

Femoral Condyle Microfracture/OATs:

The intent of this protocol is to provide the therapist with guidelines of the post-operative rehabilitation course after a femoral condyle microfracture/OATs. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

INDIVIDUAL CONSIDERATIONS:

Phase I (Weeks 0-2)**Goals**

- Control inflammation and pain
- Protect and promote healing articular cartilage
- Restoration of full passive knee extension
- Gradual restoration of knee flexion
- Re-establish voluntary quadriceps control

Brace

- Use elastic wrap to control swelling and inflammation

Inflammation Control

- Use of ice and compression 15-20 minutes (6-8 times daily)

Weight-Bearing Status

- Non-weightbearing week 0-2
- Use of crutches to control weight bearing forces

Therapeutic Exercises

- Immediate motion
- Full passive knee extension
- Passive and active assisted knee flexion (3-5 times daily) to promote articular cartilage healing
 - Week 1: 0-90° or beyond (to tolerance)
 - Week 2: 0-105° or beyond (to tolerance)
- Flexibility exercises: stretch hamstrings, calf and quads
- Isometric quadriceps setting
- Straight leg raises (4 directions)
- Multi-angle quadriceps
- Electrical muscle stimulation to quads
- Bicycle when ROM permits
- Proprioception and balance training

Phase II (Weeks 3-4)

Goals

- Gradually return to functional activities
- No sports or impact loading

Inflammation Control

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

Weight-bearing status

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

Therapeutic Exercises

- Gradually progress knee flexion
 - Week 3: 0-115/125°
 - Week 4: 0-125/130°+
- Maintain full passive knee extension
- Continue stretches for quadriceps, hamstrings, gastroc
- Perform active assisted and active ROM (4-5 times daily)
- Bicycles (1-2 times daily)
- 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

Phase III (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

- Week 6 - 50% WB
- Week 7 - 75% WB
- Week 8 - FWB as tolerated

Therapeutic Exercise

- Continue stretching hamstrings, quadriceps, and calf
- 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, stair climber*
- Initiate progressive resistance exercise* (PRE's)
- Hip abd/adduction, extension/flexion
- Hamstring strengthening (light)
- Pool program
- Initiate walking program*
- Proprioception and balance training

*Progression based on monitoring patient for pain, swelling, and motion

Criteria to Progress To Phase IV

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

Phase IV (Weeks 8- 16)

Goals

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

Exercises

- Continue progressive resistance exercises
- Continue functional rehabilitation exercises
- Balance and proprioception drills
- Bicycle and stair climber
- Neuromuscular control drills
- Initiate light running program - physician will determine
- Continue all stretches to lower extremity
- 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

Phase V (Weeks 16-26)**Goals**

- Gradual return to full unrestricted functional activities -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
- 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