

Osteochondral Allograft Transplantation — Patella / Trochlea Rehabilitation Protocol

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Patient: _____ **DOS:** _____

Surgeon Parameters

Graft site: ☐ Patella ☐ Trochlea ☐ Both	Tibial tubercle osteotomy (TTO): ☐	MPFL reconstruction: ☐
Other Precautions:		

Parameters above are patient-specific and supersede the general timeframes below. **Patellofemoral compression and shear with loaded knee flexion is the rate-limiting factor: weight bearing is allowed immediately because the brace is locked in extension, passive motion is unrestricted, and loaded flexion and open-chain extension are introduced late. With a tibial tubercle osteotomy, bone healing also governs: protected weight bearing and no active knee extension for 6 wks, and full weight bearing only after the surgeon reviews the 6-week radiographs. 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 passive extension from day 1 - Passive flexion 90° by wk 4, ≥120° by wk 6 - Quad activation; SLR without lag	Precautions - WBAT with crutches, brace locked in extension for all weight bearing, for 6 wks - Passive/active-assisted ROM as tolerated out of the brace (limit flexion <90 until 4 wks) - No weight bearing on a flexed knee - No active or resisted open-chain knee extension If TTO: touch-down (foot-flat) in the locked brace wks 0–4 → up to 50% wks 4–6; no active knee extension or SLR out of the brace; gentle passive flexion as tolerated; bike without resistance from wk 4 If MPFL reconstruction: no lateral patellar glides; avoid knee-in (valgus) positions	Treatment Focus - High-repetition passive heel slides and seated flexion, several sessions daily - Bike without resistance for ROM once flexion allows - Quad sets, SLR in the brace; NMES; BFR if available from wk 2 - Gentle patellar mobilization; hamstring, IT band, and calf stretching - Hip, core, and calf work; pool once wounds are healed
► Advance to Phase 2 when: wound healed, minimal effusion, full extension, flexion ≥120°, SLR without lag, full weight bearing in the brace pain-free (TTO: ≥6 wks and radiographs reviewed by the surgeon).			
Phase 2 Weeks 6–12	Goals - Brace off at 6 wks (unlocked situationally to wk 8) - Normal gait; full ROM - Shallow closed-chain strength - Balance and proprioception	Precautions - Loaded flexion 0–45° only, to 60° by ≈wk 10; no deep squats or lunges - No resisted open-chain knee extension - No running or jumping If TTO: after x-ray clearance: 2 crutches 1 wk → 1 crutch 1 wk → none (typically full by 8 wks); no kneeling on the tubercle If MPFL reconstruction: no valgus during closed-chain work; kneecap slipping or apprehension → contact the surgeon	Treatment Focus - Gait training; treadmill walking (to a 2–3% incline) - Partial squats, wall sits, shallow leg press, low step-ups - RDL, glute bridges, ball hamstring curls - Bike with low resistance; balance progressions
► Advance to Phase 3 when: full ROM, normal gait without the brace, effusion ≤ trace, shallow closed-chain work pain-free.			
Phase 3 Months 3–6	Goals - Build quad/hip strength and endurance (LSI ≥80%) - Stairs and daily activity pain-free - Non-impact conditioning	Precautions - No impact until 6 months - Deepen loaded flexion gradually (≤90° until 6 months) - Open-chain extension light and inner-range first - Anterior knee pain or effusion after a session → reduce load	Treatment Focus - Progressive strengthening as tolerated - Swimming, cycling, rowing, elliptical - Core, glute, and pelvic stability; eccentric hamstrings
► Advance to Phase 4 when: ≥6 months with surgeon clearance, no effusion, stairs pain-free, quad LSI ≥80%, single-leg squat to 45° with good control.			

Phase	Goals	Precautions	Treatment Focus
Phase 4 Months 6–12	Goals • Impact progression • Strength and hop testing $\geq 90\%$ of contralateral • Sport-specific conditioning	Precautions • Jogging only with surgeon clearance and no effusion • Jumping and deep loaded flexion last; cutting and contact sport typically 8–12 months • If TTO or MPFL: impact only after radiographic union of the osteotomy; cutting only without apprehension; tubercle or hardware pain $\rightarrow$ reduce load	Treatment Focus • Walk–jog progression $\rightarrow$ running • Plyometrics, double $\rightarrow$ single leg • Agility and sport-specific drills • Strength and hop testing vs. contralateral
► Full Release (typically 8–12 months): full pain-free ROM, no effusion, quad/hamstring strength and hop tests $\geq 90\%$ of contralateral, sport-specific progression completed, cleared by physician.			

Special Considerations

- Persistent effusion, catching/locking, or new anterior knee pain with loaded flexion — reduce flexion loading and contact 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.