

Stretching Devices for the Treatment of Joint Stiffness and Contracture

Description

Joint stiffness or contracture may be caused by immobilization following an injury, disease or surgery. Joint contracture is characterized by persistently reduced range of motion as a result of structural changes in muscles, tendons, ligaments, and skin. This decrease in joint mobility occurs when elastic connective tissue is replaced with inelastic fibrous material, resulting in tissue that is resistant to stretching.

Dynamic (spring loaded dynamic, low-load prolonged-duration stretch [LLPS]) splints, bi-directional static progressive stretch [SP] splints and patient-actuated serial stretch [PASS] devices are intended to stretch joints that have reduced range of motion secondary to immobilization, surgery, contracture, fracture, dislocation, or several additional non-traumatic disorders. These devices are intended to replace or reduce the number of physical therapist-directed sessions by providing frequent and controlled joint mobilization in a hospital or in the patient's home. The goal is to cause permanent elongation of the connective tissue to increase range of motion. Mechanical stretching devices are not motorized and may be prefabricated or custom fabricated.

See below for more detailed descriptions of the devices.

Policy

NOTE: Currently, VCHCP includes only LLPS devices for consideration.

VCHCP considers dynamic (low-load prolonged-duration stretch [LLPS]) devices **Medically Necessary** for use on the knee, elbow, wrist or finger in any of the following clinical settings:

1. As an addition to physical therapy in the sub-acute injury or post-operative period (> 3 weeks but < 4 months after injury or operation) in patients with signs and symptoms of persistent joint stiffness; OR
2. In the subacute injury or post-operative period (\geq 3 weeks but \leq 4 months after injury or operation) in an individual (a) whose limited range of motion poses a meaningful (as judged by the physician) functional limitation, AND (b) who has not responded to other therapy (including physical therapy); OR
3. In the acute post-operative period for patients who are undergoing additional surgery to improve the range of motion of a previously affected joint; OR

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4. For patients unable to benefit from standard physical therapy modalities because of an inability to exercise. No significant change after four months period is prophylactic use in contractures and is not medically necessary.

VCHCP considers the following devices **Investigational/Not Medically Necessary:**

1. Dynamic (low-load prolonged-duration stretch [LLPS]) devices for use in the management of chronic joint stiffness and/or chronic or fixed contractures.
2. Bi-directional static progressive (SP) stretch devices
3. Patient-actuated serial stretch (PASS) devices

DESCRIPTION OF DEVICES:

LLPS Devices:

Dynamic (low-load prolonged-duration stretch [LLPS]) devices – allow resisted active and passive motion (elastic traction) within a restricted range. LLPS devices sustain a set level of tension using integrated springs. Most of these devices are adjustable tension-controlled units that provide a continuous dynamic stretch while patients are asleep or at rest. Commonly the time of use is continuously for 6 – 12 hours, which can be at night or can be two three-hour sessions during the day. Medically necessary wearing time is less than four months. Examples of LLPS devices include but are not limited to: Dynasplint System®, EMPI Advance Dynamic ROM®, and LMB Pro-Glide™.

SP Devices:

Bi-directional static progressive (SP) stretch devices - maintain the joint in a set position but permit manual modification of the joint angle and may allow for active motion without resistance (inelastic traction). Examples of this type of device include but are not limited to the Joint Active Systems (JAS) splints (e.g., JAS Elbow, JAS Shoulder, JAS Ankle, JAS Knee, JAS Wrist, and JAS Pronation-Supination)

PASS Devices:

Patient-actuated serial stretch (PASS) devices - allow resisted active and passive motion (elastic traction) within a limited range. PASS devices supply a low to high-level load to the joint using pneumatic or hydraulic systems that can be adjusted by the patient. Examples of PASS devices include the ERMI Knee Extensionater®, ERMI Elbow Extensionater®, ERMI Knee/Ankle Flexionater®, and ERMI Shoulder Flexionater®.

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A. Attachments: None

B. References

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Web Sites for Additional Information

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Bidirectional Static Progressive Splint

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Dynamic Splinting
Dynasplint
ERMI
JAS
PASS
Patient-Actuated Serial Stretch (PASS) Splint
Spring Loaded Dynamic Splinting
Static Progressive Stretch Splint
Static Splint
Ultraflex

C. History

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