Device/Dynamic Stretch Device for any other condition or any joint other than a finger</u>

Experimental/Investigational/Unproven/Not Covered

HCPCS Codes	Description
E1800	Dynamic adjustable elbow extension/flexion device, includes soft interface material
E1802	Dynamic adjustable forearm pronation/supination device, includes soft interface material
E1805	Dynamic adjustable wrist extension/flexion device, includes soft interface material
E1810	Dynamic adjustable knee extension/flexion device includes soft interface material
E1812	Dynamic knee, extension/flexion device with active resistance control
E1815	Dynamic adjustable ankle extension/flexion device, includes soft interface material
E1830	Dynamic adjustable toe extension/flexion device, includes soft interface material
E1840	Dynamic adjustable shoulder flexion/abduction/rotation device, includes soft interface material

ICD-9-CM Diagnosis Codes	Description
	All codes

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	Description
	All codes

Static Progressive (SP) Stretch Device

Experimental/Investigational/Unproven/Not Covered for any indication::

HCPCS Codes	Description
E1801	Static progressive stretch elbow device, extension and/or flexion, with or without range of motion adjustment, includes all components and accessories
E1806	Static progressive stretch wrist device, flexion and/or extension, with or without range of motion adjustment, includes all components and accessories
E1811	Static progressive stretch knee device, extension and/or flexion, with or without range of motion adjustment, includes all components and accessories
E1816	Static progressive stretch ankle device, flexion and/or extension, with or without range of motion adjustment, includes all components and accessories
E1818	Static progressive stretch forearm pronation/supination device, with or without range of motion adjustment, includes all components and accessories
E1821	Replacement soft interface material/cuffs for bi-directional static progressive stretch device
E1831	Static progressive stretch toe device, extension and/or flexion, with or without range of motion adjustment, includes all components and accessories
E1841	Static progressive stretch shoulder device, with or without range of motion adjustment, includes all components and accessories

ICD-9-CM Diagnosis Codes	Description
	All codes

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	Description
	All codes

Jaw stretch device

Experimental/Investigational/Unproven/Not Covered for any indication::

HCPCS Codes	Description
E1700	Jaw motion rehabilitation system
E1701	Replacement cushions for jaw motion rehabilitation system, pkg. of 6
E1702	Replacement measuring scales for jaw motion rehabilitation system, pkg. of 200

ICD-9-CM Diagnosis Codes	Description
	All codes

ICD-10-CM Diagnosis Codes (Effective 10/01/2015)	Description
	All codes

Patient actuated serial stretch (PASS) device

Experimental/Investigational/Unproven/Not Covered for any indication::

HCPCS Codes	Description
E1399	Durable medical equipment, miscellaneous

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