Partial Meniscectomy or Debridement Post-Operative Rehabilitation & Return-to-Activity Protocol

Outpatient Physical Therapy | Evidence-Based, Criteria-Driven

Procedure: Arthroscopic Partial Meniscectomy (medial or lateral)
Setting: Outpatient Physical Therapy
Frequency: 1–3 sessions per week, individualized; home program daily
Protocol Type: Criterion-based (milestones, not calendar)
Date Issued: November 2026

ⓘCLINICAL NOTE — READ BEFORE INITIATING

This protocol applies to **isolated partial meniscectomy only**. If a meniscal repair, root repair, ligament reconstruction, cartilage restoration procedure (MACI, osteochondral graft) or osteotomy was also performed, the associated procedure determines restrictions — use the appropriate protocol. Progression is criterion-based: advance when milestones are met, not when a date is reached. Time windows are typical ranges only. Individualize based on extent of resection, tear location (progress more cautiously after lateral resection), cartilage status, degree of osteoarthritis, and patient response. Consult the operating surgeon if unexpected findings or complications arise.

General Principles & Precautions

Apply throughout all phases of rehabilitation.

- **No repair is being protected.** Weight-bearing as tolerated (WBAT) and unrestricted range of motion are appropriate from Day 1; a brace is not routinely required. The 2024 EU-US Meniscus Rehabilitation Consensus recommends immediate full weight-bearing as tolerated, early full ROM, and criterion-based progression after meniscectomy.
- **Joint reactivity sets the pace.** Reassess effusion, pain and gait at the start of every session and the morning after activity. If swelling, limping or pain increases, return to the previous dose rather than stopping altogether.
- **Quadriceps first.** Effusion reflexively inhibits the quadriceps. Begin activation on Day 1 and prioritize restoring lag-free strength — quadriceps weakness is the principal deficit after meniscectomy.
- **Increase one variable at a time** — add resistance, repetitions or complexity separately, and not on consecutive days for a newly introduced load.
- **Time alone does not establish readiness.** Reaching 2 weeks, 6 weeks or any calendar point does not clear running, impact or sport; objective criteria must be met.
- **Use patient-reported and performance-based measures together** (IKDC, KOOS, strength LSI, hop and balance testing) to guide decisions.
- **Individualize for risk of slower recovery:** lateral meniscectomy, larger resections, degenerative tears, underlying osteoarthritis, chondral injury, or persistent effusion/pain.
- Apply **cryotherapy 15 minutes** (protect the skin; wrap the ice pack) with compression and elevation as needed for swelling after sessions.
- Home-based programs with periodic supervised review are effective after uncomplicated meniscectomy — tailor visit frequency to deficits and the patient's ability to exercise independently.

Phase Overview

Phase	Typical Window	Weight-Bearing / ROM	Primary Focus
Phase 1	Days 0–14	WBAT; unrestricted ROM	Settle effusion; full extension; quad activation; normal gait
Phase 2	Weeks 2–6	Full WB; full ROM	Closed-chain strength; balance; cardiovascular conditioning
Phase 3	Weeks 4–12	Full WB; full ROM	Progressive strengthening; neuromuscular control; return-to-run
Phase 4	Weeks 6–12+	Full WB; full ROM	Sport-/work-specific training; return-to-activity clearance

PHASE 1 — Protection & Early Recovery

Days 0–14 | Primary Focus: Effusion Control, Full Extension, Quadriceps Activation, Normal Gait

⚠PHASE 1 PRECAUTIONS

- Avoid prolonged standing or walking if swelling increases — use short, frequent walks instead of one long walk.
- Avoid kneeling, deep squatting and pivoting on the planted foot; change direction with small steps.
- Perform straight-leg raises only without an extensor lag.
- Monitor wounds for drainage, redness or warmth; keep unhealed incisions dry.
- Urgent review: fever, wound discharge or opening, calf pain/swelling, new locking, or sudden loss of extension.

