



**Dr. Brandon Scharer**  
**Achilles Tendon Repair Protocol**

\* Actual timelines may vary per physician instruction\*

**Phase 1 – Maximum Protection Phase (0-4 weeks)**

**Goals for Phase 1**

- Protect integrity of repair
- Minimize effusion
- ROM per guidelines listed

**Precautions**

- No ankle PROM/AROM

**Immobilization/Weight Bearing**

- Immobilization in post-op boot with possible heel wedge vs cast patient dependent
- Non-weight bearing for 2 weeks

**Manual Therapy**

- Manual soft tissue
- Lymphatic massage

**Strengthening**

- Quadriceps, glute, and hamstring setting
- Hip strengthening
- **0-4 weeks:** Multi-plane OKC SLR, etc.

**Range of Motion**

- **0-2 weeks:** No ankle PROM/AROM
- **2-4 weeks:** DF limited to 0° AROM; PF PROM only, not limited

**Modalities**

- Vaso pneumatic compression for edema management 2-3x/week (15-20 min)
- Cryotherapy at home, 3x/day for 20 minutes each with ankle elevated above heart



## Phase 2 – Passive/Active Range of Motion Phase (4-6 weeks)

### Goals for Phase 2

- Begin Physical Therapy
- Protect integrity of repair
- Minimize effusion
- ROM per guidelines listed
- Scar tissue mobility

### Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

### Immobilization/Weight Bearing

- Slow progression back to full weight bearing in boot, with body weight percentage increasing by 25% every 3-4 days if patient has controlled pain and controlled effusion
- NWB when not wearing walking boot (bathing, changing attire, etc.)
- PWB with supervision at therapy and while wearing soft ankle brace

### Boot

- **4-6 weeks:** Walking boot to be worn at all times, with the exception for when awake and icing with elevation in a sitting position

### Range of Motion

- **4-6 weeks:** Begin DF AROM to 5° with knee straight, 10° with knee flexed

### Manual Therapy

- Scar massage when incisions closed
- Manual soft tissue techniques for lower extremity musculature
- Joint mobilization to talocrural joint (Grades I-III)

### Strengthening

- **4-6 weeks:** Begin PF AROM to 5° with knee straight, 10° with knee flexed
- Sub-maximal isometrics inversion and eversion
- Stationary bike in boot
- Limited ankle and foot strengthening (towel crunches, marble pick-ups, DF/PF light band strengthening, etc.)
- Lower Extremity Strengthening Program (in boot)
- Hip strengthening (continue OKC hip strengthening)
- Quad strengthening (quad sets, leg-press, wall squats, etc.)
- Hamstring strengthening (prone hamstring curls, physio-ball curls, etc.)
- Initiate core strengthening

### Aquatics

- Initiate aquatic therapy program when incisions are closed
  - No kicking in pool for 10 weeks

### Modalities

- Vaso pneumatic compression for edema management 2-3x/week (15-20 min)
- Cryotherapy at home, 3x/day for 20 minutes each with ankle elevated above heart



## Phase 3 – Progressive Stretching and Early Strengthening (6-8 weeks)

### Goals for Phase 3

- Protect integrity of repair
- ROM per guidelines listed
- FWB in boot
- Strengthening of ankle/calf musculature

### Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

### Range of Motion

- DF AROM: Limit to 10° with knee straight and 20° with knee flexed
- PF PROM: Unlimited, initiate isometrics

### Boot

- **6-8 weeks:** Reduce one heel wedge from boot per week

### Manual Therapy

- Restore flexibility – hamstrings, quadriceps
- Begin light terminal stretching in non-weight bearing by week 8
- Joint mobilization to talocrural joint (Grade I-IV)

### Strengthening

- Stationary bike in boot
- Initiate resisted dorsiflexion, inversion, and eversion strengthening
- Continue resisted NWB plantar flexion strengthening
- Lower extremity strengthening (in boot)
- Core strengthening

### Modalities

- Cryotherapy after activity



## Phase 4 – Terminal Stretching and Progressive Strengthening (8-12 weeks)

### Goals for Phase 4

- Gradually wean out of boot over a 7-10 day period
- Normalize gait

### Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

### Weight Bearing/Ambulation

- Use a heel wedge in a tennis shoe or a boot/shoe with a heel to ease transition

