

**Tibial Tubercle Osteotomy / MPFL / Patellofemoral Marrow Stim +/-
Biocartilage/Cartiform
Postoperative Rehabilitation Protocol
Dr. Jeffrey Witty, M.D.**

Starting Immediately:

- Compressive soft dressing
- Hinged knee brace or immobilizer locked in full extension
- CPM can be used per patient preference but not required
 - o CPM to be used at least 6 hours per day
 - o If no CPM, patient should perform 500 reps of motion daily within the prescribed ROM parameters.
- Commercial cryo/compression devices are suggested to facilitate swelling reduction, pain control, and decreased pain medication requirements
- E - stim to quad

	Weightbearing	Brace	ROM	Exercise
Phase I Week 0 - 6	Touchdown, foot flat	Locked in full extension for sleeping and ambulation.	Week 0 – 2: CPM 0 - 30 PROM 0 – 30 Week 2 – 4: CPM 0 – 60 PROM 0 - 60 Week 4 – 6: CPM 0 - 90 PROM 0 – 110	Week 0 – 2: Quad sets/isometrics Patella mobs Ankle AROM Calf pumps No SLR! Week 2- 6: Add side-lying hip in brace, standing glutes and abductors (0 – 30 abduction)
Phase II Week 6 - 8	Progressive WBAT. Goal full WB by week 8. Progress 25% weekly starting week 6 if cleared by M.D. (requires radiographs documenting TTO healing)	Immobilizer/brace discontinued when quad control improves. MD approval required before crutches discontinued (once radiographic healing of tuberosity noted.)	Progress ROM as tolerated - start AAROM and if pain free progress AROM	May progress strengthening as tolerated once cleared by M.D. and radiographs Weeks 6 – 8: Start closed chain, normalize gait, eccentric quads, hamstrings as tolerated Add 4 way hip, glutes
Phase III Week 8 - 12	WBAT	None	As tolerated	Progress closed chain Progress hamstrings Add balance and proprioception Continue 4 way hip. Core. Glutes

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<p>Phase IV Week 12 - 24</p>	<p>WBAT</p>	<p>None</p>	<p>As tolerated</p>	<p>Continue above phases Add walking lunges Progress hips, planks, bridges Month 3: Progress jogging in straight line Month 4: - can start figure 8 runs - plyometrics</p>
<p>Phase V After 6 months</p>	<p>WBAT</p>	<p>None</p>	<p>As Tolerated</p>	<p>Progress to sports as tolerated. Functional assessments</p>

Adapted from:
Pagenstert et al Arthroscopy 2012
O'Neill et al JBJS 1997
Reagan Clin Sport Med 2014
Magnussen et al Arthroscopy 2014
Duchman et al Clin Sport Med 2014
Tjoumakaris et al AJSM 2010
Noyes' Knee Disorders Text
Woodmass et al Arthrosc Tech 2017