

ACHILLES TENDON REPAIR REHABILITATION PROTOCOL

General Considerations:

- Time frames mentioned in this protocol should be considered approximate with actual progression based on clinical presentation and physician direction.
- Patient usually NWB for 3-4 weeks
- PT usually begins 4 weeks post-op
- Monitor the incision scar and tendon scar for mobility, implement regular soft tissue mobilization to avoid fibrosis
- No running, jumping or ballistic movements for 6 months

Phase I (1-3 weeks):

Week 1:

- Total non-weight-bearing
- Instruction in protection of the surgical site
- Exercise: Range of Motion:
 - Out of splint active range of motion Plantar flexion/dorsiflexion, two sets of five repetitions, three times daily

Week 2:

- Total non-weight-bearing
- Exercise: Range of Motion:
 - Plantar flexion/ dorsiflexion, two sets of 20 repetitions
 - Inversion/ eversion, two sets of 20 repetitions
 - Circumduction (both directions), two sets of 20 repetitions
- Strength Exercise:
 - Isometric inversion/eversion, two sets of 20 repetitions (in neutral)
 - Toe curls with towel and weight
- Therapy Adjuncts:
 - Gentle manual mobilization of scar tissue Cryotherapy with caution for any open areas of the wound

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Week 3:

- Progressive partial weight-bearing program in walker splint
- Range of Motion:
 - Previous active range of motion exercise continued
 - Gentle passive stretching into dorsiflexion with strap or towel begins
- Strength Exercise:
 - Isometric inversion / eversion, two sets of 10 repetitions
 - Isometric plantarflexion, two sets of 10 repetitions, progression to two sets of 20 over course of week 3
 - One rubber band inversion/eversion, two sets, 10 repetitions
 - One rubber band plantar-flexion and dorsi-. flexion, two sets, 10 repetitions
- Conditioning Activities:
 - Stationary cycling begins, 7 to 12 minutes, minimal resistance
 - Water exercise can begin under totally buoyant conditions with use of a flotation device.
 - In the water, ankle range-of-motion and running or walking activities can be initiated to preserve fitness in the lower body.
 - No weight-bearing activities can be done in the water.
- Therapy Adjuncts:
 - Manual mobilization of scar and cryotherapy continues.

Phase II (4-6 weeks):

- Progressive partial weight bearing to full load by weeks 5 to 6.
- Range-of-Motion:
 - Previous range-of-motion exercise decreased to one set of 10 repetitions each direction.
 - Passive stretch continues into dorsiflexion with progressively greater efforts, knee at full extension and flexed to 35 to 40 degrees.
 - Begin standing calf stretch-knee fully extended and flexed at week 5.
 - AROM, theraband exercises, calf stretch (seated, pain free), seated calf raises, straight leg raises, seated BAPS, well leg stationary bike, aquatic exercise including deep well exercises
- Stretch Exercise:
 - Decrease isometrics to one set of 10 inversion/ eversion and plantarflexion.
 - Progress to three rubber band exercises.
 - Eversion, inversion, dorsiflexion and plantarflexion, three sets of 20 repetitions.
 - Stationary cycling to 20 minutes with minimal resistance.

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- Conditioning Activities:
 - Cycling as previously outlined.
 - Water exercise continues in totally buoyant state.
- Therapy Adjuncts:
 - Gentle cross-fiber massage to Achilles tendon to release adhesions between the tendon and peritenon.
 - Cryotherapy continues, ultrasound, phonophoresis and electrical stimulation may be added for chronic swelling or excessive scar formation.
 - Soft tissue mobilization for scar tissue and modalities as indicated

Progress to Phase III when:

- Physician indicates
- Ambulating FWB without assistive device
- Plantarflexion, inversion and eversion ROM equal bilaterally
- Dorsiflexion ROM is neutral

Phase III (6-12) weeks

- Full weight-bearing in boot with heel lift (e.g. cowboy boot)
- Range of Motion:
 - Further progressed with standing calf stretch
- Strength Exercises:
 - Omit isometrics
 - Continue three rubber band ankle strengthening in all directions
 - Begin double-legged toe raises with body weight as tolerated
 - Balance board exercises are begun for proprioceptive training
 - Standing Gastrocnemius and Soleus stretch
 - Stationary bike (heel push only until 8 weeks)
 - Standing calf raises (approximately 8 weeks)
 - Mini squats (bilateral to unilateral)
 - Closed chain step exercises (step ups progress to step downs)
 - Proprioceptive training (single leg balance challenged as able)
 - Leg press (bilateral to unilateral)
- Conditioning Activities:
 - Stationary cycling Treadmill walking
 - Use of stair-climber machine
 - Water exercises in chest-deep water
- Therapy Adjuncts:
 - As needed
 - Soft tissue mobilization for scar tissue

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Progress to Phase IV when:

- Physician indicates
- Dorsiflexion ROM equal bilaterally
- Unilateral stance equal bilaterally
- Gait normalized

Phase IV (12 weeks – discharge)

- Strength Exercises:
 - Toe raises should progress to use of additional weight at least as great as body weight and, in the case of athletes, up to 1.5 times body weight.
 - Single-legged toe raises are begun as tolerated.
- Conditioning Activities:
 - Progress to jogging on a trampoline and then to treadmill running via a walk-run program.
 - Eventually perform steady-state outdoor running up to 20 minutes before adding figure-eight and cutting drills.
 - Water exercise performed in shallow water (waist deep). In the water, begin to include hopping, bounding, and jumping drills.
 - The completely rehabilitated Achilles tendon repair allows 15 to 20 degrees of dorsiflexion at the ankle, and this must be maintained with regular stretching of the gastrocsoleus group. Strength and endurance are developed to pre-injury levels, and continued strength and flexibility work is advised.
 - One leg PREs (as tolerated)
 - Lunges (multi directional and walking)
 - Unilateral calf raises (approximately 16 weeks)
 - Outdoor biking
 - Jogging (approximately 16-20 weeks, cleared by MD)
 - Agility drills (approximately 16-20 weeks, cleared by MD)

Discharge criteria:

- Physician indicates
- Long term goals achieved
- Patient personal goals achieved