

Arthroscopic Meniscus Repair (Large) Rehabilitation Protocol

Colby Wollenman, M.D.

Patient: _____ **DOS:** _____

Surgeon Parameters

WB: ☐ Protected ☐ WBAT	TTWB duration _____ wks	WBAT goal _____ wks
ROM limit __0-90__ °	ROM limitation duration __6__ wks	Brace locked in extension (ambulation) __6__ wks
Other Precautions:		

Parameters above are patient-specific and supersede the general timeframes below. The protected WB pathway is generally used for large/displaced longitudinal repairs; small vertical, ramp, and horizontal cleavage repairs may potentially WBAT with the brace locked in extension, as axial load in extension compresses the repair. Regardless of pathway, early 0–90° ROM is encouraged to promote synovial fluid circulation. 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 repair; control pain/effusion - ROM 0–90° early to promote synovial fluid circulation and meniscal nutrition - Full passive extension; SLR without extensor lag - Restore patellar mobility; safe gait per WB pathway	Precautions - WB and brace per parameters above; crutches until gait normalized - Protected pathway: TTWB wks 0–2 → graduated flat-foot PWB (≈25% → 50% → 75% body weight, advancing ≈ weekly) → WBAT by ≈6 wks - Brace locked in full extension for ambulation; unlocked 0–90° for ROM/sitting - No flexion >90°; no WB through a flexed knee (squats, lunges, reciprocal stairs); no pivoting - No resisted hamstring/knee flexion If WBAT pathway: WBAT from day 0 with brace locked in extension; all other restrictions apply - Advance only if no reactive effusion or soreness lasting >24 hrs	Treatment Focus - Quad sets, SLR (flexion/abduction/extension), band-resisted TKE (closed-chain once WB permits) — quad activation with minimal tibial shear - NMES/biofeedback PRN for quad inhibition - Heel slides, wall slides, seated flexion 0–90°; extension hangs PRN - Patellar mobilizations; ankle pumps; gastroc/hamstring stretching - Non-WB hip and core strengthening - Gait training per WB progression - Cryotherapy/compression/elevation PRN
► Advance to Phase 2 when: ≥6 wks, full extension, flexion to 90°, minimal effusion, SLR without lag, ambulating WBAT.			
Phase 2 Weeks 6–12	Goals - Progress flexion ≈15°/wk toward full ROM - Wean crutches/brace; normalize gait without device - Progress quad/hip strength with shallow closed-chain loading - Begin balance/proprioception	Precautions - No squat, lunge, or leg press deeper than 60° knee flexion - OKC knee extension permitted, but avoid loaded terminal extension (last ≈30°), where tibiofemoral shear is highest - No resisted hamstring curls; no deep loaded flexion, running, jumping, or pivoting - Back off for reactive effusion, joint-line pain, or soreness >24 hrs	Treatment Focus - Advance flexion ≈15°/wk from 90° (≈ full by wks 10–12) - Stationary bike (high seat, low resistance) once flexion ≈110° - Progressive walking program — advance speed, then duration - CKC 0–60°: mini squats, leg press, wall sits, low step-ups, bridges - OKC knee extension in mid-range (90° → ≈30°) - Hip/core strengthening; calf raises - Double- → single-leg balance, stable → unstable surfaces
► Advance to Phase 3 when: full/near-full ROM, no effusion, normal gait without device, good quad control, tolerating CKC to 60° without symptoms >24 hrs.			

Phase	Goals	Precautions	Treatment Focus
Phase 3 <i>Weeks 12–16</i>	Goals • Restore full, symmetric ROM • Build strength/endurance; quad LSI ≥ 65–70% by ≈ 16 wks • Low-impact cardiovascular conditioning • Restore single-leg balance and neuromuscular control	Precautions • No loaded squat/lunge below ≈ 60–70° knee flexion • No resisted hamstring curls (per parameters above) • No running, jumping, cutting, or pivoting • Progress load by response; persistent effusion or joint-line tenderness $\rightarrow$ contact MD	Treatment Focus • Bike (add resistance), elliptical, swimming (flutter kick; avoid breaststroke/whip kick) • CKC progression within depth limits: leg press, split squat, forward/lateral step-downs, band walks • Progressive OKC knee extension; posterior chain without resisted knee flexion (bridges, RDLs) • Single-leg balance, perturbation, dynamic stability drills • Quad strength testing (isokinetic or stabilized HHD) at ≈ 12–16 wks to guide return-to-run
► Advance to Phase 4 when: ≥ 16 wks, full pain-free ROM, no effusion or joint-line tenderness, quad LSI ≥ 65 – 70% , controlled single-leg step-down.			
Phase 4 <i>Weeks 16–24+ ($\approx$ Month 4–6)</i>	Goals • Return-to-run $\rightarrow$ sport-specific training $\rightarrow$ return to sport • Quad/hamstring and hop-test LSI $\geq 90\%$ • Normalize running, landing, and cutting mechanics • Psychological readiness; address fear of reinjury	Precautions • Clearance is criteria- and time-based; no running, jumping, pivoting, or deep loaded flexion before ≈ 4 months • Quad LSI gates progression: ≥ 65–70% return-to-run; $\geq 80\%$ RTS progression; $\geq 90\%$ RTS • Reintroduce deep ($>90^\circ$) loaded flexion gradually • Persistent effusion or joint-line tenderness may signal incomplete healing — contact MD; routine MRI not required for clearance	Treatment Focus • Walk-jog interval return-to-run program (LSI ≥ 65–70%) • Plyometrics: bilateral $\rightarrow$ unilateral, linear $\rightarrow$ multiplanar • Agility, cutting/pivoting, and sport-specific drills at progressive speed/intensity (LSI $\geq 80\%$) • Continued strength and deep-flexion loading progression • Testing: isokinetic quad/hamstring, hop battery (single, triple, crossover, 6-m timed), psychological readiness (e.g., I-PRRS)
► Full Release (typically 5–6 months / 20–24+ wks): full pain-free ROM, no effusion or joint-line tenderness, quad/hamstring and hop LSI $\geq 90\%$, normalized running/landing mechanics, psychologically ready, cleared by physician. Return to pre-injury performance may take up to ≈ 10 months.			

Special Considerations

- Radial, root, and complex repairs are not covered by this protocol and require a more restrictive progression
- Concomitant ACLR: follow the more restrictive of the two protocols; return to sport generally governed by the ACLR timeline

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.