

## WHEN IS A PATIENT A CANDIDATE FOR PROTONICS®?

- Individuals who are positive in one or more of the following assessment tests:
  - Adduction Drop Test
  - Extension Drop Test
  - Lower Trunk Rotation Test
  - Step Up / Step Down Test

### APPLICATION OF PROTONICS® IS STRONGLY RECOMMENDED FOR INDIVIDUALS WHO:

- Demonstrate increased ER ( $\geq 50^\circ$ ) to IR on the left side and have a negative Extension Drop Test and a positive Adduction Drop Test on the left side.
  - overly stretched out anterior hip ligaments and exceeds ER values
- Demonstrate an atrophied right thigh compared to the left and have a negative Extension Drop Test and a positive Adduction Drop Test on the left or both sides, and possibly increased ER values ( $\geq 50^\circ$ ) on either side and experience chronic right knee pain.
  - poor mechanical position for the gluteus medius and adductor magnus to function as left FA internal rotators
  - overactive obturator and psoas for left FA external rotation
  - compensatory driven left VL and TFL as FA internal rotators
  - overactive and underdeveloped right VL secondary to its increased IR function and decreased leg extensor function
- Demonstrate increased IR ( $\geq 60^\circ$ ) on the left side and have a negative Extension Drop Test, a positive Adduction Drop Test on the left side and experience left SI joint strain.
  - left SI joint functioning as left hip
- Demonstrate a positive Adduction Drop Test and a positive Extension Drop Test on the left side and experience chronic right SI joint pain.
  - hypermobile right SI joint
- Demonstrate a positive Adduction Drop Test and Extension Drop Test on the left side and limited IR and ER on right ( $< 30^\circ$  at each joint), and chronic right SI joint pain.
  - right SI joint functioning as right hip
- Demonstrate ongoing groin pain on either side, or chronic ischial bursitis on either side, or left anterior knee pain and a positive Extension Drop Test and Adduction Drop Test on the left side after two weeks of conventional repositioning and AF / FA IR retraining on the left side.
  - unable to maintain pelvic symmetry

# PROTONICS® CURLS WITH MEDIAL HAMSTRING

## REPOSITIONING

It is suggested that these activities be performed in the order as listed below. Place the system on the LEFT leg and set the system to a \_\_\_\_\_. Perform 15 repetitions of each. Repeat 3-4 times a day.

## PRONE HAMSTRING CURL

Lie on your stomach with a pillow under your lower ribs, a towel under your left lower thigh to keep the hip in neutral alignment and a bolster between your thighs. Turn your left thigh inward and pull your heel toward your buttocks. Lower the leg slowly until your knee is fully extended (straight). Repeat.



## SUPINE HAMSTRING CURL

Lie on your back with your left leg over the edge of a bed or table and your right leg bent up and resting. Place a small towel under your left lower thigh and a bolster between your left thigh and right foot. Turn your left thigh inward. Maintain this position as you straighten the left knee and then bend it back again moving the heel toward the floor and underneath the buttocks if possible. Repeat.



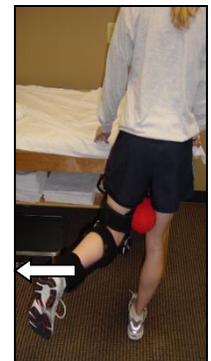
## SEATED HAMSTRING CURL

Sit with your legs over the edge of a mat or chair and a ball between your knees. Keep your knees at the level of the hip or slightly higher by placing a small towel under your left thigh. Allow your back to round slightly as you turn your left thigh inward and pull your heel toward your buttocks. Slowly straighten your leg. Repeat



## STANDING HAMSTRING CURL

Stand on your right leg with your back slightly rounded. Rotate or turn your left leg inward. Raise your left heel toward your buttocks keeping your thighs in line with each other and your shoulders directly above your hips. Lower your leg slowly until your knee is fully straight. Repeat.



## BLOCK SIDE STEPPING

Place Protonics on left leg with setting at \_\_\_\_\_. Stand sideways with your left foot next to a 4 / 6 / 8 inch block. Perform 5 standing hamstring curls with left leg. Keep your left thigh neutral as you pull your leg back and place your left foot on the outer edge and top of the block. Step up, lift right foot and place it next to other foot. Slowly lower right foot to the floor. Step down with your left leg. Always keep left foot behind the right. Repeat \_\_\_\_\_ times.

## STEP OVER

Place Protonics on left leg with setting at \_\_\_\_\_. Stand facing a 4 / 6 / 8 inch block. Pull back left leg at the knee as you place your left foot on the top of the block. Step up and lift right foot to top of block. Then slowly lower right foot to floor. Step down with your left leg. Step back up to the top of the block, going backwards, with left leg. Lift right foot to the top of the block. Lower right foot behind block. Step down with left leg. Repeat \_\_\_\_\_ times.

## LATERAL STEP UP

Place Protonics on left leg with setting at \_\_\_\_\_. Advance sideways up the stairs leading with left leg. Remember to pull back left leg at the knee before advancing up to the next step. Keep left foot behind the right. Keep feet parallel to each other or stay neutral at the hip. Try to place both feet flat on respective steps prior to hip movement. Advance sideways down the stairs with right leg. Perform \_\_\_\_\_ flights (10 to 12 steps in a flight of stairs), up and down, \_\_\_\_\_ times a day.

## FORWARD STAIR DESCENTS / BACKWARD STAIR ASCENTS

Place Protonics system on left leg with setting at \_\_\_\_\_. Advance up the stairs backward. Remember to pull back left leg at the knee before advancing up to the next step. Then go down the stairs facing forward. Keep your feet neutral or parallel with each other. Try to place both feet flat on respective steps prior to advancing up or down each step. Take your opposite hand to most flexed knee with each step. Perform \_\_\_\_\_ flights (10 to 12 steps in a flight of stairs) up and down, \_\_\_\_\_ times a day.

## RETRAINING / WALKING

Following two exercise sessions a day, wear the Protonics system at a resistance level of \_\_\_\_\_ during activities of daily living for a period of 1 to 2 hours.

*The Protonics<sup>®</sup> system is intended for use during occupational and home environmental activity for retraining. Therefore, it is not recommended for use during long walks, recreational running, retraining periods longer than 2 hours, or more than 8 hours of total retraining during a 24-hour period.*