

Katherine E. Chou, DPM

2100 Webster St., Suite 407, San Francisco, CA 94115

Phone: (415) 426-7771 Fax: (415) 967-7053

www.drkatherinechou.com admin@drkatherinechou.com

Plantar Fasciitis

What is it?

Plantar fasciitis is inflammation of the plantar fascia, a long ligament that attaches to your heel and the ball of your foot that helps to hold up your arch. The plantar fascia is also indirectly attached to your Achilles tendon.

Sometimes, the surrounding soft tissue (muscles, tendons, ligaments, or nerves) can be inflamed as well. It is an extremely common problem that is very easily treatable.

What causes it?

There is sometimes an initial injury to your plantar fascia, which can be triggered by many things: new shoes, working more hours, a new workout routine, standing for long periods on hard surfaces, recent weight gain or a specific injury. Most often, it happens due to underlying asymmetry in your gait. The initial injury may cause small micro-tears to the plantar fascia which can trigger pain and inflammation. The more you injure the plantar fascia, the more vulnerable it is to further injury. This cycle of re-injury and micro-tears causes the chronic inflammation. In addition, if your normal gait has some asymmetry, this new injury can take longer to heal and may become chronic because of ongoing abnormal tension.

Why does the first step I take after resting hurt the most?

After the initial injury, your body tries to heal the affected area. It partially heals while you sleep at night or stiffens up if you have been resting. When the foot is relaxed (i.e. after sitting for a long time or sleeping), the injured ligament stiffens. When you first get out of bed and step down, the injured ligament is not ready to bear weight. Your sudden body weight and stretches the stiffened plantar fascia, causing new tears to the fragile tissue that is trying to heal. The sharp pain that you feel is the plantar fascia getting a micro-tear. Over weeks and months, your heel is now an area that has gone through many cycles of re-injury and healing. After a while, the generalized inflammation to the area may or may not start to cause the surrounding soft tissues to become sore as well.

How do you treat it?

There are many things you can do for immediate short term pain relief to start the healing process. Ultimately though, the best way to treat plantar fasciitis is to break the cycle of re-injury. You will want to prevent re-injury as much as possible and if you do have a recurrence, speed your healing as quickly as possible.

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Immediate short term treatments - to start the healing process

1. PLANTAR FASCIA STRETCH

- This stretch and the calf stretch are the two critical treatments to start immediately.
- The timing of the stretches are very important. You **MUST** do this stretch **BEFORE** putting any weight on your foot (That means before you get out of bed, or after you've been sitting for over an hour.)
- Cross your affected foot over the opposite knee.
- Relax your ankle.
- Use the same side hand as the injured side to pull back your toes firmly.
- Use your other hand to feel the tight plantar fascia to make sure you are stretching properly. The plantar fascia should be taut, but do not overstretch it. Just pull to the point that the ligament is taut. You may not feel like you are stretching your foot because the plantar fascia is not a muscle, but a ligament.
- Hold this stretch for 30 seconds, release it for 5 seconds. Repeat 4-10 times in one sitting.
- Repeat this this stretch at least 3 times daily, **MOST IMPORTANTLY FIRST THING IN THE MORNING BEFORE STEPPING DOWN.**
- You must do these exercises **EVERY DAY.**
- Be patient. Your body still needs to complete the process of healing in its own time frame. This exercise allow healing to continue in an uninterrupted fashion.
- It may take 8-12 weeks of stretching* (if only doing this stretch) to feel significant relief of pain.
 - Alternative plantar fascia stretch - for those unable to reach their feet easily
 - While sitting upright, either on the edge of the bed or a chair, press your toes to the ground to the side and a little behind you.
 - Your big toe joint should be bent as much as is comfortable and your heel should be up in the air

2. CALF/ACHILLES TENDON STRETCH

- Face a wall and lean on it with both hands flat.
- Put your affected foot behind you with your leg straight until you feel your calf stretching.
- Your knee should be straight and your heel should be on the ground.
- Make sure the toes of your back leg are pointed forward when doing the stretch.
 - Alternatively, you can also stretch by putting your toes on a higher ledge or against the wall and lean forward with your heel on the ground

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3. ICE

- For about 15-20 minutes at a time
- Rolling a frozen water bottle on the ground under your foot will ice it and also help stretch the plantar fascia.

