



Achilles Tendinitis

DESCRIPTION

- In Achilles tendinitis, inflammation and pain occurs at the Achilles tendon, at the 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.
- This is a grade 1 or 2 strain of the tendon. A *grade 1 strain* is a mild strain, a slight pull of the tendon without obvious tendon tearing (microscopic tendon tear). There is no loss of strength, and the tendon is the correct length. A *grade 2 strain* is a moderate strain with 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 tear of the tendon (see Achilles Tendon Rupture).

FREQUENT SIGNS AND SYMPTOMS

- Pain, tenderness, swelling, warmth, and/or 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

- Sudden increase in amount or intensity of activity or overuse of the lower leg muscles and Achilles tendon
- A direct blow or injury to the lower leg, foot, or ankle

FACTORS THAT INCREASE RISK

- 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 running down hills
- Poor physical conditioning (strength, flexibility, endurance)
- Inadequate warm-up prior to practice or play

PREVENTIVE MEASURES

- Warm up and stretch before practice or competition.
- Give time for adequate rest and recovery between practices and competition.
- Appropriate conditioning that includes ankle and leg flexibility, muscle strength and endurance, and cardiovascular fitness.

- Practice proper technique.
- Taping, protective strapping, or an adhesive bandage may be recommended temporarily after healing is complete to help prevent recurrence.

EXPECTED OUTCOME

- Acute injury is usually curable within 6 weeks if treated appropriately; resting the affected area is also important.
- Chronic conditions may require up to 10 months for recovery.
- Recovery is usually quicker if the inflammation is due to a direct blow compared with overuse or sudden strain.

POSSIBLE COMPLICATIONS

- Healing time will be prolonged if the injury is not appropriately treated or given adequate time to heal.
- Recurrence is common when return to activity occurs too soon.
- Untreated tendinitis may lead to tendon rupture, which requires surgery.

GENERAL TREATMENT CONSIDERATIONS

Initial treatment consists of medication and ice to relieve pain and swelling, stretching and strengthening exercises, and modifying the activity that initially caused the problem to occur. 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. A walking boot or cast may be recommended to allow 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 also be recommended. Surgery to remove the inflamed tendon lining or degenerated tendon tissue is rarely necessary. Surgery for this problem has less predictable results.

MEDICATION

- Nonsteroidal antiinflammatory medications, such as aspirin and ibuprofen (do not take within 7 days of surgery), are used to reduce pain and inflammation. Take these as directed by your physician. Contact your doctor immediately if any bleeding, stomach upset, or allergic reaction occurs. Other minor pain relievers, such as acetaminophen, may also be used.

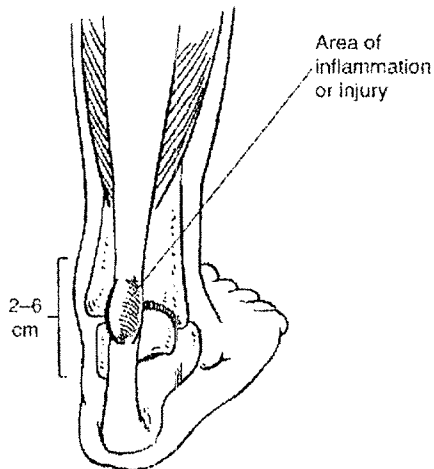


FIGURE 1 From McDermott EP: Basketball injuries of the foot and ankle, *Clin Sports Med* 12:386; 1996.

- Pain relievers may be prescribed. Do not take prescription pain medication for longer than 4 to 7 days. Use only as directed, and take only as much as you need.
- Cortisone injections are rarely if ever indicated, as these may weaken tendons and lead to rupture.

HEAT AND COLD

- Cold is used to relieve pain and reduce inflammation and should be applied for 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms.
- Heat may be used prior to performing any prescribed stretching and strengthening activities. Heat may be applied using a heat pack or a warm soak.

