

Achilles tendonitis and stretching

BY ANTHONY LETT

Achilles tendonitis is a condition characterized by inflammation and irritation of the Achilles or calcaneal tendon, which is the large tendon that connects the calf muscles to the heel bone. It is often caused by repetitive strain or overuse of the tendon, leading to micro-tears and degeneration.



Image A. The gastrocnemius and soleus are the large muscles in the posterior leg that attach to the Achilles tendon. The soleus is found deep to the gastrocnemius muscle.

What is Tendonitis?

Also known as **tendinitis**, is a condition characterized by inflammation or irritation of a tendon, which is a thick cord-like structure that connects muscles to bones. Tendons play a crucial role in transmitting the force generated by muscles to the bones, allowing movement of the joints.

Tendonitis typically occurs because of repetitive overuse of a tendon, such as from activities like sports, gardening, or typing, that can cause small-scale damage and strain on the tendon. This repeated stress can lead to inflammation and pain in the affected area.

Common symptoms of tendonitis include:

Pain: Tendonitis usually causes localized pain around the affected tendon. The pain may be mild at first and worsen with continued activity.

Swelling: Inflammation of the tendon can lead to swelling and tenderness in the affected area.

Stiffness: Tendonitis can make the joint associated with the affected tendon feel stiff and difficult to move.

Weakness: Tendonitis may cause weakness in the affected area due to pain and inflammation, making it harder to perform certain movements.

Tendonitis can occur in various parts of the body, including the shoulders, elbows, wrists, hips, knees, and ankles. Some common types of tendonitis include tennis elbow (lateral epicondylitis), golfer's elbow (medial epicondylitis), Achilles tendonitis, and rotator cuff tendonitis.

Treatment for tendonitis usually involves a combination of rest, ice, compression, and elevation (RICE), along with anti-inflammatory medications (NSAIDs) to reduce pain and inflammation. Physical therapy exercises can also be helpful in strengthening the surrounding muscles and improving flexibility.



Image B. The Achilles or calcaneal tendon is the large tendon that connects the calf muscles to the heel bone.

Healing time

Tendonitis can be slow to heal for several reasons:

Limited Blood Supply to Tendons: Tendons have a relatively poor blood supply compared to other tissues, which can slow down the delivery of nutrients and immune cells needed for healing. This reduced blood flow can make it challenging for the body to repair the damaged tissue efficiently.

Repetitive Stress: Tendonitis often develops due to repetitive stress or overuse of a tendon. The continued strain on the tendon can impede the healing process by causing further damage and inflammation, even if the affected individual is trying to rest the injured area.

Inflammation: While inflammation is a natural part of the body's healing response, chronic or prolonged inflammation can hinder the healing process. In some cases, the body's immune response might become more focused on dealing with the ongoing inflammation rather than repairing the tissue.

Degenerative Changes: In cases of chronic tendonitis, the repeated cycles of damage and inflammation can lead to degenerative changes in the tendon tissue. This can make the tendon less capable of proper healing and repair.

Age and Overall Health: Factors like age and overall health can influence the speed of healing. As people get older, their body's ability to regenerate and repair tissues might decline. Additionally, certain

medical conditions, like diabetes or certain autoimmune disorders, can interfere with the body's healing processes.

Mismanagement: If tendonitis is not properly managed, and an individual continues to engage in activities that aggravate the affected tendon, the condition can become chronic and more difficult to heal. Rest and appropriate treatment are crucial for recovery.

Tendon Structure: The structure of tendons can also contribute to their slow healing. Tendons are made up of densely packed collagen fibers, and the healing process needs to rebuild these fibers in an organized manner. This process can take time to ensure the tendon regains its strength and function.

Lack of Early Intervention: Delaying treatment or not properly addressing the initial symptoms of tendonitis can lead to the condition becoming more severe and chronic. Early intervention, rest, and appropriate care can help prevent further damage and speed up the healing process.

It's important to note that while tendonitis can be slow to heal, proper management, rest, and following medical advice can greatly improve the healing process. Physical therapy, specialized stretching exercises, and other treatments can be used to promote healing, reduce inflammation, and prevent the condition from becoming chronic.

Stretching and Achilles tendonitis

Stretching can play a beneficial role in managing Achilles tendonitis by helping to alleviate symptoms and promoting healing. Here's how stretching can help:

Relieving muscle tightness: Tightness in the calf muscles, specifically the gastrocnemius and soleus muscles, can contribute to increased stress on the Achilles tendon. Stretching these muscles helps to release tension and reduce the strain on the tendon.

Increasing flexibility: Regular stretching can improve the flexibility of the calf muscles and the Achilles tendon itself. Improved flexibility allows for better range of motion in the ankle joint, reducing the risk of further strain and injury.

Promoting blood flow: Stretching exercises can stimulate blood flow to the affected area, which can aid in the delivery of oxygen and nutrients to the tendon. Improved blood circulation can support the healing process and reduce inflammation.

Its important to note that stretching itself does not directly increase blood flow. However, stretching exercises can indirectly promote blood flow to the muscles and tendons involved. Let me explain the mechanisms involved.

a. Improved Vasodilation: Stretching can lead to improved vasodilation, which is the widening of blood vessels. When you stretch, the muscle fibres lengthen, and this elongation can trigger the release of certain chemicals in the body, such as nitric oxide. Nitric oxide is a vasodilator that relaxes the smooth muscles lining the blood vessels, allowing them to widen. This widening facilitates increased blood flow to the stretched muscles and tendons.

b. Increased Temperature: Stretching exercises can raise the temperature of the muscle tissues. Higher muscle temperature promotes metabolic activity and vasodilation, which can enhance blood flow to the area. Improved blood circulation aids in the delivery of oxygen and nutrients to the tissues while removing metabolic waste products.

