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## ACL Reconstruction Rehabilitation Protocol

### Immediate Post-op

- Advance to weight bearing as tolerated with crutches during first two weeks
- Brace locked in extension except for physical therapy for first two weeks then open brace up, sleep with brace on
- Long-leg hinged brace discontinued when gait normal and good quad control, usually at three to four weeks
- Cooling device or ice used on knee every two hours for 20 to 30 minutes for first week, then continue as needed for swelling and pain management

### Weeks 1 to 2

- **Focus on achieving full extension:** Heel prop and prone hang
- Teach patellar mobilizations: Inferior, superior and medial glides and patellar tilts
- Focus on quad activation (use neuromuscular stim if patient has poor quad contraction)
- Ankle pumps, quad sets in full extension, straight leg raises with brace locked in extension, heel slides, hamstring sets
- **With hamstring autograft:** No active hamstring exercises until week two; no open chain resisted hamstring curls until four weeks post-op
- Active hip exercises: Side-lying adduction/abduction, prone extension
- Stretch hamstrings and calves

### Weeks 3 to 6

- Active assistive range of motion (AAROM) with flexion goal of 130 degrees by end of week six
- Start stationary bike (low resistance, seat high)
- Ok to stop using brace at night while sleeping
- Resisted leg curls in prone position protecting knee from hyperextension
- Resisted gastroc/soleus exercises progressing to bilateral toe raises as tolerated then single leg toe raises
- Add resistance to hip exercises
- At post-op day 21 add
  - Partial squats at 0 to 30 degrees of knee flexion, perform bilateral and progress to unilateral as tolerated
  - Progressive quad resistance

### Weeks 7 to 12

- Range of motion (ROM): Increase flexion to full and ensure full extension is achieved
- Increase resistance exercises
  - Progress to weighted straight leg raises
  - Progress exercise on straight leg raises press/hack squat as tolerated with emphasis on high reps, low resistance in range of 0 to 90 degrees
  - Increase ROM for bilateral partial squats from 30 to 45 degrees of knee flexion
  - Emphasize high repetition and low resistance weights

- Balance activities
- Isometric and isotonic training for hamstrings

### **Months 3 to 6**

- Stationary bike, unilateral pedaling to emphasize hamstrings
- Agility work outs (figure-eights, shuttle runs)
- Exercises on weight machines
  - High reps to work on muscle endurance
  - Leg press/hack squat 0 to 90 degrees
  - Hip exercises
  - Progressively increase walking to tolerance on treadmill
- Begin jogging weeks 13 and 14
  - Up and down straightaway, no curves, stop at end and turn around
  - Take day off between each workout to see how knee responds
  - If pain or swelling develops, back off
  - Ice after jogging
- At weeks 15 and 16
  - Begin running around track, gentle curves
  - Progress speed, intensity and duration

### **6 Months**

- Okay for light tennis, golf
- Begin sport specific training
- Return to sport
  - Hamstring autograft: 6 to 8 months
  - Achilles tendon allograft: 8 to 12 months
  - Progression must be gradual and sport specific