

Postoperative Rehabilitation Protocol for ACL Reconstruction with Meniscus Root 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 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 for 6 weeks.
- Range of Motion
 - Ensure full extension is achieved
 - Active and Passive ROM 0-90 during weeks 0-4
 - May progress ROM as tolerated after week 4. 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)
 - 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
- Modalities PRN

Phase 2: Postoperative weeks 6-10

- Goals
 - Restore normal gait
 - Maintain full extension, progress to full flexion
 - Protect graft
 - Increase hip, quadriceps, hamstring, and calf strength
 - Increase proprioception
- Precautions / Brace / Crutches
 - Discontinue brace is capable of SLR without extensor lag
 - Discontinue crutches and progress to full weight bearing
- Range of Motion
 - Continue progressing in range of motion / flexibility to full knee flexion.

- Maintain full extension
- Strengthening
 - **No loading the knee in greater than 90 degrees of flexion until week 12**
 - 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
 - Protect patellofemoral joint
 - 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
 - **No loading the knee in greater than 90 degrees of flexion until week 12**
 - 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.**