

MENISCUS REPAIR

Physical Therapy Protocol · Weight Bearing as Tolerated

PATIENT

SURGEON

Andrew L. Merritt, MD

DATE OF SURGERY

PT START DATE

For the patient

Your meniscus was repaired, and it needs **6 weeks** to start healing well. You can walk with weight on your leg right away. Putting weight through the leg actually helps blood reach the repair. **What we protect is bending: no bending past 90° (a right angle) for 6 weeks.** Deeper bending puts stress on the repair. After 6 weeks you can bend further, but deep squats and kneeling with weight on the knee wait until **5 months**, when the repair is stronger. Walking is fine and encouraged. You move to the next phase when your knee meets the goals, not just because weeks have passed.

PROTOCOL AT A GLANCE

WEIGHT BEARING	As tolerated from day 1, with crutches for comfort and safety. Most people are off crutches by weeks 3 to 4
BRACE	Hinged, set at 0–90° for 6 weeks. On for walking and sleep; may be off for home bending exercises and resting in bed, never past 90°. Stops at 6 weeks
MOTION GOALS	Full straightening (0°) by week 1. Bending to 90° by weeks 2–3. No bending past 90° until 6 weeks , then full motion by weeks 10–12
PHYSICAL THERAPY	Starts 5 to 7 days after surgery, 2 times a week at first
KEY PRECAUTIONS	No bending past 90° for 6 weeks. No squatting or kneeling past 90° with weight until 5 months. No impact, cutting, or twisting until 5 months
RUNNING · SPORT	Run-walk program at weeks 18 to 20 with clearance. Full sport at 6 months , after testing

Recovery Timeline

Phase	When	PT visits	Focus
1	Weeks 0–6	2× a week	Protect the repair (0–90°), full straightening, quad activation, walking
2	Weeks 6–12	2× a week	Motion past 90°, bike, leg press, step-ups, normal gait
3	Weeks 12–20	1× a week + home program	Strength; 3-month symmetry testing; run-walk at weeks 18–20 with clearance
4	Months 5–6+	As needed	Deep squatting and kneeling, cutting and pivoting, testing, return to sport at 6 months

For the Therapist

Check the surgeon notes first. They override anything else in this protocol. Questions or setbacks: call (425) 656-5060.

Surgeon notes and special instructions

General principles

- **Motion restriction biology.** The repair heals by fibrovascular ingrowth from the peripheral (vascular) zone. Flexion past 90° in the first 6 weeks creates shear at the repair that can disrupt early granulation tissue before collagen organizes. The 0–90° limit is non-negotiable through week 6.
- **Weight bearing is safe and helpful.** Axial loading promotes vascularity at the repair. WBAT paired with the motion limit protects the repair while keeping normal joint mechanobiology.
- **Deep flexion restriction (weeks 6–20).** After 6 weeks motion is freed, but squatting, kneeling, or loading the knee past 90° is avoided until 5 months, while the repair remodels.
- **Impact, cutting, and twisting** are restricted through 5 months. Full return to sport is expected at 6 months.
- **Stationary bike under the 90° cap:** rocking or partial revolutions only, within 90°. Full revolutions once the cap lifts after week 6.
- **Brace (weeks 0–6):** hinged 0–90°, on for walking and sleep. The patient may take it off for home bending exercises and resting in bed, never past 90°.
- **Icing:** 20 minutes on, 20 minutes off, after each session and as needed.
- **Criterion-based.** Advance on the goals for each phase, not on the date alone.

PHASE

1

Protection and Early Activation

Weeks 0–6

For the patient: what to expect

You can walk with weight on your leg right away. This is safe and helps the repair heal. **Do not bend your knee past 90°** during these 6 weeks; bending farther stresses the repair before it is ready. Get your knee fully straight in the first week, then work your bending up to a right angle by weeks 2 to 3. Wear the brace for walking and sleep. You can take it off for your bending exercises and for resting in bed, but never bend past 90°. On the stationary bike, only rock back and forth; full turns of the pedals wait until after 6 weeks.

