



Austin Cole, MD

## **Anterior Cruciate Ligament (ACL) Reconstruction with Meniscus Transplant 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 unweighted 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 for 3 weeks
- 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
- Continue using two crutches, with gradual progression of weight bearing
  - Goal to be FWB without crutches at 8 weeks post op

#### 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 10:**

#### Goals

- Full knee range of motion

#### Exercise progression

- Avoid rotational movement 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 10 to 12:**

Exercise progression

- Outdoor biking
- Lung progression (retro, walk and split) as indicated
- Swimming freestyle
- Forward/backward elevated treadmill walking
- Deep water pool running progression

**Weeks 12 to 14:**

Administer preliminary functional test for physician to review

**Phase IV – Advanced 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)
- Basic ladder series
- Lateral lunge progression
- Begin linear jogging
- Basic plyometric box progression – week 16

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

- 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