



**Dr. Harold Schock III, MD**  
**Medial Reefing Protocol**

\*If MPFL repair/reconstruction performed in conjunction with a medial reefing, please follow medial reefing protocol.\*

**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 for 6 weeks

**Weight Bearing**

- NWB with bilateral crutches (10-14 days) until post-op visit with MD
- Slow progression back to FWB with BW% increasing by 25% every 3-4 days if patient has controlled effusion, controlled pain, and appropriate knee control

**Range of Motion**

- 0-2 weeks:** 0-30°, emphasis on extension
- 2-4 weeks:** 0-60°, emphasis on extension
- 4-6 weeks:** 0-90°, emphasis on extension

**Brace**

- 0-2 weeks:** Brace locked at 0°
- 2-4 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 standing
- Hip strengthening
  - **Weeks 0-4:** Multi-plane open kinetic chain SLR, straight leg bridging
- Core strengthening
- Upper body ergometer

**Modalities**

- Vasopneumatic compression for edema management 2-3x/week
- Cryotherapy at home, 3x 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 brace
- Closed kinetic chain strengthening program

### Precautions

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

### Weight Bearing

- FWB

### Range of Motion

- **6-8 weeks:** Brace open 0-120°, emphasis on extension
- Patellar mobility in superior/inferior direction only (No medial/lateral)

### Brace

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

### Manual Therapy

- Gentle flexibility – hamstring, quadriceps, 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 when incisions closed

### 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 the pool or 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

### Range of Motion

- Restore 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 with dual tasking
  - Add dual tasking and sport specific balance as able

### 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, multi-directional 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 multi-directional if able to avoid dynamic knee valgus and demonstrate good knee control with agility drills and 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