

## ACL Reconstruction Post-operative Rehabilitation Protocol

Moderate to severe calf pain should be reported immediately.

### Days 1 to 7

- CryoCuff or ice, TED hose, relative rest
- Foot flat weight-bearing as tolerated with crutches
- Office visit for dressing change two to three days post-op

### Goals

- Full passive extension measured in prone
- Minimize pain and swelling
- Good quad set with minimal extensor lag
- Independent straight-leg raise
- Knee flexion (active) 90°
- Ambulation is not emphasized the first week as goal is restoring range of motion and control of pain and swelling
- Patient should be instructed to **not** place a pillow under knee
- Crutch/gait training
- **Knee immobilizer is applied because of the femoral nerve block performed at the time of surgery. Once the block has worn off (24 to 48 hours) and the patient is able to perform an independent straight leg raises, the brace can be removed.**

### Exercise

- Straight-leg raise (100 a day)
- Quad sets with heel prop
- Ankle pumps in elevation
- Prone hangs
- Step-ups 3" to 6"
- Dead lift partial squats
- Prone hang
- Quadriceps set/hamstring isometrics hourly
- Stationary bike may begin on days three to four as tolerated
- **Use biofeedback and/or neuromuscular electrical stimulation as needed for quad shut down** (if patient does have quad shut down, issue neuromuscular electrical stimulation for home use at minimum of one hour daily).

### Days 8 to 14

- Remove steri-strips at follow-up appointment with Dr. Lavery
- Remove TED hose
- Begin to wean off crutches

### Goals

- Full knee extension
- Flexion at 110°
- Normalize gait and wean down to one, then no crutches as tolerated

- Control pain and swelling
- Full quad activation without lag

### **Exercise**

- Heel slides
- Heel raises
- Don Tigney/terminal knee extension
- Seated and prone hamstring exercises
- Short leg partial squats
- Shuttle leg press 90 to 40°
- Prone hang
- Gastroc/soleus exercises
- Cardiovascular exercises such as StairMaster, elliptical or stationary bike
- Leg press 15 to 20 reps at 90 to 40°
- CKCPA
- Wall slides

### **Days 15 to 30**

- Full active range of motion
- Continue to wean off crutches as needed
- Deep water running and swimming
- Advance closed kinetic chain functional exercises
- Scar massage
- Initiate proprioceptive training

### **Weeks 4 to 6**

- Patellar mobs
- Advance closed kinetic chain activities and closed kinetic chain proprioceptive activities
- Increase endurance
- Water exercises
- Increase cardiovascular endurance via low impact activities

### **Weeks 6 to 8**

- Gym exercises may include partial squats, leg press, lunges, leg curls, etc.; avoid knee extension machine
- Continue to stress functional training exercises and endurance activities
- May begin retro ambulation on treadmill
- Caution/educate patients regarding the revascularization of the ACL graft from weeks 6 to 12 **(the graft weakens from weeks 6 to 12, so avoid cutting, pivoting or jumping)**
- Do **not** progress to running yet

### **Weeks 8 to 12**

- Begin low level plyometrics at 70 to 80 total foot contacts (no depth jumps)

### **Month 3**

- Begin running progression (straight line only)

### **Months 4 to 5**

- Begin speed work at \_\_\_\_\_ speed, progressing to full speed at various distances
- Begin higher level plyometrics such as low depth jumps at 80 to 100 foot contacts
- Begin agility exercises in forward and lateral patterns

### **Month 6**

- Progress to full participation (must pass functional progression)