

UCLA DEPARTMENT OF ORTHOPAEDIC SURGERY – SPORTS MEDICINE



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KNEE REHABILITATION PROGRESSIVE RESISTIVE EXERCISES (PREs)

These exercises should be performed daily, or as directed by your physical therapist and all performed in one block consisting of 3 sets of 10 repetitions.

The key to success is progression through addition of resistance (weight) to compensate for progressive gains in strength. The substantial gains in strength desired may take an extended period of time to attain. Usually six to eight weeks on a daily exercise program will be the necessary period of time. The exercises must be continued after this period of daily exercise to maintain the strength levels that you have gained. If you discontinue the exercise you may rapidly lose the strength you have developed, so continue with the program at least on an every other day basis. Exercise daily for six weeks, then exercise every other day as long as you continue to be physically active.

All of the exercises are performed in 3 sets of 10 repetitions (10 times, rest, 10 times, rest 10 times) for a total of 30 repetitions. Rests between sets should be brief (less than one minute). We want you to exercise both legs independently, so you may perform 10 repetitions with one leg, 10 repetitions with the other leg and continue reciprocal sets of 10 until each leg has completed 3 sets of 10.

Each repetition is held isometrically for a 6 second count. Use a clock or count: 1001, 1002, 1003, 1004, 1005, 1006.

Start with light resistance and increase when you can complete 3 sets of 10 repetitions with the proper technique as described by your physical therapist. Increases in strength will occur through increasing resistance. Generally, increments of 2-5 lbs. are appropriate.

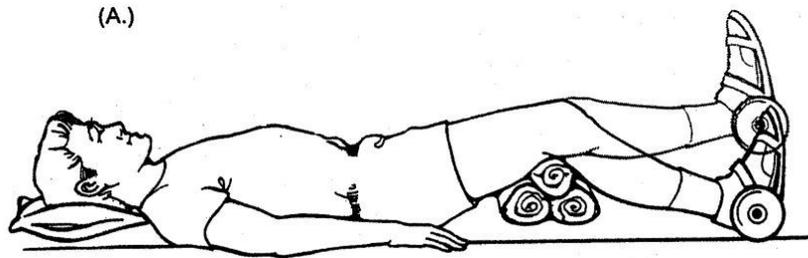
Recommended Equipment

- Nautilus, Universal or Comparable Equipment
- Variable Therapeutic Weights
- Weight Boot Assembly:
 - o Weight Boot, Bar and Collars
 - o Two 1¼ lb. plates
 - o Two 2½ lb. plates
 - o Two 5 lb. plates
 - o Two to four 10 lb. plates
 - o Six to nine towels to make three towel rolls

I. Quadriceps Extensions

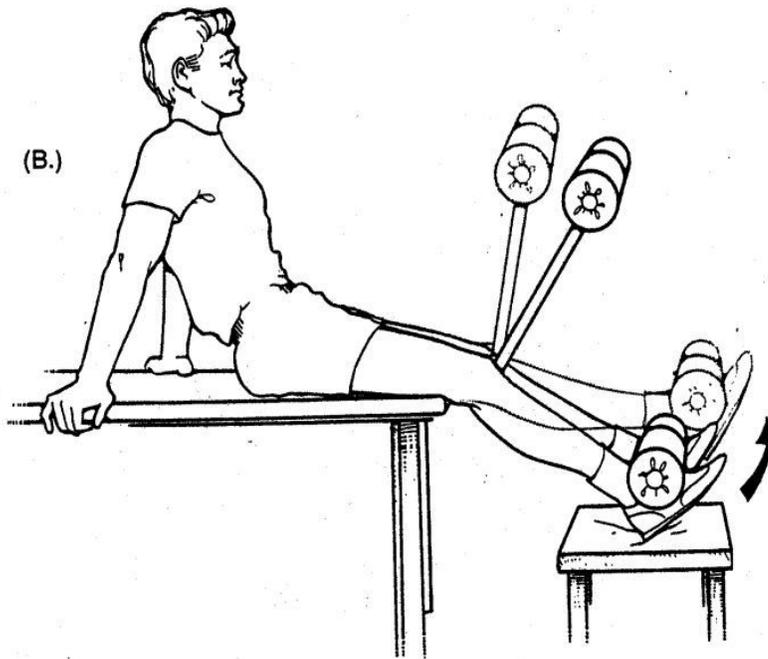
A. Short-arc isometric with weight boot assembly or therapeutic weights.

