

## Anterior Cruciate Ligament (ACL) Reconstruction Post-Operative Protocol

### Phase I – Maximum Protection

#### **Weeks 0 to 1:**

- Use crutches - 50% weight bearing
- If using brace, locked in extension for 1 week

#### Goals

- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Full extension
- 90° - 100° of knee flexion, progressing to full as tolerated
- Heel-toe gait pattern, with crutches

#### Exercise progression

- Quadriceps setting using NMES as needed
- Multi-plane straight leg raising

#### **Weeks 1 to 2:**

- Use crutches - 50% weight bearing, wean from crutches by week 2, or sooner if gait normalized
- If using brace, open for full ROM x3 more weeks

#### Goals

- Reduce inflammation
- Full knee extension/hyperextension
- 100° – 120° of knee flexion, progress as tolerated

### Phase II – Progressive Stretching and Early Strengthening

#### **Weeks 2 to 4:**

#### Goals

- Progress off crutches
- Full knee extension/hyperextension
- Knee flexion to 120°, progress as tolerated
- Normalize gait mechanics
- Normalize patellofemoral joint and scar mobility

#### Exercise progression

- Bilateral squat progression
- Multi-plane open and closed kinetic chain hip strengthening
- Step-up and step-down progression
- Stationary biking and treadmill/outdoor walking
- Proprioception drills

#### **Weeks 4 to 6:**

#### Goals

- Reduce inflammation
- Full range of motion
- Normal gait

#### Exercise progression

- Leg press, hamstrings curls
- Increase intensity of stationary bike program, may add elevation to treadmill walking and elliptical

### **Phase III – Advanced Strengthening and Proprioception**

#### **Weeks 6 to 12:**

##### Goals

- Progressive strengthening and endurance training
- Eliminate movement dysfunction (i.e. no dynamic valgus at the knee)

##### Exercise progression

- Weighted squat progression
- Lunge progression (retro, walk and split) as indicated
- Single limb stability exercises

#### **Weeks 8 to 12:**

##### Exercise progression

- Outdoor biking – week 8
- Lateral lunge progression – week 8 to 10
- Shallow water pool running – week 8 to 10
- Swimming free style – week 8 to 10
- Backward elevated treadmill walking – week 8 to 10
- Basic ladder series – week 10
- Begin linear treadmill jogging – week 10-12

#### **Weeks 12 to 14:**

Administer preliminary functional test for physician to review

### **Phase IV – Advance Strengthening and Running Progression**

#### **Weeks 12 to 20:**

##### Exercise progression

- Progress resistance with squat and lunge strengthening program
- May add leg extensions at 30° - 0° (exclude patients with patellar or trochlear groove chondral pathology)
- Linear running progression
- Advanced ladder series
- Basic plyometric box progression

##### Criteria to progress to Phase V

- Pass return-to-sport test at >90% (involved vs uninvolved limb)
  - See testing protocol

### **Phase V – Return to Sport**

#### **Weeks 20 to 24:**

##### Exercise progression

- Hurdle and plyo box progressions
- Sport specific field/court drills
- Non-contact drills

##### Criteria to be released for return to sport

- Follow-up examination with the physician
- Pass return-to-sport functional test at >90% (involved vs uninvolved limb)
  - See testing protocol
  - Display symmetry and confidence in high-speed cutting, multi-plane plyometric drills, sprinting and decelerating