

MCL SPRAIN

Nonoperative Physical Therapy Protocol

PATIENT

PHYSICIAN

Andrew L. Merritt, MD

DATE OF REFERRAL

PT START DATE

For the patient

The MCL on the inside of your knee was sprained, which means it is partly or completely torn. The good news: **most MCL injuries, including complete tears, heal very well without surgery** when they are managed properly. The biggest risk is not another injury. **It is stiffness.** Losing even 5° of full knee straightening changes the way you walk, puts more strain on the kneecap, and can leave a lasting limp. **Getting your knee fully straight from day 1 is the most important goal**, even more important than bending. You move to the next phase when your knee can do what that phase asks, not by time alone.

PROTOCOL AT A GLANCE

WEIGHT BEARING	Full weight as tolerated with a hinged brace from day 1. Crutches only for comfort. Grade III: weight bearing as Dr. Merritt directs
BRACE	Hinged brace, unlocked for walking ; may be locked at night for comfort. Off for all exercises. Weaned by weeks 3–4 (Grade I–II) or 4–6 (Grade III)
MOTION GOALS	Full straightening (0°), equal to the other knee, is the #1 goal. Bending ≥90° by week 2, ≥130° by week 6
PHYSICAL THERAPY	2× a week at first, then 1× a week or as needed from week 6
KEY PRECAUTIONS	Never put a pillow or roll under the knee. No cutting, pivoting, or sideways blows to the knee until Phase 3
RETURN TO SPORT	Usually Grade I 1–3 weeks , Grade II 4–8 weeks , Grade III 3–4 months , when all criteria are met and Dr. Merritt clears you

Recovery Timeline

Phase	When	PT visits	Focus
1	Weeks 0–2	2× a week	Full weight with brace; full straightening every day; ice and compression; wake up the quad
2	Weeks 2–6	2× a week	Step-ups, leg press, bike; wean the brace; hip strength; back to walking and daily activities
3	Weeks 6–10+	1× a week or as needed	Jogging, then sport drills; cutting when strength allows; return to sport by criteria (Grade III often 3–4 months)

Questions about PT? Call our office or ask at your next visit. We are glad to coordinate with your therapist.

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

- **Scope.** Nonoperative management of MCL sprains. Grade I (partial, microscopic tear) and Grade II (partial, macroscopic tear) injuries heal reliably. Select Grade III (complete rupture) injuries also heal nonoperatively, particularly isolated mid-substance tears with reasonable tissue quality.
- **Stiffness is the main complication, especially loss of terminal extension.** The joint capsule, posterior oblique ligament, and medial structures become fibrotic rapidly during healing; resting in flexion, even at night, lets them shorten. Even a mild (5°) flexion contracture significantly alters patellofemoral mechanics and gait, and a 5–10° contracture gets progressively harder to correct. Restoring ROM, especially full terminal extension, is the primary goal throughout.
- **Terminal extension is the priority.** A 5° extension deficit alters quadriceps mechanics, increases patellofemoral contact pressure, and creates a persistent limp. Extension work begins on day 1 and is emphasized in every phase. Never sacrifice extension for comfort.
- **Avoid valgus stress.** The MCL resists valgus load. Activities that open the medial joint (lateral-to-medial knee stress, cutting, pivoting) are restricted in Phases 1 and 2. Return to cutting and contact sport is criteria-based, not time-based alone.
- **Grade-dependent progression.** Typical return to sport: Grade I 1–3 weeks, Grade II 4–8 weeks, Grade III 3–4 months. The phase timelines are written for Grade III injuries; Grade I and II injuries move through the phases faster as each phase's milestones are met. Progress by milestones, not time alone.
- **Bracing.** A hinged knee brace limits valgus stress and provides comfort. It is not a substitute for ROM work: remove the brace for all exercise to prevent extension stiffness.
- **Ice** 20 min on, 20 min off, with a compression wrap between sessions.
- **Pain rule.** Exercise pain $\leq 2/10$ that settles by the next day is acceptable. Back off if swelling increases.

PHASE

1

Protection and Extension Recovery

Weeks 0–2

For the patient: what to expect

Getting your knee fully straight is the top goal right now, more important than bending. Straighten it fully every day, and **never rest with a pillow or roll under your knee**. Ice and compression control swelling so your quad can work. You can put weight on your leg right away unless Dr. Merritt tells you otherwise.

WEIGHT BEARING	Grade I–II: full as tolerated in the brace; crutches for comfort. Grade III: per surgeon direction. Normal gait by the end of Phase 1 (mild injuries) or week 4 (Grade III)
MOTION	Full passive extension (0°) is the primary goal: prone hangs and heel props from day 1; never accept a flexion contracture. Flexion ≥90° by the end of week 2 as swelling allows; no forced flexion before extension is full
BRACE	Hinged, unlocked for walking; may be locked at night for comfort. Off for all ROM exercises

Goals

- Full passive extension equal to the other side (primary goal)
- Control swelling and pain
- Quad activation: quad sets, SLR without lag
- Normal gait, full extension in stance

Move on when

- ☐ Full passive extension (0°) equal to the other side (required)
- ☐ Passive flexion ≥90°; SLR without extensor lag
- ☐ Quad set with VMO activation
- ☐ Normal heel-to-toe gait (Grade I–II) or improving weight bearing (Grade III)

Exercises

Exercise	How
Prone knee hangs	Daily priority; do not skip. Leg off the table edge, gravity into extension. 2 × 15 min
Supine heel props	Daily priority. Towel under the heel, nothing under the knee. 2 × 15 min daily
Quad sets	3 × 15, every 1–2 hours
Heel slides · SLR	Active-assisted heel slides 3 × 15. SLR (4 planes) 3 × 10
Stationary bike	When ROM reaches ≥100°; low resistance, 10–15 min
Hip abduction, extension	Standing. 3 × 15
Ankle pumps · ice	Ankle pumps hourly. Ice 20 min on, 20 min off; compression wrap between sessions

Precautions

- No flexion contracture: resting bent (20–30°) feels comfortable because the posterior capsule and MCL are slack, but it causes rapid contracture
- Never place a pillow or roll under the knee: the most common cause of extension contracture after injury
- No valgus stress: no lateral impact, cutting, or pivoting

PHASE

2

Progressive Strengthening

Weeks 2–6

For the patient: what to expect

Now the focus is quad and hip strength, full bending, and walking normally. **Keep doing your straightening exercises every day, even when the knee feels better.** The brace comes off step by step as strength and confidence improve.

