

Posterior Cruciate Ligament (PCL) Reconstruction Rehabilitation Protocol

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Patient: _____ **DOS:** _____

Surgeon Parameters

Weight bearing (wks 0–6): ☐ As tolerated, brace locked at 0° ☐ Touch-down _____ wks	Concurrent meniscal repair: ☐	Other Precautions:
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Parameters above are patient-specific and supersede the general timeframes below. **The PCL graft is most vulnerable to posterior tibial sag and hamstring pull: protect against both through 12 wks, with no resisted hamstring loading before 16 wks.** Default is weight bearing as tolerated with the brace locked in extension for 6 wks. Dynamic PCL brace is fit at 2 wks and worn full time to 6 months. No CPM. Therapist to use clinical judgment to individualize exercise selection and pace within each phase.

Phase	Goals	Precautions	Treatment Focus
Phase 1 Weeks 0–6	Goals - Protect the graft; control pain and effusion - Full extension without hyperextension - Passive flexion 90° by wk 2, ≥110° by wk 6 - Quad activation; SLR without lag - Patellar mobility	Precautions - Weight bearing per parameters, with crutches - Post-op brace locked at 0° until dynamic PCL brace fit at 2 wks; dynamic brace set at 0° for walking and worn for sleep until 6 wks - Passive flexion prone, or supine with the proximal tibia supported forward; 0–90° wks 0–2, then as tolerated - No posterior tibial sag: support under the calf at rest; no hyperextension - No active knee flexion, hamstring isometrics, or hamstring stretching If meniscal repair: weight bearing per parameters; no loaded flexion >90°	Treatment Focus - Cryotherapy, compression, patellar mobilization - Quad sets and SLR in the brace locked at 0° (assist until no lag); NMES - Multi-angle quad isometrics at 60° and 20° - BFR if available from wk 2 - Hip extension, glute, core, and calf work
► Advance to Phase 2 when: ≥6 wks, full extension, flexion ≥110°, SLR without lag, effusion ≤1+, no posterior sag at rest.			
Phase 2 Weeks 6–12	Goals - Full weight bearing and normal gait by ≈8 wks - Flexion ≥125° by 12 wks - Quad-dominant closed-chain strengthening - Single-leg balance	Precautions - Unlock the brace, then wean crutches once quad control and gait allow; touch-down pathway progresses to full weight bearing over 2 wks - Dynamic PCL brace full time through 6 months - No isolated or resisted hamstring work - Closed chain 0–70°; no deep squats - Open-chain knee extension 60–0° only (deeper flexion loads the PCL) - No running, jumping, or pivoting	Treatment Focus - Gait training; pool walking once incisions are healed - Double-leg leg press, wall/chair squats, step-ups (2 inch → full height), calf raises - Bike once flexion ≥115° — feet forward on pedals, no toe clips, seat high; treadmill walking forward and retro - Single-leg stance and proprioception
► Advance to Phase 3 when: normal gait without a device, flexion ≥125°, effusion ≤ trace, single-leg stance 30 s, 8-inch step-up pain-free, no posterior sag.			

Phase	Goals	Precautions	Treatment Focus
Phase 3 <i>Weeks 12–18</i>	Goals • Full ROM • Quad strength LSI $\geq 80\%$ • Introduce hamstring loading • Low-impact conditioning	Precautions • Hamstrings: bridges and light standing curls (cuff weight) from 12 wks; resisted machine curls and RDL from 16 wks • Closed chain $\leq 90^\circ$ until 16 wks, then deepen gradually • No running, jumping, or pivoting	Treatment Focus • Progressive leg press, squat, step-downs, lunges, single-leg work • Hip and core strengthening • Elliptical, stair climber, rower, slide board • Swimming (flutter kick) • Strength testing (HHD or isokinetic) at ≈ 16–18 wks
► Advance to Phase 4 when: ≥ 18 wks, full pain-free ROM, no effusion, quad LSI $\geq 80\%$, single-leg squat to 60° with good control, no increase in posterior sag.			
Phase 4 <i>Weeks 18–24</i>	Goals • Return to running • Introduce linear agility and double-leg plyometrics • Quad LSI $\geq 85\%$; hamstring:quad $\geq 60\%$	Precautions • Running not before 20 wks, and only once Phase 3 criteria are met • Progress distance or pace, not both; $\leq 10\%$ per week • No cutting, pivoting, or competition	Treatment Focus • Walk-jog $\rightarrow$ continuous running on level surfaces • Linear agility (forward/backward running, ladder), then shuffle and carioca • Double-leg jumps and hops; low volume when intensity is high • Continued progressive strength and power work
► Advance to Phase 5 when: running without pain or effusion, quad LSI $\geq 85\%$, hamstring:quad $\geq 60\%$, single-leg hop $\geq 85\%$.			
Phase 5 <i>Months 6–9+</i>	Goals • Multiplanar agility, single-leg plyometrics, cutting • Quad and hamstring LSI $\geq 90\%$; hamstring:quad $\geq 66\%$ • Graded return to sport or heavy work	Precautions • Dynamic PCL brace discontinued at 6 months; functional brace for sport if prescribed • Return to sport not before 9 months	Treatment Focus • Single-leg and multiplanar plyometrics; cutting and pivoting drills • Sport-specific drills; non-contact $\rightarrow$ contact practice $\rightarrow$ competition • Isokinetic testing monthly until passed, then hop battery • Psychological readiness assessment
► Full Release (typically 9–12 months): full ROM, no effusion, stable exam without increased posterior sag, quad and hamstring LSI $\geq 90\%$, hamstring:quad $\geq 66\%$, hop battery $\geq 90\%$ with good mechanics, sport- or work-specific progression completed, cleared by physician.			

Special Considerations

- Flexion $< 90^\circ$ at 6 wks or any loss of extension — contact the surgeon early
- Increased posterior sag or posterior drawer at any stage — hold progression and contact the surgeon
- For PCL with ACL, MCL, or PLC reconstruction, use the multiligament protocol

Thank you for taking care of our patient.

This protocol serves as a general guideline and outline only. Our team defers to the clinical judgment and expertise of the treating physical therapist to make appropriate adjustments and modifications based on the individual patient's presentation, progress, and response to treatment. For any questions regarding this protocol, please contact Dr. Wollenman directly at (561) 215 – 0184.