



**Nathan E Marshall MD**  
Rochester Hills, MI  
(248) 650-2400  
Shelby Township, MI  
(586) 254-2777  
[NateMarshallMD.com](http://NateMarshallMD.com)

## **Cartilage restoration (MACI/Microfracture) of Patella/Trochela with Tibial osteotomy Physical Therapy Protocol**

### **Weeks 0-6**

#### **Primary goals: Eliminate swelling; initial ROM**

- Touch down weight bearing in brace 6 weeks
- Brace:
  - 0-2 weeks: locked in extension; off for hygiene
  - 2-6 weeks: locked in extension with ambulation, progression of open 30 degrees a week, goal of 90 degrees by 6 weeks. Can remove to sleep.
- ROM:
  - 0-6 weeks: Use CPM 6 hours/day, begin @ 0-30 degrees for 2 weeks, then 0-60 for 2 weeks, then 0-90 for 2 weeks.
- 0-2 weeks: Quad sets, SLR in brace, calf pumps
- 2-6 weeks: Progress non-weight bearing flexibility. Begin floor-based core, hip and gluteal strength. Advance quad sets, patellar mobility, SLR.

### **Weeks 6-8**

#### **Primary goals: Increase ROM, initial strength**

- Discontinue brace, slowly advance to full weight bearing
- Advance strengthening exercises
  - Closed chain quads, proprioception, core/pelvic stability.
  - Begin stationary bike
  - Advance SLR, floor-based exercise
- Full range of motion

### **Weeks 8-12**

#### **Primary goals: Full ROM, increase strength**

- Gait training
- Closed chain activities
  - Wall sits, mini-squats, toe raises, stationary bike
- Unilateral stance activities
- Proprioception
- Progress flexibility, strengthening

### **Months 3-6**

#### **Primary goals: Full painless ROM, advanced strength**

- Advance strengthening as tolerated
- Maximize core, gluteal strength, pelvic stability, eccentric hamstrings
- Advance to elliptical, bike, pool as tolerate
- Begin agility and cutting activities when strength adequate

### **Months 6+**

#### **Primary Goals: return to function/sport**

- Advance functional activity
- Return to sport specific activity when cleared by MD