

# ACHILLES TENDINITIS



## ■ ❏ : Description

Achilles tendinitis is characterized by inflammation and pain at the Achilles tendon (back of the ankle). This tendon, sometimes called the heel cord, is the tendon attachment of the calf muscles from the leg and knee to the heel. This structure is important in standing on your toes or in the pushing-off phase of walking, running, or jumping.

Achilles tendinitis is usually a grade 1 or 2 strain of the tendon. A *grade 1 strain* is a mild strain. There is a slight pull of the tendon without obvious tendon tearing. (There is microscopic tendon tearing.) There is no loss of strength, and the tendon is the correct length. A *grade 2 strain* is a moderate strain. There is tearing of tendon fibers within the substance of the tendon or where the tendon attaches to muscle or bone. The length of the tendon or whole muscle-tendon-bone unit is increased, and there is usually decreased strength. A *grade 3 strain* is a complete rupture of the tendon.

## ■ ❏ : Common Signs and Symptoms

- Pain, tenderness, swelling, warmth, and redness over the Achilles tendon
- Pain with ankle motion (especially pushing off or pushing down with the front of the foot) or standing on the ball of the foot or toes
- Crepitation (a crackling sound) when the tendon is moved or touched

## ■ ❏ : Causes

- Strain from sudden increase in amount or intensity of activity or overuse of the lower leg muscles and Achilles tendon
- Direct blow or injury to the lower leg, foot, or ankle

## ■ ❏ : Risk Increases With

- Sports that require sudden, explosive calf muscle contraction, such as those involving jumping and quick starts or kicking, especially basketball and racquetball
- Running sports, especially training running down hills
- Poor physical conditioning (strength and flexibility/endurance)
- Inadequate warm-up before practice or play

## ■ ❏ : Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
  - Ankle and leg flexibility
  - Muscle strength and endurance
  - Cardiovascular fitness

- Use proper technique.
- To help prevent recurrence, taping, protective strapping, or an adhesive bandage may be recommended for several weeks after healing is complete.

## ■ ❏ : Expected Outcome

- An acute injury is usually curable within 6 weeks if treated appropriately with conservative treatment and resting of the affected area.
- A chronic condition may take up to 8 to 10 months to heal.
- Recovery is usually quicker if the inflammation is due to a direct blow as compared with overuse or sudden strain.

## ■ ❏ : Possible Complications

- Healing time will be prolonged if the condition is not appropriately treated or if not given adequate time to heal.
- Symptoms can reoccur if activity is resumed too soon.
- Untreated, tendinitis may result in tendon rupture requiring surgery.

## ■ ❏ : General Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem. These all can be carried out at home, although referral to a physical therapist or athletic trainer for further evaluation and treatment may be helpful. Occasionally a walking boot or cast may be recommended to immobilize the tendon, allowing the inflammation to settle down. For less severe cases or after immobilization, a heel lift may be prescribed to reduce stress to the tendon. This may be followed by an elastic bandage wrap of the ankle and Achilles tendon. Orthotics (arch supports) may be prescribed or recommended by your physician. Surgery to remove the inflamed tendon lining or degenerated tendon tissue is rarely necessary and has shown less than predictable results.

## ■ ❏ : Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), are used to reduce inflammation. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of allergic reaction occur. Other minor pain relievers, such as acetaminophen, may also be used.
- Pain relievers may be prescribed as necessary by your physician. Do not take prescription pain medication for longer than 4 to 7 days. Use only as directed and only as much as you need.
- Cortisone injections are rarely if ever indicated. Cortisone injections may weaken tendons, so it is better to give the condition more time to heal than to use them.

### ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic Achilles tendinitis. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

### ■ ■ Notify Our Office If

- Symptoms get worse or do not improve in 2 weeks despite treatment.
- New, unexplained symptoms develop (drugs used in treatment may produce side effects).

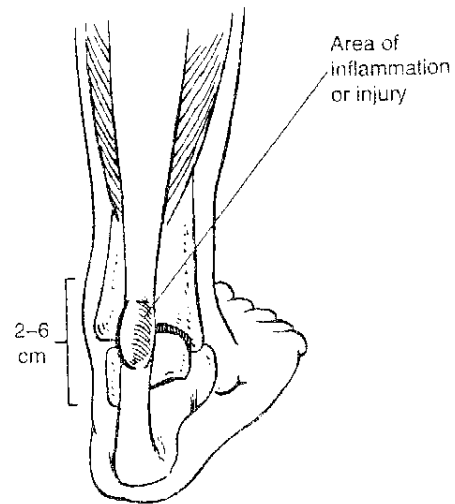


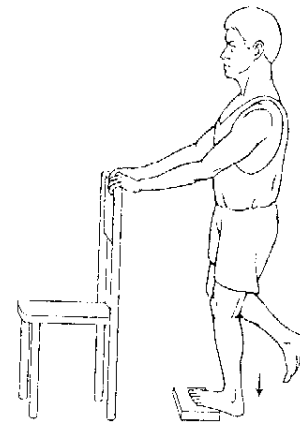
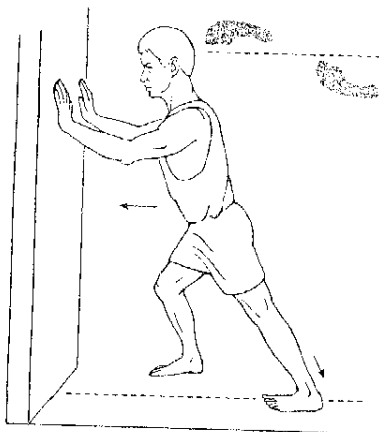
Figure 1

