OrthoIllinois℠

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)
    - 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 increase medicalization of patella
- 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
    - 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
    - Quad sets
- 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 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) Bhave, A, Baker, E. Prescribing Quality Patellofemoral Rehabilitation Before Advocating Operative Care. Orthopedic Clinics of North America: Vol. 39, 2008