

## Microfracture Procedure (Femoral Condyle) Accelerated (Small Lesion) Rehabilitation Program

### I. PHASE I: PROTECTION PHASE

**Goals:** Reduce swelling and inflammation  
Protection of healing articular cartilage  
Restoration of full passive knee extension  
Gradual restoration of knee flexion  
Re-establish voluntary quadriceps control

#### Weeks 0-2

**Weight Bearing:** Toe-touch WB (~20 pounds) week 0-2  
Use of crutches to control weight bearing forces  
Discontinue crutches when patient exhibits normal gait

**Inflammation Control:** Use of ice and compression 15-20 min. (6-8 times daily)  
Use elastic wrap to control swelling and inflammation

**Range of Motion:** Immediate motion  
Full passive knee extension  
Active assisted knee flexion (3-5 times daily)  
Week one: 0-90° or beyond to tolerance  
Week two: 0-115° or beyond to tolerance  
Flexibility exercises: stretch hamstrings, calf and quads

**Strengthening Exercises:** Isometric quadriceps setting  
Straight leg raises (4 directions)  
Multi-angle quadriceps  
Electrical muscle stimulation to quads  
Bicycle when ROM permits  
Proprioception and balance training (weight shifts)

**Functional Activities:** Gradual return to daily activities  
Monitor swelling, pain and loss of motion

#### Week 3-4

**Weight Bearing:** 50% WB week 3  
75% WB week 4

**Range of Motion:** Gradually progress knee flexion  
Week 3: 0-125°  
Week 4: 0-135°  
Maintain full passive knee extension  
Continue stretches for quadriceps, hamstrings, gastroc  
Perform active ROM (4-5 times daily)

**Strengthening Exercises:** Bicycles (1-2 times daily)  
Quads setting  
Straight leg flexion

Hip abd/adduction  
 Hip flexion/extension  
 Light hamstring curls  
 Mini squats (week 3-4)  
 Front and side lunges  
 Leg press (light – week 3-4)  
 Pool program (once incisions are closed)  
 Proprioception and balance training

**Inflammation Control:** Continue use of ice, elevation & compression (4-5 times daily)

**Functional Activities:** Gradually return to functional activities.  
 No sports or impact loading

**II. PHASE II: INTERMEDIATE PHASE (WEEKS 4-8)**

**Goals:** Protect and promote articular cartilage healing  
 Gradually increase joint stresses and loading  
 Improve lower extremity strength and endurance  
 Gradually increase functional activities

**Weight-bearing** Full WB week 4-6 as tolerated (physician discretion)

**Flexibility Exercises:** Continue stretching hamstrings, quadriceps, and calf

**Strengthening Exercises:** Initiate functional rehab exercises  
 Closed kinetic chain exercises (step-ups, lunges)  
 Vertical squats, wall squats, leg press  
 Bicycle, stair climber\*  
 Initiate progressive resistance exercise\* (PRE's)  
 Hip abd/adduction, extension/flexion  
 Hamstring strengthening (light)  
 Pool program (running week 4-6)  
 Initiate walking program (week 6-8)  
 Proprioception and balance training

**Functional Activities:** Gradually increase walking program  
 \*Progression based on monitoring patient swelling, pain and motion

**III. PHASE III: LIGHT ACTIVITY PHASE (WEEKS 8-12)**

**Goals:** Improve muscular strength/endurance  
 Increase functional activities  
 Gradually increase loads applied to joint

**Criteria to Progress To Phase II:**

- 1) Full non-painful ROM
- 2) Strength within 20% contralateral limb
- 3) Able to walk 1.5 miles or bike for 20-25 minutes without symptoms

**Exercises:** Continue progressive resistance exercises  
 Continue functional rehabilitation exercises  
 Balance and proprioception drills  
 Bicycle and stair climber  
 Neuromuscular control drills

Initiate light running program (week 8-10)  
\*\*physician will determine  
Continue all stretches to lower extremity

**Functional Activities:** Gradually increase walking distance/endurance  
Light running week 8-10

IV. **PHASE IV: RETURN TO ACTIVITY PHASE (WEEKS 12-20)**

**Goals:** Gradual return to full unrestricted functional activities  
\*Actually timeframes may vary based on extent of injury and surgery  
Physician will advise rate of progression

**Exercises:** Continue functional rehab exercises  
Continue flexibility exercises

**Functional Activities:** Per physician direction  
Low impact sports (cycling, golf) weeks 6-8  
Moderate impact sports (jogging, tennis, aerobics) weeks 8-12  
High impact sports (basketball, soccer, volleyball) weeks 12-16