

Meniscus ROOT Repair PT Protocol

Meniscal root attachments are extremely important to the function of the knee. Untreated root tears lead to rapid degeneration of knee cartilage. It is therefore crucial to protect the knee after meniscal ROOT REPAIRS. We perform repairs in young athletes after injuries and in middle-aged patients with mild degenerative changes. Both require 6 weeks of non-weightbearing/toe-touch weightbearing ONLY and slow progression into activities. Hamstrings attach to the posterior horn of the meniscus so no active hamstring activity such as a standing knee flexion for at least 6 weeks.

Phase I: Weeks 0-6

- **Weightbearing: STRICT non-weightbearing** for 6 weeks
- **Hinged Knee Brace:** worn for 6 weeks post-op
 - Locked in full extension for ambulation and sleeping – remove for hygiene and PT
 - Protects against active hamstring contraction
 - May be unlocked 0-30° while awake
- **Range of Motion** – AAROM → AROM for extension, PROM for knee flexion
 - Weeks 0-4: Limited ROM – no flexion >90°
 - Weeks 4-6: Full ROM as tolerated – progress to flexion angles >90°
- **Therapeutic Exercises (formal PT to start at 2-3 weeks)**
 - Quad sets, passive heels slides, 4-way straight leg raises in brace, co-contractions
 - Isometric abduction and adduction exercises
 - Patellar mobilizations
 - Prone and supine hangs to promote full knee extension
 - **At 4 weeks:** can begin protected supine wall slides – knee flexion angle <90°

Phase II: Weeks 7-11

Avoid squatting/flexion >90° in a deep weightbearing position

- **Weightbearing:** As tolerated – wean off crutches at 6-8 weeks when normal gait is achieved
- **Hinged Knee Brace:** Brace is optional when patient has achieved full extension with no evidence of extension lag. It will protect against squatting past 90° for less compliant patients
- **Range of Motion** – Full active ROM
- **Therapeutic Exercises**
 - Closed chain exercises
 - Lunges – 0-60°; Leg press – 0-90°, total gym – 0-90°
 - Proprioception exercises: weight shifting, balance exercises, plyoball toss
 - May use the stationary bicycle with high seat/loss resistance when flexion ≥110°
 - May begin light hamstring strengthening at 8 weeks; body weight stiff leg deadlift

- Non-impact endurance training: Nordic track, elliptical, deep water running at 8 weeks
- Swimming OK, but no frog kicking

Phase III: Weeks 12-16

At this point, the protocol is more individualized. Some research suggests permanent squatting restrictions, especially in the older patient with less robust meniscal tissue. Even in the young athlete we prefer to avoid loaded squatting and sprinting for at least 4 months after surgery.

- **Weightbearing:** Full WB with normal gait pattern and quad tone
- **Range of Motion:** Full/painless ROM should be achieved. Avoid posterior knee pain with end range knee flexion
- **Therapeutic Exercises**
 - Progress with quad and hamstring strengthening
 - Focus on single-leg strength; 4-way resisted band work/steamboats, balance board
 - Begin low amplitude agility drills: side shuffle, skipping, carioca
 - Plyometrics and sport-specific drills
 - May consider light jogging in athletes; no sprinting

Phase IV: Months 4-6

Gradual return to full activity while monitoring for any pain, swelling, or post-activity soreness. We usually recommend a return to sport test (e.g. hop test) prior to resuming sports. In certain cases, we recommend an unloader brace prior to resuming full activities.

- Maintenance program for strength and endurance
- Agility ladder drills
- Landing mechanics
- Cutting and pivoting drills
- Core strengthening and stabilization