

MPFL Reconstruction with Tibial Tubercle Osteotomy (TTO)

Physical Therapy Protocol

Restrictions

- **Weight Bearing:**
 - Touch-down weight bearing (TTWB) for 6 weeks.
 - Progress to 25% weight bearing weekly starting at week 6, aiming for full weight bearing with normalized gait pattern by weeks 8–10.
 - **Bracing:**
 - Locked brace 0–0° extension for 2 weeks (worn full-time including sleep).
 - Unlock brace to 0–90° after 2 weeks for ROM exercises and progress as tolerated.
 - Brace may be discontinued at 6 weeks once patient demonstrates adequate quadriceps control and normalized gait pattern.
 - **ROM:**
 - PROM 0–90° for the first 2 weeks.
 - Progress 10° per week thereafter until full ROM is achieved.
 - **Additional Precautions:**
 - Gentle patellar mobilizations initiated immediately post-op.
 - Avoid resisted knee extension until cleared.
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Phase I – Protection Phase (Weeks 0–2)

Goals:

- Protect surgical repair.
- Minimize pain and inflammation.

- Prevent stiffness and quadriceps inhibition.

Interventions:

- Brace locked at 0° extension, worn at all times including sleep.
 - TTWB with crutches.
 - ROM: 0–90° passive motion at home.
 - Exercises:
 - Calf pumps.
 - Quadriceps sets (in brace).
 - Straight leg raises (SLR) in brace.
 - Modalities for pain and swelling control.
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Phase II – Progressive ROM and Early Strengthening (Weeks 2–6)

Goals:

- Achieve full passive extension.
- Progress flexion ROM gradually.
- Begin early muscular activation without compromising repair.

Interventions:

- TTWB continues.
 - Brace unlocked to 0–90°, off at night starting week 2.
 - Progress non-weight bearing flexibility.
 - Exercises:
 - Floor-based core, hip, and gluteal strengthening.
 - Advance quadriceps sets, patellar mobilizations, and SLR out of brace when quad control is adequate.
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Phase III – Weight Bearing Progression and Strengthening (Weeks 6–8)

Goals:

- Gradual weight-bearing progression to normalize gait.
- Improve lower extremity strength and stability.

Interventions:

- Progress weight bearing by 25% weekly to reach FWB by weeks 8–10.
 - Discontinue brace if patient demonstrates normal gait mechanics.
 - Begin closed chain quadriceps strengthening and balance activities.
 - Initiate stationary biking (no resistance) at week 6.
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Phase IV – Advanced Strengthening and Functional Training (Weeks 8–16)

Goals:

- Achieve full ROM and return to functional mobility.
- Build dynamic balance and core stability.

Interventions:

- Full weight bearing without assistive devices.
 - Progress flexibility and strength exercises.
 - Add elliptical and swimming after 14 weeks.
 - Advance gluteal, pelvic stability, and core exercises.
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Phase V – Return to Sport and High-Level Activities (Weeks 16–24)

Goals:

- Restore dynamic neuromuscular control and strength.
- Initiate sports-specific training once cleared by surgeon.

Interventions:

“Dr. Trevor” Stefanski, M.D.
Minimally Invasive Joint Specialist
DrTrevor.com/PT for a printable copy

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Through Small Incisions

- Maximize single-leg balance and functional movements.
- Continue closed-chain quadriceps and core strengthening.
- Begin running progression and agility drills if cleared.
- Progress to high-level activities (e.g., golf, biking, light jogging) after 20–24 weeks.

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Phone: 513-232-2663
Fax: 513-985-2580