



## **Christopher Kim, MD, Scott G. Kaar, MD**

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Sports Medicine and Shoulder Service

### **Knee Tibiofemoral Microfracture Rehab Protocol Prescription**

**Patient Name:**

**Date:**

**Diagnosis: Articular cartilage lesion ( MTP LTP )**

**Frequency: 2-3 visits/week Duration: 4 months**

#### **Weeks 1-6**

- HEP with ROM as tolerated.
- Encourage ROM exercises daily
- NWB strictly using crutches or walker

#### **Weeks 6-14**

- Supervised PT - 3 times a week (may need to adjust based on insurance)

#### **GOALS**

- Restore full ROM
- Restore normal gait
- Demonstrate ability to ascend and descend 8-inch stairs with good leg control without pain
- Improve ADL endurance
- Independence in HEP

#### **PRECAUTIONS**

- Avoid descending stairs reciprocally until adequate quad control and lower extremity alignment
- Avoid pain with therapeutic exercise and functional activities
- Avoid running and sport activity

#### **TREATMENT STRATEGIES**

- Progressive WBAT as quad control allows (good quad set/ability to SLR without pain or lag). May use crutches/cane if needed

- Aquatic therapy if available - pool ambulation or underwater treadmill
- D/C crutches or cane when gait is non-antalgic
- AAROM exercises
- Patellar mobilization
- SLR's in all planes with weights
- Proximal PREs
- Neuromuscular training (bilateral to unilateral support)
- Balance apparatus, foam surface, perturbations
- Short crank stationary bike
- Standard stationary bike (when knee ROM > 115)
- Leg press - bilateral/eccentric/unilateral progression
- Squat program (PRE) 0-60 deg
- Open chain quad isotonics (pain free arc of motion)
- Initiate step-up and step-down programs
- Stairmaster
- Retrograde treadmill ambulation
- Quad stretching
- Elliptical machine
- Forward Step-Down Test
- Upper extremity cardiovascular exercises as tolerated
- Cryotherapy
- Emphasize patient compliance to HEP

#### **CRITERIA FOR ADVANCEMENT**

- ROM to WNL
- Ability to descend 8-inch stairs with good leg control w/o pain
- Add water exercises if desired (and all incisions are closed and sutures out)

#### **Weeks 14-22**

#### **GOALS**

- Demonstrate ability to run pain-free
- Maximize strength and flexibility as to meet demands of ADL
- Hop test >85% limb symmetry
- Isokinetic test >85% limb symmetry
- Lack of apprehension with sport-specific movements
- Flexibility to accepted levels of sport performance
- Independence with gym program for maintenance and progression of therapeutic exercise program at discharge

#### **PRECAUTIONS**

- Avoid pain with therapeutic exercise and functional activities
- Avoid sport activity until adequate strength development

#### **TREATMENT STRATEGIES**

- Progress squat program < 90 degree flexion

- Lunges
- Start forward running (treadmill) program at 4 months postop if 8-inch step down satisfactory
- Continue LE strengthening and flexibility programs
- Agility program/sport specific ( sports cord)
- Start plyometric program when strength base is sufficient
- Isotonic knee flexion/extension (pain and crepitus-free arc)
- Isokinetic training (fast to moderate to slow velocities)
- Functional testing (hop test)
- Isokinetic testing
- HEP

#### **CRITERIA FOR DISCHARGE**

- Symptom-free running and sport-specific agility
- Hop test >85% limb symmetry
- Isokinetic test >85% limb symmetry
- Lack of apprehension with sport specific movements
- Flexibility to acceptable levels of sport performance
- Independence with gym program for maintenance and progression of therapeutic exercise program at discharge

#### **Concerns or questions:**

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#### **Physician Signature:**