WEIGHT BEARING	As tolerated from day 1. Crutches for comfort and safety: 1 crutch by weeks 2–3, none by weeks 3–4 as gait normalizes
MOTION	Strict 0–90° through week 6. No exceptions. Full extension (0°) by week 1; flexion to 90° by weeks 2–3
BRACE	Hinged, 0–90°, for 6 weeks. On for walking and sleep; may be off for home bending exercises and resting in bed, never past 90°

Goals

- Protect the repair: strict 0–90° through week 6
- Full extension (0°) by week 1 and 90° flexion by weeks 2–3
- Normal gait on level surfaces without an antalgic pattern
- Quad and hip strengthening within the motion limit
- Swelling and pain controlled

Move on when

- ☐ Full extension (0°) by week 1
- ☐ 90° flexion by weeks 2–3
- ☐ Walking without crutches on level surfaces by weeks 3–4
- ☐ SLR without extensor lag
- ☐ Swelling stable and decreasing

Exercises

Exercise	How
Quad sets	3 × 15, every waking hour
Straight-leg raise	4 planes, 3 × 10 each
Heel slides	Active-assisted, to the 90° limit, 3 × 15
Ankle pumps	Every hour
Bridging	Supine, both legs, 3 × 10
Hip abduction · clamshells	3 × 15
Stationary bike	From weeks 2–3 when motion allows: rocking or partial revolutions only, within 90°; low resistance, 10–15 min
Gait training	With crutches on level surfaces
Ice and elevation	After each session: 20 min on, 20 min off

Precautions

- No knee flexion beyond 90°. This is the single most important restriction for the first 6 weeks
- No deep squats, kneeling, or low chairs that need more than 90° of flexion
- Stairs down step-to, not step-over-step, until cleared
- Bike: rocking or partial revolutions within 90° only; no full revolutions until the cap lifts
- No resisted knee-extension machine in Phase 1
- Avoid any loaded position needing more than 90° (cross-legged floor sitting, low car seats, feet tucked under a chair)

Why: Meniscal repairs heal by fibrovascular ingrowth from the peripheral capsular blood supply. Early granulation tissue at the repair is fragile and vulnerable to shear. Flexion past 90° substantially raises posterior horn compression and shear, so the limit protects the repair during its 6 most vulnerable weeks.

PHASE

2

Progressive Loading (Motion Released)

Weeks 6–12

For the patient: what to expect

Your 6-week mark has passed, so you can start bending your knee further and stop the brace. You'll work toward full motion and harder strengthening. One important rule remains: **do not squat or kneel past 90°** with weight on the knee until 5 months. The repair is still maturing. By the end of this phase you should be walking normally and starting to ride the bike and swim.

WEIGHT BEARING	Full, without an assistive device or brace
MOTION	Limit lifted after week 6: progress flexion gradually, 5–10° a week, toward full motion. Still no squatting past 90° with weight and no kneeling past 90° until 5 months (week 20)
BRACE	Stopped at week 6 unless Dr. Merritt directs otherwise

Goals

- Motion from 90° to full (0–130°+) by weeks 10–12
- Full weight bearing without a device; normal gait on all surfaces
- Quad strength 60–70% of the other side
- Closed-chain strengthening in a protected range (squats to 60°, step-ups)
- Walking, stationary cycling, and low-impact conditioning

Move on when

- ☐ Full motion (0–130°+) by weeks 10–12
- ☐ Mini squat (0–60°) × 15 without pain
- ☐ Step-up (6-inch) without pain or trunk lean
- ☐ Quad strength ≥60% of the other side
- ☐ 30 min of walking without pain or swelling

Exercises

Exercise	How
Stationary bike	Full revolutions now that the cap is lifted; progress to 20–30 min at moderate resistance
Mini squats	0–60°, 3 × 15; never past 90° while weight bearing
Step-ups	4-inch step, progress to 6-inch; 3 × 10
Step-downs	Eccentric control, 3 × 10
Leg press	Both legs, 0–60° at first, progress to 0–90° by week 10; 3 × 12
Hamstring curls	3 × 12, progress resistance
Hip abduction · adduction	With resistance, 3 × 12
Swimming	Freestyle or backstroke, once the incisions are healed
Single-leg balance	Firm, then foam, then eyes closed; 3 × 30 sec
Walking program	Progress distance and terrain; hills by weeks 10–12
Aqua jogging	If available; good conditioning with low joint load

Precautions

- 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
- Leg press: stay within 0–90° through week 12
- No impact (running, jumping, lateral cutting) in Phase 2
- Reactive joint-line pain: regress loading

Why: The motion limit is lifted, but the repair keeps remodeling through 4–6 months. Loaded deep flexion (squatting past 90°) produces peak posterior horn compression, so protecting that arc protects the repair while it remodels.

