ORTHOPEDICS & SPORTS MEDICINE
BAYCARE CLINIC

Dr. Harold Schock III, MD
Medial Patellofemoral Ligament Repair/Reconstruction

*If medial reefing performed in conjunction with an MPFL repair, 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 with lateral glides

Immobilization/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 swelling, controlled pain, and appropriate knee control

Range of Motion

- **0-6 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 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

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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

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: <u>Return to function testing</u>** 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.