

Posterior Cruciate Ligament Insufficiency Non-operative Rehab Protocol

Rehab Goals

- Promote tissue healing
- Decrease pain
- Decrease effusion
- Increase strength, endurance and power
- Improve proprioception and enhance dynamic stability
- Reduce functional limitations and disability

Guidelines

- Must be highly individualized!!
- Focus on quadriceps
 - Quad strength related to return to sport and patient satisfaction
- Important to protect against posterior tibial translation
 - Pillow or towel under proximal tibia during quad strengthening (QS)
 - At rest, place a pillow under the knee when leg is elevated
 - Anterior drawer past 90° flexion as described below
- Careful monitoring of patellofemoral symptoms
- Avoid open kinetic chain (OKC) knee flexion, utilize closed kinetic chain (CKC) exercises to enhance function of hamstrings
- Early considerations: QS, straight leg raise (SLR), Biofeedback, electrical stimulation (ES) for quads, hip strengthening
- Muscle function: Closed chain; mini-squats, wall slides, step-ups, leg press

Range of Motion (ROM)

- Knee flexion less than 90° 0 to 6 weeks post-injury
- If greater than 90°, **must** be done with anterior drawer (until full ROM)
- Posterior knee pain may mean patient is progressing too fast

Days 0 to 10 (Without Meniscus Injury)

- ROM: Progress as tolerated, no OKC hamstrings
- Effusion: Ice, elevation, NSAIDs, ES
- Gait/weight bearing (WB): Weight bearing as tolerated (WBAT) with assistive device as needed, long hinged brace locked in extension
- Exercise: Isometric quads when pain permits
- Avoid OKC hamstrings

Days 10 to 21

- ROM: Early ROM within limits of pain; AA/PROM if less than 90° or if more than 90°, **must** be done with anterior drawer
- Effusion: As above
- Gait/WB: Progress WBAT with knee brace locked in extension

- Criteria to discontinue crutches: Pain controlled, effusion controlled
- Criteria to discontinue brace: Good quad control; able to perform 10 straight leg raises (SLRs) without extensor lag
- Exercise: Isometric quads when pain permits
 - **Important to avoid posterior tibial subluxation**
 - Pillow under posterior aspect of lower leg when lying down
- Avoid isolated OKC hamstring exercise
- Posterior cruciate ligament (PCL) brace if indicated

Weeks 3 to 4

- ROM: Progress as tolerated, no OKC hams, continue anterior drawer with flexion ROM
- Effusion: As above
- Gait/WB: Begin single leg balance (SLB) activities as tolerated
- Exercise/Functional Training:
 - Focus on increasing strength/endurance of quads
 - OKC knee extension (0 to 70°) allowed as long as patellofemoral (PF) joint without symptoms
 - Light resistance
 - Quad sets and terminal knee extension
 - No hamstring exercises with knee flexed; may do hip extension with knee extension

Week 4 and Beyond

- ROM: Monitor
- Effusion: Monitor
- Gait/WB: Progress SLB activities as tolerated
- Exercise/Functional Training:
 - CKC exercises to improve functional strength: Squats 0 to 90°, wall slides, unilateral
 - Step-ups, step downs, leg press
 - Isotonic quad PRE
 - Treadmill (retro walking)
 - Proprioceptive training follows strengthening: slide board

Return to Sports When:

- Pain-free full knee extension
- Full ROM
- Quad strength greater than 85% of uninjured leg
- Continue PCL brace until full return to play with no effusion (remainder of season)
- Inform patient that they have abnormal laxity of the knee that will persist
- Must pass functional progression
- Cleared by Dr. Lavery