

# DISTAL AND/OR PROXIMAL PATELLAR REALIGNMENT PROTOCOL

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## **GENERAL GUIDELINES:**

- No closed kinetic chain exercise for 6 weeks
- The same rehabilitation protocol is followed for proximal and distal realignments with the exception of range of motion limitations as noted

## **GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING:**

Patients may begin the following activities at the dates indicated (unless otherwise specified by the physician):

- Bathing/showering after suture removal
- Sleep with brace locked in extension for 4 weeks
- Driving at 6 weeks post-op
- Brace locked in extension for 6 weeks for ambulation (proximal only)
- Use of crutches continued for 6-8 weeks post-op
- Weightbearing as tolerated with brace locked in extension immediately post-op (proximal only)
- Non-weight bearing for distal realignments until cleared.

## **REHABILITATION PROGRESSION:**

The following is a general guideline for progression of the rehabilitation program following patellar realignment. Progression through each phase should take into consideration patient status (e.g. healing, function) and physician advisement. Please consult the attending physician if there is uncertainty regarding the advancement of a patient to the next phase of rehabilitation.

## **PHASE I:**

Begins immediately post-op through approximately 6 weeks.

## **Goals:**

- Protect fixation and surrounding soft tissue
- Control inflammatory process
- Regain active quadriceps and VMO control
- Minimize the adverse effects of immobilization through CPM and heel slides in the allowed range of motion
- Full knee extension
- Patient education regarding rehabilitation process

## **ROM:**

- 0 – 6 weeks:        0° – 60° of flexion for proximal realignment  
                              0° – 90° flexion for distal realignment

**Brace:**

- 0 – 4 weeks: Locked in full extension for all activities except therapeutic exercises and CPM use  
Locked in full extension for sleeping
- 4 – 6 weeks: Unlock brace for sleeping, continue with brace locked in full extension for ambulation (proximal only)

**Weightbearing Status:**

- 0 – 6 weeks: As tolerated with two crutches for proximal only
- Distal: non-weight bearing until cleared

**Therapeutic Exercises:**

- Quad sets and isometric adduction with biofeedback for VMO
- Heel slides from 0-60° of flexion for proximal, 0-90° for distal realignment
- CPM for 2 hours, twice daily, from 0-60° of flexion for Proximal, 0-90° of flexion for distal realignment
- Non-weight bearing gastrocnemius/soleus hamstring stretches
- SLR in four planes with brace locked in full extension (can be performed in standing)
- Resisted ankle ROM with theraband
- Patellar mobilization (begin when tolerated by patient)

**PHASE II:**

Begins approximately 6 weeks post-op and extends to approximately 8 weeks post-op.  
Criteria for advancement to Phase II:

- Good quad set
- Approximately 90° of flexion
- No signs of active inflammation

**Goals:**

- Increase range of flexion
- Avoid overstressing fixation
- Increase quadriceps and VMO control for restoration of proper patellar tracking.

**Brace:**

6 – 8 weeks: Discontinue use for sleeping, unlock for ambulation as allowed by physician.

**Weightbearing Status:**

6-8 weeks: As tolerated with two crutches if cleared.

**Therapeutic Exercises:**

- Continue exercises as noted above, progress towards full flexion with heel slides
- Progress to weight-bearing gastrocnemius/soleus stretching
- Discontinue CPM if knee flexion is at least 90°
- Begin aquatic therapy, emphasis on normalization of gait
- Balance exercises (e.g. single-leg standing, KAT)
- Remove brace for SLR exercises
- Stationary bike, low resistance, high seat
- Short arc quadriceps exercises in pain free ranges (0-20°, 60-90° of flexion) emphasize movement quality
- Wall slides progressing to mini-squats, 0-45° of flexion

### **PHASE III:**

Begins approximately 8 weeks post-op and extends through approximately 4 months.

Criteria for advancement to Phase III:

- Good quadriceps tone and no extension lag with SLR
  - Non-antalgic gait pattern
- Good dynamic patellar control with no evidence of lateral tracking or instability

### **Weightbearing Status:**

May discontinue use of crutches when the following criteria are met:

- No extension lags with SLR
- Full extension
- Nonantalgic gait pattern (may use one crutch or cane until gait is normalized)

### **Therapeutic Exercises:**

- Step-ups, begin at 2" and progress towards 8"
- Stationary bike, add moderate resistance
- 4 way hip flexion, adduction, abduction, extension
- Leg press 0-45° of flexion
- Closed kinetic chain terminal knee extension with resistive tubing or weight machine
- Swimming, Stairmaster for endurance
- Toe raises
- Hamstring curls
- Treadmill walking with emphasis on normalization of gait
- Continue proprioception exercises
- Continue flexibility exercises for gastrocnemius/soleus and hamstrings, add iliotibial band and quadriceps as indicated

#### **PHASE IV:**

Begins approximately 4 months post-op and extends through approximately 6 months.

Criteria for advancement to Phase IV:

- Good to normal quadriceps strength
- No evidence of patellar instability
- No soft tissue complaints
- Normal gait pattern
- Clearance from physician to begin more concentrated closed kinetic chain exercises, and resume full or partial activity

#### **Goals:**

- Continue improvements in quadriceps strength
- Improve functional strength and proprioception
- Return to appropriate activity level

#### **Therapeutic Exercises:**

- Progression of closed kinetic chain activities
- Jogging in pool with wet vest or belt
- Functional progression, sport-specific activities or work hardening as appropriate