SOUTH BEND ORTHOPAEDICS

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ACHILLES RUPTURE: NONOPERATIVE PROTOCOL

Achilles ruptures occur may occur with or without trauma resulting in a partial or complete disruption of the tendon just above the heel. Although it is possible to have no signs or symptoms of Achilles rupture, most patient report "a pop" with pain and discomfort along the posterior aspect of the calf and heel with an inability to bend the foot downward or "push off" when attempting to stand or walk. Achilles ruptures may be treated with or without surgery depending on the patient's decision following discussion with their surgeon.

Please note that this is a general guideline and may be tailored to specific patient needs and conditions

Phase 1: Protection and Healing (0-8 weeks)

WEEKS 0-2: Splint to plantar flexion
- **NO WEIGHT BEARING (NWB)** in splint
- Elevate leg above heart 23 hours/day
- Ice behind knee to control pain and swelling
- Acetaminophen (e.g. Tylenol) 500mg every 6 hours alternating with ibuprofen 600mg every 6 hours or meloxicam 15mg once daily. Narcotic pain medication (hydrocodone or oxycodone) should be reserved for breakthrough pain as second line medication. Do not take over 4,000mg of acetaminophen per day.

WEEKS 2-4:
- Walking boot with 20° plantar flexion heel lift (3 wedges)
- Protected weightbearing progression with crutches --> Starting at 2 weeks begin 25% weightbearing with crutches for 1 week --> progress 25% per week until 100%
- Remove boot in seated position with lower extremity hanging free off table/chair/bed
  - Active ankle dorsiflexion to neutral only followed by passive gravity-assisted plantar flexion **ONLY** as tolerated (i.e. far as is comfortable)
  - **DO NOT GO PAST NEUTRAL ANKLE DORSIFLEXION FOR 12 WEEKS**
- Modalities as indicated
- Daily HEP for active dorsiflexion and passive plantar flexion as detailed above (5 minutes every hour)

WEEKS 4-6: Begin protected weight bearing IN BOOT with 3 wedges
- At 4 weeks, begin taking one wedge out per week.
- Monitor for swelling, use modalities for swelling and pain control.
- Wear CAM boot or splint while sleeping until 8 weeks post-injury.
- Use assistive device (walker, crutches, rollabout) at all times for safety.
- Begin physical therapy. Note that the therapist should not at this time start passive dorsiflexion (movement of the ankle and toes towards the head); this will overstretch the tendon.
  - Continue to work on AAROM and AROM with goal of obtaining neutral DF by 4-6 weeks post injury
  - Limit active dorsiflexion to neutral and no passive stretching into dorsiflexion until 8 weeks post injury
  - Initiate static balance activities in boot at 6 weeks post injury.
  - Patient may ride stationary cycle with light resistance with boot/ brace on for 10 to 20 minutes.
  - Progress with PREs for proximal muscles and joints avoiding any closed chain activities with dorsiflexion past neutral until 8 weeks post injury.

Phase 2: Recovery (6-12 Weeks)

GOALS:
- Return to normal gait pattern
- Pain and edema control
- Progress functional ROM

WEEKS 6-8:
- Weightbearing in boot with crutches
- May remove boot for sleeping
- Continue exercise protocol

WEEKS 8-12:
- Wean from boot to shoes with gel heel lift
- SLOWLY transition to regular shoe wear initially around the house, then increase to outside activities

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- Pt may be progressed to HEP/ gym program if gait is normal and pain and edema are minimal.
- Initiate WB activities outside of boot and gradually progress. May use heel lifts or towels to maintain foot and ankle in slight plantarflexion.
- Initiate static balance activities as tolerated
- Initiate gentle passive dorsiflexion at 8 weeks
- Initiate light resistance bands (level 1)
- Inititiate toe-raising exercises using the unaffected leg to support injured leg
- Once able to perform toe-raises with the injured leg unsupported, may begin Achilles stretching, strengthening and proprioception exercises

WEEKS 12+:
- Progress balance with dynamic activities
- Initiate retro walking if patient has appropriate dorsiflexion ROM (5-10 degrees active)
- Continue to progress ROM, strength, and proprioception
- Retrain strength, power, and endurance
- Increase dynamic weight-bearing exercise, including plyometric training
- Sport-specific retraining
- Patient required to wear the boot while sleeping for first 6 weeks
- Patients can remove the boot for bathing and dressing, but are required to adhwere to the weightbearing restrictions according to the rehabilitation protocol

Phase 3: Retrain (12 to 24 Weeks)

GOALS:
- Improve functional mobility with stairs.
- Improve tolerance for ambulation
- Strength to WNL
- ROM to WNL
- Progress to return to prior level of activity/ sport

MONTHS 3-6:
- Progress progressive resistance exercises (PRE) as tolerated with focus on eccentric control with plantar flexion
- Progress closed chain activities
- Progress walking program, may progress to walk/ jog when able to perform minimum 15- 20 single leg toe raises with good control
- Non-athletic patients may be discharged to HEP/ Gym program

DRIVING:
- Right foot affected: may drive when in normal shoe and perform single limb stance
- Left foot affected: may drive when off pain meds if automatic transmission vehicle

BIKING/SWIMMING: May begin at 8 weeks post injury
RUNNING/HIGH IMPACT: May begin 4-6 months post injury

FULL ACTIVITY: Return to sports may begin when you can come up and down on your toes (single heel rise) or hop (single leg hop) on the injured leg. This may take 6 months to a year. There is no guarantee on outcome. All conservative management options have risk of worsening pain, progressive irreversible deformity, and failing to provide substantial pain relief. All surgical management options have risk of infection, skin or bone healing issues, and/or worsening pain. Our promise is that we will not stop working with you until we maximize your return to function, gainful work, and minimize pain.
SHOWERING: You may shower with soap and water once you transition to your boot with wedges.
STOOL SOFTENERS: While on narcotic pain medication (e.g. Norco/hydrocodone or Percocet/oxycodone) especially within first 72 hours of surgery, you should take stool softener (e.g. Miralax, docusate, senna). Discontinue if you develop loose stool or diarrhea.

REFERENCES:

1. Westin et al. Acute Ultrasonographic Investigation to Predict Rerupture and Outcomes in Patients with an Achilles Tendon Rupture. OJSM 2016

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2. Lantto et al. A Prospective Randomized Trial Comparing Surgical and Nonsurgical Treatments of Acute Achilles Tendon Ruptures. AJSM 2016