

Key Factors in Causing and Preventing Achilles Tendinitis

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Achilles—a name with which we are all familiar, was one of the most competent heroes of the Trojan War. According to Greek mythology when Achilles was an infant, his mother dipped him in the River Styx, making every part of him invulnerable except his heel, which she held him by. In the end, following many triumphant battles, Achilles was shot in the heel with an arrow and his armor went to Odysseus.

Still, 4,000 years later, runners everywhere feel the pain and vulnerability of Achilles. Achilles tendinitis is one of the most common running injuries, and can become a debilitating condition when it is not properly treated, to the point where even walking is painful. In some cases, when the Achilles is placed under severe stress, a rupture or tear can occur, requiring surgery followed by an extended period of recovery and rehabilitation.

The Achilles tendon is a critical component in the group of muscles and bones that allow a person to walk, run, jump, sit and stand. It is responsible for providing the push necessary to drive the foot down and forward. The gastrocnemius or "calf muscle" and soleus attach to the Achilles tendon, which in turn inserts into a bone that forms the heel of your foot—the calcaneus. Under normal circumstances, massive amounts of force are placed on the Achilles tendon without causing pain. Unfortunately, pathological situations cause force to the tendon to be significantly stressed as soon as you head out for a long training session or even a recovery run.

If Achilles tendinitis is the problem, symptoms may include the following: (1) Pain in the tendon occurs on the commencement of exercise with a feeling of pain that increases with the level of performance, making it impossible to continue. (2) Pain occurs on the commencement of exercise, regresses with warming, and reappears at the end—rarely preventing the continuation of activity. The first steps in the morning are usually painful. (3) Dull pain that does not pass with warming. The pain is often aggravated by hard and/or uneven ground. The first steps in the morning are painful.

The problem is, many runners experiencing these symptoms do not understand how to protect their tendons. I have found three factors that are consistently related to Achilles tendon problems.

1) Foot Strike: The patient is usually a heel striker—and has worn out shoes. Rarely do I come across a runner experiencing Achilles tendinitis that is not a heel striker. Runners often confuse the wear pattern of pronation and supination that occur mid-stance with the wear pattern of the heel striker. A heel striker—whether pronator or supinator—wears out the sole at the back outside margin of the shoe and compresses the mid-sole. (See figure above.) A worn out shoe will force over-stretching of the tendon during heel strike. Running shoes should be replaced before they lose the ability to protect the tendon.

2) Form: Where the foot strikes the ground is very important for efficient and pain-free running, but adjusting this is not as simple as it sounds. Foot strike is only a small portion of a runner's overall form. Many runners are often focused on their lower half—feet, legs and how they feel—but fail to realize what an important role the upper body plays in balance and good form. Most heel strikers also have the tendency to lean forward with the head out in front of the feet. This can be the source of additional stress on an already inflamed Achilles. Proper form includes keeping the chin tucked in and tilted slightly down, shoulders pushed back and the pelvis slightly forward. This upright posture will minimize the stress that can injure the Achilles.

3) Footwear: Without proper footwear to absorb the shock and force that a heel striker experiences, the inflamed Achilles tendon will continue to swell and grow more painful until running becomes virtually impossible. Heel strikers must avoid shoes with a high profile, that is, a shoe with a large distance between the heel of your foot and the ground that is often over-cushioned and unstable, thus over stretching and stressing the Achilles. A shoe with a low profile around the heel provides more support and shock absorption to the heel and Achilles.

Fortunately, these three problems and the injury itself can be corrected by working with a professional that specifically treats runners. Initial, minor pain can be treated with ice, rest and anti-inflammatories, but you should consult a professional as soon as you experience any visible swelling or pain that alters your gait.

Part of the treatment regimen should include a program geared towards increased flexibility. The following exercises are designed to help runners regain the flexibility that is lost from vigorous workouts. Note that these stretches are non-weight bearing and better isolate the muscle groups that affect the Achilles than many traditional stretches.

1) Toes to Nose (Active Hamstring Stretch): Lie on your back with both knees bent, with one foot on the floor. The other leg is supported behind the knee with both hands. Straighten this knee, keeping the toes pointed toward your nose for 30 seconds. Repeat with the other leg. (See Figure A.)

2) Belt Stretch (Rope): Lie on your back, in neutral posture, with one knee bent so the sole of your foot is resting on the floor. Place a belt around the ball of your foot. Grasp the belt and straighten your leg until tension is felt, pull the belt until a stretch is felt. Repeat with other leg. (See Figure B.)

Thanks to the advances of sports medicine, running shoes and training techniques, you don't have to lose the battle with Achilles tendinitis. If you are experiencing pain, get the necessary treatment now—Achilles tendinitis will only worsen if not properly treated. With proper intervention there is no need to be like Achilles and lose this battle.

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