

## Sports Rehabilitation & Performance Center Microfracture Guidelines© \*

The following microfracture guidelines were developed by the Sports Rehabilitation and Performance Center staff at Hospital for Special Surgery. Progression is both criteria-based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression. Concomitant procedures such as additional ligament reconstruction, meniscal repair and articular cartilage procedures may alter the guideline.

### POST – OPERATIVE PHASE I (WEEKS 0-6)

#### GOALS:

- Control post-operative pain / swelling
- ROM: Full passive extension 0° → 120°
- Prevent quadriceps inhibition
- Normalize strength of proximal musculature
- Independence in home therapeutic exercise program

#### PRECAUTIONS:

- Maintain weight bearing restrictions
  - Post-op brace locked @ 0°; 0° → 20° for Patellofemoral lesion
- Avoid neglect of range of motion exercises

#### TREATMENT RECOMMENDATIONS:

- Continuous Passive Motion (CPM)
- Active – Assistive Range of Motion Exercises (Pain-free ROM)
- Towel extensions
- Patella Mobilization
- Toe-Touch Weight Bearing with brace locked at 0° with crutches
- Partial Weight Bearing progression to weight bearing as tolerated, brace 0° → 20° for Patellofemoral lesion
- Quadriceps re-education (Quad Sets with EMS or EMG)
- Multiple Angle Quadriceps Isometrics (Bilaterally – Submaximal)
- Short Crank ergometry → Standard ergometry
- SLR's (all planes)
- Hip progressive resisted exercises
- Pool exercises
- Plantar Flexion Theraband
- Lower Extremity Flexibility exercises
- Upper extremity cardiovascular exercises as tolerated
- Cryotherapy
- Home therapeutic exercise program: Evaluation based
- Emphasize patient compliance to home therapeutic exercise program and weight bearing restriction

#### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE:

- MD direction for Progressive Weight Bearing (Week 6)
- ROM 0° → 120°
- Proximal Muscle strength 5/5
- SLR (supine) without extension lag



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### POST – OPERATIVE PHASE II (WEEKS 6-12)

#### GOALS:

- ROM 0° - WNL
- Normal patella mobility
- Restore normal gait
- Ascend 8” stairs with good control without pain

#### PRECAUTIONS:

- Avoid descending stairs reciprocally until adequate quadriceps control & LE alignment is demonstrated
- Avoid pain with therapeutic exercise & functional activities

#### TREATMENT RECOMMENDATIONS:

- Progressive Weight Bearing/Gait Training with crutches
  - D/C crutches when gait in non-antalgic
- Post-op brace discontinued
  - As good quadriceps control (ability to SLR without lad or pain) is demonstrated
- Unloader brace / Patella sleeve per MD preference
- Computerized forceplate (NeuroCom) for weight bearing progression / patient education
- Underwater treadmill system (gait training) if incision benign
- AAROM exercises
- Leg Press (60° → 0° arc)
- Mini Squats / Weight Shifts
- Retrograde treadmill ambulation
- Proprioception/Balance training
  - Proprioception board / Contralateral Theraband Exercises / Balance systems
- Initiate Forward Step Up program
- Stairmaster
- SLR's (progressive resistance)
- Lower extremity flexibility exercises
- OKC knee extension to 40° (tibiofemoral lesions) – CKC exercises preferred
- Home therapeutic exercise program: Evaluation based

#### MINIMUM CRITERIA FOR ADVANCEMENT:

- ROM 0° → WNL
- Normal gait pattern
- Demonstrate ability to ascend 8” step
- Normal patella mobility

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### POST – OPERATIVE PHASE III (WEEKS 12-18)

#### GOALS:

- Descend 8”stairs with good leg control without pain
- 85% limb symmetry on Isokinetic testing (tibiofemoral lesions)
- 85% limb symmetry on Forward Step Down Test
- Return to normal ADL
- Improve lower extremity flexibility

#### PRECAUTIONS:

- Avoid pain with therapeutic exercise & functional activities
- Avoid running till adequate strength development and MD clearance

#### TREATMENT RECOMMENDATIONS:

- Progress squat program
- Initiate step down program
- Leg Press (emphasizing eccentrics)
- OKC knee extensions 90° → 40° (CKC exercises preferred)
- Advance proprioception training (perturbations)
- Agility exercises (sport cord)
- Elliptical Trainer
- Retrograde treadmill ambulation/running
- Hamstring curls / Proximal strengthening
- Lower extremity stretching
- Forward Step Down Test (NeuroCom) @ 4 months
- Isokinetic Test @ 4 months
- Home therapeutic exercise program: Evaluation based

#### MINIMUM CRITERIA FOR ADVANCEMENT:

- Ability to descend 8” stairs with good leg control without pain
- 85% limb symmetry on Isokinetic testing (tibiofemoral lesions) & Forward Step Down Test



## Sports Rehabilitation & Performance Center Microfracture Guidelines© \*

### POST – OPERATIVE PHASE IV (WEEKS 18-?)

#### GOALS:

- Lack of apprehension with sport movements
- Maximize strength & flexibility to meet demands of sport activity
- Hop Test  $\geq$  85% limb symmetry

#### PRECAUTIONS:

- Avoid pain with therapeutic exercise & functional activities
- Avoid sport activity till adequate strength development and MD clearance

#### TREATMENT RECOMMENDATIONS:

- Continue to advance LE strengthening, flexibility & agility programs
- Forward running
- Plyometric program
- Brace for sport activity (MD preference)
- Monitor patient's activity level throughout course of rehabilitation
- Reassess patient's complaint's (i.e. pain/swelling daily – adjust program accordingly)
- Encourage compliance to home therapeutic exercise program
- Home therapeutic exercise program: Evaluation based

#### CRITERIA FOR DISCHARGE:

- Hop Test  $\geq$  85% limb symmetry
- Lack of apprehension with sport specific movements
- Flexibility to accept level of sport performance
- Independence with gym program for maintenance and progression of therapeutic exercise program at discharge