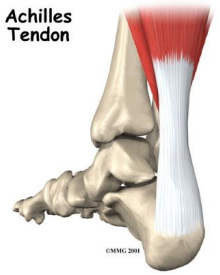
The Ultimate Patient's Guide To Recovering from an Achilles Tendon Injury

What is an Achilles Tendon



A tendon connects muscle to bone. The Achilles tendon is the largest tendon in the body. It connects your calf muscles (Soleus and Gastroncnemius) to your heel bone (calcareous) and is used when you stand, walk, run, and jump.

- Information about Tendons and Ligaments

Types of Injuries

Although the Achilles tendon can withstand great stresses, it is also prone to injury ranging from the relatively minor tendinitis to the major complete rupture.

Tendonitis: inflammation of a tendon. It is a condition associated with overuse and degeneration. Inflammation is the body's natural response to injury or disease, and often causes swelling, pain, or irritation. There are two types of Achilles tendinitis, based upon which part of the tendon is inflamed.

Tear / Rupture: When the tendon or the attaching muscle is loaded beyond its capacity fibers can tear. Much like the strains in a rope some or all may rupture leading to a PARTIAL Tear or Rupture or a COMPLET Tear or Rupture. The more complete the rupture / tear the more difficult it is to correct, heal, and recuperate.

Location of the injury

Non-Insertion or Mid Substance: Fibers in the middle portion of the tendon (i.e. farther away form the heel)

Insertional: Fibers in the lower portion of the heel, where the tendon attaches (inserts) to the heel bone. Insertional injuries tend to be more difficult to treat and heal.

Achilles Tendon Injury (1998 American Academy of Orthopaedic Surgeons US)

Diagnosis

In diagnosing an Achilles tendon rupture, the foot and ankle surgeon will ask questions about how and when the injury occurred and whether the patient has previously injured the tendon or experienced similar symptoms. The surgeon will examine the foot and ankle, feeling for a defect in the tendon that suggests a tear. Range of motion and muscle strength will be evaluated and compared to the uninjured foot and ankle. If the Achilles tendon is ruptured, the patient will have less strength in pushing down (as on a gas pedal) and will have difficulty rising on the toes.

The diagnosis of an Achilles tendon rupture is typically straightforward and can be made through this type of examination. In some cases, however, the surgeon may order an MRI or other advanced imaging tests.

Preparing for an MRI

The Lingo

Before we go any further itôs important to understand term you may hear often.

Many time acronyms will be used in discussing the injury and recovery

ATR - Achilles Tendon Rupture

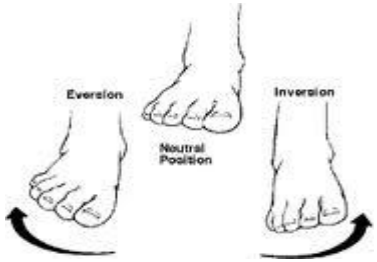
NWB - Non Weight Bearing, No Weight Bearing

PWB - Partial Weight Bearing

FWB - Full Weight Bearing

ROM - Range of Motion

And ways to describe the motion of the foot

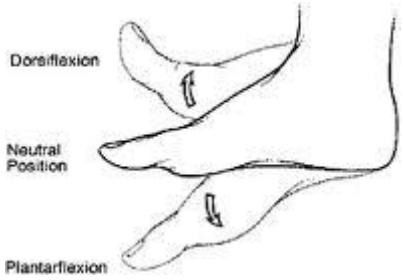


Eversion: Lifting the outside edge of the foot

Inversion: Lifting the inside edge of the foot

Dorsi Flexion: Movement at the ankle when toes go up and heel goes down.

Plantar Flexion: Movement of the foot when the toes go down and the heel goes up.



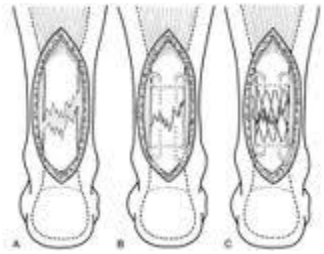
If you wonder about the meaning of other medical terms be sure to ask your Health Care Provider or look them up in an online medical dictionary.

