

## **General Guidelines**

- This protocol can be combined with ACL/PCL reconstruction protocols adhering to all restrictions for each protocol
- Patient remains in brace in full extension during 1st 6 weeks postoperatively other than when working on knee ROM or performing quadriceps exercises.
- Avoid open-chain hamstring exercises until 4 months postoperatively

### Precautions

- Progress from NWB to PWB to WBAT (in extension ONLY) by 6 weeks (protect PLC reconstruction and medial meniscal repair)
- Achieve and maintain full extension
- Flexion ROM Goals: 0°-45° by Week 3-4, 0°-90° by Week 6, Full ROM by Week 8

# Phase 1: Week 0 to Week 8

### Weight-bearing/Brace

- Non Weight-Bearing x Weeks 0–2. Ok to unlock brace from  $0^{\circ}$ -30° during ambulation (to allow foot clearance with crutch use)
- Begin Partial Weight-Bearing (20-40 lbs) at Week 3 (In full extension, brace on and locked). This continues through the end of Week 4
- OK to advance to WBAT by week 5-6, with brace on/locked in full extension

#### Exercise

- Quad strengthening with straight-leg raises and isometrics. SLR in 3 planes and quadriceps isometric
- Core (lumbopelvic and hip) stabilization exercises in knee immobilizer that do not increase knee forces in varus, hyperextension, or external rotation
- Patellar mobility and swelling/inflammation control
- Obtain and maintain full extension
- Electrical stimulation for quads if needed.
- OK to begin stationary bike after Week 4 (when patient has flexion at 90° or greater). Begin with 5 minutes every other day and increase to goal of 20 minutes/day

#### Motion

- At Week 3, begin AROM to gain flexion.
- Start with prone exercises and then progress to flexion in the seated position
- Goal: 0°- 45° by Week 3, 0°- 90° by Week 6, 0°-120° by Week 8

## Phase 2: Week 9 to Week 14

#### Weight-bearing/Brace

- WBAT (in brace, in extension) from Week 5-6
- WBAT out of brace by Week 9: Begin to unlock TROM with WB in Weeks 7 and 8.
- **Goal**: Discontinue brace (and transition to a functional brace) by Week 9 or 10. Normal gait pattern by week 12–13,



## Weight-bearing/Brace (cont)

• Goal: Full WB, full ROM and progress to a more functional program

Motion: Obtain and maintain full ROM

### Exercise

- Initiate proprioceptive training
- Initiate step-ups
- Begin closed chain exercise and continue strengthening
- Closed chain: Double-limb squat, lunges, single-limb squat, etc. All exercises performed initially at less than 70° of knee flexion

### Phase 3: Month 4 to Month 6

**Goals**: Improve quadriceps strength and function, increase endurance, improve coordination, and improve proprioception.

#### Exercise

- Walking program: 20 to 30 minutes daily with a medium to brisk pace. Add 5 minutes per week.
- Resistance can be added to bicycling as tolerated. Biking done 3 to 5 times per week for 20 minutes, and the lower extremities should feel fatigued post biking.
- Advanced closed kinetic chain exercise progression: addition of unstable surface, movement patterns, resistance, etc.
- Begin gradual treadmill running. Return to run program once patient is able to perform 20 repetitions of involved lower extremity single-limb squatting to greater than 60° of knee flexion with good control.
- Plyometric progression: supported jumping, jumping, leaping, hopping, etc.

## Phase 4: Month 6 and Beyond

Goals: Achieve maximum strength of operative extremity

• Maintenance of home exercise program 3 to 5 times per week.

**Note**: Physician will give clearance for cutting, pivoting and sports simulation activities as appropriate. This is based on favorable outcomes with imaging and clinical exam findings, and functional progression with therapy.

- Functional testing performed: A progressive RTP program initiated if limb symmetry index > than 85% with functional testing + satisfactory stress x-rays
- Return to sports or heavy labor permitted at 7-9 months post-op, when patient achieves quad strength 80-85% of unaffected leg + sufficient proprioceptive control