

Conservative Patellofemoral Rehabilitation

(non-surgical)

Below is a suggested progression. Advancement to the next phase, as well as specific exercises performed, should be individually based.

Phase I (1 – 5 days post-injury/onset of symptoms)

- Modalities: prn for pain and inflammation (ice, IFC, ionto, etc.)
 - Consider kinesiotaping to aid in reduction of swelling
 - Consider taping to aid in patellar tracking
 - McConnell taping for patellar tilt, glide, and/or malrotation
 - Kinesiotaping for VMO activation and/or Vastus Lateralis inhibition
 - Bracing to promote correct patellar alignment within the femoral trochlea
- ROM:
 - PROM prn/AROM in pain-free range (heel slides)
- Exercises:
 - Patellar mobs as tolerated
 - Stationary bike, if pain-free
 - Stretching as appropriate/needed: quad, ITB, hamstring, calf, hip musculature
 - Consider deep friction massage for ITB or ASTYM of LE
 - Hip/knee strengthening (open-chain)
 - Focusing on hip/ankle strengthening if knee exercises are not tolerated
 - General quad strengthening is more important than VMO activation
- Evaluate other areas:
 - Possible overuse patterns (athletics, work activities)
 - Foot biomechanics/wear
 - Excessive pronation during mid-stance can limit tibial ER which then limits knee ext
 - Semi-rigid orthoses suggested for increased shock absorption and arch support
 - Hip tightness/weakness, poor pelvic control
 - Stretching of TFL, ITB, hip flexors
 - Glut med weakness- sidelying abduction, side planks
 - Glut max weakness- front planks with hip extension, glut sets
 - Femur IR vs. knee valgus

Phase II (5 days – 4 weeks post-injury/onset of symptoms)

- Modalities: continue PRN
- ROM/Stretching: Continue as in phase I
- Strengthening:
 - Progress with closed-chain strengthening as tolerated
 - Step ups, Lateral step ups, Squats, Leg press
 - Continue to focus on hip and core strengthening
 - Begin with double leg balance (rockerboard) and progress to single leg

Phase III (4+ weeks post-injury/onset of symptoms)

- Modalities: continue PRN
- ROM: Continue as in phase I/II, but more aggressive
- Strengthening:
 - Progress to more dynamic closed-chain strengthening and balance exercises
 - Progress to single leg as tolerated
 - 6+ weeks or when patient is ready:
 - Advance to running and agility drills, plyometrics, and sport-specific activities as tolerated
 - Functional test: less than 25% deficit for non-athletes and less than 20% deficit for athletes
 - Can include, but not limited to: Stand and Reach balance test, Star Excursion Balance test, Hop tests, 1 Rep max on leg press, Single leg wall sit, Single leg squat test

Adapted From:

- 1) Brotzman SB, Wilk KE. Clinical Orthopedic Rehabilitation. 2nd Ed. Philadelphia: Mosby; 2003
- 2) Zachazewski JE et al. Athletic injuries and rehabilitation. Philadelphia: WB Saunders Co; 1996
- 3) Monson, J, Arendt, Elizabeth. Rehabilitative Protocols for Select Patellofemoral Procedures and Nonoperative Management Schemes. Sports Med Arthosc. Rev.: Vol. 20, #3, Sept. 2012
- 4) Dutton, RA, Khadavi MJ, Fredericson, M. Update on Rehabilitation of Patellofemoral Pain. Current Sports Medicine Reports: Vol. 13, #3, May/June 2014
- 5) Bhav, A, Baker, E. Prescribing Quality Patellofemoral Rehabilitation Before Advocating Operative Care. Orthopedic Clinics of North America: Vol. 39, 2008