

Post-Operative Protocol

Tibial Tubercle Osteotomy (TTO)/Medial Patellofemoral Ligament (MPFL) Reconstruction

This protocol will give you general guidelines for your recovery following tibial tubercle osteotomy with or without an MPFL Reconstruction for instability of the patella. This includes your initial recovery and progression through a rehabilitation program. Specific activity modifications and timeline adjustments may be made according to specific patient characteristics as well as X-ray findings.

For Patients: Recovery at a glance

- Weeks 0-2 activity kept to a minimum, rest and elevate your leg to control swelling and reduce pain
- Weeks 0-4 crutches and non-weight bearing (toes can touch), weeks 4-6 crutches 50% partial weight bearing, weeks 6+ weight bearing as tolerated wean off crutches
- You will be in a knee brace for 6 weeks. Ok to remove for showers.
- Ok to shower, but wrap dressing for first 3 days (saran wrap, bag, cast cover). Remove the dressing in 3 days, ok to shower without wrap at this point but make sure not to soak or scrub incision. Ok to let soap and water drain over incision
- First follow up in 2 weeks, sutures removed and x-rays
- Aspirin 325 mg daily x 2 weeks and TED Hose x 2 weeks for Blood Clot Prevention

For Physical Therapists

Phase 1 Weeks 0-6

1. Goals

- Rest and recovery from surgery. Protect the repair
- Control swelling and pain through elevation of operated extremity
- Prevent muscle atrophy – regain active quadriceps contraction
- Emphasis on compliance to HEP and WB precautions/restrictions

2. Precautions/Brace/Crutch Use

- Weight bearing
 - Non weightbearing (toes can touch lightly on the ground) weeks 0-4, crutch use
 - 50% partial weight bearing weeks 4-6 with crutches
 - weight bearing as tolerated weeks 6+ wean off crutches

- Brace/Range of Motion
 - Weeks 0-2: 0-70, Weeks 2-4: 0-90, Weeks 4-6: 0-110

3. Guidelines/Exercises

- Restore quadriceps recruitment through strengthening exercises
- Hip progressive resistive exercises: pain-free SLR with brace if lag is present
- Distal strengthening
- Ankle pumps/Quad Sets/Glute Sets
- Hamstring activation: heel slides up to ROM restrictions

Phase 2, Weeks 6-12

1. Goals

- Control pain and inflammation
- Promote healing
- Achieve normal knee ROM
- Good quad contraction
- Patellar Mobility

2. Precautions/Brace/Crutch Use

- Progress to weight bearing as tolerated, wean off crutch use as comfortable
- ROM 0-120 until week 8, then progress as tolerated
- No brace use in home, progress out of brace in public as comfortable

3. Guidelines/Exercises

- Be aware of any concomitant procedures (cartilage repair) that may change protocol
- Avoid excessive lateralization of patella when working on patellar mobility
- Normalize gait pattern with fully extended knee
- Progress quad strengthening
- Advance proximal strengthening/core strengthening
- Initiate balance and proprioceptive training
- Underwater treadmill or anti-gravity treadmill/stationary bike
- Progress pain free arc of motion, closed chain preferred
- Initiate step up progression
- Hip extension with knee flexion, side planks/bridge

Phase 3, Weeks 12-18

1. Goals

- Pain-free with ADLs, therapeutic exercise
- Maintain normal knee ROM / normal gait
- Initiate running program (12-16 weeks, clearance per MD), plyometrics (bilateral)
- Achieve patellar tracking symmetry and alignment during movements such as squatting, jumping in place
- Good Single limb dynamic balance

2. Precautions/Home Instruction

- Correct gait deviations/abnormal patellar tracking
- Maintain full range of motion
- Restore normal activities of daily living/pre-operative activity other than sports

3. Guidelines/Exercises

- Balance Progression, introduce different planes of motion
- Advance proximal strengthening
- Address muscle imbalances
- Initiate bilateral leg plyometric program
- Initiate running progression (late phase)

Phase 4 weeks 18-24

1. Goals

- Lack of pain with sport specific movements
- Maximize strength and flexibility to meet demands of individual sports
- Symmetric patellar tracking through a range of movement such as squats/jumping
- Increase cardiovascular training to meet demands of individual sport

2. Precautions

- Pain with therapeutic and functional activities

3. Guidelines/Exercises

- Advance LE strengthening, flexibility, dynamic single limb stability and agility
- Advance Core strength and stability
- Address muscle imbalances
- Cross-training

- Advance plyometric program
 - Vertical/Horizontal jumping progression
 - Progress running program
 - Cutting, acceleration, change of direction if progression through all other phases without weakness/pain

Return to Sport Week 24

Criteria

- Demonstrate symmetry and alignment during selected movement patterns
- Pain free running/change of direction/acceleration and deceleration
- Lack of apprehension/pain with sport specific movements
- If available - Isokinetic test at 180°/ sec and 300°/ sec: 80-85% limb symmetry
- Hop Test: 90% or greater limb symmetry