WHEN TO CALL YOUR DOCTOR

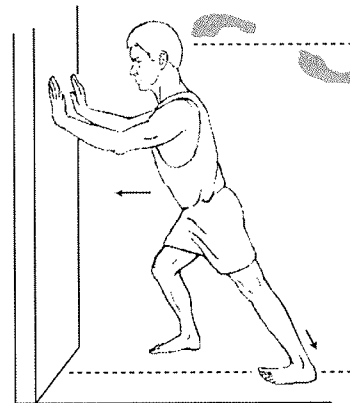
- Symptoms get worse or do not improve in 2 weeks despite treatment.
- New, unexplained symptoms develop. Drugs used in treatment may produce side effects.

RANGE OF MOTION & STRETCHING EXERCISES

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These are some of the *initial* exercises you may use to start your rehabilitation program. Do these exercises as instructed until you see your physician, physical therapist, or athletic trainer again. Please remember:

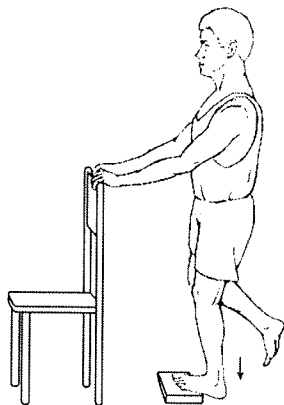
- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



FLEXIBILITY • Gastrocsoleus Stretch

1. Stand *one* arm length from the wall as shown with the 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 the wall, leading with your waist and 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 this exercise _____ times, _____ times per day.

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**FLEXIBILITY • Gastrocnemius Stretch**

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

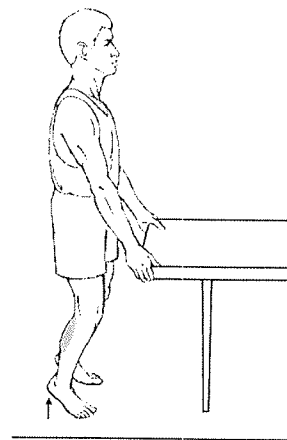
1. Place your toes and the ball of your foot on a book or on the edge of a stair. Your heel should be off the ground.
2. Hold on to a chair or handrail for balance.
3. Allow your body weight to stretch your calf.
4. First do this exercise with the knee straight, then bend the knee slightly.
5. Hold this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

STRENGTHENING EXERCISES

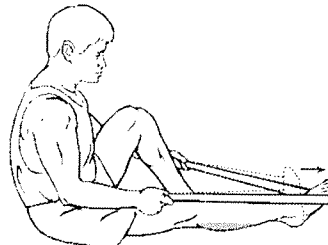
Achilles Tendinitis

These are some of the *initial* exercises you may use to start your rehabilitation program, until you see your physician, physical therapist, or athletic trainer again, or until your symptoms resolve. Begin these exercises when your pain begins to subside. Please remember:

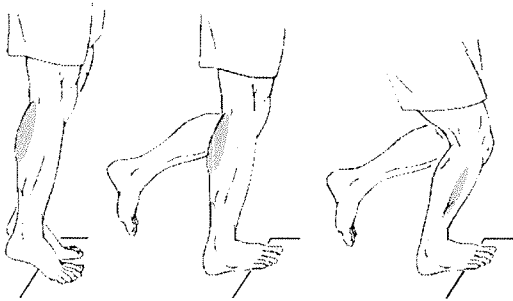
- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer; progress slowly with each exercise under their guidance, gradually increasing the number of repetitions and weight used.

**STRENGTH • Plantarflexion**

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

**STRENGTH • Plantarflexion**

1. Loop an elastic band around your foot as shown, and pull the band toward you with your hands.
2. Push your toes away from you slowly. Hold this position for _____ seconds.
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STRENGTH • Plantarflexion

Note: This exercise can place considerable 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 yourself 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 exercises above with minimal discomfort, increase the workload by adding a backpack with weights. You may increase the weight in the backpack in increments as tolerated.



STRENGTH • 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 this exercise _____ times, _____ times per day.