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# A Guide To Conservative Care For Heel Pain

*More often than not, patients with plantar fasciitis have already attempted to resolve the condition on their own before they come into your office. This author explores a range of effective conservative treatments, investigates the potential of physical therapy and offers pointers on getting patients to stretch in the appropriate manner to help relieve plantar fasciitis.*

Plantar fasciitis is one of the most common ailments affecting the feet. Millions of Americans suffer with heel pain on a daily basis. It affects people of all ages, races and activity levels. This includes professional athletes, weekend warriors and average Joes. Teachers, nurses, mechanics, retail salespeople and anyone who has suffered pain in the plantar aspect of the heel can attest to its debilitating nature. Heel pain can adversely affect a person's quality of life. It can also affect one's work and decrease productivity.

By the time plantar fasciitis patients have walked into your office, many of them have already received a multitude of diagnoses from friends, co-workers and the Internet. They often tell you that they have a "heel spur, plantar fasciitis, that fascia thing or the plantar." (I do not know where this one came from but I grow weary of having to explain that plantar is not a diagnosis and only means the bottom of the foot.) Many have already attempted to use cushioned insoles in their shoes from "the scanner at Wal-Mart," ice, nonsteroidal anti-inflammatory drugs (NSAIDs) and some may have gotten new shoes.

A careful history can often provide insight into the cause of the problem. When did the heel pain start? Was it a few weeks into a new exercise program, after buying a new pair of shoes or upon returning from a beach vacation with frequent walks on the beach? Usually, patients can trace the start to some change in a routine. These changes can include moving from a desk job to one that requires more time on one's feet, starting an exercise program, switching shoes or wearing old shoes that have broken down. This may also include stopping shoes altogether as we have seen with the most recent reincarnation of the barefoot running fad or quickly transitioning to a minimalist style running shoe without an appropriate progression.

We tend to see a large spike in plantar fasciitis as the spring rolls into summer and people move from slightly more supportive "winter" shoes to flip-flops and flatter shoes. (However, this spike has been slightly negated over the past few years as more people are being affected with plantar fasciitis through the winter due in large part to flip-flops becoming year-round fashion as well as the emergence of non-supportive fleece lined boots becoming a prominent fashion phenomenon.) The return of summer also means a large number of people cutting their grass in old, broken down sneakers that they would not run in anymore but feel obliged to wear while pushing a lawn mower on an uneven surface.

Also look at the patient's medical history for any recent surgeries such as unilateral total hip or total knee replacements. These surgeries may cause a limb length discrepancy or increased stress on a particular foot due to compensation. Ask about other joint involvement. Is there a systemic reason for the pain such as any of the inflammatory arthropathies? Recent weight gain causes increased mechanical load on the foot but it also may be a marker of a thyroid issue, which can also lead to heel pain. Look for new medications or changes in medical history that occur at the time of the onset of the heel pain or just prior. These can all provide significant clues to the reasons behind the heel pain. If you do not address these reasons, this will doom many of the treatments to failure or only short-term relief.

Pay careful attention when patients note what they have tried thus far and how it has worked. How have they modified their activity and has it helped? People may say they have tried and failed at stretching. However, when you ask some follow-up questions, you may find out they attempted two calf stretches for a couple of seconds and gave up. Did the cushioned insoles from the drugstore help for a

couple of days or not at all? Detail the prior use of NSAIDs, including dose, frequency and length of use. Careful examination of this area can provide significant clues into what will and what will not help the particular patient.

## What To Look For In The Patient Examination

As patients are relaying their history, take a glance and see what shoes they have worn into the office. Are these shoes appropriate for their activity or occupation, or are they broken down and in need of replacement? Have the patient stand up from the exam chair and even take a walk down the hallway. If radiographs are indicated (this is not the place for the debate about taking radiographs on patients with heel pain), then walking to the X-ray area is a great time to watch the patient walk down the hallway. This cursory gait exam can be very informative and happens without patients modifying their gait while thinking about the correct way they should be walking.

The examination is also very important. Look for biomechanical abnormalities including flatfoot (flexible or rigid), pes cavus, equinus, bunions, hammertoes, limb length discrepancies, etc. Is there pain with side-to-side calcaneal wall compression or just over the plantar fascia and medial calcaneal tubercle? Palpate and percuss for tarsal tunnel or Baxter's nerve symptoms. Look above the foot and ankle to the alignment of the entire lower extremity. Genu valgum or other knee and hip deformities can lead to abnormal stresses down the kinetic chain.

