

MICROFRACTURE PATELLOFEMORAL Rehab Protocols

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PHASE I MAXIMUM PROTECTION (WEEKS 0-6)

Goals

- Protection of healing articular cartilage from load and shear
- Reduce swelling and inflammation
- Restoration of full passive knee extension
- Gradual restoration of knee flexion
- Re-establish voluntary quadriceps control

Weeks 0-2

- **Brace:** Locked at 0° during ambulation and weight bearing activity
- **Weight Bearing:**
 - Week 1 – Toe Touch WB (~25% body weight) in full extension
 - Week 2 – 50% body weight in brace
- **Inflammation Control:**
 - Use of ice and compression 15-20mins (6-8 times daily)
 - Use elastic wrap to control swelling & inflammation
- **Range of Motion**
 - Immediate motion
 - Full passive knee extension immediately
 - Active assisted knee flexion (3-5 times daily)
 - Initiate CPM day one for total of 8-12 hrs 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)
 - Electrical muscle stimulation to quads
 - Bicycle on Unicam with limited motion 0-60°
 - Ankle pumps
 - Hip rotation strengthening
- **Functional Activities:**
 - Gradual return to daily activities
 - Monitor swelling, pain and loss of motion

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about rehab protocols.



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Week 6

- **Weight Bearing:**
 - 75% Body Weight Week 3
 - Week 4 Full Weight Bearing
- **Range of Motion**
 - Gradually progress knee flexion
 - Week 3: 0-125°
 - Week 4: 0-135°
 - Maintain full passive knee extension
 - Continue patellar mobilization
 - Continue stretches for quadriceps, hamstrings, gastric
 - Perform active ROM (4-5 times daily)
- **Strengthening Exercises**
 - Bicycles (1-2 times daily) low intensity cycling (unicam)
 - Electrical muscle stimulation
 - Quads setting
 - Straight leg flexion
 - Hip abd/adduction
 - Hip flexion/extension
 - 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: TRANSITION PHASE (WKS 6-12)

Criteria to Progress to Phase II

- Full passive knee extension
- Knee flexion to 115 degrees
- Minimal pain/ swelling
- Voluntary quad activation

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 without brace

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Flexibility Exercises

- Continue stretching hamstrings, quadriceps, and calf

Strengthening Exercises

- Leg Press (light) 0-60 degrees
- Mini-squat 0-45 degrees
- Toe calf raise
- EMS to Quads
- Continue SLR
- Quad sets
- Bicycle (gradually increase time) low intensity
- Lateral lunges with sportcord
- Wall Slides 0-60 degrees
- Pool program (walking and running week 6)
- Initiate walking program (week 8)
- Proprioception and balance training
- Elliptical (week 10-12)
- Treadmill walking (week 10-12)

Functional Activities

- Gradually increase walking program
- Progression based on monitoring patient swelling, pain and motion

PHASE III – LIGHT ACTIVITY PHASE (WKS 12-16)

Goals

- Improve muscular strength/ Endurance
- Increase functional activities
- Gradually increase loads applied to joint

Criteria to Progress to Phase III:

- Full non-painful ROM
- Strength within 20% contralateral limb
- Able to walk 1.5 miles or bike for 20-25 mins without symptoms

Exercises

- Continue progressive resistance exercises
- Continue functional rehabilitation exercises
- Balance and proprioception drills
- Bicycle and elliptical (week 12)
- Neuromuscular control drills
- Pool program
- Continue all stretches to lower extremity
- Light jogging (week 12-16) physician determination

Functional Activities

- Gradually increase walking distance/endurance
- Light jogging

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PHASE IV – RETURN TO ACTIVITY PHASE (WKS 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
- Emphasize patellar mobility
- Quadriceps strengthening without pain
- Hip Strengthening (ER/IR) Continue with squatting for 3-4 months
- Continue flexibility exercises
- Stretch quads, hamstring, calf

Functional Activities

- Per physician direction: Low impact sports (cycling, golf) wks 12-16
- Moderate impact sports (jogging, tennis, aerobics) wks 20-26
- High impact sports (basketball, soccer, volleyball) wks 26+

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