



## **ACL Preoperative Rehabilitation**

### **Goals Required Before Surgery**

- Symmetric knee range of motion, including full terminal hyperextension
- Good quadriceps control – Able to activate quads and hold heel off table in terminal hyperextension
- Normal gait
- Minimal swelling
- Psychologically ready for surgery and participation in postoperative rehabilitation

### **Phase I: Immediately after Injury**

- Education on pain/swelling control
  - Near continuous icing (either with cold compression device or ice packs)
  - Elevation above the level of their heart
- Education on preventing a knee flexion contracture
  - No pillows behind knee, only behind heel
  - Encouraging knee extension behaviors such as propping leg on heel while sitting, locking knee into terminal extension during weight bearing and shifting weight onto injured leg while standing
- May progress to weight bearing as tolerated and out of any immobilization devices and wean off crutches unless otherwise instructed.
  - Crutches can be used until quad control and gait normalize (no extensor lag).

### **Phase II: Extension Phase**

- Emphasis is on regaining/maintaining full terminal extension
  - It is often counterproductive and frustrating to work on both flexion and extension at the same time.
- Heel props, prone hangs (4-5 times/day)
- Encourage patient to put full weight on leg and lock knee into hyperextension
- Towel stretches, quad sets (10-15 repetitions for 10-15 seconds each, 3-4 times per day)
- Ankle Pumps, calf stretching, patellar mobilizations



Figure 4. In prone position, the patient suspends both knees off the edge of a table, allowing the knees to passively extend. A weight may be added to the ankle to increase the stretch. This exercise is performed for 10 minutes 3 to 4 times per day.



Figure 2. The patient holds on to the ends of a towel that is wrapped around the ball of the foot. While using 1 hand to hold part of the leg above the patella down on the table, the other hand pulls the ends of the towel so that the knee is hyperextended and the heel lifts off the table. This stretch is held for 10 seconds and the patient performs 10 repetitions 3 to 4 times per day.



Figure 6. Patient activates the quadriceps muscle in order to raise the heel off the table.

(Images from Biggs-Kinzer A, et al. Sports Health, Sept 2010)