TROPICAL
MEDICAL GROUP

Dx: ☐ Right ☐ Left

Patient Name: _____

Date of Surgery: _____

PT/OT: Evaluate and treat. Follow the following protocol.

Signature/Date: _____

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Non-operative PCL Rehabilitation program

Phase I 0–6 weeks after injury	Precautions PRICE (Protect, Rest, Ice, Compress, Elevate) protocol Avoid hyperextension (12 weeks) Prevent posterior tibial translation (12 weeks) *Isolated hamstring exercises should be avoided until week 12* Weight bearing Partial weight bearing with crutches (2 weeks) Range of motion (ROM) Prone passive ROM from 0° to 90° (Fig. 1) for the first 2 weeks, and then progress to full ROM Brace PCL Jack brace to be worn at all times, including rehabilitation and sleep (minimum of 12 weeks) Goals PCL ligament protection Oedema reduction to improve passive ROM and quadriceps activation Address gait mechanics Patient education Therapeutic exercise Patellar mobilizations Prone passive ROM (Fig. 1) 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° 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 after injury	Precautions
	Continued avoidance of hyperextension
	Prevent posterior tibial translation
	Limit double leg strengthening exercises to no more than 70° of knee flexion
	Weight bearing
	Weight bearing as tolerated (WBAT)
	Range of motion
	Full ROM, supine and prone ROM after 6 weeks
	Brace
	PCL Jack brace to be worn at all times
	Goals
	PCL ligament protection
	Full ROM
	Address gait mechanics during crutch weaning
	Double leg strength through ROM (no greater than 70° 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 1–4
	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	Brace
13–18 weeks after injury	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	Continue exercises and protocol from weeks 13–18
19 + weeks after injury	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



Fig. 1 Prone passive knee range of motion with the PCL Jack brace in place

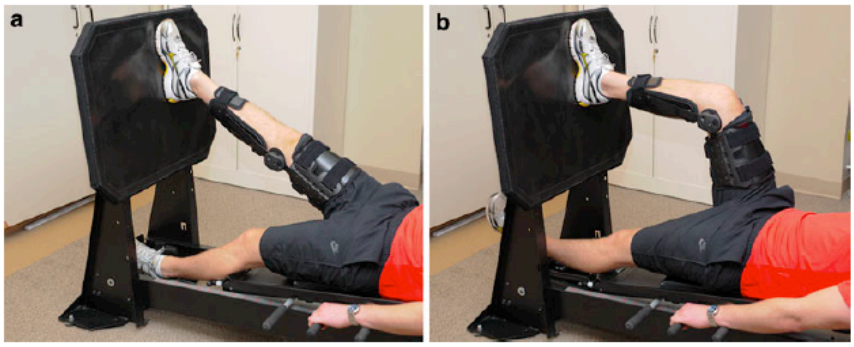


Fig. 2 Single leg presses at 70° demonstrating the starting position (**a**) and finishing position (**b**); align the feet, knees and hips and push through the foot to straighten the leg while avoiding hyperextension of the knee



Fig. 3 Static lunge demonstrating the finishing position; step into lunge position with the involved leg forward and bend the involved knee to approximately 45° and hold that position while allowing the toe of the uninvolved leg to touch the ground for assisted balance

