

KNEE ARTHROSCOPY

Physical Therapy Protocol

PATIENT

SURGEON

Andrew L. Merritt, MD

DATE OF SURGERY

PT START DATE

For the patient

Most people do a home exercise program after this surgery. Formal physical therapy is only needed if we order it. If it is ordered, it is usually 2 times a week at first. This was a small knee scope. Nothing was repaired or rebuilt. Your recovery depends on two things: **controlling the swelling** and **getting your quad muscle working again**. Swelling in the knee shuts the quad down, so icing and keeping your leg up matter a lot in the first 2 weeks. You can put full weight on your leg right away. Most people are back to full activity in 4 to 8 weeks. You move ahead when your swelling is controlled and your quad is strong, not just because weeks have passed.

PROTOCOL AT A GLANCE

WEIGHT BEARING	Full weight from day 1. Crutches for comfort only; most people are walking without them by 1 to 2 weeks
BRACE	None, unless Dr. Merritt orders one. If ordered, it is for comfort and is weaned as swelling and quad control improve
MOTION GOALS	No limits. Full straightening first , then full bending. Flexion 125–135° by week 4
PHYSICAL THERAPY	Most patients do a home program. Formal PT only if ordered; when ordered, it starts 5 to 7 days after surgery, 2 times a week at first
KEY PRECAUTIONS	Control swelling before adding load. No leg-extension machine in the first 4–6 weeks. No running while the knee is still swollen
RETURN TO ACTIVITY	Running usually around weeks 4 to 6 , once criteria are met. Cutting sports usually around 6 weeks

Recovery Timeline

Phase	When	PT visits	Focus
1	Weeks 0–2	2× a week (if ordered)	Control swelling, wake up the quad, full straightening
2	Weeks 2–4	2× a week (if ordered)	Strengthening, normal walking, balance, back to daily activities
3	Weeks 4–6	1× a week or as needed	Finish strength, return to running and sport; most finish formal PT by 6 weeks

Most patients do a home program. When formal PT is ordered, use the suggested frequency above.

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

- **Home program first.** Most patients do a home exercise program. Formal PT is only if ordered; when ordered, 2× a week early.
- **Scope of this protocol.** Minor arthroscopic procedures such as plica resection, cyclops lesion excision, chondroplasty, loose body removal, and synovectomy. There is no structural repair or reconstruction and no weight-bearing or motion restriction. Recovery is driven by effusion control and quad function, not tissue healing. Most patients finish formal PT within 6 weeks and return to full activity once effusion is controlled and strength is symmetric.
- **Effusion is the enemy of quad activation.** Arthrogenic muscle inhibition (AMI) is the main obstacle early. As little as 20–30 mL of joint fluid reflexively inhibits the quadriceps, whatever the effort. Ice, elevation, compression, and activity pacing are the top priority in Phase 1 and set the speed of quad recovery.
- **Extension first.** Establish and keep full passive extension from day 1. A flexion contracture of even 5° alters gait and can become hard to correct. Extension work takes priority over flexion throughout.
- **Criterion-based progression.** Time frames are guidelines. Patients with persistent effusion or quad weakness stay in Phase 1 regardless of time elapsed.
- **Icing:** 20 minutes on, 20 minutes off, after every session and as needed.
- **NMES** is provided at PT visits when AMI is significant. No home unit is needed.

PHASE

1

Effusion Control and Quad Activation

Weeks 0–2

For the patient: what to expect

Your knee will be swollen after surgery. This is normal. The swelling is the main reason your quad feels weak and hard to tighten. Ice, keeping your leg up, and compression will help your muscle work better. Ice for 20 minutes, then take it off for 20 minutes, and repeat as needed. You can put full weight on your leg right away, and there are no limits on bending your knee.

WEIGHT BEARING	Full, as tolerated, from day 1. Crutches for comfort only; wean as pain and confidence allow. Goal: walking without crutches by weeks 1–2
MOTION	Unrestricted from day 1. Extension is the priority: if it is limited, use prone hangs and supine heel props before flexion work. Flexion usually returns quickly; an extension deficit needs active attention
BRACE	None unless ordered. If prescribed, for comfort only; wean as effusion and quad control improve

Goals

- Effusion visibly reduced by the end of week 1
- Quad set with visible VMO activation
- Full passive extension (equal to the other side)
- SLR without extensor lag by week 2
- Walking independently, with crutches only as needed

Move on when

- ☐ Effusion visibly reduced and soft (not tense)
- ☐ Full passive extension equal to the other side
- ☐ Quad set with visible VMO activation
- ☐ SLR without extensor lag
- ☐ Walking without a crutch, or with 1 crutch, on level surfaces

Exercises

Exercise	How
Ice and elevation	20 min on, 20 min off; compression wrap between sessions
Ankle pumps	Every hour while awake
Quad sets	3 × 15, every 1–2 hours; focus on VMO activation
Heel props · prone extension	2 × 15 min a day to keep full extension
Heel slides	Active-assisted, 3 × 15
Straight-leg raise	Supine, 4 planes as tolerated, 3 × 10
Short-arc quads	0–45°, 3 × 15, once extension is full
NMES	At PT visits, if AMI is significant; 20–30 min
Stationary bike	Once flexion reaches 100° or more (usually weeks 1–2); low resistance, 10–15 min
Gait training	Normalize heel-toe pattern; minimize antalgic gait

Precautions

- Do not push through a tense, painful effusion: an inhibited quad cannot be strengthened and abnormal patterns get reinforced
- Ice after every session without exception. No heat or warm soaks in Phase 1; warmth increases synovial fluid
- No prolonged standing or walking beyond tolerance in week 1; activity that increases effusion sets back quad recovery
- Maintain full passive extension daily; even a 5° contracture alters patellofemoral mechanics and gait
- No leg-extension machine in Phase 1

Why: Joint fluid inhibits the quadriceps through a spinal reflex (AMI) at volumes as low as 20–30 mL, and voluntary effort cannot overcome it. Until effusion is controlled, quad strengthening has limited effect, so effusion reduction is the main goal of Phase 1.

