This rehabilitation program 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; time frames 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, i.e., plantarflexion motion passive only. Limit to neutral dorsiflexion for 6 weeks.
* Patient is NWB for 4-6 weeks. Likely progression is as follows:
	+ 0-2 weeks will be in splint
	+ 2-4 will be in CAM boot at 30 degrees
	+ 4-6 weeks progress CAM boot by 10 degrees per week until neutral dorsiflexion is obtained
	+ Begin weight bearing as tolerated once patient is in neutral, likely at 6 weeks.
	+ DC CAM boot @ 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** | **Goals/Milestones for Progression** |
| **Phase I** *week 0-2* | *Therapy:** Patient in splint and is NWB.
* Patient may need crutch training or taught how to utilize kneeling scooter.
* Multi-hip exercise in supine and side lying. Progress to resisted/weighted as needed
* AROM of involved knee – LAQ, SAQ, standing knee flexion, prone hamstring curls
* Supine passive hamstring stretch (in boot/splint)
* Modalities for pain and edema control
 | *Goals of Phase:*1. Skin healing
2. Edema control
3. Protection of surgical site
4. Maintain strength of hip, knee, & core
 |
| **Phase II***Post-op weeks 2-4* | *Therapy:** Patient will progress from splint to CAM boot locked at 30 degrees. Patient remains NWB.
* Exercises: continue from Phase I exercises and advance as able.
* Isometrics as tolerated into dorsiflexion, inversion, and eversion. Light plantarflexion isometrics.
 | *Goals of Phase:*1. Healing
2. Pain and edema control

*Criteria to Advance to Next Phase:* 1. Healing appropriate for stage to move on.
 |
| **Phase III***Weeks 4-6* | *Therapy:** Patient will progress CAM boot into increased dorsiflexion by 10 degrees per week
	+ Week 4: 20 degrees plantarflexion
	+ Week 5: 10 degrees plantarflexion
	+ Week 6: 0 degrees plantarflexion
* Continue exercises from phase II
* Stationary bike, pressure on heel only in CAM boot.
* Initiate ankle PROM, AAROM, & AROM – **DO NOT dorsiflex ankle past 0 degrees**
	+ Ankle pumps (not past 0 degrees/neutral)
	+ Ankle circles (not past 0 degrees/neutral)
	+ Ankle inversion/eversion
	+ Seated heel slides for ankle DF ROM (not past 0 degrees/neutral)
	+ Once able to sit with foot flat on the floor with ankle close to neutral DF:
		- Seated heel raises
		- Seated arch doming
		- Exercises for foot intrinsic muscles to minimize atrophy while in boot
		- Joint position re-training
* Initiate great toe extension and flexion stretching (by pt or therapist) **– DO NOT exceed neutral DF when performing this stretch**
* May begin gentle scar mobilization once incision is healed – **NO IASTM directly on tendon until at least 16 weeks post-op.**
 | *Goals of Phase:* 1. Obtain neutral dorsiflexion
2. No pain

*Criteria to Advance to Next Phase:* 1. Neutral Dorsiflexion
2. Pain control
3. Edema managed
4. Independent HEP
 |
| **Phase III***Weeks 6-8* | *Therapy:** Begin weight bearing as tolerated in CAM boot in neutral dorsiflexion.
* Initiate seated soleus stretching and NWB gastroc stretching as needed for ROM. **DF ROM no longer restricted but continue to gently progress**
* Isotonic ankle resists for ankle DF/Inversion/Eversion
* Continue to progress isometric PF into isotonic contraction as tolerated.
* Gentle stretching of proximal LE muscle groups as indicated (quads, hamstrings, hip flexor, piriformis, etc.)
* Ankle/foot mobilizations (talocrural, subtalar, midfoot, MTPs) as indicated
* Continue with Phase I-II interventions as indicated

\*May D/C CAM boot at night at 8 weeks post op. | *Goals of Phase:* 1. Full WB in CAM boot
2. No pain

*Criteria to Advance to Next Phase:* 1. Achieve normal ROM into all planes with exception of DF.
2. Achieve normal gait mechanics in CAM boot.

