

Knee Microfracture (Marrow Stimulation) Rehabilitation Protocol

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Patient: _____ **DOS:** _____

Surgeon Parameters

Lesion: ☐ Femoral condyle ☐ Patella / trochlea	Protected weight bearing <u>4</u> wks	Lesion ≥ 2 cm²: ☐ (protect 6 wks)
Other Precautions:		

Parameters above are patient-specific and supersede the general timeframes below. **The marrow clot and maturing repair tissue are the rate-limiting factor: load is limited early, motion is unrestricted and frequent, and impact is delayed while the repair tissue matures.** 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 repair site; control effusion - Full extension from day 1; flexion $\geq 120^\circ$ by wk 4 - Quad activation; SLR without lag - Normal gait once weight bearing is allowed	Precautions Femoral condyle: partial ($\approx 50\%$) weight bearing with crutches per parameters above, then progress to full over 2 wks (2 crutches $\rightarrow$ 1 $\rightarrow$ none); no brace Patella / trochlea: WBAT in a brace locked in extension for 6 wks; no weight bearing on a flexed knee; no active open-chain knee extension - No ROM limit - No impact, twisting, or deep loaded flexion	Treatment Focus - High-repetition passive/active-assisted flexion–extension, several sessions daily - Bike without resistance from wks 1–2 as flexion allows - Quad sets, SLR; NMES; BFR if available from wk 2 - Patellar mobilization; hip, core, and calf work - Pool once wounds are healed
► Advance to Phase 2 when: full extension, flexion $\geq 125^\circ$, minimal effusion, SLR without lag, full weight bearing without pain or limp.			
Phase 2 Weeks 6–12	Goals - Normal gait - Closed-chain strength - Balance and proprioception - Low-impact conditioning	Precautions - Condyle: closed chain $0-60^\circ$ by wk 8, $0-90^\circ$ by wk 12 - Patella/trochlea: brace off at 6 wks; closed chain $0-45^\circ$; no resisted open-chain knee extension - No running, jumping, or pivoting - Effusion or pain after a session $\rightarrow$ reduce load	Treatment Focus - TKE, leg press, bridges, hamstring curls, RDL, band walks - Body-weight squats and lunges from wks 6–8, adding load as tolerated - Bike with resistance, elliptical, swimming - Double- $\rightarrow$ single-leg balance
► Advance to Phase 3 when: full painless ROM, no or trace effusion, normal gait, single-leg stance 30 s, 10 single-leg mini-squats with good form.			
Phase 3 Months 3–6	Goals - Strength LSI $\geq 80\%$, then $\geq 90\%$ - Begin impact once cleared - Sport- or work-specific conditioning	Precautions - Impact only with surgeon clearance: not before 4 months (6 months if the lesion is ≥ 2 cm²) - Build running volume gradually; effusion $\rightarrow$ back off	Treatment Focus - Progressive resistance with single-leg emphasis - Walk–jog progression - Plyometrics, double $\rightarrow$ single leg - Agility and sport-specific drills
► Full Release (typically 6–9 months; 9–12 months for large lesions or high-impact sport): full pain-free ROM, no effusion, strength and hop tests $\geq 90\%$ of contralateral, sport-specific progression completed, cleared by physician.			

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.