

Achilles Tendon Repair

Physical Therapy Protocol · Early Functional Rehabilitation

Modeled on the Mass General Brigham Achilles rupture repair protocol. Early protected weight bearing and early functional rehabilitation are supported by the AOFAS position statement (2024): protocols beginning within 2-3 weeks improve ATRS scores, limb symmetry, and heel-rise work without increasing re-rupture.



AT A GLANCE

TIMELINE	6-9+ months to full sport; boot with heel wedges weeks 0-8, sneaker with heel lift weeks 9-12
WEIGHT BEARING	NWB in splint/boot weeks 0-3; PWB from week 4 starting at 25% body weight, advancing ~25% per week; FWB in boot without crutches by week 8
KEY MILESTONES	DF to neutral only until boot weaning; wedges removed one per week (weeks 5-7); standing heel-raise progression from ~weeks 7-8; heel-rise >90% of uninvolved side before return-to-run
RETURN TO ACTIVITY	Running program when functional testing shows >=80% symmetry (typically 5-6+ months); return to sport 6+ months with >=90% LSI, completed run progression, and MD clearance

KEY PRECAUTIONS

- Do not dorsiflex the ankle past 0 deg (neutral) during the early phases; no passive calf stretching in any position until 6+ months, then gentle gastroc/soleus stretching only.
- Avoid over-elongation of the repair throughout: no aggressive joint mobilization into DF, and no instrument-assisted soft tissue mobilization directly over the tendon before 16 weeks.
- Progress more conservatively with tendon augmentation, re-rupture, chronic tendinosis, obesity, advanced age, or steroid exposure.
- Contact the surgeon for fever, wound drainage, calf pain suspicious for DVT, or uncontrolled pain.

PHASED REHABILITATION

PHASE 1 — PROTECTION & PROXIMAL CONDITIONING		Weeks 0-3
GOALS	- Protect the repair - Edema and pain control - Maintain proximal strength	
INTERVENTIONS	- NWB on crutches in splint or boot with heel wedges; elevation and edema management - Quad sets, straight leg raises, hip abduction, prone hamstring curls - Core bracing program; upper body conditioning - No ankle DF beyond resting plantarflexed position; no stretching	
CRITERIA TO ADVANCE	- Pain <5/10 - Incision healing without complication - Independent with NWB precautions	

PHASE 2 — PROTECTED WEIGHT BEARING & EARLY MOTION		Weeks 4-6
GOALS	- Graded weight bearing in boot - Restore PF/inversion/eversion ROM; DF to neutral only	
INTERVENTIONS	- PWB beginning at 25% body weight, advancing ~25% per week in boot - Remove one heel wedge at week 5 and another at week 6 (per surgeon) - Ankle pumps and circles within limits; seated heel slides to neutral DF only - Seated heel raises, arch doming, toe intrinsic work 4-way ankle resistance band work (respecting DF-to-neutral limit)	
CRITERIA TO ADVANCE	- Pain <3/10 and minimal swelling - Full PF, inversion, and eversion ROM - DF to neutral - Tolerating progressive WB without symptom flare	

PHASE 3 — FULL WEIGHT BEARING & BOOT WEANING		Weeks 7-12
GOALS	- FWB and normalized gait out of boot - Initiate calf raise progression - Transition to sneaker with heel lift	
INTERVENTIONS	- Week 7: remove final wedge, FWB with one crutch as needed; week 8: FWB in boot without crutches - Weeks 9-10: transition to supportive sneaker with 1 cm heel lift; weeks 11-12: wean heel lift - Standing calf raise progression, bilateral toward unilateral - Lunges, bridges, hip machine work; stationary bike - Gait retraining for symmetric step length and push-off	
CRITERIA TO ADVANCE	- Normalized gait in sneaker - No pain or swelling after exercise - Symmetric non-DF ROM; DF gradually normalizing without stretch	

PHASE 4 — STRENGTHENING & POWER DEVELOPMENT		Months 3-6
GOALS	- Restore calf strength and endurance - Introduce eccentric loading and beginner plyometrics	
INTERVENTIONS	- Eccentric calf raises; single-leg heel raise progression with load - Squat progression to single-leg variants; step-downs - Beginner plyometrics: rebounding heel raises, bilateral hopping in place - Low-impact conditioning: bike, elliptical, pool once cleared	
CRITERIA TO ADVANCE	- Standing heel-rise test >90% of the uninvolved limb - No swelling after 30 minutes of fast walking - Achilles Tendon Rupture Score (ATRS) and psychological readiness assessed	

PHASE 5 — RETURN TO RUNNING & SPORT		Months 6+
GOALS	- Complete return-to-run progression - Sport-specific agility and plyometrics - Full clearance	
INTERVENTIONS	- Walk/jog intervals over ~3 weeks, then continuous running built from 20 to 60 minutes over ~8 weeks - Agility and plyometric program: anterior, then lateral, then multi-planar progressions - Gentle gastrocnemius and soleus stretching may begin - Sport-specific training and conditioning	
CRITERIA TO ADVANCE	- Functional testing $\geq 80\%$ symmetry to start running; $\geq 90\%$ LSI for return to sport - Running program completed without pain or swelling - ATRS and psychological readiness satisfactory - Clearance from MD	

GUIDING PRINCIPLES

This protocol follows criterion-based progression over rigid time-based advancement; phased rehabilitation balancing tissue healing with controlled stress application; objective milestones (ROM, strength LSI, functional testing) to guide phase transitions; individualization based on surgical findings, tissue quality, and patient factors; and ongoing surgeon–therapist communication throughout recovery.

REFERENCES

- Mass General Brigham Sports Medicine. Rehabilitation Protocol for Achilles Rupture Repair. <https://www.massgeneral.org/assets/mgh/pdf/orthopaedics/sports-medicine/physical-therapy/rehabilitation-protocol-for-achilles-tendon-repair.pdf>
- American Orthopaedic Foot & Ankle Society. Position Statement: Management of Acute Achilles Tendon Ruptures. November 2024. https://www.aofas.org/docs/default-source/research-and-policy/position-statements/positionstatement_acuteachillesruptures_nov2024.pdf
- Chiodo CP, Glazebrook M, Bluman EM, et al. AAOS Clinical Practice Guideline: Diagnosis and Treatment of Acute Achilles Tendon Rupture. J Am Acad Orthop Surg. 2010;18(8):503-510.

For clinical use by licensed physical therapists treating patients of Robert Pettit, MD. This document is a rehabilitation guideline, not a substitute for clinical judgment. Progression must be individualized based on intraoperative findings, tissue quality, and patient response. Scan the QR code for the current version of this protocol.