



## **Distal and/or Proximal Patellar Tendon Realignment**

### **Guidelines/Precautions**

- No closed-kinetic chain exercises for 6 weeks
- Same rehab protocol is followed for proximal and distal procedures except weight-bearing and other limitations as noted
- After combined proximal and distal realignment, the protocol for distal realignment is used

### **Phase I (1 – 5 days post-op)**

- Wound care: Observe for signs of infection
- Modalities: prn for pain and inflammation (ice, IFC)
- Brace
  - Locked in full extension for all activities except therapeutic exercises and CPM use
  - Locked in full extension for sleeping
- Gait
  - WBAT with two crutches for proximal realignment procedure
  - 50% weight bearing with two crutches for distal realignment
- ROM
  - 0 – 30 degrees of flexion
  - Ankle AROM
- Strengthening: none

### **Phase II (5 days – 4 weeks post-op)**

- Wound care: Monitor site for signs of infection and initiate scar management techniques when incision closed
- Modalities: Modalities PRN for pain and inflammation (ice, IFC)
- Brace
  - 0-4 weeks locked in full extension for all activities except therapeutic exercises and CPM use
  - Locked in full extension for sleeping
- Gait
  - WBAT with two crutches for proximal realignment procedure
  - 50% weight bearing with two crutches for distal realignment
- ROM
  - 0 – 2 weeks: 0 – 30 degrees of flexion
  - 2 – 4 weeks: 0 – 60 degrees of flexion
  - Goal of full knee extension by week 6



- Strengthening
  - Quad sets for isometric adduction with biofeedback and E-stim for VMO (no E-stim for 6 weeks for proximal realignment). Goal of regaining active quad and VMO control by end of 6 weeks.
  - Heel slides from 0 – 60 degrees of flexion for proximal realignment, 0 – 90 degrees of flexion for distal realignment
  - CPM for 2 hr, bid from 0 – 60 degrees of flexion for proximal realignment, 0 – 90 degrees of flexion for distal realignment
  - NWB gastroc, soleus, and hamstring stretches
  - SLR in four planes with brace locked in full extension lying down or standing
  - Resisted ankle ROM with Theraband
  - Patellar mobilization (begin as tolerated)
  - Begin aquatic therapy at 3 – 4 weeks, emphasis on gait

### **Phase III (4 – 10 weeks post-op)**

- Wound care: Observe for signs of infection, continue scar mobs
- Modalities: continue prn for pain and inflammation (ice, IFC)

#### **4 weeks to 6 weeks:**

- Brace: Unlocked for sleeping, locked in full extension for ambulation
- Gait
  - WBAT with two crutches for proximal realignment procedure
  - 50% weight bearing with two crutches for distal realignment
- ROM: 0 – 90 degrees of flexion
- Strengthening: continue same as phase II

#### **6 weeks to 8 weeks:**

- Brace: Discontinue use for sleeping, unlock for ambulation as allowed by physician
- Gait: As tolerated with two crutches
- ROM: Increase flexion gradually to normal range for patient
- Strengthening:
  - May begin NMES for proximal realignment
  - Continue exercises progressing to full flexion with heel slides
  - Progress to weight-bearing gastroc, soleus stretching
  - D/C CPM if achieved 90 degrees knee flexion
  - Continue aquatic therapy
  - Closed chain balance exercises
  - Stationary bike, low resistance, high-seat
  - Wall slides progressing to mini-squats, 0-45 degrees of flexion

#### **8 weeks to 10 weeks**

- Brace: D/C
- Gait: May D/C crutches if no extension lag is present, patient is able to achieve full extension, and gait pattern is normalized with one crutch.



- Strengthening:
  - Should be able to demonstrate SLR without extension lag
  - May begin closed chain strengthening including step-ups (begin at 2 inch step)
  - Moderate resistance for stationary bike
  - Four way resisted hip strengthening
  - Leg press for 0-45 degrees of flexion
  - Swimming and/or stairmaster for endurance
  - Toe raises, hamstring curls and proprioceptive exercises
  - Treadmill walking
  - Flexibility exercises continued

#### **Phase IV (10+ weeks post-op)**

- Criteria
  - Clearance from physician to begin more concentrated closed-kinetic chain exercises and resume full or partial activity level
  - At least 0 – 115 degrees AROM with no swelling and complete voluntary contraction of quad
  - No evidence of patellar instability
  - No soft tissue complaints
- Strengthening
  - Progression of closed-kinetic chain activities including partial squats (60 degrees), leg press, forward and lateral lunges, lateral step-ups, leg extensions 60 – 0 degrees, bicycle and /or stepper.
  - Functional progression, sport specific activities
- Functional testing: Performance to < 25% deficit compared to non-surgical side by D/C

Adapted from:

- 1) Brotzman SB, Wilk KE. Clinical Orthopedic Rehabilitation. 2<sup>nd</sup> Ed. Philadelphia: Mosby; 2003
- 2) Wilk KE, Reinold MM, Andrews, JR. Rehabilitation Following Lateral Retinacular Release and Medial Retinacular Thermal Shrinkage/Plication. Winchester, MA: Advanced Continuing Education Institute, 2004.
- 3) Wilk KE, Reinold MM, Andrews, JR. Rehabilitation Following Lateral Retinacular Release and Medial Retinacular Thermal Shrinkage/Plication. Winchester, MA: Advanced Continuing Education Institute, 2004.