Avoid:1. Over-elongation of the Achilles when stretching the calf in NWB or weight bearing positions
 |
| **Phase IV***Weeks 8-14* | *Therapy:** Educate patient that this is time for highest risk of re-ruptures.
	+ Avoid plantarflexion combined with extreme dorsiflexion.
	+ Do NOT attempt eccentric exercises.
	+ Avoid ballistic motions (running, moderate plyometrics).
* Begin normal shoe wear as tolerated, utilizing heel wedges as needed.
* Suggestion for progression of time out of boot
	+ Week 1: 1 hour out in AM/1 hour out in PM
	+ Week 2: 2 hour out in AM/2 hour out in PM
	+ Week 3: 4 hour out in AM/4 hour out in PM
	+ Week 4: out of boot completely
* Lower limb strength work, progressing from seated heel raise, bilateral standing heel raise, to unilateral standing heel raise.
* Standing calf raise progression: (based on tolerance/performance and will extend into the later phases as well)
	+ Bilateral standing heel raises – 25% body weight through involved leg
	+ Bilateral standing heel raises – 50% equal weight through both legs
	+ Bilateral standing heel raises – 75% body weight through the involved leg
	+ Eccentric Calf raises (B calf raises, unilateral lower on involved)
	+ Unilateral heel raises
* Ankle stability exercises
* May begin closed kinetic chain exercises within tolerance at Week 10
* Balance: double limb standing balance utilizing uneven surface (wobble board); single leg balance – progress to uneven surface including perturbation training
* May begin elliptical trainer at Week 12 as tolerated
 | *Goals of Phase:* 1. Full time in regular footwear
2. No pain
3. Full ROM during standing bilateral concentric calf raise with equal weight bearing through both legs

*Criteria to Advance to Next Phase:* 1. Full AROM compared to non-involved ankle
2. Able to perform 75% height with involved unilateral heel raise with non-involved side.
3. Normalize gait in supportive sneakers/regular footwear

*Avoid:*1. Avoid over-elongation of the Achilles
 |
| **Phase V***Weeks 14-24* | *Therapy:** Educate patient that may take 12-18 months to return to full activity to prevent re-injury.
* Can begin jogging in alter G at 4 months post op.
	+ Begin at 50% WB in Alter G, adding 10% every 4-7 days as tolerated
* Begin jogging on flat ground at 5 months post op.
* Full closed kinetic chain program
* May initiate eccentrics at month 5
* Begin with prone manual resisted exs, progress to double leg standing with lowering to floor.
* If indicated, may initiate gentle IASTM directly to the tendon beginning at 16 weeks.
* Seated calf machine or wall sit with B calf raises
* Plyometrics:
	+ Once able to perform 3 sets of 15 of B standing heel raises with equal weight bearing progress to rebounding heel raises B stance.
	+ Once able to perform 3 sets of 15 unilateral heel raises progress to rebounding unilateral heel raises
	+ Next initiate hopping in place bilateral stance and progress as able to unilateral hopping in place.
 | *Goals of Phase and Criteria to Advance to Next Phase:* 1. Achieve >90% strength of non-involved ankle
2. Calf girth within 1/2cm of non-involved ankle
3. Good tolerance of beginner level plyometrics
 |
| **Phase VI***Weeks 24+* | *Therapy:** Educate patient that may take 12-18 months to return to full activity to prevent re-injury.
* Agility ladder
* Single leg hopping and higher level plyometric activity
* Begin walk/jog return to running progression
* Progress weight in closed kinetic chain program
* Progress to sport specific training
 | *Criteria to Return to Sport:* 1. Horizontal single leg hop x 3 is 75% of non-involved leg
2. Vertical hop is 75% of non-involved leg
3. Single leg heel raises
4. Sprint with toe off phase of gait
5. Pass LE RTS criteria
 |