

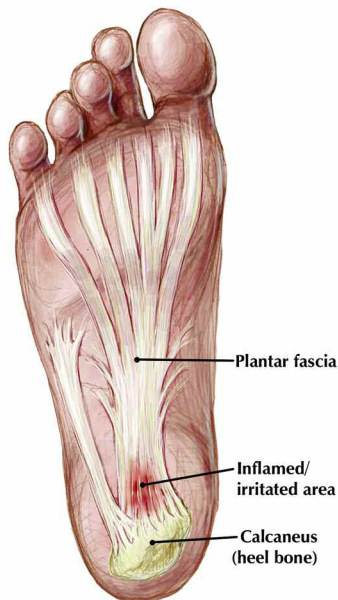
PLANTAR FASCIITIS



AOSSM SPORTS TIPS

WHAT IS PLANTAR FASCIITIS?

Plantar fasciitis is pain felt at the bottom of the heel. It is usually felt on the first step out of bed in the morning or when walking again after resting from a walking or running activity. However, plantar fasciitis pain can, if it persists, soon be felt any time you are walking, running or jumping.



Although the pain is mostly felt at the bottom of the heel, it can also radiate down the entire bottom of the foot toward the toes. Plantar fasciitis is not usually associated with numbness or tingling.

ANATOMY OF THE PLANTAR FASCIA

The plantar fascia consists of dense bands of tissue deep below the skin that extend out in a fan-like fashion from the heel bone to the toes. If you

pull your toes and foot toward your head, you will feel this tissue tighten.

WHAT CAUSES PLANTAR FASCIITIS?

Plantar fasciitis is thought to be caused by repetitive stretching of the tight bands of the plantar fascia which result in micro tears in these bands as they extend from the heel. Because these tears usually do not occur from a single traumatic event, an immediate healing reaction is not triggered. A chronic irritation or inflammation process thereby begins which increases with activity. A sudden weight gain may also increase stress to an otherwise normal plantar fascia.

Pulling of the tight plantar fascia on the heel bone during activity can result in the formation of a bone spur off the tip of the heel bone, at the origin of the plantar fascia tissue. This bone spur itself is not the cause of pain, but rather the mechanical result of the chronic inflammatory process on the bone caused by the stretching of the tight tissue.

TREATMENT TIPS

Surgery is rarely necessary to treat plantar fasciitis. To decrease your pain and symptoms, you may want to:

- *Tape the heel and arch.* Custom shoe inserts may be needed to support the arch and the heel.
- *Increase the flexibility of the plantar fascia* and calf muscles by doing stretching exercises. Tight calf muscles increase the stress on the plantar fascia and predispose you to plantar fasciitis.

- *Massage the plantar fascia* by rolling your foot over a round tube-like object with a diameter of 3 to 4 inches. A rolling pin works nicely for this.
- *Strengthen the muscles* of the foot and ankle that support the arch. One way to do this is to scrunch up a hand towel with your toes or use your toes to pull a towel weighted with a food can across the floor.
- *Warm up well before stretching.* Cold tissues cannot stretch as effectively. After stretching, ice your heel for 20 to 30 minutes at the point of maximum tenderness to decrease any inflammation that may result from too vigorous a workout.
- *Consider the use of oral anti-inflammatory medications* such as aspirin or ibuprofen. These medications can decrease the inflammation of the plantar fascia and thus decrease your symptoms so that you can stretch and improve your flexibility. In some cases, your physician may recommend a prescription anti-inflammatory for you.
- *Try a night splint.* These devices, prescribed by your physician, keep the foot flexed at 90 degrees instead of the typical relaxed foot position of toes pointed down that occurs during sleep. Wearing a splint may lessen the pain of the first step in the morning.
- *Massage the heel with a sports cream,* which may lessen symptoms. A variety of “hands on” therapeutic treatments can also be administered by a physical therapist.

HOW TO PREVENT PLANTAR FASCIITIS

Always warm up well and stretch before participating in sports.

Wear good, supportive shoes for your athletic activities.

Keep the muscles of your feet and ankles strong to support your arch.

Don't try running to lose weight after a rapid weight gain. Walk first, and stretch the muscles of the foot and calf to help condition your body before running. Avoid activities that cause pain in your heel.

See your physician if pain persists despite these measures.

Expert Consultant:
Wayne J. Sebastianelli, MD

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Plantar Fasciitis

ARE YOU FEELING ANY OF THE FOLLOWING?

Pain or tenderness along the arch or the inside of the edge of the heel that occurs when:

- Running
- Jumping
- Walking on the toes
- Taking your first few steps after getting out of bed or after sitting for more than a few minutes
- Beginning a game or workout

THIS CONDITION IS BROUGHT ON BY:

- Repeated and forceful stretching or pounding (on a hard surface)
- Tight calf muscles
- A sudden increase (more than 10% per week) in the intensity of a workout or sports activity
- Faulty foot mechanics (flat arches, rigid arches, etc.)
- Wearing shoes with little arch support or heel padding



The plantar fascia runs along the bottom of the foot, from the heel to the toes.

