ACHILLES TENDON REPAIR CLINICAL PRACTICE GUIDELINE

Progression is time and criterion-based, dependent on soft tissue healing, patient demographics and clinician evaluation. Contact Ohio State Sports Medicine at 614-293-2385 if questions arise.

Background

Achilles tendon repair is performed after injury occurs to the Achilles tendon. The injury is often accompanied by an audible and palpable pop, with limited ability to push off of the injured limb. Repair is typically carried out within 2 weeks of the injury, and recovery is expected to take between 6 to 9 months, and return to athletics may take 9-12 months depending on the severity of injury and nature of sport.

Summary of Recommendations

Risk Factors	• Exceeding ROM goals • Age (30-50 years) • Male • Fluoroquinolone use
Corrective Interventions	• Modalities for pain & swelling • Patient education • Manual: PROM, AAROM, AROM to restore normal ROM per guidelines • Ther-ex and neuromuscular re-ed for posture, general strength and stability • Therapeutic activity for sport and work specific activity to progress/prepare to RTW/RTS
Precautions	• Recommend WB in protective device at post-op week 1 (level 1 evidence, strong) • Target neutral ankle weight bearing by post-op week 4-6
Outcome Testing	• FAAM
Manual therapy	• Recommend starting post-op week 1 PROM and soft issue mobilization • DF PROM to minimal stretch, DO NOT AGGRESSIVELY STRETCH • PF PROM as tolerated • Subtalar, midfoot and forefoot mobilizations as tolerated
Criteria for discharge	• **D/C boot for shoe**: After pt in neutral weight bearing, can wear shoe and able to walk without limp • **Return to running**: 5 x 25 single leg calf raises, 95% symmetry ROM (DF/PF), 95% symmetry calf circumference at 10 cm distal to tibial tubercle (Saxena 2011) • **Return to sports**: 90% symmetry SL hop testing (check current concepts course), 90% symmetry Y balance (anecdotal experience)

Phase I

Weeks 0-2
Protection

- Maintain post-operative splint
- Manual therapy: Accessory joints
- Gait: WBAT in splint starting post-op week 1, with crutches
  - 3 heel wedges
- Recommended exercises (pain-free)
  - Toe wiggles
  - Doming
  - Towel crunches
  - Ankle AROM/alphabets
- **Goal**: Reduce edema, ensure closure of incision, educate on DVT/thromboembolism, begin ambulation without crutches

Phase II

Weeks 2-6
Return to Walking

- Walker boot, begin weaning from heel lift (1 lift every 2 weeks as tolerated)
- Mobility: Active ROM up to 15° plantar flexion (PF) without boot)
- Initiate ankle strengthening in protected positioning

After 2 weeks	After 4 weeks
○ Isometrics all planes ○ Active plantar flexion with light t-band in up to 15° ○ Sitting heel raises – no weight bearing ○ 4 way straight leg raise ○ Bicycle for ankle ROM in boot ○ BAPS (seated →standing) as tolerated	○ Active ROM up to 10° PF without boot ○ 4 way t-band, PF up to 10° ○ Seated heel raise with light weight ○ Initiate balance/proprioception training on stable surface once pt can comfortably weight bear in neutral ○ Leg press, light weight

- May initiate soft tissue mobilization after adequate wound closure
- Pool therapy may begin at post-op week 4 (if wound closed and weight bear in ankle neutral in gravity minimized position)

Phase III

Weeks 6-12
Strength Progression

- Wean off boot, initiate walking in shoe/neutral heel position
  - Use of heel wedges (≤2) in shoe PRN
    - Start at number of wedges where no pain is felt and patient demonstrates proper gait mechanics

	Normal Gait	*Abnormal Gait*
Pain free weight bearing in shoe	*No heel life, proceed with rehab*	*No heel lift, add gait training*
Painful weight bearing in shoe	*Add heel lift, wean out with rehab, ensure normalized gait*	*Add heel lift, gait training*

- Initiate weight bearing strengthening exercises
- Exercise progression:
  - Calf raise progression: shuttle 2 leg in neutral→shuttle single leg in neutral→shuttle 2 leg in DF→shuttle single leg in DF→standing 2 leg calf raise in neutral→neutral 2 up 1 down→single leg (Mullaney, 2011)
  - Continue BAPS for ankle ROM
  - Closed chain hip/knee strengthening per pt tolerance
  - Repetition progression for calf raises (progress daily if pain free) – (Saxena, 2011)
    3 x 10 → 4 x 10 → 5 x 10 → 3 x 15 → 4 x 15 → 5 x 15 →
    3 x 20 → 4 x 20 → 5 x 20 → 3 x 25 → 4 x 25 → 5 x 25
  - Initiate balance training on unstable surfaces
  - Initiate heel tap

Phase IV

>12 Weeks
Return to Sport/Activity

- **Criteria for initiating return to running (straight plane jogging)**
  - 5 x 25 single leg calf raises
  - Normal landing mechanics
  - Complete 20 single leg squats without compensation
  - 95% symmetry ROM (DF/PF)
  - 95% symmetry calf circumference at 10 cm distal to tibial tubercle (Saxena, 2011)
- **Return to Sport**
  - 90% symmetry in all SL hop testing
  - 90% symmetry Y balance
- Initiate hop training when cleared to return to jogging for landing mechanics
- **Emphasize strengthening at end range PF**
- Continuation of self-stretching
- Joint mobilizations as needed
- Continued progression of strength/stability/balance exercise on stable and unstable surfaces to correct altered mechanics
- Plyometrics progression: Single-leg shuttle plyometrics, B LE straight-plane, B LE diagonal-plane, Rotational, Multi-directional, tuck jumps
- Resisted jogging in place with resistance in all planes
- Sports specific exercise/agility progression, emphasis on proper mechanics

Authors: Lucas VanEtten, JJ Kuczynski
Reviewers: Chelseana Davis, John DeWitt
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