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PCL Reconstruction Postop Protocol

Phase 1: Immediate Postoperative (0–2 weeks)

Goals: Protect graft, control swelling, restore full extension, and maintain quadriceps activation.

- **Weight Bearing:** Partial weight bearing (PWB) with crutches (≈50%)
- **Brace:** Hinged knee brace locked in extension for ambulation; worn full-time.
- **ROM:**
  - Passive ROM 0–60° in first 2 weeks
  - Avoid posterior tibial translation — no active hamstring contraction
- **Exercises:**
  - Quadriceps sets
  - Straight leg raises in brace (no lag)
  - Ankle pumps
  - Patellar mobilizations
- **Precautions:** Avoid hyperflexion >60°; avoid open-chain hamstring work.

Phase 2: Early Rehabilitation (2–6 weeks)

Goals: Gradually restore ROM, maintain quadriceps strength, and protect graft fixation.

- **Weight Bearing:** Progress to WBAT by week 4–6 with brace locked.
- **Brace:** Remains locked in extension during ambulation; may unlock for exercises.
- **ROM:**
  - Gradually increase to 0–90° by week 6
  - Emphasis on full extension
- **Exercises:**
  - Closed-chain quadriceps strengthening (0–45° flexion)
  - Core and hip strengthening
  - Stationary bike without resistance when ROM permits
- **Precautions:** No resisted hamstring strengthening; no deep squatting or kneeling.

Phase 3: Intermediate Rehabilitation (6–12 weeks)

Goals: Restore functional ROM, increase lower extremity strength, improve balance.

- **Weight Bearing:** Full, pain-free, without assistive devices.
- **Brace:** Discontinue when adequate quad control achieved.

- **ROM:** Progress to full, pain-free ROM by week 10–12.
- **Strengthening:**
  - Progressive closed-chain strengthening (leg press ≤70° flexion)
  - Step-ups, lateral walks, glute bridges
  - Balance and proprioceptive training
- **Precautions:** Delay hamstring strengthening until week 12.

Phase 4: Advanced Strengthening (3–6 months)

Goals: Restore strength and power, introduce plyometrics, and improve agility.

- **Strengthening:**
  - Gradual introduction of hamstring strengthening (low resistance → progressive load)
  - Plyometric drills (double-leg → single-leg jumps)
  - Agility ladder, shuttle runs, sport-specific drills without cutting initially
- **Criteria to Progress:**
  - Strength ≥85–90% of contralateral limb
  - No swelling or instability after exercise

Phase 5: Return to Sport (6–9+ months)

Goals: Safe return to unrestricted sport or work activities.

- **Criteria for Return:**
  - Strength ≥90% limb symmetry
  - Hop testing ≥90% symmetry
  - No pain, swelling, or instability
  - Surgeon clearance
- **Exercises:** Unrestricted running, cutting, pivoting, and sport-specific maneuvers once cleared.

Key Evidence Notes:

- Early protection against posterior tibial sag is essential to graft healing (LaPrade et al., 2021).
- Delaying hamstring strengthening until ≥12 weeks prevents graft stretch-out (MacGillivray et al., 2020).
- Closed-chain quadriceps work within limited ROM is safe and promotes early functional gains (Shelbourne et al., 2019).