

ACL, PCL and Multiligament Knee Reconstruction Rehabilitation Protocol

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Patient: _____ **DOS:** _____

Surgeon Parameters

Reconstructed / repaired: ☐ PCL ☐ ACL ☐ MCL / POL ☐ LCL / PLC	Weight bearing, wks 0–6: ☐ As tolerated, brace locked ☐ Touch-down (any collateral)	Dynamic PCL brace @ 2 wks: ☐ Foot drop / AFO: ☐
Other Precautions:		

Parameters above are patient-specific and supersede the general timeframes below. A PCL graft is less robust than an ACL graft: preventing posterior tibial sag and hamstring pull for the first 4 months is paramount. Isolated PCL or PCL + ACL: weight bearing as tolerated with the brace locked in extension for 6 wks. Any collateral (MCL, LCL/PLC): touch-down weight bearing for 6 wks. Stiffness is the most common complication — protect the grafts and keep the knee moving. 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 grafts; 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 above, with crutches; brace locked in extension for walking and sleep - Passive flexion prone or side-lying (or supine with the 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 MCL / POL: no valgus or tibial rotation stress. OK to advance flexion more rapidly If LCL / PLC: no varus or tibial external rotation; no side-lying hip abduction; no crossing the legs, limit flexion >90 early	Treatment Focus - Cryotherapy, compression, patellar mobilization - Quad sets and SLR in the brace locked at 0° — assist until no lag; NMES; BFR if available from wk 2 - Hip extension, glute, core, and calf work - Bike without resistance for ROM only if weight bearing as tolerated; no bike if touch-down
► Advance to Phase 2 when: ≥6 wks, full extension, flexion ≥110°, 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 - Begin quad-dominant closed-chain strengthening - Single-leg balance	Precautions - Touch-down pathway: progress to full weight bearing over 2 wks; unlock, then wean the post-op brace as quad control allows - Dynamic PCL brace (if checked) full time to 6 months; otherwise functional hinged brace for weight-bearing activity - No isolated or resisted hamstring work - Closed chain 0–70° with the tibia vertical; no deep squats - Collateral precautions continue to 4 months - No running, jumping, or pivoting	Treatment Focus - Gait training; pool walking from wk 8 once incisions are healed - Double-leg leg press, wall/chair squats, step-ups (2 inch → full height), calf raises - Bike with light resistance; 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.			

Phase	Goals	Precautions	Treatment Focus
Phase 3 Months 3–6	Goals • Quad strength LSI $\geq 80\%$ • Introduce hamstring loading • Low-impact conditioning • Collateral precautions lifted at 4 months	Precautions • Hamstrings: light standing curls (cuff weight) from 12 wks; resisted prone/machine curls from 16 wks • Closed chain $\leq 70^\circ$ until 16 wks, then deepen gradually • No running before ≈ 20 wks (isolated PCL) or 6 months (multiligament); no jumping or pivoting • Collaterals: no varus/valgus or rotational drills until 4 months	Treatment Focus • Progressive leg press, squat, step-downs, single-leg work • Bridges and RDL from 16 wks • Elliptical, stair climber, rower, slide board from 16 wks • Swimming (no breaststroke or whip kick) • Strength testing at 5–6 months
► Advance to Phase 4 when: quad LSI $\geq 80\%$, full ROM, no effusion, single-leg squat to 60° with good control, stable exam without increased posterior sag.			
Phase 4 Months 6–9	Goals • Return to running • Lateral movement, plyometrics, and agility • Quad LSI $\geq 90\%$; hamstring:quad ratio $\geq 65\%$	Precautions • Jog once Phase 3 criteria are met: from ≈ 20 wks after isolated PCL, 6+ months after multiligament surgery • Dynamic PCL brace off at 6 months; functional brace for sport • No competition	Treatment Focus • Walk-jog $\rightarrow$ running; shuffle, carioca, hopping • Plyometrics double $\rightarrow$ single leg (keep volume low when intensity is high) • Supervised sport-specific drills • Isokinetic testing monthly until passed, then functional testing
► Advance to Phase 5 when: quad strength within 10–15% of contralateral, hamstring:quad $\geq 65\%$, hop battery $\geq 90\%$, running and agility without pain, effusion, or instability.			
Phase 5 Months 9–12+	Goals • Graded return to sport or heavy work • Strength and power maintenance	Precautions • Return to sport not before 9 months after isolated PCL, and typically 10–12+ months after multiligament surgery • Functional or PCL brace for sport through the first year	Treatment Focus • Non-contact $\rightarrow$ contact practice $\rightarrow$ competition • Strength and power development
► Full Release (typically 9–12 months; multiligament 12+ months): full ROM, no effusion, stable exam, quad LSI $\geq 90\%$, hamstring:quad $\geq 65\%$, hop battery $\geq 90\%$, sport- or work-specific progression completed, cleared by physician.			

Special Considerations

- Flexion $<90^\circ$ at 6 wks, or loss of extension — contact the surgeon early
- RTS testing at 6 months, 9 months, and as needed after pending course
- **If foot drop:** AFO for all walking and daily passive ankle dorsiflexion stretching to prevent an equinus contracture; nerve recovery is followed by the surgeon

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.