

Distal Realignment (Tibial Tubercle Osteotomy)

Weeks One To Four	Weeks Four To Six
Initial Evaluation	Evaluate
Range of motion Joint hemarthrosis Ability to contract quad/vmo Gait (PWB in long leg immobilizer) Inspect for infection/signs of DVT Assess RTW and sport expectations	Range of Motion Joint Hemarthrosis Ability to contract quad/vmo Signs of infection or DVT Patella mobility
Patient Education	Patient Education
Support Physician prescribed meds Reinforce use of immobilizer and assistive device Restate surgical precautions Discuss frequency and duration of treatment (2-3x/wk is expected for the first 8 weeks, followed by intermittent appointments over another 6-8 weeks)	Progress flexion ROM to 90 degrees as tolerated Continue use of brace and crutches until week 6 Reinforce precautions (WBAT continues in extension only, caution with uneven surfaces) Consider core stability based exercises as appropriate
Therapeutic Exercise	Therapeutic Exercise
Review HEP (heel slides, ankle pumps, quad sets, multi plane leg raises in immobilizer, and hamstring/gastroc stretching) No quad PRE's with exception of quad sets and multi plane leg raise in brace No self quad stretching	Continue with quad sets and SLR activity Multi-angle, sub-maximal isometrics (If pain free) AROM to 90 degrees as tolerated Weight shifting, heel raises in brace. HS and gastroc stretching
Manual Techniques	Manual Techniques
Initiate superior and inferior patella mobilization No medial and lateral patella mobilization Initiate gentle mobilization of incision when appropriate	No medial and lateral patella mobilization Posterior capsule mobilization (if needed) Incision mobilization
Modalities	Modalities
Interferential / biofeedback Ice	Initiate use of NMES Other modalities may be used as needed
Goals	Goals
Control pain Reduce joint hemarthrosis Gain full knee extension Restore voluntary quad contraction Independence with post-op precautions 0-60 degrees ROM	Restore voluntary quad contraction Decrease Hemarthrosis Prevent adherence of incision 0-90 degrees ROM Gait with single crutch and d/c brace at 6 weeks

Weeks Six To Eight	Weeks Eight To Ten
Evaluate	Evaluate
Gait and brace needs Quad Contraction ROM Balance	Any ROM restrictions HEP compliance Balance
Patient Education	
D/C brace if good quad contraction May need single axillary crutch to normalize gait	
Therapeutic Exercise	Therapeutic Exercise
Progress to light closed chain exercises for quad contraction and proprioception (partial wallslide and leg press) at 8 weeks Bilateral dynamic balance activity	Initiate squatting, lunging, and step-up progressions as tolerated through this timeframe Progress to closed chain exercises on unstable surfaces at week 10
Manual Techniques	Manual Techniques
Patella mobilizations as indicated PROM and joint mobilization as indicated	Patella mobilizations as indicated PROM and posterior capsule stretch as indicated
Modalities	Modalities
Any as Indicated	Any as Indicated
Goals	Goals
Normal gait without crutches or immobilizer by week 8 Single leg stance with eyes closed for at least 10 seconds 0-125 degrees ROM Quad strength 4/5 by week 8	No pain with ADL's Quad strength at least 4+/5 Normal ROM

Weeks Ten To Sixteen	Weeks Sixteen To Discharge
Evaluate	Evaluate
Any excessive joint laxity HEP compliance Patella mobility / crepitus Balance / single leg stance	Isokinetic Strength testing per physician request at 16 weeks Address any deficits that may limit return to work or sport goals
Therapeutic Exercise	Therapeutic Exercise
Progress Isotonic strength training to include movement in multiple planes at 10 weeks Progress balance activity to single leg dynamic activity and unstable surfaces at 14 weeks Cardiovascular training at 12 weeks (bike, swim and elliptical) with physician approval May begin CFA at 12 weeks (with physician approval)	Sports specific exercises Encourage participation in the CFA Complete agility/ running activity with good isokinetic/FMS test results and physician approval at 16 weeks
Goals	Goals
5-/5 strength with manual testing by week twelve Good stability across tibiofemoral joint May complete exercise independently with intermittent follow up appointments when above criteria is met (Typically 10 to 12 weeks)	Strength of quadriceps and hamstrings no less than 85% per isokinetic test at 16 weeks Discharge with full return to work or sport activity