
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