# Achilles Tendon Repair

GUIDELINE REAHB SERVICES

**Purpose:**
This guideline is designed to return the individual to their full activities as quickly and safely as possible, following an Achilles Tendon Repair. Modifications to this guideline may be necessary dependent on physician-specific instruction or other procedures performed. This evidence-based Achilles Tendon Repair Guideline is criterion-based; timeframes and visits in each phase will vary depending on many factors. The therapist may modify the program appropriately depending on the individual's goals for activity following an Achilles Tendon Repair.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post-operative care based on exam/treatment findings, individual progress, and/or the presence of concomitant procedures or post-operative complications. If the clinician should have questions regarding post-operative progression, they should contact the referring physician.

**Precautions:**
- Soft tissue healing restraints
  - Example: plantarflexion motion passive only, limit to neutral dorsiflexion for 6 weeks
- Patient is NWB for 4-6 weeks, and the likely progression is as follows:
  - 0-2 weeks will be in splint
  - 2-4 will be in CAM boot at 30°
  - 4-6 weeks progress CAM boot by 10° per week until neutral dorsiflexion is obtained
  - Begin weight bearing as tolerated once patient is in neutral, likely at 6 weeks
  - DC CAM boot at 8 weeks
- Monitor incision for signs/symptoms of infection
- If patient has a concomitant injury/repair, treatment may vary-consult with physician

| PHASE | SUGGESTED INTERVENTIONS | MILESTONES FOR PROGRESSION |
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| **Phase I**<br>Weeks 0-2 | **Precautions:**<br>• Pt in splint and is NWB<br>• Pt may need crutch training or taught how to utilize kneeling scooter<br><br>**Therapy:**<br>• Multi-hip exercise in supine and side-lying<br>— Progress to resisted/weighted as needed<br>• AROM of involved knee<br>— LAQ<br>— SAQ<br>— Standing knee flexion<br>— Prone hamstring curls | **Goals:**<br>• Skin healing<br>• Edema control<br>• Protection of surgical site<br>• Maintain strength of hip, knee and core |

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| | • Abdominal bracing progression<br>• Supine passive hamstring stretch (in boot/splint)<br>• Modalities for pain & edema control | |
| **Phase II**<br>Weeks 2-4 | **Precautions:**<br>• Pt will progress from splint to CAM boot locked at 30° and remains NWB<br>• No passive heel cord stretching<br><br>**Therapy:**<br>• Continue from Phase I exercises and advance as able<br>• Isometrics as tolerated, into dorsiflexion, inversion, and eversion<br>— Light plantarflexion isometrics<br>• Active ankle plantarflexion only<br>• Curl toes downward only | **Goals:**<br>• Healing<br>• Pain & edema control<br><br>**Criteria to Advance:**<br>• Healing appropriate for stage to move on |
| **Phase III**<br>Weeks 4-6 | **Precautions:**<br>• Do not dorsiflex ankle past 0°<br>• No IASTM directly on tendon until at least 16 weeks post-op<br><br>**Therapy:**<br>• Pt will progress CAM boot into increased dorsiflexion by 10°/week<br>— Week 4: 20° plantarflexion<br>— Week 5: 10° plantarflexion<br>— Week 6: 0° plantarflexion<br>• Continue exercises from Phase II<br>• Stationary bike, pressure on heel only in CAM boot<br>• Initiate ankle PROM, AAROM & AROM<br>— Ankle pumps (not past 0°/neutral)<br>— Ankle circles (not past 0°/neutral)<br>— Ankle inversion/eversion<br>— Seated heel slides for ankle DF ROM (not past 0°/neutral)<br>— Once able to sit with foot flat on the floor with ankle close to neutral DF:<br>⇒ Seated heel raises<br>⇒ Seated arch doming<br>⇒ Exercises for foot intrinsic muscles to minimize atrophy in boot<br>⇒ Joint position re-training<br>• Initiate great toe extension and flexion stretching (by pt or therapist) | **Goals:**<br>• Obtain neutral dorsiflexion<br>• No pain<br><br>**Criteria to Advance:**<br>• Neutral dorsiflexion<br>• Pain control<br>• Edema managed<br>• Independent HEP |