## Emphasizing Appropriate Shoes And Orthotic Therapy Considerations

After establishing that the patient does have plantar fasciitis and not a calcaneal stress fracture, tarsal tunnel syndrome or other pathology, one can formulate a treatment plan. The first step is to remove the causative agent if one has identified it. If the problem is broken down athletic shoes, replace them. If it is a certain exercise at the gym, then modify it. Runners are often able to switch to a bike or do pool running to maintain cardiovascular fitness. If something is tight, stretch it. Failure to address the cause will render most treatment protocols ineffective in the long term.

Wearing appropriate shoes is the first step in alleviating the pain associated with plantar fasciitis. There are many different types of shoes that patients can wear successfully to reduce plantar fasciitis pain. For men, lace-up style dress shoes tend to work better than loafers. Women should wear small heels. Very flat shoes can be just as uncomfortable, if not more so than high heeled shoes. Both men and women should limit flat shoes and barefoot walking. It is often helpful to wear two or three different types of shoes all in the same day to vary the stress on the feet. When it comes to athletic shoes, ensure appropriate fit to the patient's activity and foot type. This is where a solid relationship with a technical running store can be very beneficial.

Depending on the cause of the plantar fasciitis, orthotic therapy may be indicated. One should tailor the device type to the patient. Flexible flat feet would respond well to a rigid orthotic to control the hyperpronation. In contrast, a rigid cavus foot may respond better to a flexible device that does not overcorrect the medial column but incorporates an intrinsic heel cushion to increase shock absorption. The simple addition of a heel lift to the long, pronated limb in a limb length discrepancy may be enough to alleviate symptoms.

## Keys To Reducing Inflammation

Reducing inflammation in early plantar fasciitis is also important. Short courses of NSAIDs or corticosteroids can be effective in reducing the pain associated with plantar fasciitis. These become less effective as the fasciitis lingers and may become more of a plantar fasciosis. However, they can be beneficial early on. Injectable steroids are also effective if one uses them with early plantar fasciitis. However, many patients fall into the trap of thinking that if they get the shot, then they do not have to do any of the other treatments. The injection reduces the inflammation at the fascia but does not address the cause so injections alone may lead to relapse after a short period of time. Ice or frozen water bottle massage can also help with reducing the inflammation.

Some intense cases of plantar fasciitis or even ruptures of the plantar fascia may require either a controlled ankle motion (CAM) walker boot or cast immobilization to put the area to rest. Night splints, if patients wear them through the night and wear them appropriately, may reduce the first step out of bed pain. They also function well when the patient is lying on the couch watching television.

## How Effective Is Physical Therapy In Reducing Heel Pain?

Physical therapy can be a very effective tool in the treatment of plantar fasciitis. There are many different approaches by physical therapists to the treatment of lower extremity pathologies. Even though physical therapy providers may be well respected in the treatment of knees, shoulders or hips, they may not be equally well versed in the treatment of foot or ankle pathology.

When patients return to your office after a course of therapy, ask them exactly what they are doing in therapy. Perhaps you have sent that patient for deep tissue massage, iontophoresis, etc., and may be surprised to learn that he or she is riding the bike for 10 minutes and then stretching in the corner of the therapy gym for the remainder of the session. Patients get frustrated because these are things that they can do at the gym on their own without paying a co-pay every time.

It is extremely important to get to know some of the physical therapists in your area and maintain a good working relationship with them. Learn what their treatment approach is to various foot and ankle problems. Are they aggressive or very conservative? How much manual therapy do they do with your patient? Do they work with athletes and more active people, or do they work with a relatively sedentary population? Are they looking above the foot and ankle for other lower limb pathology? Do not be afraid to get physical therapists on the phone and discuss the particular patient and your expectations. If they happen to call you with a question about a patient, return the call promptly. This may seem like a simple thing but it can create a lot of goodwill with that physical therapist.

After creating this relationship with therapists, do not be surprised if they start sending you patients. Mrs. Jones may be doing physical therapy as part of her rehabilitation after a total hip replacement and may develop a compensatory plantar fasciitis due to gait dysfunction. After she mentions this to her therapist, you suddenly get a referral for heel pain. From a practice management standpoint, this can be very lucrative.

Why are we adding physical therapy into the treatment arsenal? The goal of physical therapy is to restore normal soft tissue mobility, restore normal joint mobility and correct dysfunctional lower extremity mechanics.