Goals

- Control pain and effusion
- Restore full passive knee extension and comfortable flexion
- Achieve voluntary quadriceps activation without extensor lag
- Restore a symmetrical, non-antalgic gait

Weight-Bearing Status

Weight-bearing as tolerated, immediately. Crutches are for comfort and gait quality only and are typically discontinued within the first days once walking is non-limping and swelling is not increasing. No brace.

Range of Motion

Unrestricted. Pursue full extension first, then gentle flexion as comfort allows. Progress by symptoms and effusion, not by angle limits.

Therapeutic Exercises

- Perform **ankle pumps** — 10–20 repetitions in short bouts every waking hour
- Perform **quadriceps sets** — 5-second holds × 8–10; use NMES if voluntary activation is poor
- Perform **straight-leg raises** in 4 planes — only without an extensor lag
- Perform **heel props and prone hangs** — low-load, long-duration stretch for terminal extension
- Perform **heel slides** and towel-assisted flexion — slow, no forcing, 10 repetitions
- Perform **patellar mobilizations** in all directions
- Perform **hip abduction and clamshells** — begin proximal strengthening
- Perform **calf raises** as tolerated
- Begin **stationary bike** when a full revolution is comfortable — no resistance
- Practice **gait re-education** — heel-to-toe pattern; stairs leading with the non-surgical limb up and surgical limb down

✓CRITERIA TO ADVANCE TO PHASE 2

- Walking is tolerated without a limp; crutches discontinued
- Effusion decreasing (trace to mild)
- Comfortable ROM progressing toward full; extension at or near 0°
- Voluntary quadriceps set with straight-leg raise and no extensor lag

PHASE 2 — Motion & Foundational Strength

Weeks 2–6 | Primary Focus: Full ROM, Closed-Chain Strength, Balance, Conditioning

⚠PHASE 2 PRECAUTIONS

- Avoid deep loaded squatting, pivoting and twisting on a planted foot.
- No running, jumping or impact activity yet.
- If the knee swells that evening or the next day, return to the previous dose.
- Reaching 2 weeks alone does not establish readiness to run.

Goals

- Achieve full, pain-free ROM symmetric to the contralateral limb
- Achieve no effusion at rest and minimal reaction to daily activity
- Build quadriceps, hamstring, hip and calf strength and endurance
- Improve balance and proprioception
- Maintain cardiovascular fitness

Weight-Bearing Status & ROM

Full weight-bearing, no assistive device. Full, unrestricted ROM.

Therapeutic Exercises

- Continue all Phase 1 exercises — progress as tolerated
- Progress **stationary bike** — add resistance and duration toward 20–30 minutes
- Perform **mini-squats, wall slides and ball squats** (0–60°) — advance depth as comfort and effusion allow
- Perform **step-ups** (low step) and **step-ups with march**
- Perform **leg press** — bilateral, progressing load
- Perform **standing and prone hamstring curls** — no restrictions after meniscectomy
- Perform **bridges** — bilateral progressing to single-leg and physioball variations
- Perform **single-leg standing balance** with a slightly flexed knee — static on a firm surface progressing to unstable surfaces
- Perform **stretching** — quadriceps, hip flexors, hamstrings, calf
- Use **low-impact cardio** — elliptical, stair climber, flutter-kick swimming (as incisions allow)

✓CRITERIA TO ADVANCE TO PHASE 3

- Full, pain-free knee ROM
- No effusion (modified stroke test negative or trace)
- Symmetrical, non-antalgic gait without assistive device
- Tolerates daily activity and Phase 2 exercise with no next-day swelling response
- Controlled bilateral squat and step-up without dynamic knee valgus

PHASE 3 — Progressive Strengthening & Neuromuscular Control

Weeks 4–12 | Primary Focus: Unilateral Strength, Dynamic Control, Run Preparation

⚠PHASE 3 PRECAUTIONS

- No running until the return-to-run criteria below are met.
- Introduce impact and plyometric loading gradually and only after bilateral strength and control are established.
- Reduce load if effusion, joint-line pain or a limp develops after a session.
- Progress more slowly after lateral meniscectomy, with osteoarthritis, or with persistent pain.

