



**Lahey Hospital
& Medical Center**

**Rehabilitation Protocol:
Achilles Tendon Rupture Repair**

Department of Orthopaedic Surgery

Lahey Hospital & Medical Center, Burlington 781-744-8650

Lahey Outpatient Center, Lexington 781-372-7020

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◀ Overview

The Achilles tendon is a strong tendon attaching the two major calf muscles (gastrocnemius and soleus) to the heel bone (calcaneus). The calf muscle is a major muscle we use for running, jumping and climbing. As we lose some flexibility and strength over time, it becomes more difficult for the Achilles tendon to sustain significant forces produced by the calf muscle. This can lead to possible tendon rupture with forceful pushing off during activities such as basketball, tennis or racquetball.

The surgical approach to repair the torn tendon requires post-operative protection to allow appropriate healing. There are certain milestones during rehabilitation that require that the patient be an active participant in rehabilitation to help ensure the best outcome. The goals of this surgery are to repair the torn Achilles tendon, maximize function of ADLs, maximize quality of life, and ultimately allow patients to return to prior level of activity.

◀ Phase I Acute Post-Op Phase 0–2 Week, Home

Goals

- Allow soft tissue healing
- Reduce pain, inflammation, and swelling
- Increase independence with bed mobility, transfers, and gait
- Educate patient regarding weight bearing

Precautions

- Patients are NWB and must use walker or crutches to maintain NWB status
- Keep incision clean and dry
- No showering until MD approves
- Observe for signs of deep vein thrombosis (DVT): increased swelling, erythema, calf pain. If present, notify MD immediately

For Patients: Week 1 and 2:

- You will be placed in a plaster splint secured with ace bandages.
- Leave the splint and dressings as placed until your 2 week follow-up appointment.
- Take pain medication and antibiotic medication as directed.
- Keep surgical leg elevated while lying down with “toes above nose” for 45 minutes out of every hour (this is important to keep swelling down).
- You can get up to use rest room, eat, wash, etc. Do not put any weight on your surgical leg. You must remain non-weight bearing (NWB) and use walker or crutches to get from room to room.
- Do not let your knee and hip get stiff! Bend and straighten knee several times every hour. You can do this lying down or sitting.

◀ Phase II – Protection Phase (Weeks 2-8, patient at home)

Goals

- Allow healing/follow precautions
- Reduce pain, inflammation, and swelling
- Increase independence with bed mobility, transfers, and gait
- Gait training – Appropriate use of assistive device to emphasize NWB

Precautions

- Patient continues to be NWB with walker or crutches until 4-6 weeks post-op (most cases are 6 weeks, unless specifically instructed by your surgeon)
- Patient can be weight bearing as tolerated (WBAT) in boot at 6 weeks post-op
- Monitor wound healing for signs and symptoms of infection. If present, notify MD

For Patients:

Weeks 2-8:

- At your 2 week follow-up appointment, you will be placed in a fiberglass cast that will stay on until 6 weeks post-op.
- You need to continue to be NWB using walker or crutches.
- You will be given orders for outpatient physical therapy that will start at 8 weeks post-op.
- You will be given instructions to call outpatient physical therapy department to schedule your physical therapy consult for 8 weeks after your surgery.
- At 6 week follow-up appointment, the fiberglass cast will be removed and you will be placed in a removable boot.
- Heel lifts will be placed in the boot to make sure your foot is in the most appropriate position in the boot.
- At 6 weeks post-op, you will now be able to put some weight on your foot when you walk, but not full weight. This is called weight bearing as tolerated (WBAT). You will be instructed how to walk this way at your 6 week follow-up appointment.
- You will continue with WBAT in boot with lifts for the next two weeks until your outpatient PT consult at 8 weeks post-op.