4. NSAIDS (non-steroidal anti-inflammatory drugs)

- Examples are: ibuprofen (Advil, Motrin) or naproxen (Aleve, Naprosyn).
- Take 400 - 600 mg of ibuprofen every 8 hours (or 500 mg of naproxen every 12 hours) for 10 days on a consistent basis. This will help maintain a steady level in your body.
- Take NSAIDs with food to prevent stomach upset.
- Do not take NSAIDs if you currently or have ever had a stomach ulcer or problems with bleeding.
- Acetaminophen (Tylenol) is not an NSAID.

5. REST

- If possible, only do regular activities of daily living such as working, cooking, grocery shopping.
- Limit extra activities such as hiking, running or excessive walking while your heel hurts.

6. CORTISONE INJECTIONS

- These are steroid injections that reduce the inflammation to the area under your heel.
- These are not a cure for your plantar fasciitis. They only provide pain relief to help you break the cycle of pain and inflammation.
- Sometimes they don't help at all, but they have the potential to provide pain relief for months.

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Long term treatments - to promote faster healing and prevent recurrence

1. ORTHOTICS AND GAIT CORRECTION

- Custom orthotics are the BEST way to fix the underlying problem with your stance and gait that either caused or prevented the quick healing of your heel pain.
- It is a hard plastic device, with a padded top-cover for comfort, that is created from an exact mold of your foot.
- You will notice the most relief within the first two months of wearing them, but you will continue to get stronger and improve for months and years.
- RIGID (not soft) over the counter orthotics such as Powersteps or Superfeet can be helpful but are limited because they are not custom made. However, they are treatments that you can start right away since we have them in the office. Custom orthotics typically take at least a month to get made. If the over-the-counter orthotics work, then custom orthotics may not be needed.

2. SHOE SELECTION

- Different people with different feet have different specific needs when it comes to finding the best shoe. However, there are some general guidelines that almost everybody can follow.
- Don't buy shoes that are too tight. For typical running or athletic styled shoes, you should have at LEAST half an inch of space between your longest toe and the end of the shoe. Your bare foot should also not be wider than the actual shoe!
- The sole of the heel should be very stable and not easy to twist or bend.
- The shoe should naturally want to bend at the base of the toes, where your foot naturally wants to bend.
- Don't buy shoes that bend and move in a way that your foot cannot.
- Do not walk barefoot.
- For more specific advice, talk to your podiatrist.

3. WEIGHT LOSS

- The foot is a machine that is made to carry the body around.
- The more weight the foot must carry, the more work it must do.
- When the foot does more work, it can become tired and injured more easily.
- If you need advice or help losing weight, talk to your podiatrist or your general doctor.

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4. MLS LASER THERAPY

- MLS Laser Therapy is a non-invasive, safe, and effective treatment modality where light is used to relieve pain, reduce inflammation, and promote wound healing and soft tissue repair.
- The laser works by converting light into biochemical energy, resulting in normal cell function. This causes symptoms and pain to disappear
- The laser is fully robotic and placed 8 inches above the skin. This allows the healing energy to penetrate tissue, where it interacts with various intracellular bio-molecules, resulting in the restoration of normal cell function

5. NIGHT SPLINTS

- These are splints you wear on your leg at night while sleeping.
- They provide a gentle stretch to your calf and some to your plantar fascia.
- They work because they give you 6-8 hours of constant stretching with no effort on your part.
- Some medical plans cover these night splints, but many people just order them from Amazon.com. Check with your insurance company to see if you are covered.
- Ideally, they have a hard plastic shell under your leg that pushes your foot up.

6. PHYSICAL THERAPY

- A PT can help with stretches and exercises to strengthen your foot
- Some also use ultrasound or massage therapy to help reduce inflammation

*Journal of Bone and Joint Surgery, Digiovanni, et al. 2006