

Pediatric / Physseal-Sparing ACL Reconstruction Rehabilitation Protocol

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Patient: _____ **DOS:** _____

Surgeon Parameters

Technique: ☐ Tibial Transphysseal
☐ All-epiphyseal ☐ IT band

Weight bearing: ☐ As tolerated
☐ Touch-down _____ wks

Brace _____ wks
Meniscus repair: ☐

Other Precautions:

Parameters above are patient-specific and supersede the general timeframes below. Typical values: transphysseal — weight bearing as tolerated, brace until straight-leg raise without lag (≈2–4 wks); all-epiphyseal or IT band — touch-down 4 wks, brace 6 wks. **Young athletes have the highest re-injury risk of any ACL group: progression is criteria-based and return to sport is not before 9 months.** Use age-appropriate, game-based exercise and involve the family in the home program. 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 - Full extension by wk 2; flexion 90° by wk 2 and ≥120° by wk 6 - Quad activation; SLR without lag - Effusion ≤1+ - Normal gait off crutches by wks 4–6	Precautions - Weight bearing and brace per parameters above - Brace locked in extension for walking until 10 SLRs without lag, then unlocked - No resisted open-chain knee extension - No running, jumping, pivoting, PE, or recess play If meniscus repair: flexion 0–90° and no loaded squatting past 60° for 6 wks	Treatment Focus - Ice, compression, patellar mobilization - Heel slides, prone hangs, heel props - Quad sets, SLR (4 planes); NMES as tolerated - Weight shifts, mini-squats, leg press 0–60° once weight bearing - Bike when flexion allows; balance
► Advance to Phase 2 when: full extension, flexion ≥120°, effusion ≤1+, SLR without lag, normal gait without crutches or brace.			
Phase 2 Weeks 6–12	Goals - Full symmetric ROM; effusion ≤ trace - Strength with movement quality first - Single-leg balance and control	Precautions - No running, jumping, pivoting, PE, or sport - Open-chain knee extension 90–45° from wk 8, full arc from wk 12 - Younger children: body weight, bands, and light loads — technique before load	Treatment Focus - Squats to 90°, step-ups, bridges, leg press - Hip and core strengthening; hamstring curls - Single-leg balance, perturbation - Bike, elliptical, swimming (flutter kick)
► Advance to Phase 3 when: full ROM, effusion ≤ trace, single-leg squat to 45° with good frontal-plane control, pain-free daily activity.			
Phase 3 Months 3–6	Goals - Quad and hamstring LSI ≥75% by 4–5 months - Begin straight-line running at ≥16 wks once criteria are met - Sound double-leg landing mechanics	Precautions - Running not before 16 wks: full ROM, no effusion, quad LSI ≥70%, controlled lateral step-down - No cutting, pivoting, or contact - No unsupervised play or sport	Treatment Focus - Progressive strength with single-leg emphasis - Walk–jog progression on a level surface - Double-leg jumping and landing technique - Ladder and straight-line agility - Strength testing at 4 and 6 months
► Advance to Phase 4 when: quad and hamstring LSI ≥80%, running 15–20 min without pain or effusion, symmetric double-leg landing without valgus.			
Phase 4 Months 6–9	Goals - Strength and hop battery LSI ≥90% - Single-leg plyometrics, lateral agility, controlled cutting - Movement quality: no dynamic valgus	Precautions - No competition; non-contact, predictable drills first - Fatigue degrades mechanics in this age group — stop the drill when form breaks	Treatment Focus - Single-leg hopping and landing - Lateral and multidirectional agility - Non-contact sport skills - Continued strength 2–3x/wk
► Advance to Phase 5 when: strength and hop LSI ≥90%, drop-jump and cutting mechanics without valgus, no effusion, psychologically ready.			

Phase	Goals	Precautions	Treatment Focus
Phase 5 <i>Months 9–12</i>	Goals - Graded return to team practice, then competition - Long-term injury-prevention program	Precautions - Return to sport not before 9 months, with all criteria met and surgeon clearance - Non-contact practice → contact → limited minutes → full play	Treatment Focus - Full practice progression - Neuromuscular injury-prevention warm-up, long term - Maintenance strength
► Full Release (typically 9–12 months): full ROM, no effusion, strength and hop LSI $\geq 90\%$, clean landing and cutting mechanics, psychologically ready, cleared by physician.			

Special Considerations

- Growth: report any new leg-length difference, knock-knee or bow-leg alignment, or loss of extension to the surgeon
- The risk to the other knee is also high — train both limbs and continue injury prevention through skeletal maturity

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.