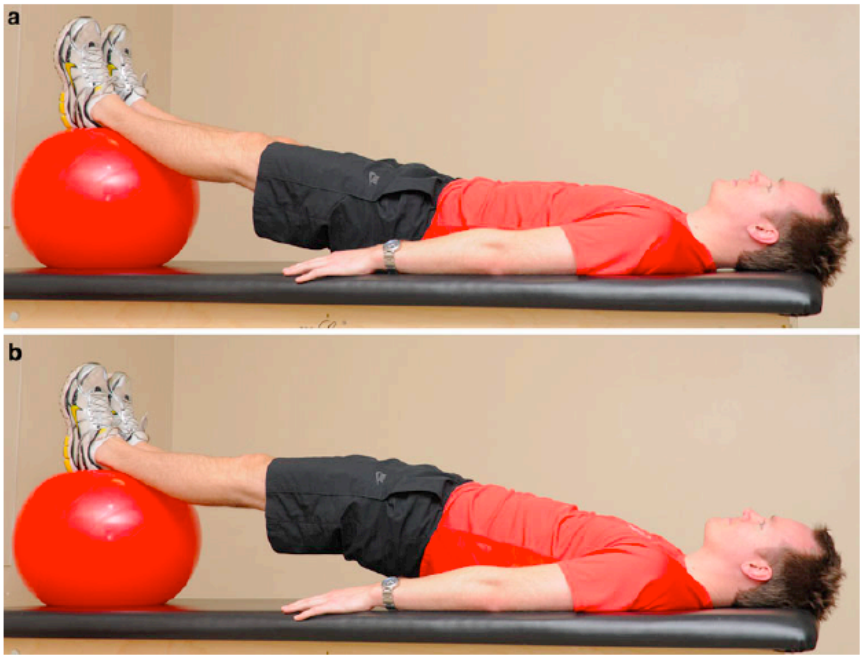


Fig. 4 Ball bridge demonstrating the starting position (**a**) and finishing position (**b**); lie supine with legs straight on the ball, press heels into ball while lifting the hips off table and hold for a count of 5 s

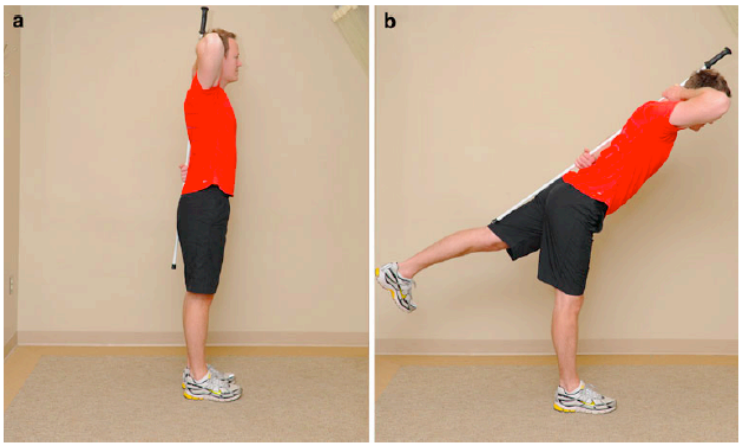


Fig. 5 Single leg deadlift demonstrating the starting position (**a**) and finishing position (**b**); stand on the involved leg keeping the back and uninvolved leg straight, hinge forward at the hip, pull through the gluteals and hamstrings to return to the start position

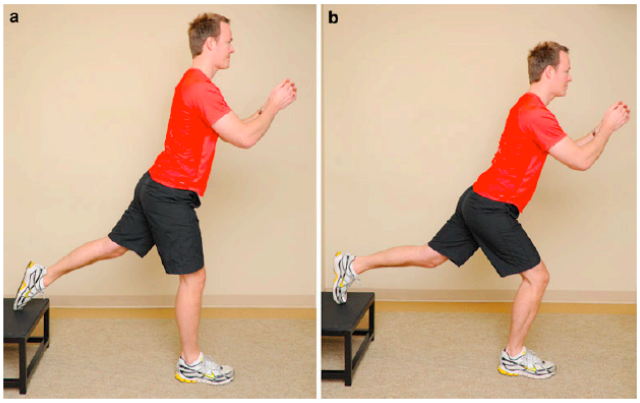


Fig. 6 Single leg balance squat demonstrating the starting position (**a**) and finishing position (**b**); allow the toe of the uninvolved leg to touch the chair and squat with involved leg to 70° keeping the hips level and the knees behind the toes while avoiding full extension of the leg upon returning to start position

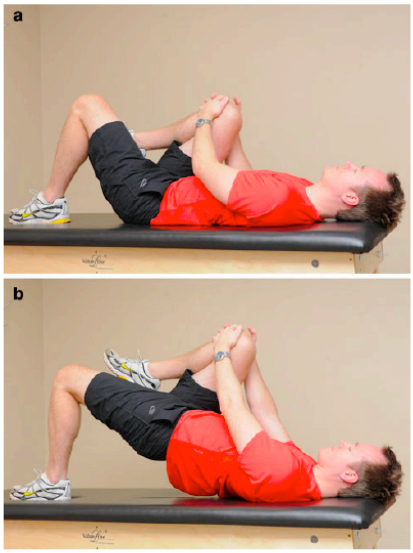


Fig. 7 Single leg bridge demonstrating the starting position (**a**) and finishing position (**b**); lie supine with the knees bent and feet shoulder width apart, grasp the uninvolved knee to chest and contract the gluteal muscles of the involved side to raise the hips off the mat to form a straight line with the shoulders, hips, and knee

Reference: Pierce CM, O'Brien L, Griffin LW, Laprade RF. Posterior cruciate ligament tears: functional and postoperative rehabilitation. Knee Surg Sports Traumatol Arthrosc. 2012 Apr 8.