WEIGHT BEARING	Full, unrestricted. Wean from the brace as gait normalizes
MOTION	Full ROM by the end of Phase 2; flexion $\geq 130^\circ$ by week 6. Prone hangs and heel props as extension maintenance. Bike is the main ROM and conditioning tool
BRACE	Wean. Grade I–II: typically off by weeks 3–4. Grade III: off by weeks 4–6, when weight bearing and quad control are adequate

Goals

- Full active ROM: extension equal to the other side, flexion $\geq 130^\circ$
- Quad strength 60–70% of the other side
- Normal gait without the brace on level surfaces
- Stairs, cycling, light sport-specific drills

Move on when

- ☐ Full ROM: extension 0° maintained, flexion $\geq 130^\circ$
- ☐ Walking without the brace on level surfaces
- ☐ Quad strength 60–70% of the other side
- ☐ Step-down $\times 10$ without valgus collapse

Exercises

Exercise	How
Extension maintenance	Continue daily: prone hangs and heel props
Stationary bike	20–30 min, progress resistance
Mini squats (0 – 60°)	Progress to full squat. 3×15
Leg press	Bilateral, then single-leg. 3×12
Step-ups, step-downs	Step-ups 4–6 inch, then 8 inch, 3×10 . Eccentric step-downs 3×10
Hamstring curls, RDL	Band curls 3×15 . Romanian deadlift 3×12
Single-leg balance	Firm surface, then foam. 3×30 –45 sec
Hip abduction (band)	Side-lying. 3×15
Elliptical	20–30 min, from week 4

Precautions

- Do not stop extension exercises when the knee feels better: stiffness can recur if maintenance stops too early
- No cutting, pivoting, or valgus-loaded activities: Grade III injuries have not fully healed at 6 weeks
- Valgus collapse during step-downs indicates hip abductor weakness; address it before advancing

Why: During weeks 2–6 the MCL is in its proliferative and remodeling phases: stronger, but not mature. Valgus loading before collagen matures risks ligament elongation and recurrent instability.

PHASE

3

Return to Activity

Weeks 6–10+

For the patient: what to expect

By now your strength and function are close to normal. Running, cutting, and sport-specific training build step by step. **You return to sport when you pass the strength and function tests**, not just because time has passed. Your knee must still straighten fully: keep up the straightening exercises until it has stayed fully straight for at least 4 weeks.

WEIGHT BEARING	Full, unrestricted
MOTION	Full, unrestricted. Continue extension maintenance if any deficit persists
BRACE	None routinely. Functional brace for return to contact sport if preferred (recommended for Grade III, see below)

Goals

- Quad strength $\geq 90\%$ of the other side
- Full, pain-free ROM with extension fully maintained
- Return to running, cutting, and sport

Move on when

- ☐ Quad strength $\geq 90\%$ of the other side
- ☐ Hop test $\geq 90\%$ LSI
- ☐ Full extension maintained at 0°
- ☐ Running and cutting without pain or giving way

Exercises

Exercise	How
Squat progression	Full squat, add load
Single-leg squat	$3 \times 10\text{--}12$
Running program	Walk-jog intervals, then continuous running
Lateral band walks and lateral step-overs	Progress as tolerated
Plyometrics	Bilateral jumps, then single-leg hops
Cutting and agility drills	Start when running is pain-free
Sport-specific training	Per sport demands
Extension maintenance	Prone hangs and heel props daily until full extension has been stable for 4 weeks or more

Precautions

- No return to contact or cutting sport with any residual extension deficit: even $3\text{--}5^\circ$ of extension loss significantly impairs deceleration and increases re-injury risk
- Grade III: consider a functional brace for the first season of contact sport
- Re-injury risk is highest in the first 3–6 months; sport-specific conditioning and neuromuscular control reduce it

Why: MCL healing continues through 3–6 months for Grade III injuries. Return to sport is based on functional testing, not ligament maturation alone. Continue extension maintenance throughout return-to-sport training: extension stiffness can recur after sport return if maintenance is abandoned.

Return to Activity Criteria

All criteria must be met before clearance for sport.

Measure	Target
Extension	Full active extension equal to the other side (non-negotiable)
Flexion	Full flexion ($\geq 130^\circ$)
Quadriceps strength	$\geq 90\%$ of the other side
Hop testing	$\geq 90\%$ LSI
Stability	No valgus instability on clinical exam
Pain	$\leq 1/10$ with the target activity
Time from injury	Typically Grade I 1–3 weeks, Grade II 4–8 weeks, Grade III 3–4 months
Clearance	Dr. Merritt or the treating therapist confirms clearance

Functional testing

- Quadriceps strength compared with the other side
- Single-leg hop testing (limb symmetry index)
- Clinical valgus stress exam

Clinical note: a functional hinged brace is recommended for Grade III injuries returning to contact sport, for at least the first season. Full extension must be documented and maintained at every follow-up; it is the most important criterion for sport clearance.