PHASE

3

Strengthening

Weeks 12–20

For the patient: what to expect

This phase builds real strength. You'll do harder single-leg exercises and more conditioning, and work toward running. The deep-bending and impact limits stay in place until 5 months while the repair finishes remodeling. A run-walk program can start at weeks 18 to 20, once Dr. Merritt clears you.

WEIGHT BEARING	Full, unrestricted
MOTION	Full active motion. Still no loaded flexion past 90° (squatting, kneeling) until week 20 (5 months)
RUNNING	Run-walk intervals on flat ground no earlier than weeks 18–20, with surgeon clearance

Goals

- Quad strength $\geq 80\%$ of the other side
- Single-leg squat and step-down without pain
- Run-walk program at weeks 18–20
- Full, symmetric lower-limb strength

Move on when

- ☐ Quad strength $\geq 80\%$ of the other side
- ☐ Single-leg squat (0–60°) $\times 15$ without pain
- ☐ Step-down (8-inch) pain-free with symmetric mechanics
- ☐ Running 5 min continuously without pain (to begin Phase 4)

Exercises

Exercise	How
Squats	Progress depth to 90° (not beyond) and load; 3 $\times$ 12–15
Single-leg squats	0–60° depth, 3 $\times$ 10–12
Leg press	Single-leg progression; progress load
Step-downs	8-inch step; eccentric quad control
Lunges	Reverse and forward; progress depth within 90° and add load
Leg-extension machine	If cleared by Dr. Merritt; moderate resistance
Stationary bike	High resistance, 30–40 min
Elliptical	Progress duration and resistance
Walking program	Varied terrain, including hills
Run-walk intervals	From weeks 18–20, flat surface only, with clearance
Hip strengthening	Hip thrusts, single-leg bridges

Precautions

- No squatting past 90° under load through week 20 (5 months)
- No kneeling past 90° through week 20
- No impact, cutting, or twisting through week 20
- Running no earlier than weeks 18–20, with surgeon clearance
- Watch for joint-line pain or swelling with progressive loading

Why: Meniscal collagen remodeling is incomplete through 4–5 months. The repair tolerates progressive loading but remains vulnerable to loaded deep flexion and torsion, so these limits stay until 5 months.

PHASE

4

Return to Sport

Months 5–6+

For the patient: what to expect

The 5-month mark has passed. You can now work toward full sport, including impact, cutting, and pivoting. Full return to sport is expected at 6 months, once you pass strength and function tests. Do not return to competition until you meet the criteria below.

WEIGHT BEARING	Full, unrestricted
MOTION	Full. Deep flexion restriction lifted at 5 months

Goals

- Quad strength $\geq 90\%$ of the other side
- Hop tests $\geq 90\%$ LSI
- Full sport and recreational activity by 6 months

Move on when

- ☐ Quad strength $\geq 90\%$ of the other side
- ☐ Single-leg hop $\geq 90\%$ LSI
- ☐ Running 20 min continuously without pain or swelling
- ☐ Cutting and pivoting without pain or hesitation
- ☐ Surgeon clearance at the 6-month visit

Exercises

Exercise	How
Squats	To full depth; progress load
Agility · cutting	Sport-specific agility and cutting drills
Plyometrics	Double-leg jump and land, then single-leg hops
Running progression	Intervals, then continuous, then acceleration and deceleration
Deceleration · direction change	At increasing speed
Hop testing	Single-leg hop, triple hop, crossover hop for distance
Sport simulation	At full intensity

Precautions

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

Why: The repaired tissue needs about 6 months to mature enough for sport-level loading. Returning early substantially raises the risk of re-tear.

Return to Sport

All criteria must be met before clearance.

Measure	Target
Time from surgery	At least 6 months
Quadriceps strength	≥90% of the other side (isokinetic or functional testing)
Single-leg hop	≥90% LSI (single, triple, crossover hop)
Motion	Full and pain-free, including deep flexion
Effusion	None after sport-specific activity
Running	20 min continuous without pain
Clearance	Surgeon clearance

Functional testing

- Strength: isokinetic or functional testing
- Hop battery: single hop, triple hop, crossover hop

Activity timeline summary: no bending past 90° for 6 weeks. No squatting or kneeling past 90° until 5 months. No impact, cutting, or twisting until 5 months. Full sport expected at 6 months.