TO RELIEVE PAIN AND SPEED RECOVERY

Unless your heel or arch pain is severe or you're unable to walk, you can try the following:

• Rest from all activities that cause pain, especially running, impact cardio and jumping.
• Ice 2-3 times per day. Rub an ice cube over the painful spot for approximately 5-10 minutes.
• Aspirin or Ibuprofen: <p style="margin-left: 40px;">To reduce pain - take per product's guidelines</p> <p style="margin-left: 40px;">To reduce inflammation - take 650 mg of aspirin or 400 mg of ibuprofen three times a day for 1-2 weeks.</p>
Important: Stop taking if it causes stomach upset or bloody stools. Contact your physician if you are currently taking other medications or if you have any questions.
• Shoes that have a firm arch support and well-cushioned heel, help reduce the tension in the Achilles tendon. Change shoes that show excess wear (change running shoes every 400 miles). If shoes are in good condition, but lack adequate support and cushion, try putting an additional arch support in both sides.

STRETCH - to reduce tension along the arch

Technique:	Warm up until you start to sweat, stretch to a gentle pull, and hold without bouncing for 20-30 seconds.
Frequency:	Do 2- 3 sets of repetitions per day, 6-7 days per week.

Calf Stretch

- Stand with your feet pointed forward.
- Keep your heels down and back leg straight.
- Slowly bend your front leg until you feel a gentle upper calf stretch in the back leg.



(next)

Heel Stretch

- Stand with your feet pointed forward and heels down.
- Slowly bend your back leg until you feel a gentle lower calf or heel stretch along that leg.



Arch Stretch

- Grab your toes and ball of the foot.
- Pull the toes and foot back until you feel an arch stretch.



Foot Rub

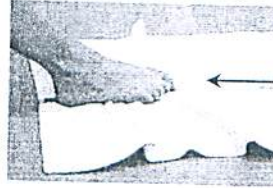
Sit in a chair with a tennis or golf ball under the foot. Slowly move your foot back and forth, rolling the ball underneath.

STRENGTHEN - the arch to prevent injury

Frequency:	Do three sets of ten repetitions, 3-4 days per week.
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Towel Crunches

- Spread out a towel in front of your foot.
- Use your toes to pull the towel toward you.



CALL YOUR DOCTOR IF:

- Your arch or heel pain continues after two weeks of self-care.
- You feel sharp, shooting pain even at rest (sitting and sleeping).
- You can't walk without limping.
- Your arch or heel swells.
- You feel unusual numbness or tingling in your foot (possible circulation or nerve problems).
- Your foot or toes are blue and cold (possible circulation problems).
- Your heel, foot or toes are red and hot and you have a fever (possible infection).

If you are concerned about any difference in your treatment plan and the information in this handout, you are advised to contact your health care provider.



University of Michigan
Health System

This information is approved and/or reviewed by U-M Health System providers but it is not a tool for self-diagnosis or a substitute for medical treatment. You should speak to your physician or make an appointment to be seen if you have questions or concerns about this information or your medical condition.

Plantar Fasciitis Rehabilitation Exercises

You may begin exercising the muscles of your foot right away by gently stretching them as follows:

- **Prone hip extension:** Lie on your stomach with your legs straight out behind you. Tighten the buttocks and thigh muscles of your injured leg and lift it off the floor about 8 inches. Keep your knee straight. Hold for 5 seconds. Then lower your leg and relax. Do 3 sets of 10.
- **Towel stretch:** Sit on a hard surface with one leg stretched out in front of you. Loop a towel around your toes and the ball of your foot and pull the towel toward your body keeping your knee straight. Hold this position for 15 to 30 seconds then relax. Repeat 3 times.
When the towel stretch becomes too easy, you may begin doing the standing calf stretch.
- **Standing calf stretch:** Facing a wall, put your hands against the wall at about eye level. Keep one leg back with the heel on the floor, and the other leg forward. Turn your back foot slightly inward (as if you were pigeon-toed) as you slowly lean into the wall until you feel a stretch in the back of your calf. Hold for 15 to 30 seconds. Repeat 3 times and then switch the position of your legs and repeat the exercise 3 times. Do this exercise several times each day.
- **Sitting plantar fascia stretch:** Sit in a chair and cross one foot over your other knee. Grab the base of your toes and pull them back toward your leg until you feel a comfortable stretch. Hold 15 seconds and repeat 3 times.

When you can stand comfortably on your injured foot, you can begin standing to stretch the bottom of your foot using the plantar fascia stretch.

- **Achilles stretch:** Stand with the ball of one foot on a stair. Reach for the bottom step with your heel until you feel a stretch in the arch of your foot. Hold this position for 15 to 30 seconds and then relax. Repeat 3 times.

After you have stretched the bottom muscles of your foot, you can begin strengthening the top muscles of your foot.

