

## What is Plantar Fasciitis and how would the Strassburg Sock help me?

*Written by Dr. David Strassburg, inventor of the Strassburg Sock*



Let's say you are a new runner/walker. Or perhaps, a long-time recreational runner. You hop in your car and pick out a pair of flashy new sneakers from mega-sports store. The price is right and they are your favorite color so you put a couple more dollars on the VISA card and off you go. Your first couple days on the roads are great and your dirty clothes hamper is rapidly filling up with the fruits of your labor. You're feeling pretty good about the miles you are putting in your training log.

Pretty good until you get up one morning and notice something doesn't feel quite right. It's your heel and it's a little tender, almost a bruise-like feeling. Similar to that one you felt when you were at the beach last summer, running across the parking lot and you firmly planted the heel of your bare foot on that unexpected stone. Your first few steps out of bed are a little cautious, but as you make your way towards the coffee pot and your foot gets moving, the dull ache slowly goes away. "Hmm.... Must be getting old you tell yourself. Just a little stiffness. Nothing a little stretching won't fix". The pain is gone, your shoes are on and now it's time to get in a few miles. The previous days heel issue is all but forgotten. The next morning you get up and the pain is there again.

It's a bit more painful than the day before but once again disappears after you get up and move around. This cycle repeats itself until one day you find yourself having to tiptoe to the bathroom in the morning to brush your teeth. "What in the heck is going on?" you ask yourself as you try to figure out why this heel pain goes away during the day only to return with a vengeance every morning. Welcome to the world of the most common running injury, Plantar Fasciitis!



You may feel alone but as you start asking around among your runner friends, you'll find that this problem is all too common. And it's not just found among runners. Dr. Scholl (yes, the guy whose name you see in all the drugstores) referred to the condition in a book he wrote in 1915 as "Policeman's Heel". Plantar Fasciitis was the injury that ended the career of Joltin' Joe DiMaggio of the New York Yankees. It's also been the bane of superstar 1st baseman Albert Pujols of the St. Louis Cardinals, arguably one of the best players in the game today. So you're not a sports superstar or even a runner and you think you're off the hook. Think again. Plantar Fasciitis is an equal opportunity afflicter affecting everyday people as well. By some estimates 10% of the population has had it and there are an estimated 7 million new cases each year. It's the number one reason someone goes to the foot doctor, accounting for an estimated 46% of all office visits. Why? Well now it's time to get into the technical stuff.



A little anatomy is in order here. The foot is a pretty complex and amazing machine containing 26 bones, 33 joints, 107 ligaments, and 19 muscles and tendons. There's a lot going on here and what goes on here ultimately affects everything going on up above it. So how does this anatomic symphony get out of whack and why does your heel hurt? It all comes down to something that's happening with a thick fibrous tissue on the bottom of your foot called the Plantar Fascia. Sound familiar? The Plantar Fascia is attached on one end to the heel and on the other end between the ball of the foot and the toes. If you think of it like a three-sided equilateral triangle with the point straight up, the plantar fascia would be the bottom leg. For a whole host of reasons I'll discuss in a bit, this Plantar Fascia can tear away from the bone it's

attached to. The term -itis in medical terminology means "inflamed" so Plantar Fasciitis means "Inflamed Plantar Fascia". Inflammation is part of it but what is really going on could better be described as a small tear or micro-tear at one end of the Plantar Fascia, usually the end attached to the heel.

## What causes Plantar Fasciitis and what can be done about it?

### What causes Plantar Fasciitis?

In most people, it's a perfect storm of a variety of factors that starts the ball rolling. In the example above where the person gets out of bed and has their initial pain relieved by gentle stretching, effective injury-halting treatment is often delayed. Some of the more common causes are listed below:

**Incorrect Footwear** - This includes summertime favorites such as dollar-store flip-flops or going barefoot. Not they will always cause the injury but they certainly will accelerate it. Shoes that flex in the arch as opposed to closer to the toes will put extra stress on this Plantar Fascia. Your local Running Specialty Retailer can help you select the right shoes for you.

**Over-pronation** - Pronation is a good thing but too much of a good thing is rarely good. Pronation is the twisting or rolling your foot undergoes from the time your foot touches the ground until the time it leaves the ground. Generally, in ideal cases, it's about 15 degrees. Its function is to absorb shock and position the foot to allow you to push off with your toes. Think of it like twisting a hand towel to wring it out. As you twist it more, it becomes tighter. Sometimes it can become too tight and can cause the fascia to tear away from the heel. This over-pronation can be modified through use of an appropriate running shoe selection or an insert, such as a Superfeet.



**Sudden Increases in Activity** - Like the new runner mentioned above too much too soon is also never good. Find a training group at a local running store to guide through the process of increasing your activity at a rate your body can handle.

**Sudden Weight Gain** - A little too much turkey after the turkey trot followed by Christmas cookies and a winter wonderland of slippery streets not always conducive to running can help add a few pounds. Pregnancy also often comes with some rapid weight gain as well as a hormone called Relaxin which can make joints more unstable.

