



MPFL Reconstruction with Tibial Tubercle Osteotomy (TTO) Rehabilitation Protocol

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Diagnosis: Patella Instability, MPFL Tear

PT Frequency: 2-4 times per week

Brace: Locked in extension x 2 weeks, then progressive increase as described below

Weightbearing: NWB x 6 weeks, then advance 25% PWB weekly until full WBAT by 8 weeks

PHASE I (Weeks 0 – 6):

- **Weightbearing:** No weightbearing (NWB) x 6 weeks with crutches and brace
- **Hinged Knee Brace:**
 - Worn at all times during day/night; ok to remove for hygiene
 - Week 0-2: Locked at 0°
 - Week 2-4: Locked at 0-30°
 - Week 4-6: Locked at 0-60°
- **Range of Motion:** 0-30° with emphasis on full extension for week 0-2 (PROM, AAROM) adding 30° every 2 weeks
 - Week 0-2: 0-30°
 - Week 2-4: 0-60°
 - Week 4-6: 0-90°
- **Home Exercises:** Heel slides, quad sets with brace locked at 0°, patellar mobilization, straight leg raise in brace locked at 0°, calf/ankle pumps, modalities

Phase II (Weeks 6 – 8)

- **Weightbearing:** Progress to partial weightbearing (25% then 50%) with goal of weightbearing as tolerated (WBAT) with crutches and brace by 8 weeks
 - Discontinue crutches when gait normalized and non-antalgic
 - Discontinue brace once fully WBAT without crutches
- **Hinged Knee Brace:** Unlocked; discontinue brace once fully WBAT without crutches
- **Range of Motion:** Full unlimited active/passive ROM
- **Therapeutic Exercises:**
 - Advance closed chain quads, progress balance
 - Core/pelvic stability work
 - Begin stationary bike at 6 weeks
 - Advance SLR, floor-based exercise; hip/core exercises

Phase III (Weeks 8 – 16)

- **Weightbearing:** Advance to full WBAT by 8 weeks
- **Hinged Knee Brace:** None
- **Range of Motion:** Full



- **Therapeutic Exercises:**

- Progress flexibility/strengthening
- Progression of functional balance core, glutes program
- Advance bike, add elliptical at 12 weeks as tolerated
- Swimming okay at 12 weeks

Phase IV (Weeks 16+)

- **Weightbearing:** Full WBAT
- **Brace:** None
- **Range of Motion:** Full range of motion
- **Therapeutic Exercises:**
 - Advance Phase IV activity
 - Progress to functional training
 - Forward/backward running, cutting, grapevine
 - Initiate plyometric program and sport-specific drills at 4 months
 - Impact activities okay after 20 weeks
 - Return to play as tolerated after 4 months post-op when cleared by MD



Exercise	Week																		
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Initial Exercises:																			
ROM Goals	0-30°				0-60°			0-90°			Progress to full								
Flexion/extension, heel slides/seated																			
Patella/Tendon mobilization																			
Quad Series	0° ISOs, SLR					60° ISO				70-30 arc-resisted			Full arc resisted						
Hamstring series																			
Sit and reach for hamstrings																			
Ankle Pumps																			
Crutch weaning	NWB					Begin WBAT progress to full by 8 weeks													
Heel prop knee extension stretch																			
SLR (w/ brace until quad control restored)																			
Toe and heel raises																			
Balance series																			
Weight-bearing Strength Exercises:																			
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Double knee bends	NWB																		
Leg Bridges (2 □ 1 leg)																			
Begin cord exercises																			
Leg press (ISO □ reps, 2 □ 1 leg)																			
Reverse lunge- static hold																			
Dead Lift (2 □ 1 leg)																			
Sports Test exercises																			
Cardiovascular Exercises:																			
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Bike with both legs-no resistance	NWB																		
Bike with both legs- resistance																			
Aqua jogging																			
Treadmill-walking (no limp)																			
Swimming with fins-light flutter kick																			
Elliptical Trainer																			
Stair stepper																			
*Cardio Exercises	Must tolerate daily walking with no limp & no significant increase in pain/swelling prior to initiating WB cardio (walk, elliptical, stepper)																		
Agility Exercises:																			
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Running Progression	NWB																		
Initial-Single Plane																			
Advance-Multi Directional																			
Functional Sports Test																			
High Level Activities:																			
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Golf Progression	NWB																		
Outdoor biking, hiking, running																			
Return to Full Sport at 6-8 months post-op																			

Adapted from post-operative protocol by Dr. Jorge Chahla created by Howard Head Physical Therapy, Jill Monson, PT, OCS and Jon Schoenecker, PT, OCS, CSCS