

PCL Injury: Non-Operative (Conservative)

PHASE I: 0-6 WEEKS

- Precautions
 - PRICE (Protect, Rest, Ice, Comrpess, Elevate) protocol
 - Avoid hyperextension (12 weeks)
 - Prevent posterior tibial translation (12 weeks)
 - Isolated hamstring exercises should be avoided until week 12
 - Partial WB with crutches (2 weeks)
 - Prone passive ROM from 0-90 deg for the first 2 weeks, and then progress to full ROM
 - PCL Jack brace or Rebound brace to be worn at all times, including rehabilitation and sleep (minimum of 12 weeks)
- Goals
 - PCL Ligament protection
 - Edema reduction to improve passive ROM and quadriceps activation
 - Address gait mechanics
 - Patient education
- Therapeutic exercise
 - Patellar mobilizations
 - Prone passive ROM
 - Quadriceps activation
 - Quadriceps sets
 - Straight leg raises (SLR) once the quadriceps are able to lock joint in terminal extension and no lag is present
 - Gastrocnemius stretching
 - Hip abduction/adduction
 - Stationary bike with zero resistance when ROM < 115 deg
 - Weight shifts to prepare for crutch weaning
 - Pool walking to assist with crutch weaning
 - Calf raises and single leg balance when weaned from crutches
 - Upper body and core strength as appropriate

PHASE II: 6-12 Weeks

- Precautions
 - Continued avoidance of hyperextension
 - Prevent posterior tibial translation
 - Limit double leg strengthening exercises to no more than 70 deg of knee flexion
 - WBAT
 - Full ROM, supine and prone ROM after 6 weeks
 - PCL Jack brace or Rebound Brace to be worn at all times
- Goals
 - PCL ligament protection
 - Full ROM
 - Address gait mechanics during crutch weaning

PCL Injury: Non-Operative (Accelerated)

- Double leg strength through ROM (no greater than 70 deg knee flexion) and single leg static strength exercises
- Reps and set structure to emphasize muscular endurance development (3 sets of 20 reps)
- Therapeutic exercise
 - Continue PRICE protocol
 - Continue exercises as weeks 1-6
 - Gastrocnemius and light HS stretching
 - Leg press limited to 0-70 deg of knee flexion
 - Squat progression
 - Static lunge
 - HS bridges on ball with knees extended
 - Progressive resistance stationary bike
 - Light kicking in pool
 - Incline treadmill walking (7-12% incline)
 - Single leg dead lift with the knee extended
 - Proprioceptive and balance exercises

PHASE III: 12-18 weeks

- Precautions
 - Discontinue PCL Jack brace
- Goals
 - Reps and set structure to emphasize muscular strength development
 - Progress ROM strength to beyond 70 deg knee flexion
 - Isolated HS exercises may begin after week 12
 - Prepare athlete for sport-specific activity
- Therapeutic exercise
 - Double leg press with progression to single leg
 - Single leg knee bends
 - Balance squats
 - Single leg dead lift
 - Single leg bridges starting during week 16
 - Continue bike and treadmill walking
 - Running is allowed once the patient has demonstrated sufficient strength and stability with functional exercise and quad girth is $\geq 90\%$ compared to the contralateral normal side
 - Week 1 = 4 min walk; 1 min jog for 15-20 min
 - Week 2 = 3 min walk; 2 min jog for 20 min
 - Week 3 = 2 min walk; 3 min jog for 20 min
 - Week 4 = 1 min walk; 4 min jog for 20 min
 - Once running progression is completed, continue single plane agility with progression to multi-planar agility
 - Clinical examination and/or PCL stress radiographs to objectively verify healing of PCL after week 15