

159 East 74 <sup>th</sup> Street, 2nd Floor New York, NY 10021	<b>Aruna Seneviratne MD</b> Tel: (212) 737 3301 Fax: (212) 737 4876 <a href="http://www.nycsportsmed.com">www.nycsportsmed.com</a>	130 East 77 <sup>th</sup> Street, 5 <sup>th</sup> Floor New York, NY 10075
---	---	---

## NICHOLAS INSTITUTE OF SPORTS MEDICINE AND ATHLETIC TRAUMA

### ACHILLES TENDON REPAIR REHAB GUIDELINES

*Typically patients are discharged on the day of the operation or the next day. The leg is usually immobilized in a cast or hinged brace, ranging from 4-8 weeks. During the period of immobilization, patients are encouraged to elevate the involved leg to avoid swelling. They are also told to perform isometric contractions of the calf muscles to prevent calf muscle atrophy. If put in a cast, patients are instructed in walking with crutches or taught how to walk with a hinged orthosis (rocker boot).*

#### WEEK 1 – 3

##### **Keys to Treatment**

- ✓ **No Passive Dorsiflexion Stretching past initial tendon tension**
- ✓ **Initiate active dorsiflexion; gravity assisted plantarflexion (healed incision)**
- ✓ **Prevent wound infection**

- Patient Education – use of rocker boot with crutches/ non-weightbearing
- Immobilized @ 10° compared to contralateral side
- 1 to 1 ½ inch heel lift in rocker boot and contralateral sneaker
- Gait, transfer, stair training
- Gentle scar tissue mobs along Achilles tendon (healed incision)
  - Moist heat after 2 weeks post-op
- Edema Control (Hi-volt, interferential, cryocuff)
- AROM – ankle dorsiflexion from seated position
- PROM – gravity assisted plantarflexion from seated position
  - Cyclic loading to initial tendon tension
- Proximal kinetic chain strengthening program
  - SLRs (hip abd/add/flex/ext)
  - Stationary bike (with use of rocker boot)
  - Intrinsic strengthening ex's (towel curls, marbles, etc)
  - Prone hamstring curls
  - Upper body conditioning program

##### GOALS:

- Protect the repair
- Minimize scar tissue formation
- Decrease swelling

#### WEEK 4 – 6

##### Keys to Treatment

- **No Passive Dorsiflexion Stretching**
- **Progress cyclic motion (active DF/ gravity assisted PF)**
- **Initiate weight bearing program**

159 East 74 <sup>th</sup> Street, 2nd Floor New York, NY 10021	<b>Aruna Seneviratne MD</b> Tel: (212) 737 3301 Fax: (212) 737 4876 <a href="http://www.nycsportsmed.com">www.nycsportsmed.com</a>	130 East 77 <sup>th</sup> Street, 5 <sup>th</sup> Floor New York, NY 10075
---	---	---

- Scar tissue mobilization
- Edema control
- Weight bearing progression
  - Week 4
    - Standing bilateral weight shift w/ towel roll under heels (no boot)
  - Week 5
    - Standing bilateral weight shifting w/ boot
    - Progress to staggered stance weight shifting (walking progression)
  - Week 6
    - Initiate gait in boot w/o crutches (sneakers w/ heel lift on contralateral)
- Early strengthening
  - Sub maximal isotonic ankle dorsi/plantarflexion and eversion
  - Prone active plantarflexion w/ flexed knee
  - Seated BAPS board

**GOALS:**

- Continue to protect repair
- Increase plantarflexion strength
- Do not over stretch healing tendon