Surgery or Conservative Treatment

Non-Surgical Treatment

Non-surgical treatment, which is generally associated with a higher rate of re-rupture, is selected for minor ruptures, less active patients, and those with medical conditions that prevent them from undergoing surgery. Non-surgical treatment involves use of a cast, walking boot, or brace to restrict motion and allow the torn tendon to heal.

Surgical Treatment



Surgery offers important potential benefits. Besides decreasing the likelihood of re-rupturing the Achilles tendon, surgery often increases the patientôs push-off strength and improves muscle function and movement of the ankle.

Various surgical techniques are available to repair the rupture. The surgeon will select the procedure best suited to the patient.

Achilles surgery is technically challenging. Surgeons compare it to trying to ends of a frayed rope together with out shortening the rope (if the Achilles is overly shortened your heel will never touch in walking) or making a knot (as the skin would not close over it)

To strengthen and augment the repair some surgeons may use a regenerative tissue matrix of a human acellular tissue graft.

Following surgery, the foot and ankle are initially immobilized in a cast or walking boot . The surgeon will determine when the patient can begin weight bearing.

Complications such as incision-healing difficulties re-rupture of the tendon, or nerve pain can arise after surgery. For more information on surgery for an Achilles Tendon Rupture

Helpful article about Surgical vs. Non Surgical (conservative) Treatment

- Operative versus Nonoperative Treatment of Acute Achilles Tendon Ruptures: A Multicenter Randomized Trial Using Accelerated Functional Rehabilitation
- Surgery or Casting, a meta analysis.
- WebMDôs overview on ATR surgery and whether itôs right for you.
- Surgery vs. non operative treatment Achilles

Other helpful links regarding Achilles Surgery

- Krakow Knot - Achilles Surgery Suturing Technique
- Mini-invasive surgical repair of the Achilles tendonð does it reduce post-operative morbidity?
- Clinical and functional results of open operative repair for Achilles tendon rupture in a non-specialist surgical unit

Recovery

Restricted Weight Bearing

Regardless if the treatment was surgical or non surgical there will be weight bearing restrictions progressing from Non Weight Bearing NWB to partial weight bearing.

NWB ï means **Non or NO Weight Bearing**. If you foot touches the ground it is bearing weight. The Achilles tendon can see forces up to 12 time your actual body weight in various activities. Studies have shown that people have an extremely difficult time gauging just how much weight is being applied to an injured limb. What you may consider just a bit could in fact be enough to rip out internal sutures after surgery and ruin or lengthen your recovery.

PWB ï means **partial weight bearing** and will be defined by you health care provider.

There are many options to stay NWB while you recover. Examining your needs, limitations, and lifestyle should help you determine which will be best for you. Renting may be a convenient and cost effective option.

Crutches

+ inexpensive
+easily available
- can be used incorrectly
- need to learn how to use correctly
- tend to be painful and require upper body strength

An Achilles Tendon Rupture Doesnôt Condemn You to Crutches (blog)

Wheelchair

+100% NWB
+Ability to elevate foot
- Limitations on daily activates
- Limited mobility
- canôt be used on steps

Knee Scooter (also Known as a Knee Walker or Roll-a-bout)

+ 100% NWB
+ Easy to use
+ Turns just like a bike
+ Stores small for easy transport and storage
+ Available for rental
- Must be able to kneel comfortably
- Can not be used on stairs

What to Look for in a Knee Walker (article)
Knee Walker Buyerôs Guide (pdf)
Comparison of Knee Walkers (chart)

Seated Scooter

+ 100% NWB
+ Easy to use
+ Turns just like a bike
+ Stores small for easy transport and storage
+ Available for rental
- Must be able to sit
- Can not be used on stairs

What is better a Knee Scooter or a Seated Scooter (blog)

Hands Free Crutch

+ Unmatched mobility
+ Can use on stairs, indoor, outdoors, even in the shower
+ Easy to put on and take off
- Need to be in relatively good shape with good balance
- Learning curve

What you need to know before getting a Hands Free Crutch (video)
Tips on Learning the I WALK FREE (video)
I WALK FREE Instructional Video
Hands Free Crutch Buyerôs Guide (pdf)
Knee Scooter vs Hands Free Crutch (blog)

Helpful Solutions for Daily Living

Bathroom Essential

Cast Cover: There are many ways to keep you r dressing and cast dry while showering from the low tech garbage bag and rubber band to a dedicated latex free cast cover. Considering the mess of garbage bags along with the guarantee the Cast Cover will last the life of your cast, this is a good investment of $29.

