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**Microfracture of the Knee**

Prior to, or on the day of surgery a continuous passive motion (CPM) machine will be dropped off at your home. You should begin using the CPM machine on the evening of, or morning following surgery. The CPM should be used for 6 to 8 hours daily for 6 to 8 weeks. You may sleep in the CPM machine or spread out its use over the course of the day. You will follow-up with Dr. Coyner 10 -14 days after surgery. Please call Dr. Coyner's office if you are having a problem with your knee or need clarification regarding the rehab protocol.

**Postoperative Phase I: Early Protection Phase (Weeks 0 to 6)**

**Goals**

- Protect healing tissue from load and shear forces
- ROM 0 to 120 degrees
- Prevents quad inhibition
- Control postoperative pain/swelling
- Normal proximal muscle strength
- Independence with home exercise program

**Precautions**

- Maintain weight bearing restrictions: postoperative brace locked at 0°; 0 to 20 degrees for patellofemoral lesions
- Non-WB in brace with crutches for first 6 weeks (may be advanced at surgeons discretion based upon lesion size and location)
- Advance to partial weight bearing at 6 weeks with progressive advancement to WBAT at 8 weeks
- No active extension exercises for patellofemoral lesions

## **Treatment Plan**

- CPM
- AAROM exercises (pain-free range of motion)
- Towel extensions
- Patellar mobilization
- Quadriceps reeducation (quad sets +/- E-stim)
- Straight leg raises (all planes)
- Stationary bike when ROM allows (week 3 to 4) - low resistance
- Upper extremity cardiovascular exercises, as tolerated
- Hip progressive resistance exercises
- Pool exercises for gait training and exercises week 3-4 (may begin when incision is fully healed)

## **Criteria for Progression to Phase II**

- MD direction for progressive weight-bearing (week 6)
- Proximal muscle strength 5/5
- ROM 0 to 120°
- Supine SLR without an extension lag

## **Postoperative Phase II (Weeks 6 to 12)**

### **Goals**

- ROM 0 to within normal limits
- Normal patellar mobility
- Restore normal gait

## **Microfracture of the Knee**

- Ascend 8 inch stairs with good control and without pain

### **Precautions**

- Avoid descending stairs reciprocally until adequate quadriceps control
- Avoid pain with therapeutic exercise and functional activities

### **Treatment Plan**

- Progressive weight-bearing / gait training with crutches
- Discontinue crutches when gait is non-antalgic
- Discontinue brace once able to SLR 20 repetitions without a lag
- Continue pool exercises and gait training
- AAROM exercises
- Leg press 0 to 60°
- Mini-squats
- Retrograde treadmill ambulation
- Proprioception training ( i.e. balance board)
- Initiate forward step-up program
- Stairmaster
- SLRs (progressive resistance)
- Lower extremity
- Open chain knee extension to 40° (tibiofemoral lesions) - close chain preferred
- Home exercise program

### **Criteria for Progression to Phase III**

- ROM 0 to WNL
- Normal gait pattern
- Demonstrated ability to ascend 8 inch step
- Normal patellar mobility

### **Postoperative Phase III (Weeks 12 to 18)**

#### **Goals**

- Return to normal ADL
- 85% limb symmetry on isokinetic testing (tibiofemoral lesions)
- Improve lower extremity flexibility
- Demonstrate ability to descend 8 inch stairs with good control and without pain

#### **Precautions**

- Avoid pain with therapeutic exercise and functional activities
- Avoid running until adequate strength development and surgeons clearance

#### **Treatment Plan**

- Progress squat program
- Initiate step down program
- Leg Press (emphasizing eccentrics)
- Advance proprioception training (perturbations)
- Retrograde treadmill ambulation/running
- Hamstring curls/proximal strengthening
- Isokinetic test at 4 months
- Lower extremity stretching
- Agility exercises (sports cord)

### **Microfracture of the Knee**

- Home exercise program

#### **Criteria for Progression to Phase IV**

- 85% limb symmetry on isokinetic testing (tibiofemoral lesions)
- Demonstrated ability to descend 8 inch step with good leg control and w/o pain

#### **Postoperative Phase IV: Return to Sport (Weeks 18 and Beyond)**

##### **Goals**

- Lack of apprehension with sport-specific movements
- Maximize strength and flexibility to meet demands of individual's sport activity
- Hop test  $\geq$  85% limb symmetry

##### **Precautions**

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

##### **Treatment Plan**

- Continue to advance lower extremity strengthening, flexibility, and agility programs
- Forward running
- Plyometric program
- Brace for sport activity (MD preference)
- Monitor patient's activity level throughout course of rehabilitation and adjust accordingly
- Encourage compliance to home exercise program

## **Criteria for Discharge**

- Lack of apprehension with sport-specific movements
- Hop test  $\geq$  85% limb symmetry
- Flexibility to accepted levels of sports performance
- Independence with gym program for maintenance and progression of therapeutic exercises