

**Achilles-Tendon Repair**  
**Post-operative Protocol****I. Phase I: Recovery (weeks 0-6)**

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- Immobilization Device:
    - I. **Weeks 0 to 2:** Splint in 20 degrees of PF
    - II. **Weeks 2 to 4:** Remove two heel lifts from rigid boot at three weeks post-operatively. Remove the remaining two heel lifts at four weeks post-operatively.
    - III. **Weeks 5 to 6:** Boot in neutral position worn during WB activities at six weeks.
  - Weight Bearing Status:
    - IV. **Weeks 0 to 2:** Non-weight bearing in splint
    - V. **Week 2 to 4:** TDWB in boot with crutch assistance
    - VI. **Week 5 to 6:** WBAT in boot
  - Exercises:
    - I. **Weeks 0-2:**
      1. *ROM: No ankle or foot ROM*
      2. *Strengthening: Hip and knee open-chain ROM and strengthening only within boot*
      3. *Cardiovascular activity: UBE*
    - II. **Weeks 2-4:**
      1. *ROM: Gentle PROM limiting DF to 0 degrees with knee flexed to 90, no passive Achilles stretching. No active PF:*
        - Joint mobilizations: talocrural; subtalar, for maintenance of accessory motions as needed. Continue mobilizations until associated motion has full AROM
        - Scar mobilization
      2. *Strengthening: No resisted EVERSION:*
        - Ankle AAROM limiting DF to 0 degrees
        - Isometrics of *uninvolved* muscles
      3. *Cardiovascular Activity: UBE*
    - III. **Weeks 5-6:**
      1. *ROM: A/PROM to tolerance, forefoot and hindfoot mobilizations:*
        - Gait training with boot to minimize deviations with discharge of crutches.
        - Manual passive stretching to DF; increase intensity with knee flexed, gentle with knee in extension.



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2. *Strengthening:*
  - Begin gentle stretches to calf/Achilles
  - Isometrics of uninvolved muscles
  - Begin Gait training in PT in athletic shoes with bilateral heel lifts at week 6
3. *Cardiovascular Activity:* Stationary bike within boot (remaining seated)

## **II. Phase II: Rehabilitation (weeks 7-12)**

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- Goals:
  1. Protect
- Boot/Device:
  - VII. **Weeks 7-8:** Can d/c boot at 8 weeks using shoe with heel lift
- Weight bearing status:
  - VIII. **Weeks 7-8:** Wean from boot to FWB
  - IX. **Weeks 9-12:** FWB
- Exercises:
  - I. **Weeks 7-8:**
    1. *ROM:* A/PROM to tolerance, **slowly progress DF ROM/calf stretches**, forefoot and hindfoot mobilizations
    2. *Strengthening:* Avoid aggressive eccentric loading to Achilles tendon
      - Begin stationary bike w/o boot for ROM
      - Begin foot/ankle strengthening: therabands, seated heels raises (or with < body weight) progressing to bilateral with body weight, then unilateral.
      - Begin bilateral standing proprioception progressing to unilateral: then progress from stable to unstable surfaces.
      - Progress to closed-chain proximal and LE strengthening, beginning with < body weight progressing to bilateral standing
    3. *Cardiovascular Activity:* Stationary biking, pool jogging, progressing to elliptical trainer
  - II. **Weeks 9-12:**
    1. *ROM:* A/PROM to tolerance, **slowly progress DF ROM/calf stretches**, forefoot and hindfoot mobilizations
    2. *Strengthening:*



- Progress heel raises from bilateral to unilateral with body weight
  - Begin sub-maximal closed-chain acceleration/deceleration exercises beginning with < body weight (e.g. shuttle, pilates)
3. *Cardiovascular Activity:* Elliptical trainer, treadmill walking with incline progression.

### III. Phase III: Restoration (weeks 13-16)

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- Boot/Device: none
- Weight bearing status: FWB
- Exercises:
  - I. **Weeks 13-16:**
    1. *ROM: Full ROM, mobilizations as needed*
      - Remove heel lifts from shoes
    2. *Progress strengthening:*
      - CKC, **progressing unilateral heel raises with body weight or greater** – gradually increasing DF range and resistance
      - **Continue low-impact acceleration/deceleration hops with < body weight** (e.g. shuttle, pilates, etc.) once pt is able to perform 3 sets of 15 repetitions of unilateral heel raises in standing.
    3. *Proprioception:* Unilateral standing with perturbations
    4. *Begin Alter-G Run Progression:*
      - Starting at 50-75% body weight and speed once pt is able to perform 3 sets of 15 repetitions of unilateral heel raises in standing with minimal to no heel/Achilles pain.
    5. *Cardiovascular Activity:* Alter-G treadmill running

### IV. Phase IV: Return to Play (weeks >17)

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- Boot/Device: none
- Weight bearing status: FWB
- Exercises:
  1. *ROM:*
  2. *Continue strengthening with sport-specific movement patterns and equipment*
    - Combined motions: adding resistance, speed, and complexity of patterns
  3. *Running progression:*



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- **Progress to standard treadmill running** once pt is able to perform Alter G running at 95% body weight and 75-90% speed with minimal to no heel/Achilles pain.
- Progress **dry land running to 75-100% intensity.**

4. *Proprioception/Agilities:*

- Progress acceleration/deceleration to submaximal **bilateral hops with body weight.** Progress from concentric to eccentric, bilateral to unilateral, from uniplanar to multiplanar.
- **Progress to linear dry-land running progression at 50-75% intensity** once pt is able to perform standard treadmill running at 85-90% intensity with minimal to no heel/Achilles pain.
- **Begin sub-maximal cutting (cone and ladder drills: box shuffles, typewriters, icky shuffles) at 50-75% speed** once pt is able to perform unilateral hops with body weight with minimal to no heel/Achilles pain.
- Progress unilateral **sport-specific agilities/cutting and hopping to 75-100% intensity.**

5. *Cardiovascular Activity:*

- Standard treadmill running progressing to dry land running, versaclimber.
- Running advancement is dependent on the return of balance, agility and the ability to run 2 miles at each level without pain or swelling.

- Return to field/court activities when functional testing criteria met