

PCL Reconstruction Protocol

Precautions:

- For 1 week, brace locked at 0 degrees extension
- No open chain hamstring strengthening or stretching

Phase I (1 – 4 weeks post-op)

- Wound care/Edema: Monitor for signs of infection and eliminate effusion
- Modalities:
 - NMES to quads if activation is trace or poor
 - PRN for pain and inflammation (IFC, ice)
- Brace: Locked in 0 degrees extension for 1 week, then locked when WB
- Gait: WBAT with crutches, brace locked in extension
- ROM: Prevent tibial sagging and stress on PCL
 - Patellar mobilizations
 - 0-90 degrees flexion weeks 1-2, 0-100 degrees by week 3, 0-110 degrees by week 4
 - Restore full knee extension
 - Avoid prone hangs secondary to hamstring guarding
 - May use gravity for flexion assistance. No active knee flexion, passive knee flexion only.
- Exercises:
 - Multi-angle quad sets
 - Open chain active knee extension against gravity per quad control
 - 3 way SLR (NOT EXTENSION secondary to hamstring restriction)
 - Hip and ankle AROM with knee in full extension
- Goals:
 - Restore knee extension
 - Eliminate effusion
 - Restore leg control

Phase II (4 weeks – 10 weeks post-op)

- Gait/Brace:
 - WBAT with crutches and brace unlocked
 - 6-8 weeks: D/C brace and wean from crutches based on quad control, balance, and normalized gait
- ROM: 0 – 120 degrees flexion
 - Avoid hyperflexion and prone hangs
- Strengthening:
 - Starting at 5-7 weeks
 - Wall slides, partial squats, and leg press to 60 degrees

- Standing TKE
- Proprioceptive based activities including uniplanar balance board
- Hip and core strengthening- can add in hip extension SLR as patient tolerates
- Single leg balance and control
- Step up/downs
- NO open chain hamstring isometrics or concentrics, NO aggressive hamstring stretching
- Starting at 8-10 weeks:
 - Stationary bike
 - Wall slides, squats, and leg press to 90 degrees
 - Continue balance and proprioceptive activities
 - Preliminary functional testing
 - Stair master
- Goals:
 - Single leg stand control
 - Normalize gait
 - Good quad control and no pain with functional movements

Phase III (10+ weeks post-op)

- Strengthening: Progress as tolerated
 - Low load hamstring strengthening
 - Closed and open chain quad strengthening: multi-plane
 - Non-impact balance and proprioceptive drills
 - 12 weeks: Elliptical and running
 - 12 weeks: Sport specific balance and agility drills
 - Beginning at 16 weeks: Impact control exercises and light plyometrics: start 2 feet, progress to single leg,
 - 16 weeks: initiate jumping
 - Running/agility drills, as allowed per physician
 - 20 weeks: Advance to sprinting/cutting/pivoting/diagonal directions
- Testing: Less than 25% deficit for non-athletes; Less than 20% deficit for athletes
- Goals:
 - Good control and no pain with functional movements, agility, and low impact multi-plane drills
 - Ability to land from sagittal, frontal, and transverse plane lead with good control and balance



Adapted From:

- 1) Brotzman SB, Wilk KE. *Clinical Orthopedic Rehabilitation* Second Edition. Philadelphia: Mosby; 2003.
- 2) Kisner C, Kolby LA. *Therapeutic Exercise: Foundations and Techniques, 3rd Edition*. Philadelphia: F.A. Davis Company; 1996.
- 3) Wilk, KE, Reinold MM, Andrews JR. *Anterior Cruciate Ligaments and Posterior Cruciate Ligament Combined Reconstruction Surgery Rehabilitation Surgery*. Winchester, MA: Advanced Continuing Education Institute, 2004.
- 4) Sherry M. UW Health Sports Rehabilitation. *Rehabilitation Guidelines for Posterior Cruciate Ligament Reconstruction*. 2013.
- 5) Rehab following PCL Reconstruction Using 2 Tunnel Graft. Advanced CEU. Wilk, KE. 2019.
- 6) Cole, BJ. *PCL Reconstruction Rehabilitation Protocol*. 2014.