

## Postoperative Rehabilitation Protocol for ACL Reconstruction with Meniscus Repair

*\*Physical Therapy should be started within a week after surgery*

### Phase 1: Postoperative weeks 0-6

- Goals
  - Protect graft
  - Minimize pain / swelling
- Precautions / Brace / Crutches
  - Brace to be worn and set at 0-90 degrees for 6 weeks
  - Brace to remain unlocked at all times following resolve of nerve block
  - Brace may be removed for hygiene and therapy
  - Flat foot (25%) weight bearing 0-6 weeks.
- Range of Motion
  - Ensure full extension is achieved
  - Active and Passive ROM 0-90 during weeks 0-2
  - May progress ROM as tolerated after week 2. No forced flexion
  - **No weight bearing with knee flexion >90 degrees**
- Strengthening
  - Ankle pumps
  - Patellar mobilizations
  - Work on quadriceps control (quad sets, heels slides, SLR)
  - For patellar or quadriceps tendon autograft – hamstring curls adding weight as tolerated, closed kinetic chain quadriceps strengthening as tolerated (wall sit, step ups, mini squats, leg press 90-30 degrees)
  - SLR in all planes with brace in full extension until quadriceps strength is sufficient to prevent extension lag – add weight as tolerated to hip abduction, adduction, and extension
  - Quadriceps NMES
  - Hamstring stretches
  - Quadriceps isometrics at 60 and 90 degrees
  - Stationary Bike – initially only for promotion of ROM – progress light resistance as tolerated
- Modalities PRN

### Phase 2: Postoperative weeks 6-10

- Goals
  - Restore normal gait
  - Maintain full extension, progress to full flexion
  - Protect graft
- Precautions / Brace / Crutches
  - Discontinue crutches and progress to full weight bearing
  - Discontinue brace if capable of SLR without extensor lag
- Range of Motion

- Continue progressing in range of motion / flexibility to full knee flexion.
- Maintain full extension
- Strengthening
  - Continue CKC strengthening and progress as tolerated: One-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits, lunge walks
  - Stairmaster – begin with short steps, avoid hyperextension
  - Nordic Trac or Elliptical machine for conditioning
  - Stationary bike – progress time and resistance as tolerated
  - Continue to progress proprioceptive activities: ball toss, balance beam, mini-trampoline balance
  - Continue to progress hip, hamstring, and calf strengthening as tolerated
  - If available, begin running in pool (waist deep) or an unweighted treadmill at 8 weeks

### Phase 3: Postoperative weeks 10-16

- Goals
  - Full ROM
  - Improve strength, endurance, and proprioception of lower extremity
  - Normal running mechanics / gait
  - Strength approximately 70% of the uninvolved lower extremity (using isokinetic evaluation if available)
- Range of Motion
  - Continue ROM exercises to maintain full active ROM
- Strengthening
  - Initiate open chain kinetic extensions 90-30 degrees, process to eccentrics
  - Begin swimming if desires
  - If available, isokinetics (with anti-shear device) – begin with mid-range speeds (120 degrees / sec to 240 degrees / sec)
  - Progress toward FWB running at 12 weeks
  - Progressive hip, quadriceps, hamstring, and calf strengthening
  - Advance proprioceptive activities to initiate agility activities
  - Recommend isokinetic test with anti-shear device at 12 weeks (used to guide continued strengthening)

### Phase 4: Postoperative months 4-6

- Goals
  - Symmetric performance of basic and sport specific agility drills
  - Single hop and 3 hop tests 85% of uninvolved lower extremity
  - Quadriceps and hamstring strength at least 85% of uninvolved lower extremity per isokinetic strength test
- Maintain full ROM
- Strengthening
  - Continue and progress flexibility and strengthening program based on individual needs and deficits
  - Initiate plyometric program as appropriate for patient's goals
  - Agility progressing including, but not limited to:
    - Side steps, crossovers, figure 8 running, shuttle running, one-leg & two-leg jumping, cutting, acceleration / deceleration sprints, agility ladders drills, sport-specific drills as appropriate for patient
  - Assessment of running on treadmill for proper running mechanics

- Continue progression of running distance based on patient needs

#### Phase 5: Postoperative 6 months and beyond

- Goals
  - Single hop and 3 hop tests at least 85% of uninvolved lower extremity
  - Quadriceps and hamstring strength at least 85% of uninvolved lower extremity per isokinetic strength test
  - Safe return to athletics / work
  - Maintenance of strength, endurance, proprioception
  - Educate patient with regards to any possible limitations
- Maintain full ROM
- Strengthening
  - Maintenance program for strength and endurance with gradual return to sports participation / work
  - **All patients should consult with their operative surgeon on specific return to work / return to play release.**