DynaPro™ Flex Knee Orthotic

PROGRAM:

Orthotic therapy for mild to moderate (< 90°) stiffness or contracture of the knee. The knee should demonstrate good end feel to passive stretch and significant gains in ROM should be anticipated. Effective treatment to full joint extension and for prophylactic maintenance of full ROM as needed.

TREATMENT RATIONALE:

The knee orthotic device will facilitate muscle inhibition to predispose the affected joint(s) to the benefits of Low Load Prolonged Stretch provided by the orthotic. By increasing wearing time to three to six hours per use, the Total End Range Time (TERT) of device wear allows the Muscle Spindle to re-set at a greater resting length, providing long effects stretch and permanent increases in joint range of motion over time. Orthotic treatment should be continued until function is restored to the affected joint.

FUNCTIONAL OBJECTIVES:

Increase knee Range of Motion to full extension, allowing for increased function and use of the affected joint. Functional use of the knee can be significantly improved by increasing the functional ROM, allowing for greater independence in ADL's such as weight bearing, wheel chair mobility, and potential ambulation. If function is not restored or significantly limited, the device should be used to maintain full ROM as needed.

ORTHOTIC TREATMENT:

1. Lower extremity tone may require the use of Passive Range of Motion (PROM) or NeuroStretch™ beginning at the hip (see the NeuroStretch™ Instructions) to reduce tone and facilitate muscle inhibition and increased motion at the hip prior to using PROM or NeuroStretch™ at the knee
2. Use PROM or NeuroStretch™ to passively stretch the affected joint capsule(s), connective tissue, tendons, and muscles. Avoid a stretch reflex while passively stretching the joint.
3. Slowly and gently use sub-maximal passive stretching to the point of noticeable resistance only (no discomfort). Hold for a minute to allow the extension release of the affected joint.
4. Set the knee orthotic hinges to provide 5° to 15° of additional extension (extension setting) beyond the point of resistance to stretch (flexion setting).
5. Open the upper and bottom cuff flaps and release the kneecap straps on the inside (body side) of the device only. The top of the device has a fixed cuff and the bottom cuff will rotate to accommodate lower limb motion from flexion to extension. The device label is always placed on the top cuff for ease in device orientation.
6. Place the orthotic on the leg with the hinge at the midline of the knee joint.
7. Secure the top cuff flap over the upper thigh.
8. Secure the bottom cuff flap over the shin.
9. Bring the kneecap directly over the middle of the patella (centered) and loosely secure the knee cap.
10. Incrementally tighten all four knee cap straps towards the center of the knee cap to slowly bring the knee into a stretched (extended) position. ***When properly fitted, the knee cap straps will form an "X" over the center of the knee cap.*** The "X" orientation of the knee cap straps is important to provide medial – lateral and rotational control of the knee as the knee moves from flexion to extension and to accommodate flexion during episodes of tone. The "X" position of the knee cap straps is also important to equally distribute the knee cap pressure across the entire knee cap.
11. Palpate the medial hamstring tendon. The tendon should demonstrate extension tension on the tendon. The patient should experience a "stretch" sensation on the affected joint. No pain or discomfort should be experienced. When the desired extension tension is achieved, the initial application is complete.

12. Check all cuff flaps and the kneecap for pressure. Two fingers should be able to be inserted between the strap and the skin. Loosen straps if necessary.
13. Re-palpate the medial hamstring tendon after 15 to 30 minutes of wear. The tendon should be in a relaxed or "softer" state, indicating that muscle inhibition is being initiated by the device. The patient may continue to feel a gentle stretch. No pain or discomfort should be present.
14. Determine wearing schedule per therapy evaluation and physician's order.
15. Incrementally increase wearing time per patient tolerance and patient care plan up to a maximum of six hours on per shift. A minimum of three to four hours of wear daily after the adaptation period is recommended for best results.
16. Release and check for skin redness or pressure or patient discomfort every two to three hours at a minimum. Use the Blanch Test to evaluate any red areas, especially the patella. A pink color is normal, and indentation marls from the knee cap material folds is normal. Check the cuff contact point at the upper thigh. Indentation is normal, and should begin to dissipate after several minutes after device removal. Remove the orthotic device immediately if significant redness or pressure is evident.
17. Upon device removal, closely inspect for skin integrity. Notify the appropriate staff member(s) immediately and document any significant redness or signs of adverse pressure or shear. Discontinue device use until the skin integrity issues are resolved, and the device is modified or the wearing schedule is altered to eliminate potential skin integrity problems.
18. Always follow orthotic device protocols if the patient is transferred to acute care or another healthcare facility. Send the related orthotic care plan and any accessories along with the orthotic device(s) with the patient if the orthotic will be going with the patient.
19. A wearing time adjustment is necessary every time there is a significant disruption in wearing schedule. Device endurance must be reintroduced gradually, and noted in the Patient's care plan.
20. Follow manufacturer's instructions for care of the orthotic device. Always inspect the device between applications to ensure the soft goods are properly in place, the device settings have not been altered, and the device has not been soiled or would not provide any other risk to the patient prior to application.
21. Check device settings for continued application of the desired amount of extension stretch at least once a month or whenever the patient is not experiencing a gentle stretch sensation post application. Re-adjust the hinges to maintain 5° to 15° of extension beyond the point of resistance to stretch as needed.

Laundry Instructions:

1. Always remove soft cover from frame before washing. Do not machine wash or dry the gel pads.
2. Close all hook and loop attachments on the soft cover and place in enclosed laundry bag.
3. Hand or machine wash, gentle cycle with mild detergent. DO NOT USE COMMERCIAL WASHERS OR HOT WATER.
4. No bleach or fabric softener.
5. Air dry.

WARNING: The product requires a physician's order. The product is designed for single patient use only in order to avoid cross contamination. Any substitution or removal of the product's parts voids the manufacturer's warranty. OCSI/NeuroFlex, Inc. will assume no liability if the above instructions are not followed.

OCSI
PHONE: (800) 375-0207 ● FAX: (727) 525-1424