

Sportshealing non operative PCL rehab protocol with PCL brace

Time following injury	Specific protocol
Phase I 0–6 weeks after injury	<p>Precautions</p> <p>PRICE (Protect, Rest, Ice, Compress, Elevate) protocol</p> <p>Avoid hyperextension (12 weeks)</p> <p>Prevent posterior tibial translation (12 weeks)</p> <p><i>Isolated hamstring exercises should be avoided until week 12</i></p> <p>Weight bearing</p> <p>Partial weight bearing with crutches (2 weeks)</p> <p>Range of motion (ROM)</p> <p>Prone passive ROM from 0° to 90° (Fig. 1) for the first 2 weeks, and then progress to full ROM</p> <p>Brace</p> <p>PCL Jack brace to be worn at all times, including rehabilitation and sleep (minimum of 12 weeks)</p> <p>Goals</p> <p>PCL ligament protection</p> <p>Oedema reduction to improve passive ROM and quadriceps activation</p> <p>Address gait mechanics</p> <p>Patient education</p> <p>Therapeutic exercise</p> <p>Patellar mobilizations</p> <p>Prone passive ROM (Fig. 1)</p> <p>Quadriceps activation</p> <p>Quadriceps sets</p> <p>Straight leg raises (SLR) once the quadriceps are able to lock joint in terminal extension and no lag is present</p> <p>Gastrocnemius stretching</p> <p>Hip abduction/adduction</p> <p>Stationary bike with zero resistance when ROM > 115°</p> <p>Weight shifts to prepare for crutch weaning</p> <p>Pool walking to assist with crutch weaning</p> <p>Calf raises and single leg balance when weaned from crutches</p> <p>Upper body and core strength as appropriate</p>
Phase II 6–12 weeks after injury	<p>Upper body and core strength as appropriate</p> <p>Precautions</p> <p>Continued avoidance of hyperextension</p> <p>Prevent posterior tibial translation</p> <p>Limit double leg strengthening exercises to no more than 70° of knee flexion</p> <p>Weight bearing</p> <p>Weight bearing as tolerated (WBAT)</p> <p>Range of motion</p> <p>Full ROM, supine and prone ROM after 6 weeks</p> <p>Brace</p> <p>PCL Jack brace to be worn at all times</p> <p>Goals</p> <p>PCL ligament protection</p> <p>Full ROM</p> <p>Address gait mechanics during crutch weaning</p> <p>Double leg strength through ROM (no greater than 70° knee flexion) and single leg static strength exercises</p> <p>Reps and set structure to emphasize muscular endurance development (3 sets of 20 reps)</p> <p>Therapeutic exercise</p> <p>Continue PRICE protocol</p>

Continue exercises as weeks 1–4
Gastrocnemius and light hamstring stretching
Leg press limited to 0–70° of knee flexion (Fig. 2)
Squat progression (squat → squat with calf raise → squat with weight shift)
Static lunge (Fig. 3)
Hamstring bridges on ball with the knees extended (Fig. 4)
Progressive resistance stationary bike
Light kicking in pool
Incline treadmill walking (7–12% incline)
Single leg dead lift with the knee extended (Fig. 5)
Proprioceptive and balance exercises

Phase III
13–18 weeks after injury

Brace
Discontinue PCL Jack brace

Goals
Reps and set structure to emphasize muscular strength development
Progress ROM strength to beyond 70° knee flexion
Isolated hamstring exercises may begin after week 12
Prepare athlete for sport-specific activity

Therapeutic exercise
Double leg press with progression to single leg (Fig. 2)
Single leg knee bends
Balance squats (Fig. 6)
Single leg dead lift (Fig. 5)
Single leg bridges starting during week 16 (Fig. 7)
Continue bike and treadmill walking

Running
Running is allowed once the patient has demonstrated sufficient strength and stability with functional exercise and quadriceps girth is greater than or equal to 90% compared to the contralateral normal side.
Outline:
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

Phase IV
19 + weeks after injury

Continue exercises and protocol from weeks 13–18
Set and reps structure to emphasize muscular power development (3 sets of 4–8 reps)
Sport-specific agility exercises
Non-contact return to play following clearance by the operating physician
Full contact return to play when specific return to sports criterion met:
Full active ROM
Greater than 85–90 % normal quadriceps strength
No evidence of instability or giving way
Greater than 90 % function on return to sports testing
Athlete is mentally ready to return to sport and not timid or fearful of re-injury