◀ Phase III – Transitional Phase (Weeks 8-12, guided by outpatient physical therapist)

Goals

- Reduce pain and inflammation
- Increase range of motion (ROM) gradually
- Increase strength
- Balance and proprioceptive training to assist with functional activities
- Gait training: Gradual removal of heel lifts and progress from WBAT to FWB
- Functional activity training to enhance patient autonomy with ADLs/mobility

Precautions

- Continue to monitor wound healing for signs and symptoms of infection
- No passive dorsiflexion ROM, only active DF

Therapeutic Exercise (To be guided by outpatient physical therapist)

- AROM: ankle pumps, alphabet, INV/EV, toe curls
- Submaximal isometric ankle PF for strengthening
- Seated BAPS
- Theraband resistance for ankle INV/EV
- Stationary Bike (gradual progression to FWB)
- 4-way straight leg raise (SLR)
- Leg press (gradual progression to FWB)
- Single leg stance balance activities

Functional Activities (To be guided by outpatient physical therapist)

- Sit to stand activities
- Lifting and carrying
- Ascending/descending stairs
- Gait Training

Modalities

- Cold pack or ice pack for 10-15 minutes 1-3x/day to manage pain and swelling

Criteria for progression to next phase

- Minimal pain and inflammation
- Patient ambulates in boot without assistive device without pain or deviation
- Good voluntary quad control

◀ Phase IV – Outpatient Intermediate Phase (Weeks 12-16, guided by outpatient physical therapist)

Goals

- Progress out of boot to normal shoe, full weight bearing (FWB)
- Regain normal ankle mobility and gastrocnemius flexibility
- Improve balance and proprioception
- Increase overall strength throughout lower extremities
- Return to all functional activities
- Begin light recreational activities

Therapeutic Exercise

- Gradual gastrocnemius and soleus stretching
- Progress ankle PF strengthening
- Progress **Phase III** exercises by increasing resistance and repetitions
- Sidestepping exercises
- Front lunge and squat activities
- Progress balance and proprioception activities (Star Excursion Balance, ball toss, perturbations)
- Initiate overall exercise and endurance training (walking, swimming, progress biking)

Criteria for discharge

- No pain with functional activities of daily living
- Good lower extremity strength of $\geq 4/5$ throughout
- Patient ambulates without device, without deviation wearing shoes
- Patient is independent with reciprocal stair climbing
- Patient consistent adheres to plan of care and home exercise program

◀ Phase V – Return to High Level Activity (4+ months)

Activities

- Continue walking, swimming and biking programs for aerobic conditioning/endurance
- Begin playing golf and outdoor cycling
- Obtain clearance from surgeon for return to impact sports such and tennis or jogging

Post –op Phase/Goals	Therapeutic Exercise	Precautions
<p>Phase I Acute Post-Op Phase Weeks 1 & 2 Patient at home</p> <p><i>Goals</i> Allow soft tissue healing Reduce pain, inflammation, and swelling Increase independence with bed mobility, transfers, and gait Educate patient regarding weight bearing</p>	<ul style="list-style-type: none"> • You will be placed in a plaster splint secured with ace bandages. • Leave the splint and dressings as placed until your 2 week follow-up appointment. • Take pain medication and antibiotic medication as directed. • Keep surgical leg elevated while lying down with “toes above nose” for 45 minutes out of every hour (this is important to keep swelling down). • You can get up to use rest room, eat, wash, etc. Do not put any weight on your surgical leg. You must remain non-weight bearing (NWB) and use walker or crutches to get from room to room. • Do not let your knee and hip get stiff! Bend and straighten knee several times every hour. You can do this lying down or sitting. 	<p>Patients are Non Weight Bearing and must use walker or crutches to maintain NWB status</p> <p>Keep incision clean and dry</p> <p>No showering until MD approves</p> <p>Observe for signs of deep vein thrombosis (DVT): increased swelling, erythema, calf pain. If present, notify MD immediately</p>

