ORTHOPEDICS & SPORTS MEDICINE
BayCare Clinic

DR. CARL DIRAIMONDO AND DR. BRIAN KURCZ
MEDIAL PATELLOFEMORAL LIGAMENT REPAIR/RECONSTRUCTION
POST-OP THERAPY PROTOCOL

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

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

Goals for Phase 1	Precautions for Phase 1
• Protect patellar stabilization procedure • Minimize effusion • ROM per guidelines listed, emphasis on extension • Encourage quadriceps function • Scar tissue mobility	• 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 on 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:
  - **4-6 Weeks**: for ROM <90° of knee flexion
- Quadriceps strengthening:
  - **0-6 Weeks**: quadriceps setting with focus on VMO activation
  - **2-6 Weeks**: terminal knee extension in prone and in standing
- Hip strengthening:
  - **0-4 Weeks**: multi-plane open kinetic chain SLR, brace on if quad la present
  - **4-6 Weeks**: 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 physician and therapist discretion
  - NMES to be used at home, 3x a day for 20 minutes each time

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

Goals for Phase 2	Precautions for Phase 2
• Minimize effusion • Gently increase ROM • Normalize gait with heel-toe pattern • Discharge knee brace • Closed kinetic chain strengthening	• 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 on 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, 2x per day for 20 minutes each with knee elevated above heart
- NMES for quadriceps function if quad lag present with SLR

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Phase 3 – Advanced Strengthening (8-16 weeks)

Goals for Phase 3	Precautions for Phase 3
• Progress muscle strength, endurance, and balance	• 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
- FWB

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 physician.
- Y-Balance testing within 6 cm of involved LE
- 3PQ isometric quadriceps testing (<25% difference)
- Single leg squat without display of knee valgus

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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: Return to Function for the Lower Extremity Protocol to be Used
- **Week 24**: Return to function testing per physician approval
- 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

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