



MPFL Protocol

T. Ryan Pflugner, MD

General Guidelines: The included protocol is intended to be a guideline for the therapist in assisting the patient having undergone a medial patellofemoral ligament repair or reconstruction with either an autograft or allograft tendon. The overall speed of progression is determined by the therapist upon achieving the designated goals. Determined length of therapy is 2-3 times weekly for 4-8 weeks with emphasis on a home exercise program. Modalities may be used as needed.

Rehabilitation Protocol

Phase 1: 0-2 weeks postop

Goals: Control pain, diminish swelling, begin regaining knee range of motion with focus on full extension, patella mobility, protect the MPFL repair/reconstruction

Weight bearing: weight bearing as tolerated in hinged knee brace set at 0-60° with crutches for assistance for 2 weeks.

Brace: hinged knee brace locked in extension for sleep. May unlock brace 0-60° during the day and for therapy/home exercises.

Exercises:

- Quad Isometric Contractions
- Patella mobilization (medial/superior/inferior, avoid lateral)
- Ankle pumps
- Straight leg raises to 45° with brace locked in extension
- Hip adduction, abduction, extension
- Knee Extension: Heel prop, Prone leg hang
- Knee Flexion: assisted by contralateral leg, heel slides

- Stationary cycling without resistance with elevated seat allowing only 0-60° of knee flexion in hinged knee brace

Phase 2: 2-6 weeks postop

Goals: Control pain, maintain full knee extension and advance flexion as tolerated, develop muscular control, achieve normal gait, protect

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the MPFL repair/reconstruction

Weight bearing: as tolerated in hinged knee brace. Progression to wean off crutches after demonstrating normal heel-toe gait

Brace: Advance settings beginning

- Week 2: 0-90°
- Week 3: 0-120°
- Week 4+: unlocked full open

Exercises: (with above knee brace settings)

- Continue Phase 1
- Heel/toe raises
- Mini squats to 45°
- Wall slides
- Prone/standing hamstring curls (delay until 6 weeks if hamstring autograft patient)
- Proprioception: single leg balance, balance board, BOSU trainer
- Stationary cycling—increase resistance as tolerated
- Cardiovascular: elliptical, stationary bike, treadmill walking (no jogging/running until 3 months).
- Avoid open chain knee extension/curly machine

Phase 3: 6-12 weeks postop

Goals: Maintain full range of motion, enhance leg muscular strength and endurance, improve proprioception and neuromuscular control, return to functional activities

Weight bearing: as tolerated

Brace: May wean out of brace as tolerated, transition to a patella

stabilizing brace. Exercises:

- Continue Phase 2/lower extremity strengthening
- Continue cardiovascular training
- Front/lateral lunges
- Front/lateral step-ups
- Seated leg press (avoid knee flexion > 45°)
- Introduce stair climber
- Improve proprioception/neuromuscular control
- Aquatic exercise: pool walking, straight-leg flutter kicks, water bicycle

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Phase 4: 3-4 months postop

Goals: Maintain full range of motion, enhanced quad/hamstring strength 80% of contralateral leg, improve lower limb endurance, achieve normal running gait

Exercises:

- Continue Phase 3 exercises
- Continue daily flexibility/stretching
- May initiate eccentric knee extensions
- Initiate running progression protocol: light jogging → jogging → running on level track surface/treadmill → running on level pavement at 4 months
- Avoid hiking/running on uneven surfaces

Phase 5: 4-6 months postop

Goals: Maintain full pain-free range of motion, strength > 80% of contralateral leg, normal running gait, sufficient proprioception/neuromuscular control to begin agility exercises, return to skill activities and sport participation

Exercises:

- Straight-ahead running on level surfaces (no trail running until 6 months)
- May begin outdoor cycling
- Agility drills: side steps, figure of eight drills, stair running, shuttle running, ladder drills, straight ahead acceleration/deceleration
- Begin plyometric drills, two-leg and single-leg jumping. May introduce sport-specific drills
- At 5-6 months: Safe return to athletic participation
 - Full pain-free range of motion, quad/hamstring strength >80% of contralateral leg, satisfactory single-leg hop equivalent to contralateral side
 - Physician clearance examination prior to return to full sport participation
- Maintenance program for continued knee strength and endurance