

Dr. Lucas Murnaghan  
MPFL Reconstruction Rehabilitation – 5 Phase Progression

**PHASE I: Post-Op (0-6 weeks)**

**Goals:**

- Protect graft and graft fixation
- Minimize effects of immobilization
- Control inflammation/swelling
- Full active and passive extension range of motion.
- Restore normal gait on level surfaces

**Weightbearing Status:**

- Weight-bearing as tolerated immediately post-op with crutches
- Wean from crutches for ambulation by 4 weeks as patient demonstrates normal gait mechanics and good quad control.

**Physiotherapy / Exercises:**

- Patellar mobilization/scar mobilization
- Heel slides, Quad sets, Hamstring curls
- Gastroc/Soleus, Hamstring stretches
- Gastroc/Soleus strengthening
- SLR, all planes, once quads strength sufficient to prevent extension lag

## **PHASE II: Post-Op (6-12 weeks)**

### **Criteria for advancement to Phase II:**

- Full extension/hyperextension
- Good quad set, SLR without extension lag
- Minimum of 90° of flexion
- Minimal swelling/inflammation
- Normal gait on level surfaces

### **Goals:**

- Restore normal gait with stair climbing
- Maintain full extension, progress toward full flexion range of motion
- Protect graft and graft fixation
- Increase hip, quadriceps, hamstring and calf strength
- Increase proprioception

### **Exercises:**

- Continue with ROM/flexibility exercises as appropriate for the patient
- Continue closed kinetic chain strengthening as above, progressing as tolerated – can include one-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits.
- Stairmaster (begin with short steps, avoid hyperextension)
- Elliptical machine for conditioning.
- Stationary bike- progress time and resistance; progress to single leg
- Continue to progress proprioceptive activities
- Continue hamstring, gastroc/soleus stretches
- Continue to progress hip, hamstring and calf strengthening
- If available, begin pool running (waist deep) or on an unweighted treadmill
- Single leg balance, proprioception work

### **PHASE III: Post-Op (3-4 months)**

#### **Criteria to advance to Phase III include:**

- No patellofemoral pain
- Minimum of 120 degrees of flexion
- Sufficient strength and proprioception to initiate running.
- Minimal swelling/inflammation

#### **Goals:**

- Full range of motion
- Improve strength, endurance and proprioception to prepare for sport
- Avoid overstressing the graft
- Protect the patellofemoral joint
- Normal running mechanics
- Strength approximately 70% of the uninvolved lower extremity

#### **Exercises:**

- Continue flexibility and ROM exercises as appropriate for patient
- Knee extensions 90°-30°, progress to eccentrics
- Full weight-bearing running
- Begin swimming if desired
- Progressive hip, quadriceps, hamstring, calf strengthening
- Cardiovascular/endurance training via *Stairmaster*, elliptical machine, bike
- Advance proprioceptive activities

## **PHASE IV: Post-Op (4-5 months)**

Criteria for advancement to Phase IV:

- No significant swelling/inflammation.
- Full, pain-free ROM
- No evidence of patellofemoral joint irritation
- Strength approximately 70% of uninvolved lower extremity
- Sufficient strength and proprioception to initiate agility activities
- Normal running gait

### **Goals:**

- Symmetric performance of basic and sport specific agility drills
- Single hop and 3 hop tests 85% of uninvolved lower extremity
- Quad and hamstring strength at least 85% of uninvolved lower extremity

### **Exercises:**

- Continue and progress flexibility and strengthening program based on individual needs and deficits.
- Initiate plyometric program as appropriate for patient's athletic goals
- Agility progression including, but not limited to:
  - Side steps
  - Crossovers
  - Figure 8 running
  - Shuttle running
  - One leg and two leg jumping
  - Cutting
  - Acceleration/deceleration/sprints
  - Agility ladder drills
- Continue progression of running distance based on patient needs.
- Initiate sport-specific drills as appropriate for patient

## **PHASE V: Post Op (5 – 6 months)**

### **Criteria for advancement to Phase V:**

- No patellofemoral or soft tissue complaint
- Necessary joint ROM, strength, endurance, and proprioception to safely return to work or athletics
- Physician clearance to resume partial or full activity

### **Goals:**

- Safe return to athletics/work
- Maintenance of strength, endurance, proprioception
- Patient education with regards to any possible limitations

### **Exercises:**

- Gradual return to sports participation
- Maintenance program for strength, endurance