

PCL Reconstruction Protocol

Philosophy

This protocol is to be utilized as a guideline. There will always be individual differences amongst patients regarding progression and tolerance of specific activities. Progression through the protocol will depend on successful accomplishments of set milestones as assessed by the physician and the physical therapist/athletic trainer.

The patient's home exercise program is of utmost importance and should be monitored and emphasized. Initially, patients should be performing their exercises several times a day to regain motion. Due to the importance of regaining early motion, patients are to be seen 3x/week for the first month.

Rehabilitation should create the optimal environment for the natural process of healing to occur. Initially, there should be a strong emphasis on minimizing swelling and pain as well as motion restoration. If a patient's progress is significantly delayed, please contact the physician office to keep them informed.

If you have any questions regarding this protocol, please contact our office at (859) 236-8730.

Phase 1 (0-6 weeks)

Goals

1. Reduce Edema
2. Establish normal quad tone
3. Educate patient regarding PCL precautions
4. Ambulate without crutches with brace locked
5. Achieve ROM 0-90 degrees
6. Initiate movements in the transverse plane

Precautions:

1. ROM limitation 0-90 degrees for 6 weeks
*note if MCL/LCL repair then ROM limitation 0-90 degrees for 12 weeks
2. Brace locked with ambulation for three weeks

Treatment and rehabilitation exercises phase 1

1. E-stim for quad re-education
 2. Gentle PROM with therapist hand giving anterior force on the tibia while passively flexing.
 3. Quad sets, SLR in brace, Hip abd, add, ext in brace
 4. Hamstring and gastroc stretching
 5. Patella mobilizations
 6. Gait training with brace locked. Move away from crutches as quad strength improves
 7. Single leg balance exercise.
 8. Single leg balance with bilateral arm movement to the right and left over the head in a chopping pattern.
 9. Dynamic stability with four-way tubing with brace locked.
 10. Standing calf raises
 11. Cryotherapy after exercise to control edema.
- *After three weeks
1. Initiate closed chain exercise on the total gym in a 0-45 degree range.
 2. Closed chain terminal knee extensions

Phase II (6-10 weeks)

Goals

1. AROM 0-130 degrees
2. Normal gait pattern without assistive device
3. Girth measurements for edema within 0.5 cm compared to opposite knee
4. Demonstrate eccentric quad control with six inch lateral step down
5. Demonstrate unilateral balance when moving in the transverse plane

Precautions

1. No open chain resistive hamstring work for eight weeks.
2. No aggressive passive flexion stretching
3. Brace can be discontinued at six weeks if okayed by physician

Treatment and Rehabilitation Exercise

1. Total gym squats single and double leg 0-70 range
2. Leg Press both single and double leg
3. Minisquats 0-70 range stressing proper technique and control
4. Forward step-ups
5. Lateral step-ups
6. Lunges with a step progressing to lunges without a step when eccentric quad control is present
7. Balance activities
 - a. single leg balance with rotational plane movements of upperbody with ball
 - b. BAPS board or KAT system
 - c. Single leg balance with medicine ball tossing in various planes
 - d. Dynamic stability in four planes
8. Sport cord in four directions
9. Side step, box step, circle step with theraband for hip strengthening
10. Bike, stairmaster, nordic track, or elliptical trainer for cardiovascular conditioning

Phase III (10-14 weeks)

Goals

1. Normal AROM compared to contralateral side
2. Girth measurements for edema equal bilaterally
3. Demonstrated eccentric control with single leg minisquat
4. Perform greater than 80% on basic functional test at the end of fourteen weeks.

Precautions:

1. No running, cutting, or agility work
2. Continued emphasis on closed chain hamstring work

Treatment and Exercises

1. Leg Press single and double leg
2. Single leg minisquats
3. "Rock around the clock" Single leg minisquats using uninjured leg to reach in various planes
4. Bench-ups
5. Lunges in multiple directions
6. Inverted leg press

*After 12 weeks can begin:

1. Jump-ups on to mat with controlled landing
2. Toe taps (reciprocating touches on mat)
3. Jog in place on mini trampolene

Phase IV (14-18 weeks)

Goals

1. Successful monitoring of a return to running program
2. Introduction of a controlled agility and plyometric training
3. Perform 80% or better on advanced functional test at the end of 18 weeks

Treatment and Exercises

1. Continue with strengthening exercises as noted above
2. Initiate lateral movements:
 - a. slide board
 - b. fitter
 - c. Lateral shuffles (progressing 25% intensity each week)
3. Plyometric training
 - a. Jump-ups on to box
 - b. Jump rope
 - c. Bilateral forward hopping over cones
 - d. Reciprocating toe touches with power jumps
 - e. Bilateral and alternating jumps on total gyn
3. Agility training
 - a. Ladder drills
 - b. Star drill
 - c. Box drill
4. Resisted running with the sport cord

Phase V (18-22 weeks)

Goals

1. Score 90% or better on advanced functional test for return to sport

Treatment and Exercises

1. Continue with strengthening exercises as noted above
2. Plyometric training
 - a. Power skips
 - b. Single leg jump-ups
 - c. Single leg repetitive jumps over cones
 - d. Lateral hopping
3. Agility training
 - a. Figure 8 running
 - b. Cutting drills
 - c. Stop/start sprinting
 - d. W-drills