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# Isolated Lateral Lengthening Rehabilitation Guidelines

- o This guideline is for an isolated lateral lengthening WITHOUT a MPFL reconstruction. If a MPFL reconstruction was performed please use the MPFL protocol.

### Acute/Immediate Post-Operative Phase 0-1 week

#### Guidelines

- Brace:
  - o Locked in full extension (-10) for all activities except therapeutic exercises
  - o Locked in full extension for sleeping
- Gait: WBAT in Full extension only
- ROM:
  - o Knee: 0 – 30 degrees
  - o Ankle AROM
- Maintain hamstring strength of the ipsilateral leg and lower extremity strength of the contralateral leg

### Moderate Protection Phase 2-4 weeks

#### Guidelines

- Brace:
  - o Weeks 0-2, locked in full extension for all activities except therapeutic exercises
  - o Until 2 weeks post-op, keep locked in full extension for sleeping
- Gait:
  - o Weeks 2: Progress to WBAT out of extension
- ROM:
  - o Weeks 0–2: 0–30 degrees
  - o Weeks 2–4: 0–90 degrees
  - o Weeks 4-6: as tolerated
- Strengthening:
  - o Quad sets with biofeedback and e-stim for VMO
  - o By 6 weeks, goal of regaining active quad and VMO control
    - Heel slides to recommended ROM, SLR in 4 planes with brace locked in full extension
    - Resisted ankle ROM with theraband
    - Patellar mobilization, as tolerated

### Moderate Protection Phase 4-10 weeks

#### Guidelines

- 4–6 weeks:
  - o Brace
    - Removed for sleeping (6 weeks)
  - o Gait: FWB/WBAT
  - o ROM
    - As tolerated
  - o Strengthening: Continue same as Phase II
- 6–8 weeks:
  - o Brace

- Discontinued
- o Gait: Normalize gait (WBAT in flexion/extension)
- o ROM: Increase flexion gradually to normal range for patient
- o Strengthening
  - Continue NMES as needed
  - Progress to WB gastroc and soleus stretching
  - Closed chain balance exercises
  - AVOID deep knee squatting greater than 90 degrees
  - Stationary bike: low resistance and high seat
  - Wall slides progressing to mini-squats 0 – 45 degrees of flexion
- 8 – 10 weeks:
  - o Brace: Compression Sleeve PRN
  - o Gait: should be normalized
  - o Strengthening:
    - SLR without extension lag
  - o Closed-chain strengthening including step-up (begin at 2-inch step)
    - Moderate resistance for stationary bike
    - 4-way resisted hip strengthening
    - Leg press 0 – 60 degrees of flexion
      - Swimming and/or stair master for endurance
      - Toe raises, hamstring curls, and proprioceptive exercises
      - Treadmill walking
      - Flexibility exercises

### **Minimal Protection Phase (Progressive ROM/Strengthening) 10+ weeks**

#### Guidelines

#### 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 soft tissue complaints
- Strengthening:
  - o Progression of closed-kinetic chain activities including partial squats (0 – 90 degrees), leg press, forward and lateral lunges, lateral step-ups, bicycle and/or stepper o Functional progression, sport specific activities

### **Return to Activity Phase**

- Exercises: Slowly progress to treadmill walking, resisted biking, running (as strength, ROM and pain/swelling allow) progress proprioception activities as tolerated, begin hop/agility when good alignment and LE control is present\*
- \*May use single leg hop for distance testing (Cincinnati hop tests) for side-to-side comparison 80% is goal to begin light agility and cutting

**\*\*Modalities as needed for pain control and quadriceps strengthening are permitted.**