

## **Wanted: Pain-free Feet and Ankles**

The foot and ankle have more than 26 bones and 100 muscles, tendons and ligaments. Problems may develop due to the complexity, resulting in pain and putting limits on your activity and training. Recognizing this pain is important so that you can treat it and rehabilitate before your training is affected. Two of the most common foot and ankle diagnoses in runners are Achilles tendinitis and plantar fasciitis

### **Achilles Tendinitis**

Tendons are thick fibrous structures that attach muscles to bone. The Achilles tendon is a large tendon at the back of the leg that attaches the main calf muscles (the gastrocnemius and soleus muscles) to the heel bone (calcaneus). There is a significant amount of force generated through this tendon when you run. Research has shown the force can approach 8-10 times your body weight. Anatomical and physiological changes in the tendon can contribute to Achilles tendinitis. The result is pain at the back of the heel during activities. You also may feel a bump, thickening or swelling of the tendon and increased pain while running, walking or standing for a prolonged period.

### **Planter Fasciitis**

Another fibrous tissue, known as the plantar fascia, runs along the bottom of your foot from heel to toe. The plantar fascia acts as a bridge for the bottom of the foot, supplying support for the arch while you stand and shock absorption while walking and running. When you run, the forces through the plantar fascia are twice your body weight. Plantar fasciitis is caused by micro-trauma of the tissue, resulting in degenerative changes. Plantar fasciitis triggers pain at the bottom of your heel and can extend into the arch. It's often painful first thing in the morning when you take your first steps out of bed. It also may be painful at the onset of your run, but will usually improve with activity - but not too much activity. Prolonged exercise can make it worse.

### **The Causes**

These injuries are often found in people who participate in high-impact activities, including running and jumping. Some triggers include increasing your training intensity too quickly, lack of conditioning, change in footwear, change in running surface or route (hills), or change in running gait. Internal and anatomical factors that can lead to pain include an abnormal arch of the foot, weak leg muscles and tight muscles and tendons. Recognizing what may be causing or contributing to the pain is vital to treating the underlying issue.

## **Treating the Pain**

Conservative treatments are the mainstay for both ailments and are highly effective in curbing the pain; however, it's important to note that there is no quick fix. These injuries can take weeks or months to resolve. Therefore, it is important to recognize and treat the pain before it becomes chronic.

If your pain is due to overtraining, one of the easiest treatments is rest. As difficult as it sounds to stop your training, research supports that this is the quickest route to resolution. This doesn't mean you can't exercise. Instead, just decrease or stop running. To maintain conditioning, you may cross train with lower impact activities such as biking, swimming, rowing, anti-gravity treadmill running and using an elliptical. I usually recommend a rest period of 1-2 weeks followed by a slow progression back into training.

You may continue to run if the pain is not too intense, but I recommend you decrease your speed, distance and intensity and run on a level surface until the pain resolves. It's also important to replace your shoes every 300-500 miles because their support breaks down. Ice and anti-inflammatories for pain are also highly effective. For plantar fasciitis, I recommend placing a frozen water bottle on the floor and rolling it from heel to midfoot. You can also place a golf ball under your heel and do a rolling massage to stretch the tissue.

## **Stretching**

Muscle imbalances, weakness and tightness in the legs also may cause Achilles tendinitis or plantar fasciitis. Stretching is one of the best things you can do, both before and after exercise. Stretching the plantar fascia is best done first thing in the morning, before you get out of bed. Grab your toes and stretch your foot toward your shin for 30-45 seconds. Do this three times. You can also do the runners' stretch: place your hands on a wall, extend your foot behind you and push your heel to the ground.

A stretch that I find more effective for both the Achilles tendon and plantar fascia is to stand on a stair on the ball of your foot and let your heel drop off the stair. Hold the stretch for 30 seconds and repeat three times. You can change the position of your foot to target different areas. Night splints, which are braces worn while you sleep to prevent tightness, might help. Heel lifts and cushioning may also be beneficial in off-loading the affected areas. These can be used while running, but also throughout the day.

## **Medical Evaluations**

If these simple self-treatments do not alleviate your pain, I would recommend a medical evaluation. If you have a muscle imbalance or gait abnormality you may benefit from physical therapy and a running gait analysis. The anatomy of your foot could contribute to the pain, so orthotics might help. There are also procedures, injections and other treatment options.

If you have an injury or lingering pain, do not hesitate to reach out to one of our sports medicine physicians at Spectrum Health Orthopedics at (616)267-8860. You can also find more information about our orthopedic program and providers [here](#).