Meniscal Root Repair Rehabilitation Protocol

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This protocol outlines the comprehensive rehabilitation plan following a meniscal root repair. The guidelines below are intended for patients, therapists, and healthcare professionals to ensure optimal recovery and protection of the surgical repair.

Procedure

Meniscal Root Repair — Rehabilitation Protocol

Patient Name:	_____	Date:	_____
Therapist:	_____		

Key Surgical Note

To protect the meniscal root repair, it is critical to limit knee flexion to less than or equal to 90 degrees for the first six weeks. Axial loading and deep squats should be strictly avoided during this initial period. Patients must remain non-weight bearing for the first six weeks postoperatively. After this period, gradual progression to full weight bearing should occur, with the goal of achieving complete weight bearing by 10 to 12 weeks.

Phase I — Protection & Early Mobility (0–2 Weeks)

- Goals: Protect the surgical repair site, effectively control pain and swelling, achieve passive knee flexion from 0 to 90 degrees, and maintain full extension of the knee.
- Precautions: The patient must remain non-weight bearing with the brace locked in extension. Loaded knee flexion and twisting movements should be avoided.
- Interventions: Cryotherapy, quadriceps sets, passive heel slides within 0 to 90 degrees, patellar mobilizations, neuromuscular electrical stimulation (NMES), and ankle pumps are recommended.
- Metric Targets at 2 Weeks: Full extension to 0 degrees, flexion to 90 degrees, minimal joint effusion, and active quadriceps muscle activation should be present.
- Advancement Criteria to Phase II: Patient reports pain of 3 out of 10 or less, achieves 90 degrees of knee flexion, and demonstrates compliance with non-weight bearing and range of motion limitations.

Phase II — Controlled Strengthening (2–6 Weeks)

- Goals: Maintain control of the quadriceps, gradually increase range of motion (not exceeding 90 degrees), and continue to protect the healing meniscal root.
- Precautions: Patient remains non-weight bearing until six weeks post surgery and avoids any loaded knee flexion greater than 90 degrees.
- Interventions: Continue with supine heel slides up to 90 degrees, quadriceps sets, double-leg bridges, neuromuscular electrical stimulation, and stationary bicycling without resistance.
- Metric Goals at 6 Weeks: Achieve full knee extension, pain rated at 2 out of 10 or less, and minimal swelling.
- Advancement Criteria to Phase III: Patient is cleared by the physician for progression from partial to full weight bearing after the six-week mark.

Phase III — Advanced Strength & Neuromuscular Control (6–8 Weeks)

- Goals: Progress weight bearing to full by eight weeks and initiate closed-chain neuromuscular control exercises within a safe range of 0 to 60 degrees of knee flexion.
- Precautions: Continue to avoid deep flexion and loaded squatting to prevent undue stress on the repair.
- Interventions: Leg press exercises within 0 to 60 degrees of flexion, mini-squats, bridges, balance training, step-ups, and stationary bicycling with mild resistance are introduced.
- Metric Goals at 8 Weeks: Achieve strength at or above 70 to 80% limb symmetry index (LSI), normalized gait pattern, and no reactive swelling.
- Advancement Criteria to Phase IV: Patient achieves full weight bearing, absence of effusion, and pain rated at 1 to 2 out of 10 or less.

Phase IV — Functional Restoration & Return to Activity (8–12 Weeks)

- Goals: Restore functional strength, proprioception, and dynamic balance necessary for daily activities and return to sports or higher-level function.
- Interventions: Step-downs, light resistance training, closed-chain proprioceptive exercises, elliptical training, and introduction of low-level plyometrics after 12 weeks as appropriate.
- Return-to-Activity Criteria: Demonstrate strength equal to or greater than 90% of LSI, functional testing at or above 90% symmetry, performance of all activities of daily living without pain, and obtain physician clearance.

Selected References

1. LaPrade RF, et al. Meniscal root tears: current concepts review. Am J Sports Med. 2015;43(2):363–370.
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3. Nepple JJ, Dunn WR, Wright RW. Long-term outcomes after meniscal repair. Am J Sports Med. 2012;40(1):191–197.

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