

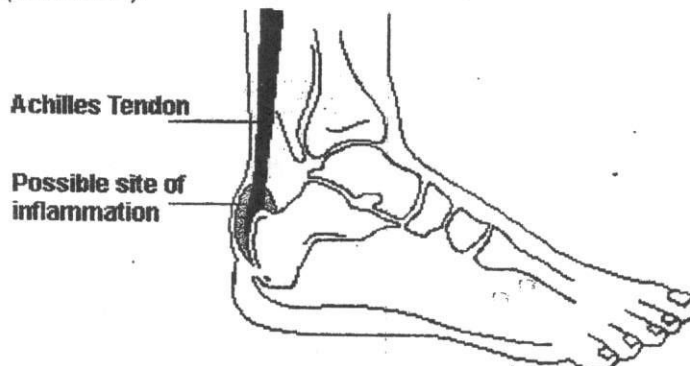
Achilles Tendonitis

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What is this injury?

A tendon is made of connective tissue that joins muscle to bone. The largest tendon in the human body is the Achilles tendon, which attaches the powerful calf muscles (gastrocnemius and soleus) to the heel bone (calcaneus).



Tendinitis is inflammation of a tendon. Thus, Achilles tendinitis is an inflammation of the Achilles tendon. The inflammation may be localized to the end of the tendon closest to the heel or may spread upward to affect even the muscles of the calf. Swelling occurs and pain is felt upon contraction of the calf muscles. In severe cases, pain may be felt even at rest.

How does the injury occur?

Achilles tendinitis is most commonly an overuse injury in athletes whose sports require jumping, such as in basketball or volleyball. The injury often afflicts track and field athletes, particularly high jumpers, long jumpers, triple jumpers, and hurdlers. Rarely, the injury occurs in walkers, joggers, runners, and dancers.

Generally, Achilles tendinitis begins as a dull pain at the back of the lower leg just above the heel when pushing off the ground with the foot. Unless the activity is stopped, the condition rapidly gets worse until any activity requiring a push-off from the ground by the foot becomes quite painful and nearly impossible.

Onset of Achilles tendinitis is often associated with sudden increases in volume or intensity of training. Uphill running more likely causes the condition than level running. Stiff, inflexible shoes are thought to exert stress on the Achilles tendon and to perhaps help create inflammation. Finally, Achilles tendinitis appears more prevalent among runners who tend to land on the inner part of the heel and foot as opposed to the outer part.

What are the symptoms?

The primary symptom is pain at the back of the lower leg closer to the heel than to the muscles of the calf. This pain is present during exercise and afterward. In severe cases, pain is felt even at rest.

Swelling occurs from the heel to the lower calf. Inflammation may be severe enough to create a temperature increase in the affected side; this difference in temperature is often discernable by touch. Stiffness at the back of the ankle may be present and associated with pain when pressing toes downward.

How is the injury diagnosed?

The health care professional will ask for a history of the injury, including duration of symptoms, conditions surrounding early symptoms, and whether a single incident caused the condition. The health care professional will palpate (feel with the hands) the back of the calf and the heel. He or she may manipulate the foot and ankle or ask the patient to perform activities to identify movements that cause discomfort. Occasionally an ultrasound exam or magnetic resonance imaging are required to assess the Achilles tendon.

How is the injury treated?

All activities that create or intensify pain in the affected area must be avoided. When seated or lying down, the affected leg should be elevated. Apply cold to the area for 10 to 20 minutes at least four times daily. This application may be in the form of ice massage, but do not put uncovered ice directly on the skin. If swelling is extensive, apply an elastic bandage to the injured leg. This is especially recommended for long periods of standing.

Nonsteroidal anti-inflammatory agents, such as ibuprofen, should be taken according to directions for three to five days. Cortisone, a powerful steroid, is generally not recommended, as it tends to weaken connective tissue and thus lay open the Achilles tendon for more serious problems, such as tears or rupture.

Return to activity gradually and only after standing on the toes with the foot fully extended can be done with little or no pain. If the condition persists for more than two weeks, return to the health care professional for further evaluation.

How long will the effects of the injury last?

A first occurrence diagnosed and treated in its early stages usually remits within two weeks. If the injury has recurred several times, full recovery may take as long as six weeks. Frequent episodes of Achilles tendinitis may result in formation of calcium deposits in the tendon. Such a complication may require surgical treatment; full recovery under such circumstances can take months.

When can I return to my sport or activity?

Complete return to sport or activity may be possible within two weeks but can take considerably longer with more complicated cases. The patient should not consider returning to sport or activity until he or she can

stand on the toes of the injured side foot without pain. All other movements that might aggravate the condition, such as jumping, should be attempted cautiously and avoided if painful. Clearly, the nature of the sport in question has much to do with how soon the athlete can be fully involved.

How can I prevent the injury?

Be sure to stretch the muscles of the calf before each training session and to gradually increase the strength of the calf muscles. Look for stretching and strengthening exercises below.

When training for or participating in your sport, wear proper shoes in good condition. Often, the support structures built into sport shoes deteriorate before the external parts of the shoe. Wearing sport shoes after their support systems are worn down is poor economics in the long run.

If Achilles tendinitis tends to reoccur, see a health care professional for advice on using heel lifts. Heel lifts placed in shoes limit the extent to which the Achilles tendons can be stretched through jumping or running activities.

Increase the volume and intensity of training in small increments. Begin new training methods, such as stair climbing, running stadium steps, and uphill running with caution and back off at first sign of discomfort in the Achilles tendons.

Rehabilitation?

During the period when normal training must be suspended, alternative exercise modalities may be used. These activities should not require any actions that create or intensify pain at the site of injury. Swimming is probably the best choice, as it is non-weight bearing and allows for gentle motion of the feet at the ankle. Water running is also excellent for this purpose. If swimming or water running are impossible, a stationary bicycle serves well. Riding a bicycle on the roadways or bike paths is not recommended, as a fall could greatly aggravate the inflamed Achilles. When using a stationary bicycle, add resistance gradually from one session to the next, as pain allows. Substituting training tasks permits the patient to retain cardiovascular fitness during the time normal training and involvement in the usual sport is impossible.

Major objectives of rehabilitation from Achilles tendinitis are to improve the elasticity of the musculature of the calf and to gradually increase pain-free range of motion at the ankle. Exercises to achieve these goals follow.