- **Frozen can roll:** Roll your bare injured foot back and forth from your heel to your mid-arch over a frozen juice can. Repeat for 3 to 5 minutes. This exercise is particularly helpful if done first thing in the morning.
- **Towel pickup:** With your heel on the ground, pick up a towel with your toes. Release. Repeat 10 to 20 times. When this gets easy, add more resistance by placing a book or small weight on the towel.
- **Balance and reach exercises**

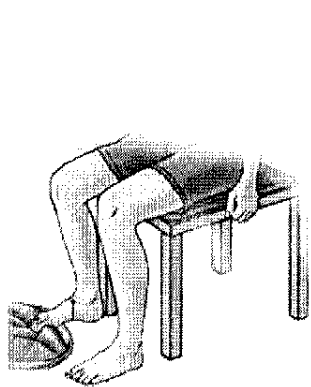
Stand upright next to a chair with your injured leg farthest from the chair. This will provide you with support if you need it. Stand just on the foot of your injured leg. Try to raise the arch of this foot while keeping your toes on the floor.

- A. Keep your foot in this position and reach forward in front of you with the hand farthest away from the chair, allowing your knee to bend. Repeat this 10 times while maintaining the arch height. This exercise can be made more difficult by reaching farther in front of you. Do 2 sets.
 - B. Stand in the same position as above. While maintaining your arch height, reach the hand farthest away from the chair across your body toward the chair. The farther you reach, the more challenging the exercise. Do 2 sets of 10.
- **Heel raise:** Balance yourself while standing behind a chair or counter. Using the chair to help you, raise your body up onto your toes and hold for 5 seconds. Then slowly lower yourself down without holding onto the chair. Hold onto the chair or counter if you need to. When this exercise becomes less painful, try lowering on one leg only. Repeat 10 times. Do 3 sets of 10.
 - **Side-lying leg lift:** Lying on your uninjured side, tighten the front thigh muscles on your top leg and lift that leg 8 to 10 inches away from the other leg. Keep the leg straight and lower slowly. Do 3 sets of 10.

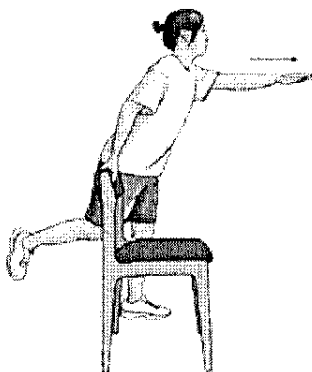
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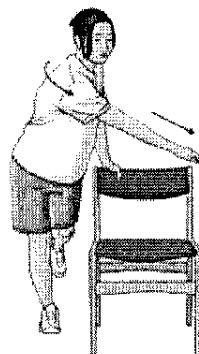
Plantar Fasciitis Rehabilitation Exercises



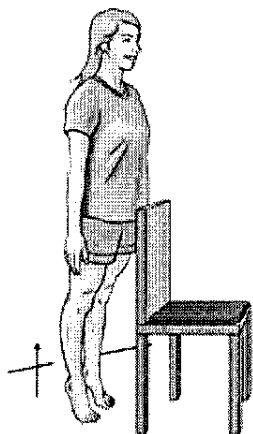
Towel pickup



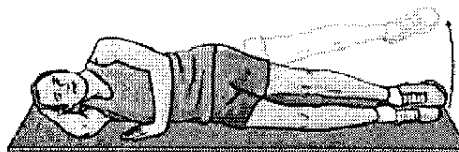
Balance and reach exercise A



Balance and reach exercise B

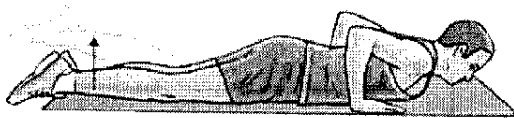


Heel raise

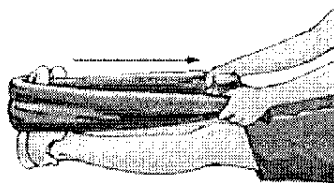


Side-lying leg lift

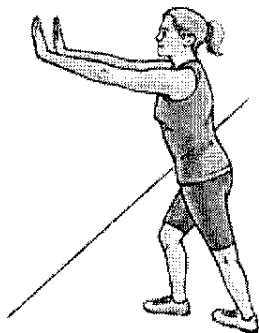
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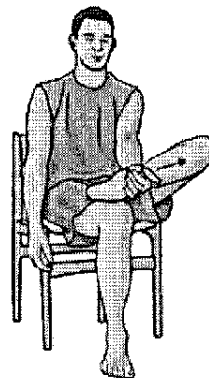
Prone hip extension



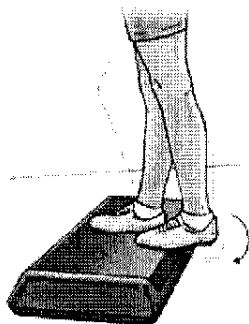
Towel stretch



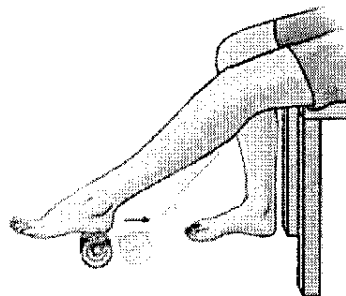
Standing calf stretch



Sitting plantar fascia stretch



Achilles stretch



Frozen can roll