### Strengthening

- 8-10 weeks
  - Stationary bike
  - Initiate a light gastrocnemius/soleus stretch in a weight bearing position
  - Continue with multi-plane ankle stretching
  - Normalize gait
  - Begin bilateral heel raises off of the floor progressing to off of a step as tolerated
- 10-12 weeks
  - Advance PF strengthening to unilateral as tolerated (single leg calf raises, single leg squats, step-up progression, multi-directional lunges)
  - Initiate gastroc/soleus strengthening in gym (eccentric leg press)

### Aquatics

- **10-12 weeks:** Begin treadmill walking and/or elliptical with progression in intensity as tolerated

### Neuromuscular Control

- **8-10 weeks:** Begin unilateral proprioceptive training

### Modalities

- Cryotherapy after activity



## Phase 5 – Progressive Strengthening and Return to Function (3-6 months)

### Goals for Phase 5

- Return to function

### Strengthening

- Continue to increase intensity with progressive resisted exercises
- Increase intensity with cardiovascular program
- May begin cycling outdoors
- Begin multi-directional resisted cord program (side stepping, forward, backward, grapevine)
- Initiate impact activities
  - **12+ weeks:** Initiation to impact exercise, sub-maximal bodyweight progressing to maximal (pool, GTS, plyo-press, AlterG), sagittal plane jogging only
  - **14+ weeks:** Multi-directional agility drills, cutting, pivoting, and plyometrics
- Continue unilateral gym strengthening program (single leg calf raises, single leg squats, eccentric leg press, step-up progression, multi-directional directional lunges)
- Core strengthening

### Aquatics

- Begin pool running program progressing as tolerated to dry land running

### Neuromuscular Control

- Advanced proprioception on un-stable surfaces with perturbations and/or dual tasking, add sport specific balance tasks as able

### Modalities

- Cryotherapy after activity

### Return to Function Testing (6 months)

- Follow-up examination with the physician for return to sport
- Return to function testing per MD approval:
  - Criteria: Pain-free, full ROM, minimal joint effusion, 5/5 MMT strength, jump/hop testing at 90% compared to uninvolved, adequate ankle control with sport and/or work specific tasks

This protocol was reviewed and updated by Dr. Brandon Scharer, Sarah Burton, NP and Katelyn Peterson, PT on 3/5/2025.

## References:

1. Bevoni, R. et al. Long term results of acute Achilles repair with triple-bundle technique and early rehabilitation protocol. *Injury, Int J. Care Injured*. 2014; 45:1268-1274.
2. Brumann, Mareen. Accelerated rehabilitation following Achilles tendon repair after acute rupture – Development of an evidence-based treatment protocol. *Injury*. 2014; 1-9.
3. Doral, Mahmut Nedim. What is the effect of the early weight-bearing mobilization without using any support after endoscopy-assisted Achilles tendon. *Knee Surg Sports Traumatol Arthrosc*. 2013; 21: 1378-1384.
4. Groetelaers, Rene P.T.G.C. et al. Functional Treatment or Cast Immobilization After Minimally Invasive Repair of an Acute Achilles Tendon Rupture: Prospective Randomized Trial. *Foot & Ankle International*. September 2014; 35(8) 771-778.
5. Huang, Jiazhang et al. Rehabilitation Regimen After Surgical Treatment of Acute Achilles Tendon Ruptures: A Systematic Review With Meta-analysis. *The American Journal of Sports Medicine*. May 2014; 1-9.
6. Kearney, Rebecca S. et al. A systematic review of patient-reported outcome measures used to assess Achilles tendon rupture management: What's being used and should we be using it? *Br J Sports Med*. 2012; 46:1102-1109.
7. Majewski, M. et al. Postoperative rehabilitation after percutaneous Achilles tendon repair: Early functional therapy versus cast immobilization. *Disability and Rehabilitation*. 2008; 30(20-22):1726-1732.
8. Porter, Mark D. et al. Randomized controlled trial of accelerated rehabilitation versus standard protocol following surgical repair of ruptured Achilles tendon. *ANZ J Surg*. 2014; 1-5.
9. Olsson, Nicklas, et al. Predictors of Clinical Outcomes After Acute Achilles Tendon Ruptures. *The American Journal of Sports Medicine*. 2014; 42(6)1448-1455.
10. Suchak, Amar A. et al. Postoperative Rehabilitation Protocols for Achilles Tendon Ruptures. *Clinical Orthopedics and Related Research*. April 2006; 445:216-221.