PHASE

2

Progressive Strengthening

Weeks 2–4

For the patient: what to expect

Swelling should be down by now, and your quad should be working well. The exercises get harder: squats, step-ups, and the stationary bike are the main focus. Keep icing after every session, even if your knee feels fine. If exercise makes your knee swell a lot more, ease off and call the office.

WEIGHT BEARING	Full, unrestricted
MOTION	Full, unrestricted. Flexion 125–135° by the end of Phase 2
BRACE	None. Stop it if still in use

Goals

- Quad strength 60–70% of the other side
- Full active motion: extension equal on both sides, flexion 130°+
- Single-leg balance 30 sec or more on a firm surface
- Normal gait on all surfaces, including stairs
- Minimal or no effusion with exercise

Move on when

- ☐ Minimal effusion: knee soft and not warm after exercise
- ☐ Full active motion, extension equal on both sides
- ☐ Squat to 90° × 15 without pain
- ☐ Quad strength 60–70% of the other side
- ☐ Single-leg balance 30 sec or more, firm surface

Exercises

Exercise	How
Stationary bike	20–30 min, moderate resistance; main conditioning and low-impact quad loading
Mini squats	0–60°, 3 × 15; progress to 0–90° by the end of the phase
Leg press	Both legs, 0–90°, 3 × 12; add resistance progressively
Step-ups	4–6-inch step, 3 × 10 each direction
Step-downs	Eccentric quad loading, 3 × 10
Hamstring curls	Resistance band, 3 × 15
Single-leg balance	Firm to foam, 3 × 30–45 sec
Calf raises	Both legs to single leg, 3 × 15
Hip abduction · extension	With resistance, 3 × 12
NMES	At PT visits, if quad inhibition persists
Ice	After every session: 20 min on, 20 min off

Precautions

- No leg-extension machine: resisted open-chain extension in the first 4–6 weeks puts focal contact stress on the joint surface, especially after chondroplasty
- Reactive effusion after exercise (knee larger, warm, tight): reduce load by 30–40% and do not advance until it settles
- No running or impact in Phase 2; impact before adequate strength and effusion control raises joint contact stress

Why: Chondroplasty and other minor cartilage work leave the joint surface briefly vulnerable to focal loading. Closed-chain exercise spreads the load and is preferred over resisted open-chain extension. A reactive effusion means the load exceeded the joint's tolerance and should trigger load reduction.

PHASE

3

Return to Activity

Weeks 4–6

For the patient: what to expect

Your knee should feel close to normal by now. This phase finishes your strength and gets you back to your sport or activity. Running and harder activities start when you meet the goals below, not just because a number of weeks has passed.

WEIGHT BEARING	Full, unrestricted
MOTION	Full, unrestricted
BRACE	None

Goals

- Quad strength $\geq 80\%$ of the other side (LSI)
- No effusion with exercise or activity
- Full, pain-free motion
- Return to running, sport, or full work activities
- Independent home maintenance program

Move on when

- ☐ Quad strength $\geq 80\%$ of the other side
- ☐ No effusion after exercise
- ☐ Full, pain-free motion
- ☐ Running pain-free (if applicable)
- ☐ Surgeon clearance

Exercises

Exercise	How
Bike · elliptical	High resistance, 20–30 min
Squats	To full depth, 3 × 15; add load progressively
Leg press	Single-leg progression, 3 × 12
Step-ups · step-downs	8-inch step, 3 × 10
Lunges	Forward, lateral, reverse; add load as tolerated, 3 × 10
Single-leg squat	3 × 10–12
Running program	Criteria-based: walk-jog intervals to continuous running
Plyometrics	Once running is pain-free: double-leg jumps, then single-leg hops, then sport-specific movement
Agility · cutting	For returning athletes
Ice	After high-load sessions as needed: 20 min on, 20 min off

Precautions

- Do not start running while effusion is present; impact on an inflamed joint risks persistent synovitis
- Any return of significant effusion warrants surgeon evaluation. Persistent effusion beyond 6 weeks may mean a residual problem in the joint that needs reassessment

Why: Most patients finish formal PT by 6 weeks. Persistent effusion or weakness beyond this is unusual after minor arthroscopy and should prompt a call to Dr. Merritt. Return to activity is criteria-based: strength symmetry and effusion control are the two main criteria, regardless of time.

Return to Activity

All criteria must be met before clearance.

Measure	Target
Quadriceps strength	≥80% of the other side (LSI)
Effusion	None at rest or after exercise
Motion	Full, pain-free, equal to the other side
Single-leg hop	≥80% LSI (for running athletes)
Pain	≤1/10 with target activities
Clearance	Surgeon clearance

Clinical note: activity timing

- Outdoor cycling: once the incisions are healed and effusion is controlled, usually weeks 2–3
- Swimming: about 4 weeks, once the incisions are fully healed (no pools before 4 weeks)
- Running: usually weeks 4–6, when criteria are met
- High-impact and cutting sports: usually 6 weeks, when criteria are met
- Chondroplasty: avoid repetitive high-impact loading long term; low-impact alternatives are preferred if symptoms recur