Newsletter

April 2004

Achilles Tendinitis

In Greek mythology, Achilles was a mighty warrior who said to be indestructible. You see, as a child he'd been picked by the gods to be a great warrior and they'd protected him by dipping him in a river and this ceremonial dipping was said to have left him impenetrable to his enemies' weapons. As the story goes, Achilles was eventually brought down by an arrow that pierced his heel and later lead to his death. Apparently when the gods had dipped him in the river, they held onto his heel and that was the only part of his body that was not protected by the water. From the tale we get the term "Achilles Heel" which refers to a person's weak spot. It's also the name of the large tendon on the back of the calf that joins the calf muscles to, you guessed it, the heel. Achilles tendonitis is probably more common in other sports such as basketball but it does affect runners. It's another easy condition to treat if caught early and it's usually caused by a runner neglecting to do both of the calf stretches discussed below.

The Anatomy

The Achilles tendon is an enormous tendon that joins the calf muscles (Gastrocnemius and Soleus) to the heel allow us to stand on our toes, jump, push off during running etc. The gastrocnemius is the outer calf muscle and it's the one that's visible when we stand on our toes. The soleus is a deeper, postural muscle. The gastrocnemius crosses over the knee joint a bit so it's stretched when the knee is straight and the soleus doesn't cross the knee joint so it's stretched with the knee bent. Also of note, if you are doing weights to strengthen your calves, calf raises with the knee straight (standing calf raises) will work the gastrocnemius while calf raises with the knee bent (seated calf raises) will target the soleus.

Signs and Symptoms

- Pain in the lower part of the calf muscle on the back of the lower leg.
- Pain may also be located on the back of the heel, where the tendon attaches. This area is often extremely tender.
- Pain is often aggravated by running, especially the first few minutes of running or after climbing hills.
- More prevalent in women who wear high heels, because the calf is chronically shortened. In fact, high heels (or even shoes/boots with 1 inch heel) will often be relieving or may eliminate the pain completely by decreasing the pull of the tendon on the heel.
- Often associated with old shoes or running in 'cross-trainers'.

What's Going On

For one reason or another, the calf muscles have shortened to some degree and this causes tension in the Achilles tendon and it reacts by getting inflamed. This will often be the result of spending too much time in shoes with high heels (even a 1 inch heel). Wearing heels allows the calf muscles to relax and over time the tendon will begin to shorten. Some women who wear heels exclusively will not be able to walk barefoot because their tendons have become chronically short. But most runners get problems because they forget to *stretch* the soleus muscle. They stretch the gastrocnemius but not the soleus. This causes things to shorten slowly and that's why tendonitis develops. It will often develop after running up hills because as we run up hills the calves are being stretched and this will aggravate tight calves. This is

similar to the person who tries to run for any extended period of time in cross-trainers. They just aren't made for distance running. They don't have the same shape to the classic running shoe. If you look at a running shoe, you'll notice that it has quite a high heel compared to the toe. It looks like its built on a wedge. This eases the stress on the achilles. Cross trainers are much flatter on the ground and therefore not suitable for running. If your running shoe is too old and worn out the heel may have lost some or all of it's shock absorption properties and this can lead to Achilles problems as well. When in doubt, replace your worn out shoes. Often that's all the treatment required. Achilles Tendinitis may also be due to some faulty foot mechanics. This is often beyond the scope of self-treatment and requires a professional to address gait, foot biomechanics, etc.

What To Do About It

Unless you have faulty foot mechanics you may be able to treat Achilles tendonitis on your own, providing you have caught it before it became chronic. If you've been neglecting to do both calf stretches that's the best place to start. Here are a few other things to try:

- Use ice when very sore, especially after activity
- Soak with the Epsom salts. This is the single best thing-apart from stretching-that you can do. Ideally soak halfway or more up your calf. After soaking, stretch your calves. Alternately, if you don't have a bucket, you can soak a face cloth in a pot of hot water and Epsom salts, wring it out a bit, place it over the Achilles and heel, wrap in saran wrap to keep in the heat and then wrap that with a tensor bandage and leave it for 20-45 minutes.
- Reduce or stop running (especially hills) until pain has disappeared. Maintain fitness with water running or any other activity that does not increase symptoms
- Stretch the gastrocnemius and soleus muscles
- Massage helps.
- Adding a heel (up to ¼ inch) temporarily will help, as will wearing heels but remember this is only temporary and if you rely on some sort of heel lift you may end up shortening the Achilles even more.
- Change old shoes.
- Have your foot checked for faulty foot mechanics if you're not improving with the above suggestions.