

MICROFRACTURE PROCEDURE (FEMORAL CONDYLE)

Small Lesion (Accelerated) Rehabilitation Program

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

A. 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

B. 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 and compression (4-5 times daily)
- Functional Activities: - Gradually return to functional activities.
- No sports or impact loading

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
- Weightbearing - 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

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

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