

Microfracture Procedure (Femoral Condyle) Regular (Medium-Large Lesion) Rehabilitation Program

I. PHASE I: PROTECTION PHASE:

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

Weeks 0-2

Brace: Use elastic wrap to control swelling and inflammation

Weight Bearing: Non weight-bearing week 0-2
Use of crutches to control weight bearing forces

Inflammation Control:
Use of ice and compression 15-20 min. (6-8 times daily)

Range of Motion: Immediate motion
Full passive knee extension
Passive and active assisted knee flexion (3-5 times daily) to promote articular cartilage healing
Week one: 0-90o or beyond (to tolerance)
Week two: 0-105o or beyond (to tolerance)
Flexibility exercises: stretch hamstrings, calf & 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

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

Weeks 3-4

Weight Bearing: Toe-touch WB week 3
25% WB week 4
Weight bearing crutches

Range of Motion: Gradually progress knee flexion
Week 3: 0-115/125o
Week 4: 0-125/130o+
Maintain full passive knee extension
Continue stretches for quadriceps, hamstrings, gastroc
Perform active assisted and active ROM (4-5 times daily)

Strengthening Exercises: Bicycles (1-2 times daily)
Low intensity bicycle – longer duration

Quads setting
 Straight leg flexion
 Hip abd/adduction
 Hip flexion/extension
 Light hamstring curls
 Pool program (once incisions are closed)
 Proprioception and balance training
 No OKC resisted knee extension

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

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

II. PHASE II: INTERMEDIATE PHASE (WEEKS 5-8):

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: 50% WB week 6
 75% WB week 7
 FWB as tolerated week 8

Flexibility Exercises: Continue stretching hamstrings, quadriceps, and calf

Strengthening Exercises: Initiate functional rehab exercises
 Mini-squats & leg press week 6
 Closed kinetic chain exercises (step-ups, lunges) week 8
 Vertical squats, wall squats, leg press
 Bicycle, elliptical (low intensity long duration)
 Initiate progressive resistance exercise* (PRE's)
 Hip abd/adduction, extension/flexion
 Hamstring strengthening (light)
 Pool program
 Initiate walking program* (light walking)
 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 8-16) :

Goals: Improve muscular strength/endurance
 Increase functional activities
 Gradually increase loads applied to joint
 Control compression and shear forces

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 elliptical
 Neuromuscular control drills
 Initiate light running program
 **Physician will determine
 Continue all stretches to lower extremity

Functional Activities: Gradually increase walking distance/endurance
 Pool running week 10
 Light running week 12-16
 Progress running program week 16-18
 Progression based on monitoring patient's swelling, pain, and motion*

IV. PHASE IV: RETURN TO ACTIVITY PHASE (WEEKS 16-26):

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
 Restrict with deep squatting with resistance and heavy knee extensions
 Monitor jumping activities closely

Functional Activities: -
 Low impact sports (cycling, golf) weeks 6-8
 Moderate impact sports (jogging, tennis, aerobics) weeks 12-16
 High impact sports (basketball, soccer, volleyball) weeks 16-26
 * Actual return to sports or strenuous will be determined by your Physician & Rehabilitation Team