

R. JOHN ELLIS, JR., M.D.  
MARK E. PETRIK, M.D.  
LAWRENCE A. SCHAPER, M.D.  
MARK G. SMITH, M.D.  
G. JEFFREY POPHAM, M.D.  
AKBAR NAWAB, M.D.  
MICHAEL SALAMON, M.D.  
MATTHEW PRICE, M.D.  
DANIEL RUEFF, M.D.



ORTHOPAEDIC SURGERY  
FRACTURES  
JOINT REPLACEMENT  
SPORTS MEDICINE

## MICROFRACTURE PROTOCOL

The following protocol should be used as a guideline for rehabilitation progression, but may need to be altered pending the nature and extent of the surgical procedure, healing restraints or patient tolerance.

- Patient will be released from the hospital the same day as surgery
- Surgical dressing should be removed 2 days post op in physical therapy
- Strict protective weight bearing status for 2 months (approximately 8-9 weeks). TTWB for balance or otherwise determined by physician.
- Begin outpatient physical therapy 2-3 days post op.
- Emphasis on range of motion. Patient may perform active assisted range of motion as part of their home exercise program.
- Patient may start an aquatics program to initiate functional exercises in a reduced weight environment after the incisions have healed, approximately 3-4 weeks post-op.
- Emphasis on cycling for range of motion without resistance according to patient tolerance.
- At 2 months, transition to full weight bearing status (transition may vary on a case to case basis). Some patients may transition immediately to full weight bearing status. Others may require a transition to 1 crutch or continued support for long distances, which may be needed for 1-2 weeks.
- The rehab program will proceed cautiously for the first 3 months, after which functional progression will be determined by patient's tolerance to the exercises and general activity.

## MICROFRACTURE PROTOCOL

### PHASE 1: EARLY PHASE

#### Week 1

- Seated knee extensions
- Ankle pumps
- Pelvic tilts
- Trunk rotation
- Double leg bridges
- Prone on elbows
- Prone knee flexion
- Standing abduction without resistance

#### Week 2

Continue with previous exercises, but may add:

- Supine marching (modified dead bug)
- Superman
- Abduction isometrics
- Standing theraband resistance (start very low resistance) – abduction, adduction, flexion

#### Week 3

Continue with previous exercises, but may add:

- Seated physioball active hip and knee motions
- Active range of motion with gradual end range stretch within tolerance
- Sidelying hip adduction

**Patient may progress to phase 2 when they have achieved the following: minimal pain with phase 1 exercises, minimal range of motion limitations, demonstrates restricted weight bearing during gait**

### PHASE 2: INTERMEDIATE PHASE

#### Weeks 4-6

Continue with previous or modified versions of previous exercises, but may add:

- Clamshells
- Progression of 4 way SLR table exercises

### **PHASE 3: ADVANCED PHASE**

#### Week 7

Continue with previous or modified versions of previous exercises, but may add:

- Superman in quadruped position
- Clamshells with theraband resistance
- Standing theraband or multi-hip in flexion, abduction, adduction, and extension
- Aquatic exercises: flutter kick, swimming, 4 way hip exercises with water weights, step ups

#### Week 8

Continue with previous or modified versions of previous exercises, but may add:

- Partial squats
- Calf raises

#### Week 9

Continue with previous or modified versions of previous exercises, but may add:

- Sidestepping with resistance (pause on affected limb)
- Sports cord walking forward and backward (pause on affected limb)
- BOSU squats
- Knee extensions
- Hamstring curls
- Single stability ball bridges

#### Week 10

Continue with previous or modified versions of previous exercises, but may add:

- Step ups with eccentric lowering
- Lunges (progress from single plane → tri-planar lunges → add medicine balls for resistance and rotation)

### **PHASE 4: SPORTS SPECIFIC TRAINING CLINIC BASED PROGRESSION**

#### Weeks 11-13

Continue with previous or modified versions of previous exercises, but may add:

- Pool running
- Treadmill jogging
- Step drills, quick feet step ups, forward, lateral carioca
- Plyometrics: double and single leg shuttle jumps
- Theraband walking patterns

## **FINAL PHASE: SPORT TRAINING ON THE FIELD OR COURT**

Weeks 14+

Continue with previous or modified versions of previous exercises, but may add:

- Running progression
- Sport specific drills
- Traditional weight training

### **Criteria for full return to sport:**

- **Full range of motion**
- **Hip strength equal to uninvolved side; single leg pick-up with level pelvis**
- **Ability to perform sport-specific drills at full speed without pain**
- **Completion of functional sports test**