

Dr. Curtis Noel's Protocol for:

**QUADRICEPS/PATELLAR  
TENDON REPAIR**



**Phase I – Maximum Protection (Weeks 0 to 6):**

**0 to 2 weeks:**

- Brace locked in full extension for 6 weeks
- Partial weight bearing for 2 weeks
- Ice and modalities to reduce pain and inflammation
- Aggressive patella mobility drills
- Range of motion – 0° to 30° knee flexion
- Begin submaximal quadriceps setting

**Weeks 2 to 4:**

- Weight bearing as tolerated; progressing off of crutches
- Continue with inflammation control
- Continue with aggressive patella mobility
- Range of motion – 0° to 60°
- Continue with submaximal quadriceps setting

**Weeks 4 to 6:**

- Full weight bearing
- Continue with ice and aggressive patella mobility
- Range of motion – 0° to 90° (by week 6)
- Increase intensity with quadriceps setting

**Phase II – Progressive Range of Motion and Early Strengthening (Weeks 6 to 12):**

**Weeks 6 to 8:**

- Full weight bearing
- Open brace to 45°- 60° of flexion week 6, 90° at week 7
- Continue with swelling control and patellar mobility
- Gradually progress to full range of motion
- Begin multi-plane straight leg raising and closed kinetic chain strengthening program focusing on quality VMO function.
- Initiate open kinetic chain progressing to closed kinetic chain multi-plane hip strengthening
- Normalize gait pattern
- Begin stationary bike
- Initiate pool program

**Weeks 8 to 10:**

- Wean out of brace
- Continue with patella mobility drills
- Normalize gait pattern
- Restore full ROM
- Progress open and closed kinetic chain program from bilateral to unilateral
- Increase intensity on stationary bike
- Begin treadmill walking program forward and backward
- Begin elliptical trainer

**Weeks 10 to 12:**

- Full ROM

- Terminal quadriceps stretching
- Advance unilateral open and closed kinetic chain strengthening

### **Phase III – Progressive Strengthening (Weeks 12 to 16):**

#### **Weeks 12 to 16:**

- Advance open and closed kinetic chain strengthening
- Increase intensity on bike, treadmill, and elliptical trainer
- Increase difficulty and intensity on proprioception drills
- Begin gym strengthening: leg press, hamstring curls, ab/adduction; avoid lunges and knee extensions
- Begin multi-directional functional cord program

### **Phase IV – Advanced Strengthening and Functional Drills (Weeks 16 to 20):**

#### **Weeks 16 to 20:**

- May begin leg extensions; 30° to 0° progressing to full ROM as patellofemoral arthrokinematics normalize
- Begin pool running program advancing to land as tolerated

### **Phase V – Plyometric Drills and Return to Sport Phase (Weeks 20 to 24):**

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

- Advance gym strengthening
- Progress running/sprinting program
- Begin multi-directional field/court drills
- Begin bilateral progressing to unilateral plyometric drills
- Follow-up appointment with physician
- Sports test for return to competition