



**Austin Cole, MD**

## **ACL, PCL, MCL Repair with Meniscus Repair Post-Operative Protocol**

### **Phase I – Maximum Protection**

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

- Brace – 0-90 x 6 weeks
  - Recommend locking in extension for sleep
- 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
- Avoid isolated hamstring exercises x 12 weeks

#### **Goals**

- Reduce inflammation and pain
- 0 degrees of knee extension
- PCL protection, prevent posterior tibial translation
- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Avoid hyperextension
- Proper gait mechanics asap
- Avoid valgus stress at knee

#### **Exercise progression**

- Quadriceps setting using NMES as needed
- Emphasize patellofemoral mobilizations
- Passive/active knee extension range of motion with 90° flexion limit
  - No resistance for 8 weeks
- Prone passive knee flexion only, within 90 degree flexion limit for 3 weeks
- Quadriceps setting emphasize VMO function
- Multi-plane straight leg raising
  - SLR when no quad lag present
- Open chain hip strengthening
  - No side-lying hip adduction x 8 weeks.

### **Phase II – Progressive Stretching and Early Strengthening**

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

- Brace – open to 0-90 degrees for ambulation
- Continue using two crutches, with gradual progression of weight bearing
  - Increase WB to FWB over next 2 weeks
- Avoid isolated hamstring exercises x 12 weeks
- PCL protection, prevent posterior tibial translation
  - Avoid hyper-extension

### Exercise progression

- Gradual progression to full knee flexion
- Continue to emphasize patella mobility
- Begin bilateral closed kinetic chain strengthening limited range initially
  - Bilateral squat limited/leg press limited to 70 degrees flexion through week 12
  - Single leg – no knee flexion past 30 degrees through week 12
  - Standing hip adduction may begin with resistance proximal to knee
- Step-up progression
- Begin stationary bike with light resistance initially
- Gait training - normalize gait pattern

### **Phase III – Advanced Strengthening and Endurance Training**

#### Goals

- Full knee range of motion – avoid hyper-extension
- PCL protection, prevent posterior tibial translation

#### **Weeks 8 to 10:**

#### 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
  - Bilateral squat limited/leg press limited to 70 degrees flexion through week 12
  - Single leg – no knee flexion past 30 degrees through week 12

#### **Weeks 10 to 12:**

#### Exercise progression

- Forward/backward elevated treadmill walking
- Deep water pool running progression

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

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

#### Criteria for progression through Phase IV

Administer preliminary functional test for physician to review prior to 4.5 month follow up

#### Exercise progression

- Progress resistance with squat and lunge strengthening program.
- Lunge progression (retro, walk and split) as indicated
- Begin isolated hamstring exercise, progress slowly
- Bilateral squat/leg press – can progress past 70 degrees at 16 weeks
  - Initiate single limb leg press
  - Single leg bridge
- Begin light plyometric drills, progress from bilateral to unilateral
  - Must pass PFT
- Begin linear jogging – week 18 if good quad control and passes PFT
- Progress to lateral and rotational stresses at 18 weeks
- Multi-directional drills at 18 weeks with adequate control

## **Phase V – Return to Sport**

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

#### Exercise progression

- Advance ladder, 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