

## **ACL Reconstruction**

### **Pre- and Post-Operative Physical Therapy Protocol**

#### **PRE-OPERATIVE PHASE REHABILITATION (“Prehab”)**

**Primary goals: Eliminate swelling; ROM – full extension; FWB; Normalize gait**

- Crutch ambulation training
- Post-op exercise instruction/training
  - Quad sets, leg lifts
  - Active flexion/passive extension
  - Patella mobilization
  - Abductor, gluteal and core strengthening
  - Quadriceps/Hamstrings isometrics at 90°
  - Quadriceps re-education
  - Restoration/Improvement of ROM
  - Reduction of edema/inflammation
  - Normalize gait

#### **POST-OPERATIVE PHASE**

**\*Blood Flow Restriction (BFR) encouraged at all stages**

##### **Weeks 0-2**

**Primary goals: Eliminate swelling; ROM – full extension; FWB; Regain quad control**

- WBAT, with brace, crutches until gait controlled, discontinue crutches as progressing (by 7-10 days)
- Unlock brace for ambulation with return of active straight leg raise
- Brace locked in extension for sleep
- ROM as tolerated (minimum 0-90°), heel and wall slides
- Patella mobilization
- Ankle pumps, straight leg raise, quad sets, gluteal sets, hamstring stretch
- Sit to stand squats – 0-45°
- BAPs – proprioception
- Swelling/effusion control

##### **Weeks 2-4**

**Primary goals: Increase ROM; Increase total leg strength; Normalize gait**

- Discontinue brace (if possible)

- ROM as tolerated (minimum 0-110<sup>0</sup>), emphasis on full extension
- Emphasize patellar mobilization
- Stationary bike
- Step ups: anterior – 4 inches @ 2 weeks; 6 inches @ 3 weeks
- Balance board – Bilateral: frontal and sagittal planes
- Half squats
- Multi-angle isometrics, leg raises (4 planes), hamstring/calf stretching
- BAPs – FWB
- Unilateral stance Leg press – Bilateral 0-90<sup>0</sup>

## **Weeks 4-6**

### **Primary goals: Normal ADLs; Increase functional capacity; Increase strength**

- ROM – WNL
- Treadmill walking (if gait normal)
- Stairmaster – ipsilateral rotation and straight
- Mini squats – bilateral
- Step ups – Anterior: 8 inches
- Step ups – Anteromedial: 8 inches
- Step downs – Anterior & medial: 4 inches, progress to 8 inches
- Hamstring curls
- Unilateral squats
- Unilateral stance on trampoline
- Leg press – unilateral

## **Weeks 6-12**

### **Primary goals: Increase functional leg strength; Normalize balance and proprioception**

- 2# ball toss on trampoline – unilateral stance – increase dispersion with improved control
- Balance board – unilateral – sagittal & frontal
- Step downs – posterolateral @ 8 inches
- Lunges – anterior and lateral for distance and speed (not depth)
- Increase strengthening especially in frontal and transverse planes
- Stairmaster – contralateral rotation and straight
- Sliding board
- Emphasize eccentric quad
- Continue closed chain, step ups, mini squats, leg press
- Hip abduction/adduction, calf raises

## **Weeks 12-16**

### **Primary goals: Increase agility and speed of training; Normalize strength; Increase muscular endurance**

- Initiate Plyometrics
- Initiate running program (\*16 weeks for allograft)

- Initiate agility drills
- Sport specific training
- Sliding board side-side with rotation
- Lunges – anterolateral, anteromedial
- Bilateral hopping – low intensity/high volume
- Fitter side-side

#### **Months 4-6**

##### **Primary goals: Gradual return to athletic activity**

- Jumping
- Unilateral hopping
- Agility drills; running, cutting
- Accelerate sport specific drills and training
- Return to sport typically after 9 months, per MD

#### **Months 6-12**

##### **Primary goals: discharge into home program and release to full sport participation**

- Decision for full return to sport is based on peer-reviewed physical testing and performance in sport-specific drills