Shower Bench: If your shower is not already handicap accessible you might need a chair or bench. In a big shower a plastic lawn chair works well. If you have a smaller bathing space, look for a small shower bench with adjustable height.

Grab Bars: Getting up from a seated position in the shower or while on the toilet with out using your injured leg can be very challenging, especially at night. If you donôt want to permanently make your bathroom handicap accessible consider Suction Grab Bars. Usually about 12 to 16ò long they install easily and hold strongly on any smooth surface (tile must be >4ò). They can even be used while traveling.

Toilet Seat: One of the most athletically challenging feats you may have to perform is rising from a low seat like a toilet. If you donôt have something SOLID* to hold on to that will assist you consider a higher toilet seat. They are relatively inexpensive and easy to install and remove.

*Before grabbing a towel bar or toilet paper holder ensure they are securely fastened to a stud. Itôs easier than you think to rip them right off the drywall leaving holes.

Leg Length Inequality: When you transition to a walking boot you may notice your injured leg is much longer than the other leg. Some people can tolerate this while for others it causes pain in their knee, hip or back. Since itôs not possible to make the fracture boot thinner you must build up other shoe. This can be done by wearing thick soled shoes or boot or by putting on an Even Up Leg Length Equalizer. This device easily pulls over your athletic or dress shoe.

When in doubt, RICE is as good as Chicken Soup

Rest. Stay off the injured foot and ankle, since walking can cause pain or further damage.

Ice. Apply a bag of ice covered with a thin towel to reduce swelling and pain. Do not put ice directly against the skin. Cold Therapy Devices provide both compression and cooling.

Compression. Wrap the foot and ankle in an elastic bandage to prevent further swelling.

Elevation. Keep the leg elevated to reduce the swelling. It should be even with or slightly above heart level.

Physical Therapy

Whether an Achilles tendon rupture is treated surgically or non-surgically, physical therapy is an important component of the healing process. Physical therapy involves exercises that strengthen the muscles and improve the range of motion of the foot and ankle.

Rehabilitation typically starts as early as after you start partial weight bearing. It can be as simple as doing passive Range of Motion Exercises to following regimen set by your physical therapist. Failure to follow the directed protocol can results in re-rupturing (overdoing) or a loss of strength and ROM (under doing)

Also, there seem to be benefits to therapeutic massage. Most Physical therapists do some massaging as part of their program, but Iôve heard that itôs good to seek a therapeutic massage therapist as well.
(Update: A lot of massage therapists do not work on people who recently had surgery for fear of doing damage to your body. I discovered that if your surgery was within the past 6 months, then they wonôt even touch your heel area.)

- Physical Therapy
- Therapeutic Massage
- Information relevant for 2-shoes and Full Weight Bearing (FWB)

Hereôs a compilation of ATR rehab protocols guidelines.

- Achilles Tendon Rupture, Overview of the recovery stages, exercises, physical rehabilitation descriptions and illustrations. by Eric Berkson, MD (Orthopaedic Surgery of Quincy, Massachusetts General Hospital)
- ATR Rehab Protocol by Dr. Matthew Crawford
- ATR Post-op Rehabilitation Guidelines from Workersô Compensation Board
- ATR Rehabilitation Protocol from the Stone Clinic
- AAOS Early Motion rehab article
- Early weight-bearing

Sources:

Achilles Blog
American Academy of Orthopaedic Surgery
American College of Foot and Ankle Surgeons
American Podiatric Medical Association
Foot Health Facts
Wright Medical Technologies

Disclaimer:

This information is a compilation of publically available information. The information provided is not necessarily based on any advice of medical doctors, physical therapists or others in the medical profession. One suggested treatment or protocol should not be considered any better than another. Please consult appropriate medical professionals for treatment relating to your specific injury and make decisions based on the information provided by these professionals. This information should not be considered authoritative or medical advice in any way, shape or fashion.
