



## Medial Patellofemoral Ligament Repair/Reconstruction Protocol

Dr. Jonathon Henry, MD

\*Defer to AMZ protocol if done in conjunction with MPFL repair/reconstruction. \*

### Phase 1 – Maximum Protection Phase (0-6 weeks)

#### Goals for Phase 1

- Protect patellar stabilization procedure
- Minimize effusion
- ROM per guidelines listed, emphasis on extension
- Encourage quadriceps function
- Scar tissue mobility

#### Precautions

- No patellar mobility with lateral glides

#### Immobilization/Weight Bearing

- WBAT with crutches but can wean from crutches as tolerated

#### Range of Motion

- 0-6 weeks: 0-90°, emphasis on extension

#### Brace

- 0-3 weeks: Brace locked at 0°
- 3-4 weeks: Brace opened 0-30°
- 4-6 weeks: Brace opened 0-70°
- Brace locked in full extension while sleeping for 6 weeks
- Progression of opening brace is dependent controlled pain, appropriate quad strength, and controlled effusion

#### Manual Therapy

- Scar massage
- Gentle flexibility using deep tissue mobilization or the “Stick” – hamstring, quadriceps, gastroc-soleus, ITB
- PROM/AROM knee flexion per ROM guidelines listed above

#### Strengthening

- Stationary bike: Weeks 4-6 for ROM <90° of knee flexion
- Quadriceps strengthening
  - **Weeks 0-6:** Quadriceps setting with focus on VMO activation
  - **Weeks 2-6:** Terminal knee extension in prone and in standing
- Hip strengthening
  - **Weeks 0-4:** Multi-plane open kinetic chain SLR, brace on if quad lag is present
  - **Weeks 4-6:** Multi-plane open kinetic chain SLR, straight leg bridging
- Core strengthening
- Upper body ergometer

#### Modalities

- Vasopneumatic compression for edema management 2-3x/week
- Cryotherapy, 3 x per day for 20 minutes each with knee elevated above heart
- NMES for quadriceps function
  - Home NMES unit with or without a garment to be issued for first 8 weeks following surgery, per MD and therapist discretion
  - NMES to be used at home, 3 x a day for 20 minutes each time



## Phase 2 – Moderate Protection Phase (6-8 weeks)

### Goals for Phase 2

- Minimize effusion
- Gently increase ROM
- Normalize gait with heel-toe pattern
- Discharge knee brace
- Closed kinetic chain strengthening

### Precautions

- Avoid closed kinetic chain knee flexion past 45°
- No kicking in the pool for 12 weeks

### Immobilization/Weight Bearing

- FWB

### Range of Motion

- **6-8 weeks:** 0-120°, emphasis on extension

### Brace

- **6-8 weeks:** Brace opened 0-90°
- Weaning from brace is dependent controlled pain, appropriate quad strength, and controlled effusion

### Manual Therapy

- Gentle flexibility – hamstring, quad, gastroc-soleus, ITB

### Strengthening

- Stationary bike for ROM
- Bilateral gym strengthening program (mini squats, leg press, 4-way hip strengthening, step-ups, bridging, calf raises)
- Core strengthening

### Aquatics

- Initiate aquatic therapy program

### Neuromuscular Control

- Proprioception on stable surface

### Modalities

- Vasopneumatic compression for edema management 2x/week
- Cryotherapy, 2 x per day for 20 minutes each with knee elevated above heart
- NMES for quadriceps function if quad lag present with SLR

## Phase 3 – Advanced Strengthening (8-16 weeks)

### Goals for Phase 3

- Progress muscle strength, endurance, and balance

### Precautions

- No kicking in pool for 12 weeks
- Avoid twisting and pivoting for 12 weeks
- Avoid deep squatting for 16 weeks (greater than 90°)
- Avoidance of impact activity until able to pass functional testing

### Immobilization/Weight bearing

- **6-8 weeks (WBAT):** Soft ankle orthosis (ASO, Impact, etc) to be purchased for gradual progression out of walking boot
- **8-12 weeks (WBAT):** Soft ankle orthosis (ASO, Impact, etc) to be worn when walking on uneven surfaces, busy environments, and during all athletic or sporting activities
- If Microfracture Procedure performed: NWB for 8 weeks

### Range of Motion

- Restore full ROM

### Strengthening

- Stationary bike or elliptical for warm-up
- Bilateral gym strengthening with progression to unilateral as able (leg press, step-ups, hamstring curls, side-stepping, single leg squat, multi-directional lunges)
- Core strengthening

### Neuromuscular Control

- Advanced proprioception on unstable surfaces and dual tasking

### Modalities

- Cryotherapy after activity



### Testing to advance to Phase 4 of protocol

- Functional strength testing to be scheduled before 12 week follow-up with MD (appt must be scheduled with Aurora BayCare Sports Medicine department – East Side location to complete testing). Please contact physician office if unable to make this arrangement for alternative testing.
  - Y-Balance testing within 6 cm of involved LE
  - 3PQ isometric quadriceps testing (<25% difference)
  - Single leg squat without display of knee valgus

## Phase 4 – Strengthening and Plyometric Phase (16-24 weeks)

### Goals for Phase 4

- Progress single leg muscle strength, endurance and balance
- Initiate impact activity
- Sport or work specific tasks

### Weight bearing/Range of motion

- Full weight bearing without restriction
- Restore full ankle ROM in all planes

### Manual Therapy

- Restore flexibility – hamstring, quad, gastroc-soleus, ITB

### Strengthening

- Stationary bike or elliptical
- Bilateral gym strengthening program with focus on single leg strengthening and power development (single leg squats, eccentric single leg press, lateral step-downs, multidirectional lunges, OKC hamstring curls)
- Initiate impact activities
  - **16-18 weeks:** submaximal body-weight exercise (pool, GTS, plyo-press, Alter G)
  - **18+ weeks:** sagittal plane running with progression to multidirectional if able to avoid dynamic knee valgus and demonstrate good knee control, agility drills, plyometrics
  - **24+ weeks:** cutting and pivoting drills
- Core strengthening

### Neuromuscular Control

- Advanced proprioception on unstable surfaces with dual tasking, add sport specific balance tasks as able

### Modalities

- Cryotherapy after activity

**Return to Function Testing:** Aurora BayCare return to function for the lower extremity protocol to be used.

- Week 24: Return to function testing** per MD approval (appt must be scheduled with Aurora BayCare Sports Medicine department – East Side location to complete testing). Please contact physician office if unable to make this arrangement for alternative testing.
- Criteria: pain-free, full ROM, minimal joint effusion, isokinetic strength and functional testing at 90% compared to uninvolved, adequate knee control with sport and/or work specific tasks.