OrthoIllinois℠
REHABILITATION

# 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/core 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 (Concentric 90*-0*, Eccentric 45*-100*)
    - Continue to focus on hip and core strengthening
    - Begin with double leg balance (rockerboard) and progress to single leg
        - Progress from a solid surface to a compliant surface

**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
            - Dynamic stretching prior and static stretching after exercise program
        - 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) Monson, J, Arendt, Elizabeth. Rehabilitative Protocols for Select Patellofemoral Procedures and Nonoperative Management Schemes. Sports Med Arthosc. Rev.: Vol. 20, #3, Sept. 2012
3) Dutton, RA, Khadavi MJ, Fredericson, M. Update on Rehabilitation of Patellofemoral Pain. Current Sports Medicine Reports: Vol. 13, #3, May/June 2014
4) Bhave, A, Baker, E. Prescribing Quality Patellofemoral Rehabilitation Before Advocating Operative Care. Orthopedic Clinics of North America: Vol. 39, 2008
5) Wilk, KE. Recurrent Unremitting Patellar Tendinitis/Tendinosis Rehab Program. 2019
6) Wilk, KE. Non-Operative Treatment of Osteoarthritis of the Knee. 2019.


Phone (815) 484-6990 * Fax (815) 484-6961