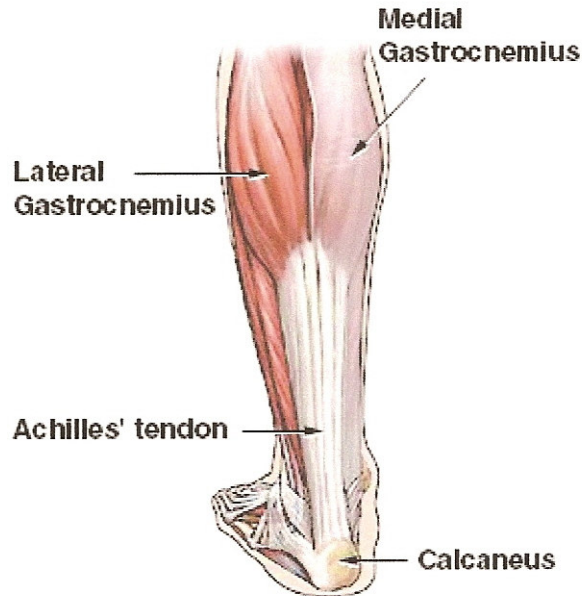


## ACHILLES TENDONITIS

According to the Greek myth, Achilles was vulnerable only at his heel. It's a trait that he must have passed down to all other humans when he gave his name to the Achilles tendon, which connects the calf muscles to the heel bone.

The Achilles tendon is the largest tendon in the human body and can withstand forces of 1,000 pounds or more. But it is also the most frequently ruptured tendon, and both professional and weekend athletes can suffer from Achilles tendinitis, a common overuse injury and inflammation of the tendon. Achilles tendonitis is an inflammation: the Achilles tendon becomes filled with inflamed cells.



### **Cause Achilles tendonitis, including:**

- rapidly increasing your running mileage or speed
- adding hill running or stair climbing to your training routine
- starting up too quickly after a layoff
- trauma caused by sudden and/or hard contraction of the calf muscles when putting out extra effort such as in a final sprint
- overuse resulting from the natural lack of flexibility in the calf muscles

### **Symptoms of Achilles Tendonitis**

- Mild pain after exercise or running that gradually worsens
- A noticeable sense of sluggishness in your leg
- Episodes of diffuse or localized pain, sometimes severe, along the tendon during or a few hours after running
- Morning tenderness about an inch and a half above the point where the Achilles tendon is attached to the heel bone
- Stiffness that generally diminishes as the tendon warms up with use
- Some swelling

## Diagnosis

It is easy to diagnose this condition. It usually occurs in patients who are between 35 and 45, and who are not necessarily athletic. The tendon and the leg are painful and pushing off the leg may be painful and weak. The Achilles tendon is swollen, and visibly thickened. This can be felt with the finger as an elongation which is thickened in the tendon.

## Treatment

Treatment of Achilles Tendonitis includes five simultaneous steps.

1. Relative rest. Stop doing the activity that caused the injury for between a week and a few months, depending upon the degree of degeneration. Relative rest should last at least 1 week for a grade 1 or 2 injury, at least 3 weeks for a grade 3 injury, and at least 1 month for a grade 4 injury. For an understanding of injury grades see: injuries. During the relative rest period also stop performing activities and sports that are similar to the one that caused the injury, i.e. soccer is similar to running, handball is similar to tennis, etc.

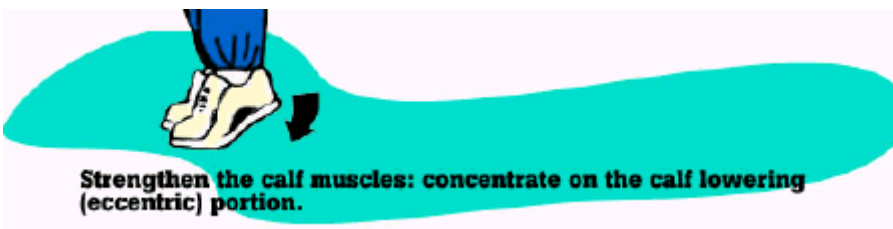


Achilles tendonitis is not an excuse to get out of shape. Relative rest is the treatment, not total rest. During the relative rest period do alternate sports that are easy on the Achilles tendon, such as swimming, moderate cycling, upper body weight lifting, etc.

After the relative rest period, resume gradually. For example, if you are a runner with a grade 3 injury resume with jogging until you are sure that you are down to at least a level 2 injury, then resume running moderate distance with no speed work or hills until you are down to at least a grade 1 injury, then resume running at the same intensity as prior to the injury.

2. Stretch the calf muscles for 20 or more minutes per day. If the other leg muscles, the hip muscles, and the back muscles are tight, they may be causing tightness of the calf muscles, so stretch these other muscles as well. In addition to standard stretching, muscles can also be stretched by strengthening their opposing muscle group. For example, strengthening the anterior tibialis, the small muscle group on the front of the lower leg, stretches the calf muscles. As part of stretching, consider massage.

3. Eccentric strengthening of the leg muscles, particularly the calf muscles. Do daily or every other day calf raises on a stair or using a calf raise machine in a gym. Start slowly using just your body weight doing three sets of 10 or 15. When this can be done without pain, gradually increase the speed, number of repetitions per set, amount of weight, and number of sets.



Concentrate on the eccentric rather than the concentric portion of the exercise (the calf lowering rather than the calf raising portion of calf raises). On each repetition, be sure to go all the way down for a full stretch of the Achilles tendon. Do the calf raises after, rather than before, any other exercises that you are doing.

4. Physical therapy. Therapies applied by professional physical therapists to repair tendon degeneration include: ultra sound, electric stimulation, and laser photostimulation.

5. Ice therapy. Apply ice to reduce the degeneration. Ice should not be applied directly to the skin, use an ice pack instead. Apply the ice pack to the Achilles tendons after exercise or physical therapy. Apply as often and as for as long as possible.

#### **Other Treatment Modalities**

- NSAIDs (Alleve, Motrin, etc. 10 - 14 days)
- Check Running Shoes
- Replace if heel is worn
- Replace if excessive heel shock absorption (soft air sole cushion, excessive gel shock absorption)
- Replace if shoe is excessively stiff at the "break point" (ball of foot).

You may not be able to prevent Achilles tendonitis, but here are six steps to reduce your risk of incurring an attack:

- Choose your running shoes carefully. They should provide sufficient cushion for the heel strike. Using a prescribed orthotic to change the position of a poorly aligned heel bone may also help. Perhaps the best precaution is to know your limits and to follow a sensible program when you exercise.
- Walk and stretch to warm up gradually before running. It's better to spend few minutes warming up than to spend months on the sidelines with a ruptured Achilles tendon.
- Focus on stretching and strengthening the muscles in the calf.
- Increase your running distance and your speed gradually, in increments no greater than 10% a week.
- Avoid unaccustomed strenuous sprinting, hill running and the like.
- Cool down properly after exercise.