Post –op Phase/Goals	Therapeutic Exercise	Precautions
<p>Phase II – Protection Phase (Weeks 2-8, patient at home) Allow healing/follow precautions</p> <p>Reduce pain, inflammation, and swelling</p> <p>Increase independence with bed mobility, transfers, and gait</p> <p>Gait training – Appropriate use of assistive device to emphasize NWB</p>	<ul style="list-style-type: none"> • At your 2 week follow-up appointment, you will be placed in a fiberglass cast that will stay on until 6 weeks post-op. • You need to continue to be NWB using walker or crutches. • You will be given orders for outpatient physical therapy that will start at 8 weeks post-op. • You will be given instructions to call outpatient physical therapy department to schedule your physical therapy consult for 8 weeks after your surgery. • At 6 week follow-up appointment, the fiberglass cast will be removed and you will be placed in a removable boot. • Heel lifts will be placed in the boot to make sure your foot is in the most appropriate position in the boot. • At 6 weeks post-op, you will now be able to put some weight on your foot when you walk, but not full weight. This is called weight bearing as tolerated (WBAT). You will be instructed how to walk this way at your 6 week follow-up appointment 	<p><i>Precautions</i></p> <p>Patient continues to be NWB with walker or crutches until 4-6 weeks post-op (most cases are 6 weeks, unless specifically instructed by your surgeon)</p> <p>Patient can be weight bearing as tolerated (WBAT) in boot at 6 weeks post-op</p> <p>Monitor wound healing for signs and symptoms of infection. If present, notify MD</p>

Post –op Phase/Goals	Therapeutic Exercise	Precautions
<p>Phase III – Transitional Phase (Weeks 8-12, guided by outpatient physical therapist)</p> <p>Reduce pain and inflammation</p> <p>Increase range of motion (ROM) gradually</p> <p>Increase strength</p> <p>Balance and proprioceptive training to assist with functional activities</p> <p>Gait training: Gradual removal of heel lifts and progress from WBAT to FWB</p> <p>Functional activity training to enhance patient autonomy with ADLs/mobility</p>	<p><u>Therapeutic Exercise</u> (To be guided by outpatient physical therapist)</p> <ul style="list-style-type: none"> • AROM: ankle pumps, alphabet, INV/EV, toe curls • Submaximal isometric ankle PF for strengthening • Seated BAPS • Theraband resistance for ankle INV/EV • Stationary Bike (gradual progression to FWB) • 4-way straight leg raise (SLR) • Leg press (gradual progression to FWB) • Single leg stance balance activities <p><u>Functional Activities</u> (To be guided by outpatient physical therapist)</p> <ul style="list-style-type: none"> • Sit to stand activities • Lifting and carrying • Ascending/descending stairs • Gait Training <p><u>Modalities</u></p> <ul style="list-style-type: none"> • Cold pack or ice pack for 10-15 minutes 1-3x/day to manage pain and swelling 	<p>Continue to monitor wound healing for signs and symptoms of infection</p> <p>No passive dorsiflexion ROM, only active DF</p>

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<p>Phase IV – Outpatient Intermediate Phase (Weeks 12-16, guided by outpatient physical therapist)</p> <p>Progress out of boot to normal shoe, full weight bearing (FWB)</p> <p>Regain normal ankle mobility and gastrocnemius flexibility</p> <p>Improve balance and proprioception</p> <p>Increase overall strength throughout lower extremities</p> <p>Return to all functional activities</p> <p>Begin light recreational activities</p>	<p>Guided by outpatient physical therapist</p> <ul style="list-style-type: none"> • Gradual gastrocnemius and soleus stretching • Progress ankle PF strengthening • Progress Phase III exercises by increasing resistance and repetitions • Sidestepping exercises • Front lunge and squat activities • Progress balance and proprioception activities (Star Excursion Balance, ball toss, perturbations) • Initiate overall exercise and endurance training (walking, swimming, progress biking) 	

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Phase V – Return to High Level Activity (4+ months)	<ul style="list-style-type: none"> • Continue walking, swimming and biking programs for aerobic conditioning/endurance • Begin playing golf and outdoor cycling • Obtain clearance from surgeon for return to impact sports such and tennis or jogging 	