ANDREW L. MERRITT, MD — PROLIANCE ORTHOPEDIC ASSOCIATES

YOUR MENISCUS REPAIR RECOVERY (WEIGHTBEARING PERMITTED)
A GUIDE TO PHYSICAL THERAPY

THE ROLE OF PHYSICAL THERAPY IN YOUR RECOVERY

Your meniscus was repaired and needs six weeks to begin healing properly. You can walk with weight on your leg right away — axial load actually promotes blood flow to the repair and helps it heal. However, bending your knee past 90 degrees is not allowed for six weeks because deeper bending creates stress at the repair site. After six weeks, bending opens up, but loaded deep squatting and kneeling are avoided until five months when the repair is more mature.

Important: The 0–90° bending limit for the first six weeks is non-negotiable. Walking is fine and encouraged. Bending past a right angle is what we are protecting.

YOUR RECOVERY TIMELINE

PHASE	TIMEFRAME	PT VISITS	WHAT YOU'RE WORKING ON
1	Weeks 1–6	2–3× per week	• Walk right away — full weight is safe and promotes healing • No bending past 90° — protect the repair site • Get your knee fully straight — the top priority from Day 1 • Quad activation, stationary bike with seat raised, light strengthening
2	Weeks 6–12	2× per week	• Bend past 90° — progress range of motion as tolerated • Stationary bike, leg press, and step-up progression • No loaded deep squats or kneeling past 90° yet • Single-leg balance and gait normalization
3	Months 3–5	1× per week + home program	• Progressive strengthening — mostly home program • Jogging begins when cleared by Dr. Merritt • Still avoiding loaded deep bending until 5 months • Limb symmetry testing at Month 3
4	Month 5–6+	As needed	• Deep squatting and kneeling now permitted • Return to cutting, pivoting, and sport at 6 months • Final strength and hop testing before clearance • Dr. Merritt confirms full return to activity

Questions about your PT progress? Call our office or bring them to your next appointment. We are always glad to coordinate with your therapist.

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Meniscus Repair (Weight-Bearing Protocol)
PHYSICAL THERAPY PROTOCOL

Patient Name: _____ **Surgeon:** Andrew L. Merritt, MD
Date of Surgery: _____ **PT Start Date:** _____

Overview & General Principles

Meniscus repair preserves the native meniscus tissue and requires a period of protected rehabilitation to allow fibrovascular healing of the repaired tissue. In this protocol, weight bearing is permitted from Day 1 — axial loading promotes vascular ingrowth at the repair site — however, ROM is strictly limited to 0–90° for the first six weeks to minimize shear stress at the repair interface. After six weeks, range of motion is progressed as tolerated, but deep knee flexion under load (squatting, kneeling past 90°) is avoided until five months post-op. Impact, cutting, and twisting activities are restricted through five months. Full return to sport is anticipated at six months.

- ROM RESTRICTION BIOLOGY: The meniscus repair site relies on fibrovascular ingrowth from the peripheral (vascular) zone. Flexion beyond 90° in the first 6 weeks creates shear forces at the repair interface that can disrupt early granulation tissue before collagen organization occurs. The 0–90° restriction is non-negotiable through Week 6.
- WEIGHT BEARING IS SAFE — AND HELPFUL: Axial loading promotes vascularity at the repair site through mechanical stimulation. WBAT is not just permitted — it actively supports healing when paired with ROM restriction. The combination protects repair integrity while maintaining joint mechanobiology.
- DEEP FLEXION RESTRICTION (WEEKS 6–20): After six weeks, ROM is freed but squatting, kneeling, or loading the knee past 90° is avoided until 5 months. This restriction protects the repair during the remodeling phase, when the tissue has initial healing but has not yet achieved mature collagen organization.

PHASE 1 — PROTECTION & EARLY ACTIVATION (Weeks 0–6)

INFORMATION FOR THE PATIENT — What to Expect This Phase

Your meniscus has been repaired and needs 6 weeks to begin healing properly. You are allowed to walk with weight on your leg right away — this is safe and actually helps the repair heal. However, you must not bend your knee past 90 degrees during this time. Bending farther than that puts stress on the repair before it's ready. Focus on keeping your knee straight most of the time and bending it to no more than a right angle.

Goals:

- Protect the repair site — strict ROM limit of 0–90° through Week 6
- Normalize gait on level surfaces without antalgic pattern
- Achieve full extension and 90° flexion by Week 3–4
- Initiate quad and hip strengthening within ROM restriction
- Control swelling and pain

Weight-Bearing Status:

Weight bearing as tolerated (WBAT) from Day 1. Crutches for comfort and safety — wean to single crutch by Week 2–3 and no crutch by Week 3–4 as gait normalizes. Weight bearing is safe and encouraged.

Range of Motion:

STRICT LIMIT: 0–90° maximum through Week 6. No exceptions. Full knee extension is the priority — achieve 0° extension by Week 1. Progress flexion to 90° by Week 2–3. Stationary bike crank height must be set to limit flexion to ≤90°.

