Microfracture Medium to Large Lesion Rehabilitation

Phase 1: Maximum Protection Phase (Weeks 1-4)

Goals: Control inflammation/effusion
Allow early healing
Full passive knee extension
Gradually increase knee flexion
Independent quad. Control

Stage 1: Week 1
- Ice, compression, elevation
- Brace locked at 0 degrees for ambulation and sleeping only
  - Brace may be unlocked during sitting etc.
- ROM (Passive 0-90)
- Patellar mobilization
- Strengthening exercise:
  - Quad Sets
  - SLR flexion
  - Hip Abd/Adduction
- Non-Weight Bearing x 6 weeks

Stage 2: Weeks 2-4
- Continue use of ice and compression
- Brace locked for ambulation
- ROM Guidelines
  - Gradually increase PROM
  - Week 2: 0-90 degrees
  - Week 3-6: 0-95 degrees
- Strengthening Exercises:
  - SLR (all 4 planes)
  - Knee Extension 90-0 degrees
  - Heel Slides to 90

Phase 2: Moderate Protection Phase (6-8 weeks)

Goals: Full PROM
No Swelling/inflammation
Re-establish muscle control
Proper gait pattern

- Weight bearing guidelines-> Continue to lock brace
  - Week 6: 25-50% WB as tolerated with 2 crutches
  - Week 7-8: FWB unlock brace (Discontinue brace at 8 weeks)
*Discontinue crutches when safe and proper gait (usually 7-8 weeks)
• Continue use of ice and compression
• Continue ROM and progress to 0-135 Degrees
• Progress strengthening exercises Phase I
  o Heel slides to full ROM
  o Long sit hamstring stretch
  o Knee extension 90-0 Degrees
  o Standing hamstring curls
• Begin Level Two agility
  o Cup walking
  o Planks
  o Bridging
  o Steamboats 4 way (involved leg down)
  o Ball roll: for, side and back (involved leg down)
  o Heel raises
• Light strengthening: Short range leg press, 4-Way hip, leg extension 90-45, Dead lifts
• Bicycle (as ROM permits)
• Pool Program
*Avoid* twisting, deep squatting, stooping, no lunges!!!
  pivoting, running and deep squatting

**Phase 3: Controlled Activity Phase (9-16)**

**Goals:** Improve strength and endurance
  Maintain Full ROM
  Gradually increase applied stress

**Week 9 -11**
• Continue all strengthening exercises listed above
• Initiate Dynamic warm-up (no lunge)
• Initiate Form Stepping (progress from walk pace to fast step pace and no lunge)
• Initiate light resistive hamstring curls
• Toe calf raises
• Progress balance training
• Progress to Phase II strengthening program

**Week 12 – week 15**
• Continue Strengthening and stretching program
• Continue dynamic warm-up (now can include lunges)
• Form running: progress from fast pace walk to trot to jog pace (now include lunges)
• Initiate treadmill for endurance (3.5mph fast walk then progress to light jog at 14 weeks)
• Begin step ups and step downs
Phase 4: Return to Activity Phase (4-6 month)

Goals: Improve strength and endurance
Prepare for unrestricted activities

Criteria to Progress to Phase 4
• Full non-painful ROM
• No pain or tenderness
• Satisfactory clinical exam

Exercises
• Continue and progress all strengthening exercises and stretching drills
• Initiate straight line running at 5 months
• Initiate controlled pivoting and cutting: 6 months
• Deep squatting permitted at 6 months
• Initiate controlled agility training: 6 months
• Initiate jumping program at 8 months: Ankle jumps, two-legged hop, two–legged jumps, single leg, etc…
• Gradually return to sport drills at : 9 months
• Non contact practice 8 months
• Full competition non contact sports 9 months
• Full competition full contact 10 to 12 months

• Initiate pool running