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| | — Do not exceed neutral DF when performing this stretch<br>• May begin gentle scar mobilization once incision is healed | |
| **Phase IV**<br>Weeks 6-8 | **Precautions:**<br>• Begin WB as tolerated in CAM boot in neutral dorsiflexion<br>• May DC CAM boot at night at 8 weeks post op<br>• DF ROM no longer restricted but continue to gently progress<br><br>**Therapy:**<br>• Initiate seated soleus stretching and NWB gastroc stretching as needed for ROM<br>• Isotonic ankle resists for ankle DF/Inversion/Eversion<br>• Continue to progress isometric PF into isotonic contraction as tolerated<br>• Gentle stretching of proximal LE muscle groups as indicated<br>— Quads, hamstrings, hip flexor, piriformis, etc.<br>• Ankle/foot mobilizations as indicated<br>— Talocrural, subtalar, midfoot, MTPs<br>• Continue with Phase I-III interventions as indicated | **Goals:**<br>• Full WB in CAM boot<br>• No pain<br><br>**Criteria to Advance:**<br>• Achieve normal ROM in all planes with exception of DF<br>• Achieve normal gait mechanics in CAM boot<br><br>**Avoid:**<br>• Over-elongation of the Achilles when stretching the calf in NWB or WB positions |
| **Phase V**<br>Weeks 8-14 | **Precautions:**<br>• Educate pt that this is time for highest risk of re-ruptures<br>— Avoid plantarflexion combined with extreme dorsiflexion<br>— Do not attempt eccentric exercises<br>— Avoid ballistic motions (running, moderate plyometrics)<br><br>**Therapy:**<br>• Begin normal shoe wear as tolerated, utilizing heel wedges as needed<br>• Suggestion for progression of time out of boot:<br>— Week 1: 1 hour out in AM/1 hour out in PM<br>— Week 2: 2 hour out in AM/2 hour out in PM<br>— Week 3: 4 hour out in AM/4 hour out in PM<br>— Week 4: out of boot completely<br>• Lower limb strength work, progressing from seated heel raise, bilateral standing heel raise, to unilateral standing heel raise.<br>• Standing calf raise progression based on tolerance/performance:<br>— B standing heel raises – 25% body weight through involved leg<br>— B standing heel raises – 50% equal weight through both legs<br>— B standing heel raises – 75% body weight through involved leg | **Goals:**<br>• Full-time in regular footwear<br>• No pain<br>• Full ROM during standing bilateral concentric calf raise with equal WB through both legs<br><br>**Criteria to Advance:**<br>• Full AROM compared to non-involved ankle<br>• Able to perform 75% height with involved unilateral heel raise with non-involved side<br>• Normalize gait in supportive sneakers/regular footwear<br><br>**Avoid:**<br>• Over-elongation of the Achilles |

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| | — Eccentric calf raises (B calf raises, unilateral lower on involved)<br>— Unilateral heel raises<br>• Ankle stability exercises<br>• Begin closed kinetic chain exercises within tolerance at Week 10<br>• Balance:<br>— Double limb standing balance utilizing uneven surface (wobble board)<br>— Single leg balance – progress to uneven surface, including perturbation training<br>• May begin elliptical trainer at Week 12 as tolerated | |
| **Phase VI**<br>Weeks 14-24 | **Therapy:**<br>• Educate pt that may take 12-18 months to return to full activity to prevent re-injury<br>• Return to Run Criteria:<br>— 4-6 months post-op<br>— Single leg stance >60 seconds<br>— >80% single leg squat depth (can push into dorsiflexion)<br>— 20 single leg heel raises<br>⇒ Expecting slight lag with heel lift, as typically 75% strength is at least expected after surgery<br>• Can begin jogging in Alter-G at 4 months post-op<br>— Begin at 50% WB in Alter-G, adding 10% every 4-7 days as tolerated<br>• Begin jogging on flat ground at 5 months post-op<br>• Full closed kinetic chain program<br>• May initiate eccentrics at month 5<br>• Begin with prone manual resisted exercises, progress to double leg standing with lowering to floor<br>• May initiate gentle IASTM directly to the tendon beginning at 16 weeks<br>• Seated calf machine or wall sit with B calf raises<br>• Plyometrics:<br>— Once able to perform 3 sets of 15 B standing heel raises with equal WB, progress to rebounding heel raises B stance<br>— Once able to perform 3 sets of 15 unilateral heel raises, progress to rebounding unilateral heel raises<br>— Initiate hopping in place B stance and progress as able to unilateral hopping in place | **Goals:**<br>• Achieve >90% strength of non-involved ankle<br>• Calf girth within ½ cm of non-involved ankle<br>• Good tolerance of beginner-level plyometrics |

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| **Phase VII**<br>Weeks 24+ | **Therapy:**<br>• Educate pt that may take 12-18 months to return to full activity to prevent re-injury<br>• Agility ladder<br>• Single leg hopping and higher level plyometric activity<br>• Begin walk/jog return to long distance running progression<br>• Progress weight in closed kinetic chain program<br>• Progress to sport specific training | **Return to Sport:**<br>• Horizontal single leg hop x3 is 75% of non-involved leg<br>• Vertical hop is 75% of non-involved leg<br>• Single leg heel raises<br>• Spring with toe off phase of gait<br>• Pass LE RTS criteria |