Bracing:

Hinged knee brace set at 0–90° ROM for the first 6 weeks. Wear during all activities. May remove for exercises performed in controlled setting under PT supervision. Do need brace for sleep, protected environments.

Exercises:

- Quad sets — 3×15, every waking hour
- Straight-leg raises (4 planes) — 3×10 each
- Heel slides (active-assisted flexion to 90° limit) — 3×15
- Ankle pumps — every hour
- Terminal knee extension (TKE) with band — 3×15
- Supine bridging (bilateral) — 3×10
- Hip abduction and clamshells — 3×15
- Stationary bike: begin Week 2–3 when ROM allows; crank height set to limit flexion ≤90°; low resistance, 10–15 minutes
- Gait training with crutches on level surfaces
- Ice and elevation after each session — 20 minutes

Progression Milestones:

- Full extension (0°) by Week 1–2
- 90° flexion achieved by Week 2–3
- Ambulating without crutches on level surfaces by Week 3–4
- SLR without extensor lag
- Swelling stable and diminishing

PHASE 1 PRECAUTIONS — ROM RESTRICTION IS CRITICAL

- NO knee flexion beyond 90° — this is the single most important restriction for the first 6 weeks. Flexion past 90° can disrupt the repair before it heals.
- No deep squats, kneeling, or sitting in low chairs that require >90° knee flexion
- No stair descent with step-over-step technique until cleared — use step-to pattern
- Stationary bike must be set with crank height to prevent flexion >90°
- No resisted knee extension machine in Phase 1
- Avoid any loaded position that requires knee flexion >90° (e.g., floor sitting cross-legged, low car seats, sitting with feet back under chair)

Rationale: Meniscal repairs heal via fibrovascular ingrowth from the peripheral capsular blood supply. The early granulation tissue at the repair interface is fragile and susceptible to shear disruption. Knee flexion beyond 90° significantly increases posterior horn compressive and shear loading. This restriction protects the repair during the 6-week window of maximum vulnerability.

PHASE 2 — PROGRESSIVE LOADING (ROM RELEASED) (Weeks 6–12)

INFORMATION FOR THE PATIENT — What to Expect This Phase

Your six-week mark has passed and you can now begin bending your knee further. You will progress toward full range of motion and begin more active strengthening. However, there is still an important restriction: do not squat past 90 degrees while standing, and do not kneel past 90 degrees. Your meniscus repair is still maturing and deep flexion under load can stress the healing tissue. You should be walking normally and beginning bike riding and swimming by the end of this phase.

Goals:

- Progress ROM from 90° to full (0–130°+) by Week 10–12
- Full weight bearing without assistive device, normal gait on all surfaces
- Achieve quad strength 60–70% contralateral
- Begin closed-chain strengthening in protected ROM (squats to 60°, step-ups)
- Return to walking, stationary cycling, and low-impact conditioning

Weight-Bearing Status:

Full weight bearing without assistive device or brace.

Range of Motion:

ROM restriction lifted after Week 6 — progress flexion gradually, 5–10° per week toward full ROM. IMPORTANT RESTRICTION CONTINUES: No squatting while weight-bearing past 90°, and no kneeling past 90°, until 5 months post-op (Week 20).

Bracing:

Brace discontinued at Week 6 unless otherwise directed by surgeon.

Exercises:

- Stationary bike — remove crank restriction; progress to 20–30 min at moderate resistance
- Mini-squats (0–60°) — 3×15; do NOT exceed 90° flexion while weight-bearing
- Step-ups (4 inch, progress to 6 inch) — 3×10
- Step-downs (eccentric control) — 3×10
- Leg press (bilateral, limited arc 0–60° initially, progress to 0–90° by Week 10) — 3×12
- Hamstring curls — 3×12, progress resistance
- Hip abduction/adduction with resistance — 3×12
- Swimming (freestyle, backstroke) — when incision healed
- Single-leg balance: firm surface → foam → eyes closed — 3×30 sec
- Walking program: progress distance and terrain; hills by Week 10–12
- Aqua jogging (if available) — excellent for cardiovascular conditioning with low joint load

Progression Milestones:

- Full ROM (0–130°+) by Week 10–12
- Mini-squat (0–60°) ×15 without pain
- Step-up (6 inch) without pain or compensatory trunk lean
- Quad strength ≥60% contralateral
- Walking 30 minutes without pain or swelling

PHASE 2 PRECAUTIONS — DEEP FLEXION RESTRICTION CONTINUES

- NO squatting past 90° while weight-bearing through 5 months (Week 20)
- NO kneeling past 90° through 5 months — no deep kneeling, sitting on heels, or yoga-type deep flexion positions
- Leg press arc: stay within 0–90° through Week 12; do not load deeper
- NO impact activities (running, jumping, lateral cutting) through Phase 2
- Monitor for reactive joint line pain — if present, regress loading

Rationale: While the 6-week ROM restriction is lifted, the meniscus repair continues to remodel through 4–6 months post-op. Deep flexion under load (squatting past 90°) generates peak posterior horn compressive loading. Protecting this arc preserves repair integrity during the remodeling phase.