Goals

- Quadriceps and hamstring limb symmetry index (LSI) ≥ 80%
- Restore single-leg strength and movement quality
- Advance dynamic balance and neuromuscular control
- Meet return-to-run criteria

Therapeutic Exercises

- Continue all Phase 1–2 exercises with progressive overload — increase intensity (strength) and duration (endurance)
- Perform **squat to chair and goblet squats** — progress load and depth by tolerance
- Perform **forward, lateral and reverse lunges**, split squats and slide-board lunges
- Perform **step-downs and lateral step-ups** — emphasize frontal-plane control
- Perform **Romanian deadlift and single-leg deadlift**
- Perform **single-leg press and single-leg wall slides/squats**
- Use **gym machines** — leg press, seated hamstring curl, hip abduction/adduction, hip extension
- Perform **advanced balance** — single-leg stance on foam/BOSU with perturbation and dual-task challenges
- Perform **hip and trunk strengthening** — lateral band walks, planks, Pallof press
- Use **blood flow restriction (BFR)** training as an adjunct if quadriceps strength lags despite load tolerance
- Begin **low-level plyometrics** — bilateral jumps and landings with landing-mechanics coaching — once bilateral squat and step-down control is established

Return-to-Run Protocol

ALL criteria must be met before initiating running:

✓PRE-RUN CRITERIA

- Full, pain-free ROM symmetric to the other limb
- No more than trace effusion; no joint-line tenderness with loading
- Normal walking gait and tolerance of brisk walking
- Controlled single-leg squat (no Trendelenburg or dynamic valgus)
- Quadriceps and hamstring strength ≥ 80% of the contralateral limb (also consider absolute strength and movement quality)
- No swelling response to Phase 3 loading

Running Progression

Stage	Prescription
Stage 1	Walk–jog intervals on level ground (e.g., 2 min walk : 1 min jog × 20 min); every other day
Stage 2	Reduce walk intervals; progress to continuous 15–20 minute jog
Stage 3	Increase distance, pace variation and mild incline
Stage 4	Speed work, accelerations/decelerations and change of direction; progress only if no next-day effusion

✓CRITERIA TO ADVANCE TO PHASE 4

- Completed running progression without pain or effusion
- Quadriceps and hamstring LSI ≥ 80% (target ≥ 90% for sport)
- Hop testing and landing mechanics begun with acceptable quality
- No joint-line tenderness; full, pain-free ROM

PHASE 4 — Return to Activity & Sport

Weeks 6–12+ (up to 3–6 months with lateral resection, OA or slower recovery) | Primary Focus: Sport-/Work-Specific Training, Clearance

Goals

- Achieve ≥ 90% LSI quadriceps and hamstring strength
- Perform hop testing and landing tasks with ≥ 90% symmetry and good mechanics
- Complete sport- or work-specific drills without pain or swelling
- Obtain return-to-activity clearance based on clinical criteria

Therapeutic Exercises

- Continue strength program — emphasize heavy, progressive loading in squat, hinge and single-leg patterns
- Perform **plyometric progression** — bilateral → single-leg hop-and-hold → bounding → drop landings; assess landing quality with the Landing Error Scoring System (LESS)
- Perform **change-of-direction and deceleration drills** — 45° then 90° cuts at progressive speeds
- Perform **agility and reaction training** — sport- and work-specific
- Perform **pivoting and contact preparation** as sport demands
- Graduate to **full practice participation** before competition

✓RETURN-TO-ACTIVITY CLEARANCE CRITERIA

ALL criteria must be met before unrestricted sport or high-impact activity:

1. No effusion or swelling response after sport-specific training
2. Full, pain-free ROM symmetric to the contralateral limb
3. No joint-line tenderness or mechanical symptoms (locking, catching)
4. Quadriceps LSI ≥ 90%
5. Hamstring LSI ≥ 90%
6. Single-leg hop battery (single, triple, crossover, 6-m timed) ≥ 90% LSI
7. Y-Balance Test anterior reach asymmetry ≤ 4 cm
8. Controlled single-leg squat and lateral step-down with good frontal-plane control
9. Landing mechanics acceptable (e.g., LESS < 5 errors)
10. Sport-/work-specific drills completed without pain or swelling
11. Patient-reported function acceptable (e.g., IKDC ≥ 85–90 or KOOS subscales near normative values)
12. Psychological readiness and confidence — patient reports readiness to return
13. Surgeon agreement

