William J. Robertson, MD
TMI Sports Medicine
3533 Matlock Rd
Arlington, TX 76015
Office: (817) 419-0303
Fax: (817) 468-5963
www.billrobertsonmd.com
www.hipkneepreservation.com

Microfracture Procedure of the Knee - Postoperative Rehab Protocol

You will see a TMI physical therapist on post-operative day #1 and begin a rehabilitation program. You will also be set up with a continuous passive motion (CPM) machine. The CPM should be used for 6 hours daily for 6 weeks. You may sleep in the CPM machine or spread out its use over the course of the day.

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
- TTWB in brace with crutches for first 4 weeks (may be advanced at surgeons discretion based upon lesion size and location)
- Advance to partial weight bearing at 4 weeks with progressive advancement to WBAT at 6 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. May "Rock for Range" using well leg immediately.
- Upper extremity cardiovascular exercises, as tolerated
- Hip progressive resistance exercises
- May start Alter-G and Pool ambulation for gait training at 50% body weight at 3-4 weeks, progression per MD (Assure wound is completely healed/scar prior to beginning pool therapy).

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

<u>Postoperative Phase II (Weeks 6 to 12)</u>

Goals

- ROM 0 to within normal limits
- Normal patellar mobility
- Restore normal gait
- 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
- Jogging program on Alter-G with gradual increase in body weight
- Hamstring curls/proximal strengthening
- Isokinetic test at 4 months
- Lower extremity stretching
- Agility exercises (sports cord)
- 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 ≥ 85% limb symmetry
- Flexibility to accepted levels of sports performance
- Independence with gym program for maintenance and progression of therapeutic exercises