Lying on back with 3 towel rolls under knee, extend the knee and hold that position for 6 seconds. Exercise each leg for 3 sets of 10 repetitions. (10 times, rest, 10 times, rest, 10 times). Begin with light resistance and increase when 3 sets of 10 are completed proficiently with that resistance. Make progressions in 2-5 lb. increments as specified by your physical therapist.



B. Short-arc Quadriceps Extension on Nautilus or Universal Thigh and Knee Machine.

Lift the weight through the last 30 degrees of motion only (approx. 6-8"). Exercise each leg independently. Hold for 6 seconds; perform 3 sets of 10 repetitions with each leg.

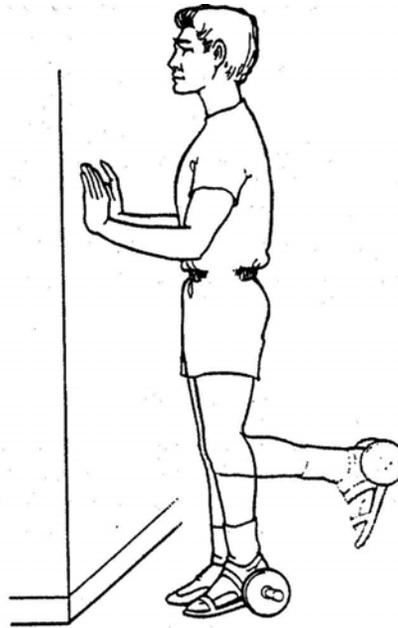


II. Hamstring Flexion

A. Weight Boot

Standing against and facing wall, bend knee and left weight boot off the surface. Hold for 6 seconds. Perform 3 sets of 10 repetitions with each leg.

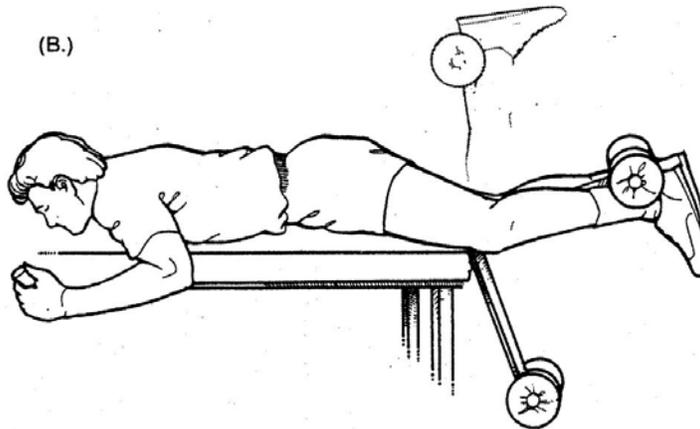
(A.)



B. Hamstring Flexion on Nautilus or Universal Thigh and Knee Machine.

Lying on stomach, hook heel under hamstring attachment and slowly bend knee toward buttocks. Pause briefly and lower weight slowly. Exercise each leg independently.

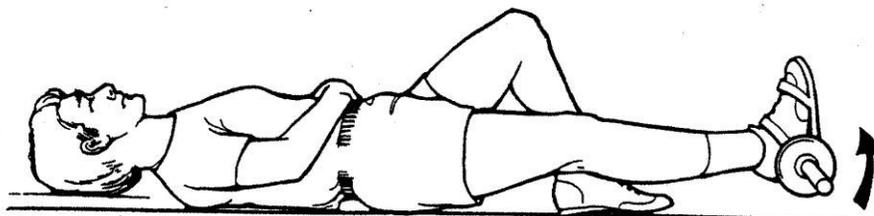
(B.)