ⓘNOTE ON RETURN-TO-ACTIVITY TIMELINE

Return to activity is criterion-based. Athletic series commonly report return to pre-injury activity at roughly 7–9 weeks after partial meniscectomy, and many patients return within 4–12 weeks, though some require longer. Low-impact activity and desk work often resume within 1–4 weeks and manual labor around 2–6 weeks, depending on job demands. Progression is typically slower after lateral resection, with larger resections, degenerative changes or persistent pain. Time is a checkpoint, not a clearance — do not release on the calendar alone.

Outcome Measures

Measure	Assessment Tool	Benchmark / Target	Phase
Effusion	Modified stroke test / circumference	Trace or none before progression	All phases
Knee ROM	Goniometry	Symmetric to contralateral limb	Phases 1–2
Quadriceps / hamstring strength	Handheld dynamometry or isokinetic testing	≥ 80% LSI (run); ≥ 90% LSI (sport)	Phases 3–4
Single-leg hop tests	Single, triple, crossover, 6-m timed hop	≥ 90% LSI at clearance	Phase 4

Dynamic balance	Y-Balance Test (anterior reach)	≤ 4 cm asymmetry	Phases 3–4
Landing mechanics	LESS	< 5 errors before plyometric progression	Phase 4
Functional movement	Single-leg squat / lateral step-down	Good frontal-plane control	Phases 2–4
Patient-reported outcome	IKDC, KOOS, Tegner	Approaching normative values; Tegner at or near pre-injury level	Phases 3–4

[1] Rehabilitation after meniscectomy should be criterion-based, with immediate WBAT, early full ROM, quadriceps strengthening, neuromuscular control, open- and closed-chain exercise, and return to activity once milestones are achieved. *Pujol N, et al. The Formal EU-US Meniscus Rehabilitation 2024 Consensus (ESSKA-AOSSM-AASPT), Part I. IJSPT 2025;20(6):918–930.*
[2] Return to sport after meniscus surgery should be both criterion- and time-based; patient-reported outcomes combined with performance-based measures are recommended to evaluate rehabilitation. *Prill R, et al. EU-US Meniscus Rehabilitation 2024 Consensus, Part II. IJSPT 2025;20(7):1097–1106.*
[3] Athletes return to pre-injury activity about 7–9 weeks after partial meniscectomy on average. *Lee YS, et al. Return to sports after athletes undergo meniscal surgery: a systematic review. Clin J Sport Med 2019.*
[4] Return-to-run and return-to-sport criteria commonly include full ROM, no pain or effusion, and strength deficits ≤ 30% for running and ≤ 15% for sport, plus balance and neuromuscular testing. *Schwach M, et al. Return-to-sport criteria after isolated meniscus suture: scoping review. Orthop Traumatol Surg Res 2023 (applied here by extrapolation).*
[5] Home-based and supervised rehabilitation produce comparable outcomes after meniscectomy. *Nutarelli S, et al. JAMA Netw Open 2021;4(5):e2111582.*
[6] Phased, criterion-based meniscectomy protocols (WBAT, early ROM, running at full ROM with no effusion and adequate strength). *Massachusetts General Brigham Sports Medicine meniscectomy protocol; Poboży T, partial meniscectomy protocol (2026).*

This protocol is a general clinical guideline for isolated arthroscopic partial meniscectomy. Evidence quality for meniscectomy rehabilitation is low to moderate and largely consensus-based; individualize based on surgical findings, extent of resection, tear location, cartilage status, patient age, activity level and surgeon direction. Not for use after meniscal repair, root repair, or concomitant ligament or cartilage procedures. Austin V Stone MD PhD | austinstonemd.com