



Patella Tendon/Quadriceps Tendon Repair Guidelines

GENERAL GUIDELINES

- Focus on protection of graft during primary re-vascularization (the first 8 weeks post-op) and graft fixation (4-6 weeks post-op).
- No bathing/swimming until sutures are removed.
- Showering is permitted with waterproof covering over sutures (Tegaderm)
- Driving: Must be off all pain medications
 - More than 1 week post-op for automatic transmission or left leg surgery.
 - More than 4 weeks for manual transmission or right leg surgery.
- Crutches for ambulation for 4-6 weeks as determined by MD/PT. Discontinue crutches when able to walk normally (no limp).
- Brace use
 - NWB/TDWB locked in extension for 0-2 weeks.
 - WBAT locked in extension for 2-6 weeks.
 - WBAT brace unlocked 0-90 degrees 6-12 weeks.
 - Sleep with brace locked in extension for 1 week post-op.
- Return to work as determined by MD (dependent on work demands).
- Use ice and elevation for swelling and pain control.
- NO ACTIVE knee extension for 4 weeks
- NO quad sets for 2 weeks.

PHASE I (Weeks 0 - 2)

Goals:

- Protect repaired structure
- Educate patient on rehab progression
- Decrease inflammation and swelling
- Control pain
- Full passive knee extension to 0 degrees

Exercises

- Ankle pumps
- Passive knee extension
- Heel slides 0-45 degrees



- Active standing or prone knee flexion 0-45 degrees.
- Hip SLR in abd/add/ext with brace on.
- Seated gastrocnemius stretch with towel
- Medial/lateral patella mobilizations
- Gentle isometric hamstring exercises

Criteria to advance to Phase II:

- Knee ROM 0-45 degrees
- Minimal swelling/inflammation

PHASE II (Weeks 2 - 6)

Goals:

- Eliminate inflammation and swelling
- Passive knee ROM (0-90 degrees)
- Restore full patellar mobility
- Normal gait on all surfaces without brace or assistive device
- Improve lower extremity strength
- Demonstrate stability with dynamic knee activities (no varus/valgus deviations)

Exercises:

- Patellar mobilizations
- Heel slides, AAROM prone knee flexion, seated flexion stretch
- Gentle Submax quad sets and progress to assisted SLR with brace locked in extension
- Prone or standing active knee flexion
- **2-4 Weeks:** 25-50% PWB on land
- **4 Weeks:** Initiate active knee extension (LAQ knee extension and SAQ over bolster, using non-involved leg or strap to assist as needed)
- Initiate stationary bike for ROM as able
- Aquatic exercises for gait training and lower extremity strengthening
- Progress gait training to 50-75% PWB on land

Criteria to Advance to Phase III:

- Knee ROM 0-90 degrees
- Normal patellar mobility
- Demonstrate good SLR without quad lag



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- Normalized gait with brace locked in extension
- Minimal swelling/inflammation
- No pain with exercises



PHASE III (Weeks 6 -12)

Goals:

- Full knee flexion ROM
- Improve quad strength Progress hip, quad, hamstring calf strengthening
- Normalize gait with brace locked 0-90 degrees and no assistive device
- Advance lower extremity flexibility
- Advanced aquatic exercises
- Initiate proprioception exercises

Exercises:

- Gentle quad stretching in prone or semi-reclined Thomas Test position
- Progress gait training with brace unlocked to 45-90 degrees of flexion. Wean from crutches.
- Bilateral closed kinetic chain strengthening:
 - Partial wall slides
 - Mini-squats
 - Low resistance leg press
- At 8-10 weeks begin single leg closed chain strengthening
 - Leg press
 - Step-ups/downs
 - Partial lunge
- Stationary bike for aerobic training

Criteria to Advance to Phase IV:

- Full knee ROM
- Demonstrates good quad strength with exercises
- Normal gait on all surfaces at community level distances using the brace
- Minimal swelling/inflammation
- No pain with exercises



PHASE IV (Weeks 12 - 16)

Goals:

- Normal gait on all surfaces without brace or assistive device.
- Cross-training machines for conditioning
- Increase strength to >85% non-involved extremity
- Advance proprioception exercises
- Improve aerobic endurance
- Initiate plyometric exercises
- Physician clearance to initiate return to running and functional progression

Exercises:

- Spin bike
- Cybex training (if indicated by surgeon)
- Pre-running exercises
 - Low skips
 - Punch steps
 - Double punch steps
 - Hurdle walks
 - High skips
 - Kickbacks
 - Step-overs
- Advance proprioceptive exercises
 - BOSU
 - Single leg dynamic balance
 - Dual task balance
- Agility drills
 - Ladders
 - Side shuffles
 - Cross-overs
 - Backwards run
 - Quick start/stops
 - Zig-zags
 - Cutting
- Jump training
 - Shuttle training
 - Trampoline
 - Landing techniques
 - Box jumps
 - Single leg hops
 - Tuck jumps



- Return to running – treadmill with transition to level outdoor surfaces
- Continue strengthening – advance resistance and repetitions
 - Ball hamstring curls
 - Single leg press
 - Core stabilization

Criteria to Advance to Phase V:

- Lower extremity strength greater than or equal to 85% of non-involved (by Cybex test if requested by surgeon)
- Single leg hop test greater or equal to 85% of non-involved leg
- No pain with forward running, agilities, jump training, or strengthening
- Good knee control with single leg dynamic proprioceptive activities

PHASE V (Weeks 16 and beyond)

Goals:

- Full return to sport activity/work
- Equal bilateral lower extremity strength
- Equal bilateral balance, proprioception, and power in lower extremity
- 100% global function rating

Exercises:

- Advance above exercises
- Gradually increase level of participation in sports-specific activities
- Running on all surfaces