### What can be done about it?

There are many things that can be done to help assist in recovery from plantar fasciitis. These include shoe changes, training changes, icing, stretching, orthotics, and cortisone injections. All these things helpful during the daytime, but for plantar fasciitis to be treated effectively it needs to be addressed as a

24-hour solution. All day long the plantar fascia is being stretched and pulled through the course of normal movement and bearing the weight of the whole body up above it. When you are off your feet at night the plantar fascia is relaxed, bearing no weight or load and begins to heal in this position. It's being stretched all day and then attempts to heal in an unstretched position at night. Unfortunately, it doesn't have an adequate opportunity for these micro-tears to heal with just a few hours off your feet. When the sufferer steps down on their foot in the morning, the healing that takes place is rapidly undone and that tearing is manifested as morning heel pain.

### **If we could just find a way to maintain tension on the plantar fascia at night wouldn't it heal much faster?**

Have you ever had a cut on your knuckle and noticed how long it took for it to heal. Every time you bend your finger the skin is stretched and the ends of the cut are pulled open. Now imagine you made a fist, bent your knuckle, and let it heal stretched in that position. It's going to heal much faster but you're not constantly going back and forth between stretched and unstretched.



#### **Night Splints**

Doctors have recognized that something needed to be done about night-time positioning of the foot since the early 90s. The first doctors to do this were 2 podiatrists from Temple University, Dr.'s Wapner and Sharkey, who

fashioned some splints for their patients to wear at night. The contraptions basically resembled the back half of a ski boot, designed to bend the ankle and bring the foot back to slightly less than 90 degrees. They were followed by many others office fabricated and commercial designs with varying degrees of success. The problem had always been that these night splints were hot, bulky, and cumbersome. Patients don't like to wear them. Doctors know that and therefore don't like to prescribe them. This is where the idea for the Strassburg Sock was born.

#### **The Strassburg Sock Solution**

The Strassburg Sock was created out of necessity by my father, Terry Strassburg, in a desire to find an effective solution for his own case of plantar fasciitis. Dad was a runner who couldn't run, not a place any runner wants to be. He had gone through the cycle of initial relief through stretching. Then, visits to the doctors for medications, a cortisone shot (which this twice wounded Vietnam veteran described as one of his most painful experiences ever), and the big plastic night splint boot. After a few nights of trying to get a restful night sleep in boot he realized there had to be a better way. One night, literally in



the middle of the night, he crawled out of bed, pulled a long tube sock from his dresser drawer. He gently woke my mother and asked where he could find a strip of fabric about so-long. She told him where to find it and warned him that if he broke her sewing machine there would be hell to pay in the morning, turned away and went back to sleep. Dad worked for a bit until he had rigged together something that he thought would hold his foot in the same position as the boot, just do it more comfortably. He slipped it on his leg and went back to sleep. When he woke up the next morning he noticed that his foot did feel a little better. He continued to wear it for the next few nights, after which the morning pain totally went away. He was so excited that he made a comfortable alternative he could comfortably wear. He didn't know that there was more to the story than just comfort.

#### **The Windlass Effect**

What dad didn't know is that the reason the sock worked so well was because of something called the Windlass Mechanism. First described in the medical literature by Dr. Hicks way back in 1954, it basically can be described as a tightening of the plantar fascia by bending your toes backwards towards you knee. You can see it in

action by doing this: Place one hand in the middle of your arch. Use the other hand to pull your toes back. That band of tissue that tightens and pops up out of the bottom of your arch is your plantar fascia. Most night splints are rigid on the bottom, where you put your arch. When dad created the sock in a effort to make it more comfortable he didn't put anything rigid on the bottom. The effect is that the stretch applied is focused on the toes rather the foot and ankle, the windlass mechanism is engaged, and the plantar fascia is directly stretched while sleeping. Just like we used before in the knuckle example, allowing the fascia to heal in a stretched position at night speeds recovery and maintains the benefits of any daytime treatments.

### **The Research Study**

There have been several studies on the effectiveness of night splints. The study that was done on the Strassburg Sock was the largest, independent peer-reviewed night splint study done to date. It was published in the Oct 2002 issue of the Journal of Foot and Ankle Surgery. In the study done on 160 patients, half the patients wore the sock at night for at least 6 hours and half were given a stretching regimen as initial therapy. The initial intention was to create a standardized 4 gradually more aggressive treatment regimen where the final step if necessary would be surgery. Only problem was that the patients who wore the sock were getting better....fast! In fact the results of the study were as follows:

- Average recovery time with the Strassburg Sock 18.5 days vs. 58.6 days with the other group
- 97.8% of patients using the sock recovered within 8 weeks.
- 100% of the patients were able to wear the Strassburg Sock for a minimum of 6 hours per night as prescribed by their podiatrist.

After the results of this research study were published and subsequently picked up in an article by Amby Burfoot of Runner's World Magazine, the Strassburg Sock has gone on the help hundreds of thousands of runners and everyday people effectively recover from plantar fasciitis. The Strassburg Sock is available in over 1,000 running and multi-sport retailers in the US and Canada and 21 countries around the world.

Stop in to FLEET FEET Sports today and let their FIT Professionals show you how the Strassburg Sock can get you moving again!



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