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## **GUIDELINES FOR REHABILITATION FOLLOWING DISTAL AND/OR PROXIMAL PATELLAR REALIGNMENT**

### **GENERAL GUIDELINES**

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

Proximal Realignment - 0°-60° for first six weeks

Distal Realignment - 0°-90° for first six weeks

- A combined proximal/distal realignment will follow the proximal protocol
- Supervised physical therapy takes place for 3-6 months post-operatively.

### **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.
- Use of crutches continued for 6-8 weeks post-op.
- Weightbearing as tolerated with brace locked in extension immediately post-op.

### **PHYSICAL THERAPY ATTENDANCE**

The following is an approximate schedule for supervised physical therapy visits:

Phase I (0-6 weeks):	1 visit/week
Phase II (6-8 weeks):	2-3 visits/week
Phase III (2-4 months):	2-3 visits/week

Phase IV (4-6 months):

1 visit/1-2 weeks

## **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 any uncertainty regarding 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° of 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

#### **Weightbearing status:**

0 - 6 weeks:                    As tolerated with two crutches

#### **Therapeutic Exercises:**

- Quad sets and isometric adduction with biofeedback for VMO No NMES with proximal realignment for six weeks
- 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
- Nonweightbearing 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)
- Begin aquatic therapy at 3-4 weeks with emphasis on gait

## **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

### **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
- Nonantalgic 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 lag 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 for 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 gastroc/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