

## Sports Rehabilitation & Performance Center Achilles Tendon Repair Guidelines© \*

The following Achilles Tendon repair guidelines were developed by the Sports Rehabilitation and Performance Center staff at Hospital for Special Surgery. Progression is both criteria-based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression. Concomitant procedures such as additional ligament reconstruction, meniscal repair and articular cartilage procedures may alter the guideline.

### Follow physician's modifications as prescribed

#### POST – OPERATIVE PHASE I (WEEKS 1-6)

##### GOALS:

- Protect repair
- Control edema and pain
- Weight-bearing:
  - Progressive weight bearing-MD directed
- Minimize scar formation
- Improve range of motion of dorsiflexion to neutral (0°)
- Independence in home exercise program

##### Emphasize

- protection
- edema and pain control
- Improving quadriceps contraction
- Controlling pain/effusion

##### PRECAUTIONS:

- Avoid passive heel cord stretching
- Limit active dorsiflexion range of motion to neutral (0°) with knee flexed at 90°
- Avoid heat application
- Avoid prolonged dependent position

##### TREATMENT RECOMMENDATIONS:

- Progress weight-bearing status in the Cam boot with crutches or cane-MD directed
- AROM Dorsiflexion/Plantarflexion/Inversion/Eversion
- Scar massage
- Joint Mobilizations
- Proximal musculature strengthening
- Modalities
- Cryotherapy

##### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE:

- Pain and edema control
- Weight-bearing status-MD directed
- ROM dorsiflexion to neutral (0°)
- Proximal lower extremity muscle strength 5/5



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### POST – OPERATIVE PHASE II (WEEKS 6-12)

#### GOALS:

- Normalize gait
- Restore full functional range of motion necessary for normal gait (15° dorsiflexion) and for ascending stairs (25°)
- Normalize dorsiflexion, inversion, and eversion ankle strength 5/5

#### Emphasize

- Normalizing knee ROM and patella mobility
- Minimizing knee effusion
- Normal gait pattern

#### TREATMENT RECOMMENDATIONS:

- Continue Gait training WBAT to FWB with/without orthoses or assistive device
  - d/c crutches when gait is non-antalgic
- Underwater treadmill system for gait training
- Heel lift in shoe to assist non-apprehensive and normalized gait
- AROM Dorsiflexion/Plantarflexion/Inversion/Eversion
- Proprioception training: BAPS
- Isometrics/Isotonics: inversion/eversion
- Week 6: PREs plantarflexion/dorsiflexion with knee flexed to 90°
- Week 8: PREs plantarflexion/dorsiflexion with knee extended 0°
- Plantarflexor strengthening using a leg press and leg curl machine
- Bike
- Alphabet drawing using Multi-axial plate
- Retro treadmill
- Modalities
- Scar massage
- Forward step up program

#### PRECAUTIONS:

- Avoid descending pain with therapeutic exercise and functional activities
- Avoid passive heel cord stretching

#### MINIMUM CRITERIA FOR ADVANCEMENT:

- Normal gait pattern
- Full passive range of motion dorsiflexion 20°
- Manual muscle test grade of 5/5 for dorsiflexion, inversion, and eversion

### POST – OPERATIVE PHASE III (WEEKS 12-20)

#### GOALS:

- Restore Full AROM
- Ability to descend stairs
- Normalize plantar flexion strength 5/5
- Normalize Balance (tested using NeuroCom or Biodex Balance System)
- Return to functional activities without pain

#### Emphasize

- Restore full AROM
- Eccentric quadriceps control

#### TREATMENT RECOMMENDATIONS:

- Inversion/Eversion isotonics/isokinetics
- Bike, Stairmaster, Versaclimber

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- Proprioception training: Prop board/BAPS/foam rollers/trampoline/Neurocom
- Aggressive plantarflexion PRE's (emphasize eccentric activity)
- Submaximal sport specific skill development
- Progress proprioception program
- Running in underwater treadmill system
- Progress proximal strengthening of LE's (PRE's)
- Isokinetic PF/DF
- Flexibility as needed for activity
- Forward step down program

### PRECAUTIONS:

- Avoid pain with therapeutic exercise and functional activities
- Avoid high loading the Achilles tendon (i.e. aggressive stretching in dorsiflexion with body weight or jumping)

### MINIMUM CRITERIA FOR ADVANCEMENT:

- No apprehension with activities of daily living
- Normal flexibility
- Adequate strength base shown by ability to perform ten unilateral heel raises
- Ability to descend stairs reciprocally
- Symmetrical lower extremity balance

## POST – OPERATIVE PHASE IV (WEEKS 20-28)

### GOALS:

- Demonstrate ability to run forward on a treadmill symptom-free
- Average peak torque of 75% with isokinetic testing
- Maximize strength and flexibility as to meet all demands of activities of daily living
- Return to functional activity without limitation
- Higher level dynamic activity with lack of apprehension with sport-specific movements

### TREATMENT RECOMMENDATIONS:

- Start forward treadmill running
- Isokinetic testing and training
- Continue lower extremity strengthening and flexibility program
- Advance proprioception training with perturbation
- Light plyometric training (bilateral jumping activities)
- Continue aggressive plantarflexion PRE's (emphasize eccentric activity)
- Submaximal sport specific skill development drills
- Progress bike, Stairmaster, Versaclimber
- Continue to progress proximal strengthening of lower extremities (PRE's)

### PRECAUTIONS:

- No apprehension or pain with dynamic activity
- Avoid running or sport activity until adequate strength and flexibility is achieved

### CRITERIA FOR ADVANCEMENT:

- Pain free running
- Average peak torque of isokinetic test=75% of non involved
- Normal flexibility
- Normal strength (5/5 throughout ankle)

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- Sports-specific drills with zero apprehension

### POST – OPERATIVE PHASE V RETURN TO SPORT (WEEKS 28 – ONE YEAR)

#### GOALS:

- Lack of apprehension with sports activity
- Maximize strength and flexibility as to meet demands of individual's sport activity
- 85% limb symmetry with Vertical Jump Test
- 85% limb symmetry for average peak isokinetic torque (PF/DF/INV/EV)

#### TREATMENT RECOMMENDATIONS:

- Advanced functional exercises and agility exercises
- Plyometrics
- Sport specific exercises
- Isokinetic testing
- Functional Test Assessment such as Vertical Jump Test

#### PRECAUTIONS:

- Avoid pain with therapeutic, functional, and sport activity
- Avoid full sport activity until adequate strength and flexibility

#### CRITERIA FOR DISCHARGE:

- Flexibility and strength to accepted levels for sports performance
- Lack of apprehension with sport specific movements
- 85% limb symmetry with functional tests
- 85% limb symmetry for average peak isokinetic torque (PF/DF/INV/EV)
- Independent performance of gym/home exercise program