



Austin Cole, MD

## **Anterior Cruciate Ligament (ACL) Reconstruction with Meniscus Repair (Radial/Root) Post-Operative Protocol**

### **Phase I – Maximum protection**

#### **Weeks 0 to 6:**

- Brace – 0-90 x 6 weeks, locked in extension for ambulation for 3 weeks
  - Recommend locking in extension for sleep for 3 weeks
- Non-weight bearing with two crutches for 6 weeks
- Limit knee flexion to 90-degrees for 3 weeks; allow 90-120 degrees between 3 to 6 weeks

#### Goals

- Reduce inflammation and pain
- 0 degrees of knee extension

#### Exercise progression

- Quadriceps setting using NMES as needed
- Emphasize patellofemoral mobilizations
- Passive/active knee range of motion with 90° flexion limit
- Quadriceps setting emphasize VMO function
- Multi-plane straight leg raising
- Open chain hip strengthening
- Gait training

### **Phase II – Progressive stretching and early strengthening**

#### **Weeks 6 to 8:**

- Brace – open to 0-90 degrees for ambulation, discontinue with sleep
- Continue using two crutches, with gradual progression of weight bearing
  - Increase WB to FWB over next 2 weeks

#### Exercise progression

- Gradual progression to full knee flexion
- Continue to emphasize patella mobility
- Begin bilateral closed kinetic chain strengthening limited range initially
- Step-up progression
- Begin stationary bike with light resistance initially
- Gait training - normalize gait pattern

### **Phase III – Advanced strengthening and endurance training**

#### **Weeks 8 to 14:**

#### Goals

- Full knee range of motion, discontinue brace

#### Exercise progression

- Avoid rotational movements for 14 weeks
- Advance stationary biking program (increase intensity)
- Introduce treadmill walking and elliptical trainer

- Begin unilateral closed kinetic chain program
- Gym strengthening progression (leg press above 90-degrees, hamstrings curls etc.)

**Weeks 12 to 16:**

Exercise progression

- Outdoor biking, deep water pool running progression
- Lunge progression (retro, walk and split) as indicated
- Forward/backward elevated treadmill walking
- Progress resistance with squat/lunge strengthening (keep light)

**Week 16:**

Administer preliminary functional test. Brace ordered (for athletes)

**Phase IV – Advanced strengthening and running progression**

**Weeks 16 to 20:**

Exercise progression

- Progress resistance with squat and lunge strengthening program.
- Begin light plyometric drills; progress from bilateral to unilateral
- Begin running program, start short (walk-jog) at week 16
- Progress to lateral and rotational stresses at 18 weeks
- Multi-directional drills at 18-20 weeks

Criteria to progress to Phase V

- Quadriceps >65% compared to other side
- Minimal swelling/pain with activity

**Phase V – Return to sport**

**Weeks 20 to 24:**

Exercise progression

- Advance ladder, hurdle and plyo box progressions
- Sport specific field/court drills
- Strengthening program

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)
  - Typically at 6-7 months initially. Retest as needed.
  - Display symmetry and confidence in high-speed cutting, multi-plane plyometric drills, sprinting and decelerating
  - No full return to sport until minimum of 9 months
  - Physician may direct progression back to sport with certain programs and restrictions from 6-9 months