When performing stretches for Achilles tendonitis, it's important to keep the following points in mind:

Gradual progression: Start with gentle stretches and gradually increase the intensity and duration over time. Avoid aggressive stretching, as it may further irritate the tendon. Hold and repeat: Hold each stretch for 2 to 3 minutes. This allows for adequate muscle elongation and relaxation.

Consistency: Incorporate stretching exercises into your daily routine. Regular and consistent stretching can yield better results and help prevent future injuries.

Which stretches should you do?

We recommend stretching the gastrocnemius and soleus initially in order to reduce the strain on the tendon. Reducing any activities that repeatedly load the tendon, like running or long-distance walking is also advised, at least until the tendon settles and pain is reduced. When symptoms subside and rehab. has been consistently practiced, work with a coach or health professional to reintroduce activities slowly.

To reduce the likelihood of any recurrence of the condition, we recommend a holistic stretching regimen that includes all of the muscle compartments of the leg-posterior, anterior and lateral.

Please follow the “healthy feet” feet video below for instructions.

Standing gastrocnemius stretch



[Click to play video](#)

Standing soleus stretch



[Click to play video](#)

Flexible feet class



[Click to play video](#)

The Achilles tendon and Greek mythology

The Achilles tendon is named after the Greek mythological figure Achilles. According to the ancient Greek legend, Achilles was a heroic warrior and the central character in Homer's epic poem, the "Iliad." He was said to be nearly invulnerable, except for his heel. His mother, Thetis, dipped him in the River Styx to make him invincible, holding him by the heel. As a result, his entire body became impervious to harm except for the small area where her hand covered his heel.

During the Trojan War, Achilles was eventually killed when Paris, a prince of Troy, shot an arrow into his heel, the only vulnerable spot. This vulnerable spot, or weakness, came to be known as "Achilles' heel."

The Achilles tendon, which connects the calf muscles to the heel bone, was likened to this concept of vulnerability due to its relatively small size and crucial role in the body's movement. Hence, it was named after the mythological Achilles and his Achilles' heel to symbolize a strong but potentially vulnerable point in the human body.

When an achillies tendon is completely torn it might require surgery. In video A below, a common surgical procedure is described. In video B, if you are not squeamish, you can watch the actual surgery.

Video A

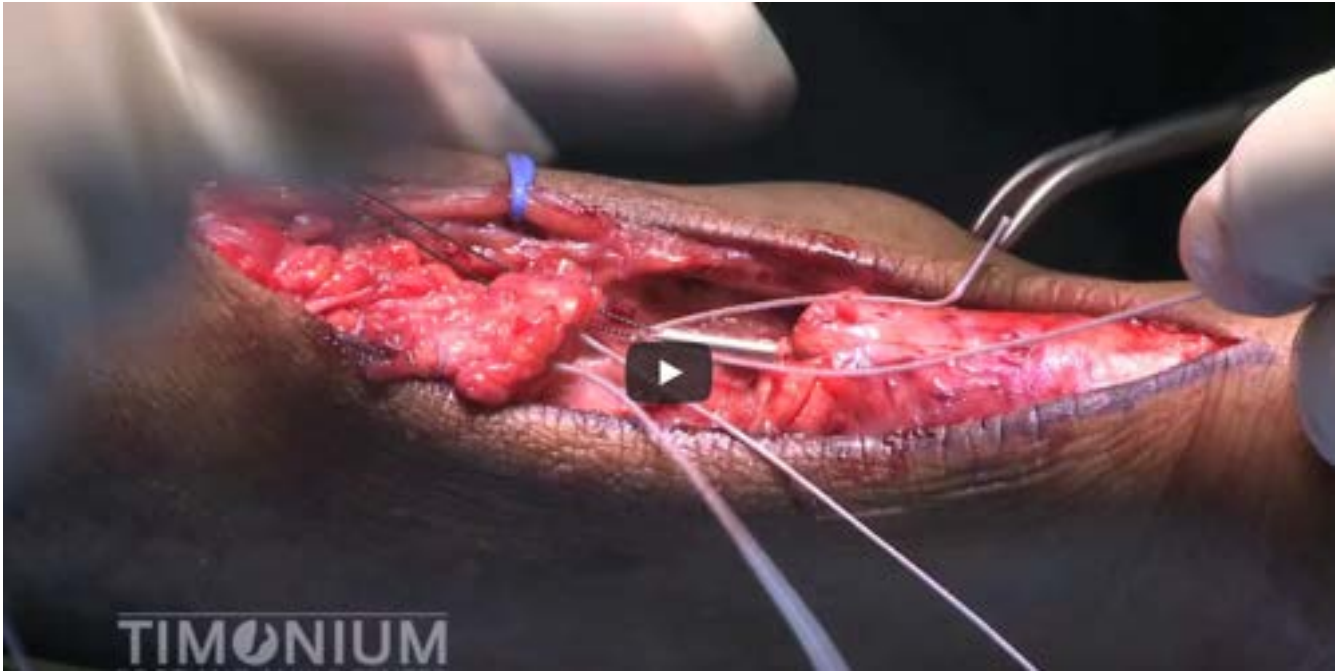
Explanation of Achillis tendon surgery



[Click to play video](#)

Video B

Watch the surgery



[Click to play video](#)