From McDermott EP: Basketball Injuries of the Foot and Ankle. Clin Sports Med 12:386, 1996.

**> RANGE OF MOTION AND STRETCHING EXERCISES • Achilles Tendinitis**

These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



**STRETCH • Gastrocnemius**

*Note: This exercise can place a lot of stress on your foot and ankle and should only be done after specifically checking with your physician, physical therapist, or athletic trainer.*

1. Place your toes and the ball of your foot on a book(s) or the edge of a stair. Your heel should be off the ground.
2. Hold on to a chair or stair rail for balance.
3. Allow your body weight to stretch your calf.
4. First do this exercise with the knee straight, then bend the knee slightly.
5. Hold this position for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

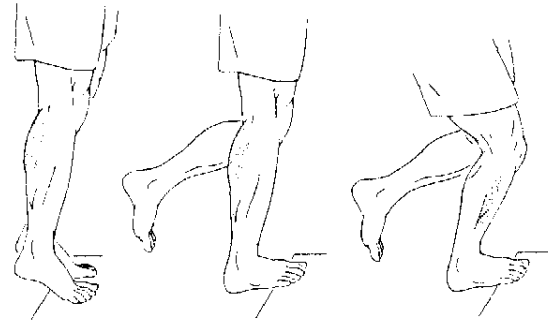
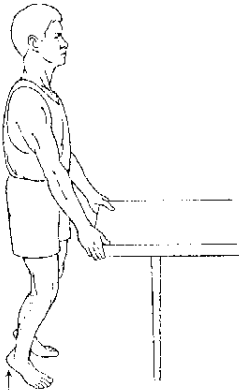
**STRETCH • Gastrocnemius**

1. Stand *one* arm length from the wall as shown. Place calf muscle to be stretched behind you as shown.
2. Turn the *toes in* and *heel out* of the leg to be stretched.
3. Lean toward wall leading with your waist, allowing your arms to bend. **Keep your heel on the floor.**
4. First do this exercise with the knee straight, then bend the knee slightly. **Keep your heel on the floor at all times.**
5. Hold this position for \_\_\_\_\_ seconds.
6. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

### > STRENGTHENING EXERCISES • Achilles Tendinitis

These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. These exercises should be started when some of your pain begins to subside and resolve. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.



### PLANTAR FLEXION STRENGTH

*Note:* This exercise can place a lot of stress on your foot and ankle and should only be done after specifically checking with your physician, physical therapist, or athletic trainer.

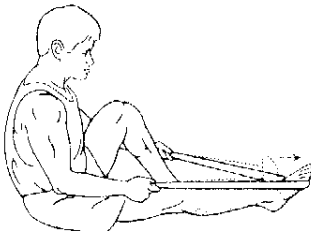
1. Stand on the edge of a step as shown with your body weight on the front of both feet. Use both legs to rise up on your toes.
2. From the toe, raise your position with your knee straight. *Using your injured leg*, lower the heel of the injured side *below* the level of the step. *Use the uninjured leg* to rise back to the starting position (the first figure). Work up to 3 sets of 15 repetitions.
3. Repeat by lowering the heel of the injured side below the level of the step with the knee slightly bent. Work up to 3 sets of 15 repetitions.
4. When you can perform the above exercises with minimal discomfort, increase the workload by adding a back pack with weights. You may increase the weight in the backpack in increments as tolerated.

*Do this exercise twice a day for 12 weeks, every day.*



### STRENGTH • Plantarflexors

1. Stand with feet shoulder-width apart. Hold on to counter or chair if necessary for balance.
2. Rise up on your toes as far as you can. Hold this position for \_\_\_\_\_ seconds.
3. Complete this exercise using only one leg if it is too easy using both legs.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.



### STRENGTH • Plantarflexors

1. Loop elastic band around foot as shown. Pull the band toward you with your hands.
2. Push your toes away from you slowly. Hold this position for \_\_\_\_\_ seconds. Slowly return to starting position.
3. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.

### SEATED CALF RAISE

1. Sit on the edge of a chair or a bench with your feet flat on the ground in front of you.
2. Push down with your toes, raising your heel off of the floor.
3. To add resistance, you may push down on the top of your knee with your hand, or you may add weight on top of your knee as shown.
4. Repeat exercise \_\_\_\_\_ times, \_\_\_\_\_ times per day.