

Posterior Cruciate Ligament (PCL) Rehabilitation Nonoperative Protocol

Phase 1 – Maximum Protection

Weeks 0 to 6

- Partial weight bearing with crutches x 2 weeks
- PROM must be performed in prone (within ROM limits) x 2 weeks
- Avoid isolated hamstring exercises

Goals:

- PCL protection, prevent posterior tibial translation
- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Avoid hyperextension
- Proper gait mechanics as soon as possible

Exercise Progression:

- Quad activation exercises
- Straight leg raises when no quad lag is present
- Prone passive knee flexion, within limits (see below)
- Hip adduction/abduction exercises
- Upper body exercise, core muscle training as indicated
- Stationary bike without resistance, when ROM >115 degrees

ROM limitations:

- Weeks 0-2: 0-90 degrees
- Weeks 2-6: progress gradually as tolerated

Phase 2 – Progressive Stretching and Early Strengthening

Weeks 6 to 12

Goals:

- PCL protection, prevent posterior tibial translation
- Full ROM, avoid hyperextension
- Normalize gait mechanics
- Normalize patella mobility with manual mobilizations

Exercise Progression:

- Bilateral squat progression, limited to 70 degrees
- Single-leg exercise in static positions (no single-leg knee flexion beyond 30 degrees)

- Leg press bilateral, limited to 70 degrees
- Closed kinetic chain hip strengthening
- Step-up and step-down progression
- Stationary biking with progressive resistance and duration
- Proprioception drills
- Single-leg deadlift with knee extended
- Incline treadmill walking

Phase 3 – Advanced Strengthening and Proprioception

Weeks 12 to 18

Goals:

- Progressive strengthening and endurance training
- Eliminate movement dysfunction (i.e. no dynamic valgus at the knee)
- Quad girth 90% (versus uninvolved limb)

Exercise Progression:

- Begin isolated hamstring exercise, progress slowly
- Lunge progression (retro, walk, and split) as indicated
- Leg press with single limb
- Add resistance and duration to stationary bike
- Weighted squat progression, can progress past 70 degrees at 16 weeks
- Single-leg bridges, knees bent, starting at 16 weeks
- When good quad control in function drills, may begin jogging progression

Criteria for progression to Phase 4

- Pass preliminary function test at >90% (involved vs uninvolved limb)

Phase 4 – Advanced Strengthening and Return to Sport

Weeks 18 to 24

Goals:

- Power development

Exercise Progression:

- Sport specific agility drills
- Advanced ladder series
- Linear running progression
- Hurdle and plyo box progression
- Sport specific field/court drills
- Non-contact drills

Criteria for return to play:

- Follow-up examination with the physician
- Pass return to sport function test at >90% (involved vs uninvolved limb)
- Display symmetry and confidence in high-speed cutting, multi-plane plyometric drills, sprinting, and decelerating

Anticipated return to sport:

- 6-8 months for contact and non-contact athletes