**WEEK 7 – 9**

**Keys to Treatment**

- ✓ **No Passive Dorsiflexion Stretching**
  - ✓ **Progress cyclic muscle strengthening**
  - ✓ **Stress plantarflexion end range strengthening (0° - 30°)**
  - ✓ **Lower heel lifts 25%**
- Weight bearing/Gait training
    - Week 7
      - At Clinic: bilateral weight bearing w/ sneakers and heel lifts
      - At Home: still ambulate w/ boot
    - Week 8
      - At Clinic: ambulate w/ sneakers and heel lifts
      - At Home: ambulate w/ sneakers and heel lifts
      - Outside: ambulate w/ boot
    - Week 9
      - DC boot: ambulate w/ sneakers and heel lifts
      - Do not ambulate bare foot
  - AROM – dorsi/plantarflexion, inversion, eversion
  - Balance - bilateral
  - Strengthening
    - T-band all planes
    - End range isometrics
    - Leg press calf raise (week 8)
    - Step-ups 4-6'' (back down w/ NI)
  - Swimming (no fins)

**GOALS:**

- Improve fitness

159 East 74 <sup>th</sup> Street, 2nd Floor New York, NY 10021	<b>Aruna Seneviratne MD</b> Tel: (212) 737 3301 Fax: (212) 737 4876 <a href="http://www.nycsportsmed.com">www.nycsportsmed.com</a>	130 East 77 <sup>th</sup> Street, 5 <sup>th</sup> Floor New York, NY 10075
---	---	---

- Moderate gastro/soleus muscle control
- Ambulate w/o boot

### WEEK 9 – 12

#### **Keys to Treatment**

- ✓ **No Passive Dorsiflexion Stretching**
  - ✓ **Progress cyclic muscle strengthening**
  - ✓ **Stress plantarflexion end range strengthening (0° - 30°)**
  - ✓ **Lower heel lifts another 25% (50% total)**
- Gait Training
    - Patient will still ambulate w/ ↓ push-off
      - Marching
      - Lateral walking
  - Stairmaster (pushing through forefoot)
  - Retro Treadmill
  - Calf raises and eccentric calf lowering
    - Progress from supine position (on leg press with bilateral to unilateral support) to standing (bilateral to unilateral)
  - Single leg balance
    - BAPS
    - Decline board
  - Steps
    - Lateral step-ups 6-8"
    - Descend 4" step w/ NI
  - Isokinetics
    - Concentric (0° - 30°) plantarflexion
    - Eccentric (0° - 30°) plantarflexion
  - End range Strengthening
    - Bilateral decline board calf raise
    - Prone isometrics, isotonic
    - Leg Press calf raises; begin w/ foot on plate @ neutral

#### GOALS:

- Restore normal gait
- Full active plantarflexion ROM
- Continue to progress gastro/soleus strength

### WEEK 13 – 20

#### **Keys to Treatment**

- ✓ **Initiate passive dorsiflexion stretching**
  - ✓ **Progress full ROM muscle strengthening**
  - ✓ **Stress plantarflexion end range strengthening (0° - 30°)**
  - ✓ **Lower heel lifts another 25%**
  - ✓ **Functional training**
- Jogging/retro jogging
  - End range plantarflexion strengthening

159 East 74 <sup>th</sup> Street, 2nd Floor New York, NY 10021	<b>Aruna Seneviratne MD</b> Tel: (212) 737 3301 Fax: (212) 737 4876 <a href="http://www.nycsportsmed.com">www.nycsportsmed.com</a>	130 East 77 <sup>th</sup> Street, 5 <sup>th</sup> Floor New York, NY 10075
---	---	---

- Continue w/ leg press calf raise
- Single limb decline board calf raise (may only be an isometric)
- Jump progression
  - Single limb leg press hopping; landing on forefoot
  - Bilateral mini hops
  - Unilateral mini hops (week 20)
- Trampoline hopping
- Forward, lateral stopovers (on box)
- Sub maximal agility training (figure 8's, kareokees, shuffles)
- Regular biking

GOALS:

- Cross-over stair descent
- Jogging
- Full ROM

**WEEK 20 to 1 year**

**Keys to Treatment**

- ✓ **Progress full ROM muscle strengthening**
- ✓ **Functional training**
- ✓ **DC heel lifts**
  
- Plyometrics
- Running, agility drills
- Return to sports