***NOTE:** The amount of resistance used for each exercise may vary. Consult your physical therapist for details.

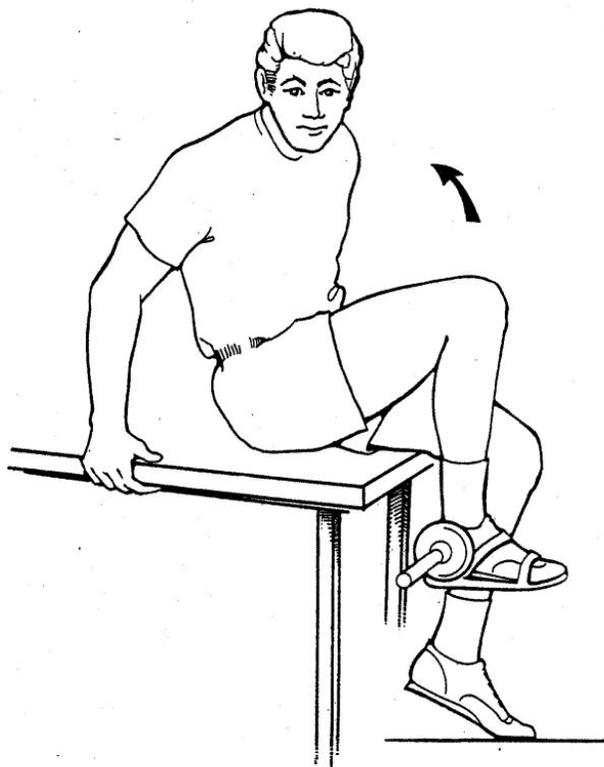
III. Hip Flexion using weight boot or therapeutic weights.

STRAIGHT LEG RAISE (SLR). Lying on back with opposite knee bent and foot flat on the table, or floor, gently lock the exercising knee in the extended position before lifting the leg off the surface 6 to 8 inches. Hold for 6 seconds and lower slowly. Perform 3 sets of 10 repetitions with each leg.



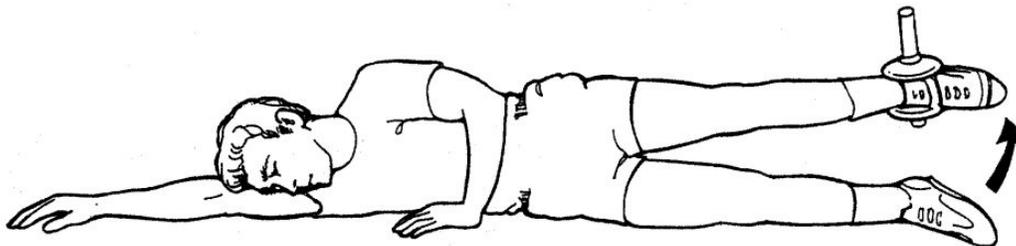
IV. Hip Flexion, seated. KNEE TO CHEST

Seated, lift knee toward chest using weight boot or therapeutic weight, hold for 6 seconds. Perform 3 sets of 10 repetitions. Begin exercise IV when instructed to do so by your physical therapist.



V. Hip ABDuction

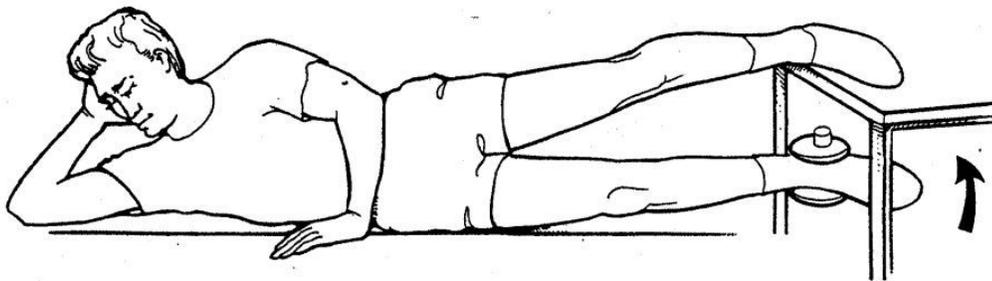
Assume a sidelying position with 1/3 to 1/4 resistance used for Exercise I attached to the lower leg. ABDuct the leg and hold the leg 6 to 8 inches off the surface for 6 seconds, perform 3 sets of 10 repetitions.



Begin exercise V as instructed by your physical therapist.

VI. Hip ADDuction

Lying on affected side with unaffected leg on bench or chair 15-18 inches high, ADDuct the lower limb, bringing the legs together for 6 seconds. Perform 3 sets of 10 repetitions. Use 1/3 to 1/4 weight of Exercise I. Begin Exercise VI when instructed to do so by your physical therapist.



VII. Heel raises to strengthen calf muscles.

Step up on toes, as heels are elevated, pause briefly, lower slowly. Perform 3 sets of 25 repetitions. Begin with both legs and progress to exercising each leg independently. Your physical therapist can discuss variations of this exercise with you.

