



## Achilles Tendon Repair Protocol

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### Phase I

#### 0 – 2 weeks

1. Cast x 2 weeks
2. Crutches, non-weight bearing (NWB) x 2 weeks
3. Wound protection
4. Edema reduction – ice, elevation and compression
  - a. Out of cast 2 weeks postop, places in boot
5. Recommended exercises (pain-free range)
  - a. Toe wiggles

**Goals:** Wound healing, edema reduction, ensure neurovascular integrity

#### 2-4 weeks

1. Placed in post-operative boot to 30° PF using heel lifts
2. PWB with boot and heel lifts
3. Continue ice (3x/day), rest and elevation
4. Range of motion (ROM) – begin active ROM
  - a. Alphabet
  - b. ankle pumps to 0° dorsiflexion (DF), pain-free range
  - c. Eversion, dorsiflexion, and inversion isometrics

**Goals:** Continued wound healing, improve mobility to 0° DF (pain-free range)

### Phase II

#### 4-6 weeks

1. At 4 wks may progress to one crutch
2. At 5 wks FWB with boot as tolerated
3. Icing prn
4. ROM
  - a. Bike with boot (half to full revolutions per tolerance, no resistance)
  - b. Continue active ROM, gentle stretching to 0 deg
5. Recommended exercises
  - a. Ant/post and med/lat weight shifts with upper extremity (UE) support in boot
  - b. Multi-directional straight leg raises (SLR)
  - c. Terminal knee extensions
  - d. Sub maximal eversion, DF and inversion T-band strengthening
  - e. Gentle Plantar flexion isometrics
  - f. Mini-squats – double leg: 25%-50% body weight (to 0° DF)

**Goals:** Improve ankle strength without exacerbation of symptoms, complete PWB exercises

without increase in pain

### 6-8 weeks

1. Continue to progress to full-weight bearing (FWB) in boot with 1-2 heel lifts per tolerance or at 6wks may progress to wearing shoe for weight bearing with 1-2 heel lifts
2. Scar mobilization
3. Icing prn
4. ROM
5. Stationary biking without boot
6. Seated towel stretches (to 0° DF)
7. Recommended exercises (without boot)
  - a. Seated multi-directional ankle T-band strengthening; initiate plantar flexion from 0° dorsiflexion
  - b. Progress SLRs
  - c. Multi-directional weight shifts
  - d. Seated heel raise
  - e. Bilateral LE heel raises 25-50% body weight to 0° DF (with boot)
  - f. Mini-squats – single leg: 25%-50% body weight (to 0° DF)
  - g. Leg extensions
  - h. Bridges
  - i. Mini-lunges with UE support for balance

**Goals:** Increased strength with exercise without pain, improved scar mobility, no reactive effusion, normalization of gait in boot without use of crutches

### 8 - 10 weeks

1. WBAT in shoe with no heel lift
2. Scar mobilization
3. Icing prn
4. ROM
  - a. Biking without boot
  - b. Seated or standing gastroc stretch
5. Recommended exercises (without boot)
  - a. Biking with light resistance
  - b. Seated heel raise with ankle weight on to of knee
  - c. Eccentric heel raise (up with two, down with affected side, 25-50%) – limit to 0° DF
  - d. Single-leg mini-squats: 50-75% body weight
  - e. Single-leg stance with upper-extremity support
  - f. Progress all NWB strengthening exercise
  - g. Lunges in boot without UE support

**Goals:** Normalization of gait without use of crutches, improved scar mobility, active ROM from 0°DF to full plantar flexion, no exacerbation with gains in multi-directional strength



### Phase III

#### 10-12 weeks

1. Continue gait training
2. Scar mobilization
3. ROM
  - a. standing gastroc and soleus stretches
  - b. Continue biking without shoe and progressive resistance
4. Recommended exercise
  - a. leg press
    - i. PWB with both LE (75-100% BW)
  - b. Bilateral eccentric heel raise (75-100% BW)
  - c. Lunges on stable surface
  - d. Treadmill walking
  - e. Leg extensions
  - f. Single-leg balance with perturbations (steamboats)
  - g. Bilateral LE heel raise with UE support at home

**Goals:** Equal weight distribution with exercise, increased tolerance with community ambulation, progression with controlled strengthening and balance activities, no graft attenuation

### Phase IV

#### 12-14 weeks

1. Gait training
2. Scar mobilization
3. ROM
  - a. Bike and stretching
4. Recommended Exercises - Progress strengthening on stable and unstable surfaces with emphasis on eccentric control of LE/hip/lumbosacral region
  - a. Bilateral LE mini-squats on BOSU
  - b. Bilateral LE Shuttle plyometrics (25-50% to 50-75% BW)
  - c. Hop downs (ensure appropriate landing mechanics)
  - d. Standing eccentric heel raises with only UE support for balance
  - e. Conditioning
    - i. Progression of TM walking

**Goals:** Reduce UE support with standing strengthening exercise, normalization of active and passive ROM, progression of conditioning

### Phase V

#### 3-6 months

1. ROM
  - a. Continuation of self-stretching
  - b. Joint mobilizations as needed

- c. Recommended exercises
  - i. Continued progression of strength/stability/balance exercise on stable and unstable surfaces
- d. Plyometrics
  - i. Single-leg shuttle plyometric
  - ii. Bilateral LE straight plane
  - iii. Bilateral LE diagonal plane
  - iv. Rotational
  - v. Multi-directional
- e. Resisted jogging in place with resistance in all planes Sports specific exercise/agility progression, emphasis on proper mechanics
- f. Walk to jog progression

Criteria to begin jogging

- 1. Hop 10 times on involved leg with good mechanics
  - 2. Audible symmetry with foot strike
  - 3. Normalized functional ROM
  - 4. Conditioning
    - Progress Stepper and walking progression
- Increase incline as strength and endurance improves

**Goals:** 80-100% plantar flexion isokinetic strength, normalization of movement without Achilles attenuation, completion of sports-specific exercise without exacerbation with or without functional bracing, no signs of excessive Achilles thickening