



FAMILY FOOT AND ANKLE CLINIC

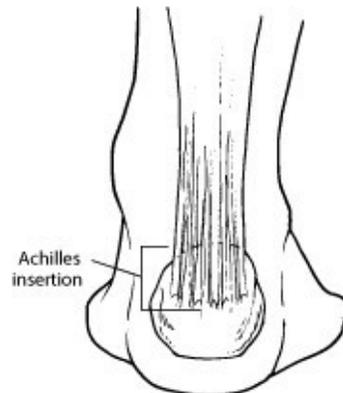
SPECIALISTS AND SURGEONS

At Family Foot & Ankle Clinic, we are committed to providing you with the highest quality of care and ensuring you have all the information you need to make informed decisions about your health.

If you have any questions or concerns, please don't hesitate to reach out to us. You can contact our office directly at 763-421-7300. Additionally, you can visit our website at <https://familyfootmn.com/> for more resources and information about our services.

Thank you for choosing us for your healthcare needs!

Achilles Tendon Disorders



What Is the Achilles Tendon?

The Achilles tendon is a band of tissue that connects a muscle to a bone. It runs down the back of the lower leg and connects the calf muscle to the heel bone. Also called the heel cord, the Achilles tendon facilitates walking by helping to raise the heel off the ground.

Achilles Tendonitis and Achilles Tendinosis

Two common disorders that occur in the heel cord are Achilles tendonitis and Achilles tendinosis.

Achilles tendonitis is an inflammation of the Achilles tendon. This inflammation is typically short-lived. Over time, if not resolved, the condition may progress to a degeneration of the tendon (Achilles tendinosis), in which the tendon loses its organized structure and is likely to develop microscopic tears. Sometimes the degeneration involves the site where the Achilles tendon attaches to the heel bone. In rare cases, chronic degeneration with or without pain may result in rupture of the tendon.

Causes

As "overuse" disorders, Achilles tendonitis and tendonosis are usually caused by a sudden increase of a repetitive activity involving the Achilles tendon. Such activity puts too much stress on the tendon too quickly, leading to micro-injury of the tendon fibers. Due to this ongoing stress on the tendon, the body is unable to repair the injured tissue. The structure of the tendon is then altered, resulting in continued pain.

Athletes are at high risk for developing disorders of the Achilles tendon. Achilles tendonitis and tendonosis are also common in individuals whose work puts stress on their ankles and feet, such as laborers, as well as in "weekend warriors"—those who are less conditioned and participate in athletics only on weekends or infrequently.

In addition, people with excessive pronation (flattening of the arch) have a tendency to develop Achilles tendonitis and tendonosis due to the greater demands placed on the tendon when walking. If these individuals wear shoes without adequate stability, their overpronation could further aggravate the Achilles tendon.

Symptoms

The symptoms associated with Achilles tendonitis and tendonosis include:

- Pain—aching, stiffness, soreness or tenderness—within the tendon. This may occur anywhere along the tendon's path, beginning with the tendon's attachment directly above the heel upward to the region just below the calf muscle. Pain often appears upon arising in the morning or after periods of rest, then improves somewhat with motion but later worsens with increased activity.
- Tenderness, or sometimes intense pain, when the sides of the tendon are squeezed. There is less tenderness, however, when pressing directly on the back of the tendon.
- When the disorder progresses to degeneration, the tendon may become enlarged and may develop nodules in the area where the tissue is damaged.

Diagnosis

In diagnosing Achilles tendonitis or tendonosis, the surgeon will examine the patient's foot and ankle and evaluate the range of motion and condition of the tendon. The extent of the condition can be further assessed with x-rays or other imaging modalities.

Treatment

Treatment approaches for Achilles tendonitis or tendonosis are selected on the basis of how long the injury has been present and the degree of damage to the tendon. In the early stage, when there is sudden (acute) inflammation, one or more of the following options may be recommended:

- **Immobilization.** Immobilization may involve the use of a cast or removable walking boot to reduce forces through the Achilles tendon and promote healing.
- **Ice.** To reduce swelling due to inflammation, apply a bag of ice over a thin towel to the affected area for 10-15 minutes of each waking hour. Do not put ice directly against the skin.
- **Oral medications.** Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, may be helpful in reducing the pain and inflammation in the early stage of the condition.
- **Orthotics.** For those with overpronation or gait abnormalities, custom orthotic devices may be prescribed.
 - Over-the-counter Arch Supports – Superfeet (Green or Blue for Men,

Green or Berry for Women)

- **Night splints.** Night splints help to maintain a stretch in the Achilles tendon during sleep.
- **Physical therapy.** Physical therapy may include strengthening exercises, soft-tissue massage/mobilization, gait and running re-education, stretching and ultrasound therapy.
- **Heel Lift.** For acute flares, not long term use.