PHASE 3 — STRENGTHENING (Weeks 12–20)

INFORMATION FOR THE PATIENT — What to Expect This Phase

This phase focuses on building real strength in your leg. You will progress to more challenging single-leg exercises, start low-impact conditioning, and work toward returning to running and sport-specific activities. The deep flexion and impact restrictions remain in place until 5 months — this protects the repair as it undergoes final remodeling.

Goals:

- Quad strength ≥80% contralateral
- Single-leg squat and step-down without pain
- Begin running program (Week 18–20)
- Full symmetric lower extremity strength

Weight-Bearing Status:

Full, unrestricted.

Range of Motion:

Full, unrestricted active ROM. Restriction maintained: No loaded knee flexion >90° (squatting, kneeling) until Week 20 (5 months).

Exercises:

- Squats — progress depth to 90° (not beyond) and load; 3×12–15
- Single-leg squats (0–60° depth) — 3×10–12
- Leg press (single-leg progression) — progress load
- Step-downs (8 inch) — eccentric quad control emphasis
- Reverse and forward lunges — progress depth within 90° limit and add load
- Leg extension machine (if cleared by surgeon) — moderate resistance
- Stationary bike at high resistance — 30–40 minutes
- Elliptical — progress duration and resistance
- Walking program on varied terrain including hills
- Begin run-walk intervals at Week 18–20 (flat surface only)
- Hip strengthening progression: hip thrusts, single-leg bridges

Progression Milestones:

- Quad strength ≥80% contralateral
- Single-leg squat (0–60°) ×15 without pain
- Step-down (8 inch) pain-free with symmetric mechanics
- Running 5 minutes continuous without pain (to begin Phase 4)

PHASE 3 PRECAUTIONS

- NO squatting past 90° under load through Week 20 (5 months)
- NO kneeling past 90° through Week 20
- NO impact, cutting, or twisting activities through Week 20
- Running program begins no earlier than Week 18–20 with surgeon clearance
- Monitor for joint line pain or swelling with progressive loading

Rationale: Meniscal collagen remodeling is incomplete through 4–5 months. The repair has sufficient tensile strength for progressive loading but remains vulnerable to high-stress deep flexion and torsional forces. These restrictions are maintained until the 5-month mark to allow full tissue maturation.

PHASE 4 — RETURN TO SPORT (Weeks 20–24+ (Month 5–6))

INFORMATION FOR THE PATIENT — What to Expect This Phase

The five-month mark has passed, and you can now progress toward full sport activities including impact, cutting, and pivoting. Return to full sport is anticipated at 6 months, based on meeting strength and functional criteria. Do not return to competition until you have met the objective criteria below.

Goals:

- Quad strength ≥90% contralateral
- Hop test ≥90% limb symmetry index
- Return to full sport and recreational activities by 6 months

Weight-Bearing Status:

Full, unrestricted.

Range of Motion:

Full, unrestricted. Deep flexion restriction lifted at 5 months.

Exercises:

- Squats to full depth — progress load
- Sport-specific agility and cutting drills
- Plyometric progression: bilateral jump/land → single-leg hops
- Running progression: intervals → continuous → acceleration/deceleration
- Deceleration drills and directional change at increasing speed
- Hop testing: single-leg hop, triple hop, crossover hop for distance
- Sport simulation drills at full intensity

Progression Milestones:

- Quad strength ≥90% contralateral

- Single-leg hop test ≥90% limb symmetry index
- Running 20 minutes continuous without pain or swelling
- Cutting and pivoting drills without pain or hesitation
- Surgeon clearance at 6-month follow-up

PHASE 4 PRECAUTIONS

- Full sport return at 6 months minimum — do not return on time alone without meeting strength and hop test criteria
- Contact sport return requires specific surgeon clearance

Rationale: Meniscal repair requires 6 months of rehabilitation for the repaired tissue to achieve sufficient mechanical maturity for sport-level loading. Premature return significantly increases re-tear risk.

RETURN TO SPORT CRITERIA

Criteria for Return:

- Quad strength ≥90% contralateral (isokinetic or functional testing)
- Single-leg hop test ≥90% limb symmetry index (single, triple, crossover hop)
- Full pain-free ROM including deep flexion
- No effusion after sport-specific activity
- Running 20 minutes continuous without pain
- Minimum 6 months post-operative
- Surgeon clearance

Clinical Note

- Activity timeline summary: No impact or cutting/twisting until 5 months. No squatting past 90° or kneeling past 90° until 5 months. Full sport anticipated at 6 months.

Surgeon Notes / Special Instructions: