

## 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 when WB
- Gait: WBAT with crutches, brace locked in extension
- ROM: Prevent tibial sagging and stress on PCL
  - Patellar mobilizations
  - 0-90 degrees flexion
  - Restore full knee extension
  - Avoid prone hangs secondary to hamstring guarding
  - May use gravity for flexion assistance
- 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
    - Sing 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
  - Impact control exercises: start 2 feet, progress to single leg
  - Sport specific balance and agility drills
  - Light plyometrics: start 2 feet, progress to single leg
  - Running/agility drills, as allowed per physician
- 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, 3<sup>rd</sup> 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.