

American Health Network Bone and Spine Posterior Cruciate Ligament Reconstruction Protocol Dr. Aaron Coats

Philosophy

The goals of this protocol are to set guidelines for rehabilitation following PCL reconstruction. Time frames are set in order to allow patients to reach optimum rehab potential, but at the same time protecting the graft site in order to allow for proper healing.

Weight bearing and ROM restrictions will be set by physician on a per case basis. Restrictions will be updated at each physician visits. Protocols will need to be adjusted to match restrictions that which are noted on patient therapy script.

Phase 1 (0-4 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 three 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 therapists 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
7. Single leg balance exercises
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 three weeks**

1. Begin AROM knee flexion exercises beyond 90 degrees. This should be done at the patient's own tolerance with no passive stretching.

Phase II (4-8 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 degree 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 upper body 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 (8-12 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 twelve week

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 uninvolved leg to reach in various planes
4. Bench ups
5. Lunges in multiple directions
6. Inverted leg press

After 10 weeks can begin:

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

Phase IV (12-16 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 16 weeks

Treatment and exercises:

1. Continue with strengthening exercises as noted above
2. Initiate lateral movements:
 - a. Slide board
 - b. Fitter
 - c. Lateral shuffle (progressing 35% intensity each week)
3. Plyometric training
 - a. Jump ups on to a box

- b. Jump rope
 - c. Bilateral forward hopping over cones
 - d. Reciprocate toe touches with power jumps
 - e. Bilateral and alternating jumps on total gym
4. Agility training
 - a. Ladder drills
 - b. Star drills
 - c. Box drills
 5. Resisted running with the sports cord

Phase V (16 -20 weeks)

Goals:

1. 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