

Alta View Sports Medicine



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# Knee Microfracture

## Physical Therapy Protocol

**General Guidelines:** The included protocol is intended to be a guideline for the therapist in assisting the patient having undergone a microfracture procedure. The overall speed of progression is determined by the therapist upon achieving the designated goals and determined length of therapy is 2-3 times weekly for 6-12 weeks with emphasis on a home exercise program. Modalities may be used as needed.

### **Rehabilitation Protocol**

#### **Phase 1: 0-2 weeks postop**

**Goals:** Control pain, diminish swelling, begin regaining knee range of motion with focus on full extension, patella mobility, protect the microfracture site

#### **Weight bearing:**

- Femoral condyle/tibial plateau: Non-weight bearing for 6 weeks, crutches at all times
- Patella/trochlea defects: as tolerated with knee brace 0-30° of flexion for 6 weeks

**Brace:** prescribed for patella/trochlea defects, set at 0-30° of flexion for 6 weeks.

**Wound care:** suture removal at 10-14 days. Keep incisions covered with large band-aids or ace wrap.

#### **Exercises:**

- **CPM:** if prescribed, to use for 6-8 hrs/day for 1-2 hrs at a time. Start 0-60°, advance 10° daily as tolerated
- Patella/trochlea lesions: perform any active knee range of motion exercises with brace on with settings 0-30° of flexion. May remove brace in CPM/supervised passive motion only.
- Quad Isometric Contractions
- Patella mobilization
- Ankle pumps
- Straight leg raises to 45°

- Hip adduction, abduction, extension
- Knee Extension: Heel prop, Prone leg hang
- Knee Flexion: assisted by contralateral leg, heel slides
- Proprioception: Single leg balance
- Stationary cycling without resistance

### **Phase 2: 2-6 weeks postop**

Goals: Protect the microfracture site, improve range of motion, develop muscular control

#### Weight bearing:

- Femoral condyle/tibial plateau: Non-weight bearing for 6 weeks, crutches at all times
- Patella/trochlea defects: as tolerated with knee brace 0-30° of flexion for 6 weeks
- Avoid impact exercises to the knee

#### Exercises:

- Continue Phase 1
- Wall slides
- Prone/standing hamstring curls
- Stationary cycling—increase resistance as tolerated
- Aquatic exercise: straight-leg flutter kicks (avoid whip-kicks), water bicycle

### **Phase 3: 6-12 weeks postop**

Goals: Achieve full range of motion, begin weight bearing, restore normal gait, enhance leg muscular strength and endurance, improve proprioception and neuromuscular control

Weight bearing: may wean off crutches as tolerated

Brace: may wean out of brace for patella/trochlea lesions, advance motion as tolerated.

#### Exercises:

- Continue Phase 2/lower extremity strengthening
- Resisted knee flexion: heel/toe raises, standing mini squats, (to 45° of flexion), seated leg press (to 45° of flexion)
- Improve proprioception/neuromuscular control: single leg stork balance, wobble board, BOSU trainer, backward walking
- Cardiovascular training: stationary bicycle, elliptical, swimming, gentle walking on treadmill (no running)
- Continue pool program

### **Phase 4: 3-6 months postop**

Goals: Maintain full range of motion, increase leg strength and endurance, return to skill activities and sport participation

### Exercises:

- Continue Phase 3/lower extremity strengthening
- Front/Lateral step ups
- Front/Lateral lunges
- Wall squats, progress to single leg wall squats (avoid > 90° flexion)
- May introduce stair climber
- May begin light jogging on treadmill/soft track
  
- At 4 months:
  - May begin outdoor running on level surface
  - Plyometric exercises, two-leg and single-leg jumping
- At 5 months:
  - Agility drills: backward running, figure of eight drills, box runs, ladder steps, crossovers, accelerations/decelerations
  - May begin trail and stair running
  - Sport specific drills
- At 6 months: may return to full sport participation
  - Goal: full pain-free range of motion, quad/hamstring strength > 80% contralateral leg, satisfactory single-leg hop test, satisfactory clinical exam