

## MPFL REHABILITATION PROTOCOL

### I. IMMEDIATE POST-OPERATIVE PHASE (Week 1)

Goals: Diminish swelling/inflammation (control hemarthrosis)  
Initiation of quadriceps muscle training  
Independent Ambulation

**Weight Bearing:** As tolerated with crutches and brace locked in Extension

**Swelling/ Inflammation Control:** Cryotherapy, NSAIDS, Elevation & Ankle Pumps

**Range of Motion:** Encourage Full ROM

**Muscle Retraining:** Quadriceps isometrics, Straight Leg Raises, Hip Adduction

**Flexibility:** Hamstring Stretches, Calf Stretches

### II. ACUTE PHASE (Week 2-6)

Goals: Control swelling/inflammation  
Gradual Improvement in ROM  
Quadriceps Strengthening (Especially VMO)  
*Note: Rate of progression based on swelling/inflammation.*

**Weight Bearing:** Discontinue crutches when appropriate, Progress WBAT with brace in extension until good quadriceps control

**Swelling/Inflammation:** Cryotherapy, NSAIDS, Elevation and Ankle Pumps

**Range of Motion:** Rate of progression based upon swelling/inflammation.

At least 90 degrees flexion (Week 2)

Full flexion by Week 6-8

**Muscle Retraining:** Electrical muscle stimulation to quads

Quad Setting Isometrics

Straight Leg Raises (flexion)

Hip Adduction

Knee Extension 60-0 degrees, painfree arc

\* Bicycle (Stationary, in brace) if ROM/Swelling permits

Proprioception Training

**Flexibility:** Continue Hamstring, Calf Stretches

Initiate quadriceps muscle stretching

#### **Criteria to Progress to Phase III:**

1. Minimal inflammation/pain
2. ROM (0-near full flexion)
3. Strong quadriceps contraction

### III. SUBACUTE PHASE - MODERATE PROTECTION (Week 6-12)

Goals: Eliminate any joint swelling  
Improve muscular strength and control without exacerbation of symptoms.  
Functional exercise movements  
May discontinue brace

**Exercises:** Continue muscle stimulation to quadriceps (if needed)

Quadriceps setting isometrics  
4 way Hip Machine (hip adduction, abduction, extension, and flexion)  
Lateral Step-Ups (if able)  
Front Step-Ups (if able)  
Squats against wall (0-60 degrees)\*  
Knee Extension (90-0 degrees), painfree arc  
Bicycle  
Pool Program (walking, strengthening, running)\*  
Proprioceptive Training.

**Flexibility:** Continue all stretching exercises for LE

**Swelling/Inflammation:** Continue use of ice, compression, and elevation, as needed.

**Criteria To Progress to Phase IV:**

1. Full Non-Painful ROM
2. Absence of swelling/inflammation
3. Knee extension strength 70% of contralateral knee.

### IV. ADVANCED PHASE - MINIMAL PROTECTION (Week 12-16)

Goals: Achieve maximal strength and endurance.  
Functional activities/drills

**Exercises:** Wall Squats (0-70 degrees) painfree arc

Vertical Squats (0-60 degrees)\*  
Leg Press  
Forward Lunges  
Lateral Lunges  
Lateral Step-ups  
Front Step-ups  
Knee Extension, painfree arc  
Hip Strengthening (4 way)  
Bicycle  
Stairmaster®  
Proprioception drills  
Sport Specific functional drills (competitive athletes)  
Jogging Program  
Continue all stretching  
Continue use of ice as needed



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**Criteria to Progress to Phase V:**

1. Full Non-Painful ROM
2. Appropriate Strength Level (80% of greater of contralateral leg)
3. Satisfactory clinical exam

**V. RETURN TO ACTIVITY PHASE (Week 16-20)**

Goal: Functional return to work/sport

**Exercises:** Functional Drills

Continue Jogging/Running Program  
Strengthening Exercises (selected)  
Flexibility Exercises