Rules Of Fixing Achilles Tendinitis

- Before exercising, minimize the pain! It is ok to exercise with pain, but the pain should not increase to the point where it's unbearable.
- You should be able to walk normally without a limp.
- The next morning, the pain should not be worse than the previous morning.
- If you cannot walk without a limp, it is advisable to either rest, or use a heel lift, which helps to decrease the tensile load on the tendon.
- As the acute inflammation decreases, try to wean off the heel lift.

Stretching Exercises

- Calf & Soleal Stretch
 - This is the first and easiest step. Loosen the gastrocnemius and soleus with these stretches. Make sure to drive your heel down as you bring the rest of your leg forward. By bending the knee, you can focus on stretching the ankle and soleus more.
- Doming
 - Maintain the alignment of your foot with doming, and potentially orthotics. The doming exercise (also known as short foot) teaches you how to maintain your arch using your foot muscles. If you are unable to do this, then supplement this with arch support. You should be able to maintain this position whenever you stand.
- Position – Single Leg Balance
 - Challenge your balance (with proper foot mechanics) to help strengthen your foot muscles. Start with simply standing tall and balancing on one foot. Once you can do 10 seconds consistently, also try these two other positions: single leg squat and single leg hip hinge (pics). And then once you can do 3 of those consistently, grab a weight and perform halos while maintaining your balance.
- Eccentrics & Time Under Tension
 - These are the most important exercises for rehabbing Achilles tendinopathy. When there is pain in the Achilles, most people are told to rest. This is good advice at first, however the calf muscles AND the tendon will also begin to atrophy. To avoid this, practice isometric and eccentric exercises.
 - Isometrics
 - Introduce isometric exercises first, where you load the

tendon without movement. Just stand on one leg, and lean forward so that the weight is on the ball of your foot (heel should still be touching the floor). Hold this for 10 seconds at a time. Repeat for sets of 10. You should feel your calf working as you lean forward. This is a very physiologically safe exercise as there is no movement to the tendon. Ideally, you would perform this throughout the day for multiple sets of 10.

- Eccentrics
 - This exercise is generally considered the gold standard for tendon rehab. After you are comfortable with isometrics, transition to eccentrics, which add in motion mostly in only one direction.
 - Also known as negatives, you will rise onto the ball of your feet using the strength of both legs. Then, put all of your weight on your injured side, and **SLOWLY** lower yourself. **Take at least 4 seconds to get back to the start position.** You can even do this on a step and allow your heel to go lower than your forefoot (unless you have insertional pain at the heel bone). Once you hit bottom, use both legs to press back up, and then repeat.
 - Parameters: As this is your main exercise, perform as many sets as you can.
 - 3 sets of 15 repetitions with a straight leg.
 - 3 sets of 15 repetitions with a bent knee.
 - Repeat everything again at night for a total of 240 reps/day.
 - As your strength increases and you can do 3 sets of 15 without too much fatigue, you can wear a backpack with weights (or hold dumbbells). However, if this causes too much soreness the next day, decrease the weight.
- Foam Roll
 - Lastly, help the calf muscle relax by spending a few minutes rolling it out with a foam roller. Try to get both the medial and lateral sides of your calf, and be patient – the more weight you apply to the calf, the slower you should roll.
 - The hardest part about exercising with Achilles tendinopathy is trying to find the right balance of exercise without flaring up the tendon, and rest.
 - Remember the basic rule: **you should stop BEFORE the pain makes you stop**, and your symptoms the next day should never be worse than the previous day. If you are able to do this while exercising to increase the strength and flexibility of your leg, then your tendon should slowly be able to recover and regenerate.

For examples of these stretching exercises, visit:

<https://www.builtlean.com/2016/12/05/rehab-achilles-tendinitis/>

When Is Surgery Needed?

If nonsurgical approaches fail to restore the tendon to its normal condition, surgery may be necessary. The foot and ankle surgeon will select the best procedure to repair the tendon,

based on the extent of the injury, the patient's age and activity level, and other factors.

Prevention

To prevent Achilles tendonitis or tendonosis from recurring after surgical or nonsurgical treatment, the foot and ankle surgeon may recommend strengthening and stretching of the calf muscles through daily exercises. Wearing proper shoes for the foot type and activity is also important in preventing recurrence of the condition.

<https://www.foothealthfacts.org/conditions/achilles-tendon-disorders>