



## PCL + PLC RECONSTRUCTION (+/- PCL RECONSTRUCTION)

### Post-Operative Rehabilitation Protocol

#### 0-6 Weeks:

- **Weight Bearing:** Non-weight bearing (NWB) with crutches for 6 weeks.
- **Brace:**
  - Keep the brace locked in full extension for ambulation and sleeping for 6 weeks.
  - If undergoing **PCL reconstruction**, use a dynamic knee brace for 6 months post-op.
- **ROM:**
  - For **PCL reconstruction**, perform range of motion (ROM) exercises only in the prone position to avoid tension on the PCL graft from posterior tibial glide caused by gravity.
  - **Weeks 0-2:** Limit ROM to 0-90° for knee flexion, progressing as tolerated. Focus on maintaining full extension.
  - **ROM Exercises:**
    - Wall slides and supine heel slides with strap
    - Seated knee flexion with assistance from the contralateral leg
    - If **PCL reconstruction**, perform prone knee flexion passive ROM (PROM) with a strap
- **Strengthening & Neuromuscular Control:**
  - Perform quad sets, prone terminal knee extensions (TKE), and straight leg raises (SLR) in the brace.
  - If quadriceps activation is insufficient, use neuromuscular electrical stimulation (NMES).
  - Quad isometrics at 90°, 60°, 30°, and 0° of knee flexion in a side-lying position (S/L), with hip abduction in the brace.
  - Perform prone hip extensions with the brace.
  - Work on ankle mobility and resisted motions in all planes while in supine, long sit, or seated position.
  - Focus on core stabilization exercises in supine and seated positions.
  - Perform anti-rotation exercises (e.g., Pallof press) in seated and supine positions.

- Incorporate core isometrics with upper extremity (UE) and lower extremity (LE) dissociative movements.

### **Weight Bearing Status:**

- NWB for 6 weeks

### **Brace Settings:**

- Locked straight for ambulation and sleeping for 6 weeks.
- Once good quadriceps control is achieved, switch to an open brace.

### **ROM Restrictions:**

- PROM 0-90° starting on post-op day 1

### **Progression Criteria:**

- Pain-free ROM 0-90°
  - Pain/swelling under control
  - SLR without extensor lag
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### **6-12 Weeks:**

- **No kneeling for 12 weeks post-op.**
- Begin progressing to partial weight bearing (PWB) and then to full weight bearing (FWB). Start to wean off assistive devices.
- Discontinue crutches and brace once quadriceps activation and strength are sufficient.
- **ROM:**
  - Begin stationary bike as tolerated.
- **Proprioception & Balance:**
  - Initiate balance training.
- **Strengthening:**
  - Closed-chain functional exercises, including mini squats, step-ups, and lunges in the sagittal plane (avoid knee flexion >70°).
  - Incorporate bridges and side steps.
  - Use resistance bands proximally to minimize varus stress on the knee.
  - Continue with core strength and endurance exercises.

### **Progression Criteria:**

- Pain-free, non-antalgic gait without assistive devices for limited distances.

- PROM normalized to the contralateral side (100%).
  - Dynamometry strength at 80% compared to the contralateral leg.
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### **12-20 Weeks:**

- Begin transverse plane and multiplanar motions.
- Initiate plyometric exercises and work on restoring power.

### **Progression Criteria:**

- Y-balance test >90%.
  - 60-second continuous single-leg squat to 60° without compensations in the femoral or lumbopelvic regions.
  - Plank and side plank for 60 seconds without compensations.
  - Dynamometry strength at 90% compared to the contralateral leg.
  - Return to prior functional level with minimal symptoms.
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### **>20 Weeks:**

- Initiate Alter G (anti-gravity treadmill) running at 20 weeks.
- Full body running can begin at 24 weeks.
- Incorporate sport-specific dynamic exercises.
- **If PCL reconstruction:** Discontinue the dynamic brace if kneeling stress X-rays show less than 2mm difference.

**Note:** Progression through these phases should be based on individual recovery, with all exercises adjusted as necessary under the guidance of your surgeon and physical therapist. Regular follow-ups with the surgical team are crucial to ensure optimal recovery