



Austin Cole, MD

Posterior Cruciate Ligament (PCL)

Non-Operative Protocol

Phase I – Maximum protection

Weeks 0-6:

- Partial weight-bearing with crutches x2 weeks (brace locked in full extension)
- Full to full weight-bearing after week 2, discontinue crutches when stability and strength allow
- Avoid isolated hamstring exercises

Goals

- PCL protection, prevent posterior tibial translation, utilize brace at all times
- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Avoid hyperextension
- Proper gait mechanics ASAP

Exercise progression

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

ROM limitations

- 0-2 weeks: Prone PROM 0-90 degrees only in brace
- 2-6 weeks: Progress passive followed by active ROM in brace, prone or supine, gradually as tolerated

Phase II – Progressive stretching and early strengthening

Weeks 7-12:

Goals

- PCL protection, prevent posterior tibial translation
- Full ROM, avoid hyperextension
- Normalize gait mechanics, normalize patella mobility with manual mobilizations
- Transition out of brace for ADLs around 8-10 weeks

Exercise progression

- Bilateral squat progression, limited to 70 degrees
- Single-leg exercises 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 III – Advanced Strengthening and Proprioception

Weeks 13-18:

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 biking
- 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 functional drills, may begin jogging progression

Criteria for progression to Phase IV

- Pass preliminary functional test at >90% (involved versus uninvolved limb)
- See testing protocol

Phase IV – Advanced strengthening and return to sport

Weeks 19-24:

Goals

- Power development

Exercise progression

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

Criteria to be released for return to sport

- Follow-up examination with the physician
- No evidence of instability or giving way
- Pass return-to-sport functional test at >90% (involved versus uninvolved limb)
- See testing protocol
- Display symmetry and confidence in high-speed cutting, multiplane plyometric drills, sprinting and decelerating
- Utilize PCL brace for first year upon return to sport