USA Track & Field - New Jersey
NEWSLETTER

FootFacts

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Understanding Achilles Pain

Dear Dr. Braver,

I have had chronic achilles pain for many years. I frequently stretch, but this has not helped my problem. Please help.

Dear Achilles Sufferer,

You should first understand that the achilles tendon is formed by the two calf muscles -- the gastrocnemius and the soleus.

These two muscles extend down the calf and join together to form the common tendon of the achilles at the back of the heel. These muscles are responsible for push off during walking,, running and jumping.

There are several factors which lead to achilles tendinitis:

1. Tight calf/achilles. **2.** Excessive motions of the heel and foot. **3.** Improper running surface. **4.** Poor running form. **5.** Bony prominence of the heel.

Tight Calf Muscles

Through continual use the runner's calves become strong and tight. As the heel rocks forward, excessive stretch of the achilles occurs. It is therefore imperative to keep the calf musculature flexible. This may be obtained by utilizing several flexibility exercises or the Pro Stretch device available at your local sports store.

Excessive Motions of the Heel and Foot

Further predisposing the achilles to injury would be a runner with tight calves coupled with excessive pronation (collapsing inward) or supination (rolling outward) of the foot.

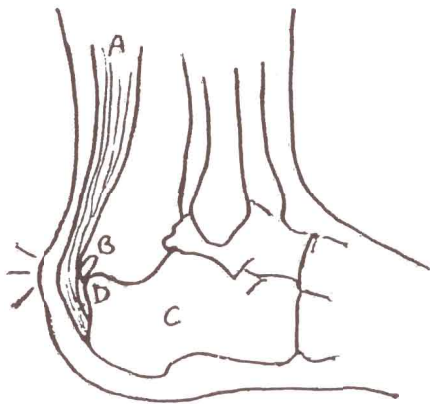
Examining the sole of the shoe will reveal either condition. Hyperpronation may be seen through radical shoe wear under the big toe joint. Hypersupination places more pressure and wear upon the outer edge of the shoe.

Improper Running Surface

Many runners assume that running on a soft surface is ideal. This is not always so. Improper training surfaces may aggravate the achilles.

A surface such as a grassy field causes excessive motion of the heels. The sinking effect of running on sand causes the achilles tendon to be stretched beyond its normal range and the soft surface makes push off more difficult.

Stick to all-weather tracks, well-groomed cinder tracks, smooth running trails, and smooth grass or dirt. Running the roads is fine as long as the runner utilizes a high tech, cushioned running shoe.



A. ACHILLES
B. BURSA
C. CALCANEUS
D. PROMINENCE

Poor Running Form

Poor running technique may lead to excessive strain of the achilles tendon. Landing during foot strike toward the toes causes strain to the achilles tendon as the heel decelerates to the ground.

If improper running form exists, a video analysis of the runner can be revealing as well as a biomechanical analysis which measures muscle power and flexibility and joint range of motion.

Treatment of the above conditions would include rest and stretching or strengthening. Also, running shoes with a firm heel counter will provide proper foot support.

Initially, it is helpful to place a heel lift within the shoe to reduce stretch of the achilles. This should only be a temporary measure as long term use of heel lifts causes further contraction and shortening of the calf muscles.

Do not forget to utilize physical therapies including the use of massage, electrical modalities, and heat and ice. Avoid uphill running and sprinting.

Should the runner continue to have problems despite proper shoe wear, then a custom orthotic device may be necessary.

Orthotic devices counter balance the abnormal excessive motions of the feet. It is important to have forefoot "correction" so that the heel and achilles tendon do not undergo excessive motion during push off. The orthotics must therefore be full length with the correction (not just a cushion) underneath the ball of the foot.

Bony Prominence of the Heel

A bony prominence on the back of the heel can cause pain as well. This may be an enlargement of the heel bone which rubs against the achilles tendon. In addition, it can cause irritation and inflammation of the bursa (cushioning sac). Surgical removal of the prominence may be needed. A corticosteriod injection or ice may provide temporary relief if the bursal sac is swollen.

If abnormal changes to the achilles tendon are noted on an x-ray or MRI (shows soft tissue images), then surgery to clean up the achilles may be necessary.

However, it is important to realize that even if surgery is performed, the causation of the problem, whether tight calf/achilles, biomechanical excessive motions, poor training surface or poor running form, must be properly addressed to prevent recurrence.

Questions may be forwarded to Dr. Richard Braver, c/o the USATF New Jersey Office, Box 10120, New Brunswick, NJ 08906-0120.

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