Physical therapists have many modalities at their disposal. Ultrasound can provide deep heat to the plantar fascia. This can help break up or loosen fibrotic tissue. Some NSAID topical agents are also showing some promise in the treatment of superficial tendon, ligament and plantar fascia pathology when one combines these with ultrasound (phonophoresis). Electrical stimulation is a tool for temporarily reducing pain. Iontophoresis is the transdermal administration of corticosteroids to decrease inflammation by using an electrical charge as the driving force for the medication. Cold packs can control pain and reduce inflammation. One can use cold therapy concurrently with an object (i.e. frozen water bottle, frozen tennis ball, golf ball, etc.) for the dual purpose of inflammation reduction and soft tissue mobilization.

Physical therapists can also aid in the evaluation of a lower extremity alignment. Limb length discrepancies lead to gait alterations and eventually may cause plantar fasciitis. Some cases of limb length discrepancies are structural in nature and one can treat them with appropriate lifts. A fair number of people are affected by a limb length discrepancy, which has a largely functional component to it. One can also treat discrepancies in the short term with a heel lift on the short side.

However, this patient will benefit in the long term from skilled physical therapy to address the functional aspect. This may be stemming from a weak core group leading to ilium malrotation and pelvic upslip causing a functional limb length discrepancy. One can correct a pelvic obliquity through muscle energy techniques, manipulations and stretches. Core strengthening and continued home exercises are paramount to long-term treatment success and preventing a relapse.

## Pertinent Pearls On Getting Patients To Stretch Correctly

An analysis of the lower extremity must also focus on the posterior muscle groups from the hips (gluteals, piriformis), thighs (hamstrings), calf (gastroc/soleus complex, posterior tibialis) and all the way down to the foot (intrinsics and long flexors).

Corrections to a lack of flexibility with stretching exercises are very important. Many patients tell you they have been stretching. Make them demonstrate these stretching exercises to you. The importance of proper technique cannot be overstated. Most will be doing something wrong with the stretches and are most often guilty of not holding the stretch long enough. Stretching for four to five seconds is a waste of time. Patients should hold the stretches for 30 seconds. Make sure that these people are not “over-stretching,” not in terms of the number of times per day (which they usually aren’t doing enough) but in terms of the intensity of each stretch. The stretch should increase until patients feel some tension in the tissue. Some patients feel that a “little stretch is good so a big stretch must be better.” This is not the case and may actually prevent the problem from going away.

Regular stretching must occur throughout the day and not be limited to a couple of minutes in the morning and evening. Stretches should start when the alarm clock goes off in the morning and before the patient gets out of bed even if this means setting the alarm three minutes early. It should become part of the daily routine. Towel or resistance band fascia/gastrocnemius stretches, alphabet stretches and self-massage of the fascia can be very successful in alleviating the post-static pain associated with plantar fasciitis

There is an opportunity to stretch every time the patient gets up from an extended period of time being seated, gets out of a car or comes back to the office chair. The bars on the bottom of a desk chair attached to wheels function well as built-in stretching devices that are routinely accessible during the day. Patients who spend a considerable time at their desk should also make sure that the chair is set up for them appropriately. Poor ergonomics are often a hidden underlying cause of recalcitrant heel pain and can delay healing if they go unaddressed.

## Evaluating Joint Mobility And Soft Tissue Dysfunction

In addition to assessing the posterior muscle group, evaluate joint mobility. Look for talocrural joint restrictions that may limit dorsiflexion of the foot. Is the midfoot hypermobile or restricted? Is the distal fibula anteriorly displaced, limiting foot dorsiflexion from a previous

ankle injury? If this is the case, this patient would benefit from mobilization of the restricted joints to restore the anatomical alignment and mobility of the ankle and midfoot. This can have a sudden and profound increase in dorsiflexion of the foot.

Are there digital deformities or restrictions of movement of the digits at the metatarsophalangeal joints? Examining flexor substitution, flexor stabilization or extensor substitution hammertoes can give insights into foot mechanics that may lead to excessive pressure on the plantar fascia. People always talk about thinking outside of the box. We need to look outside of the heel.

If there is soft tissue dysfunction or restrictions present and they go uncorrected, then pain will persist. Some of the most commonly restricted tissues include the plantar fascia, gastrocnemius/soleus complex, posterior tibial tendon and posterior ankle joint capsule. One can successfully correct these with any form of myofascial release including deep tissue and cross friction massage or stick rolling. Other options include any of the trademarked soft tissue release/mobilization techniques, such as ASTYM (Performance Dynamics), ART (Active Release Techniques) or the Graston Technique (TherapyCare Resources).

Taping can also be an effective way to treat soft tissue or joint dysfunction. Classic low-Dye taping can reduce pressure on the plantar fascia in the short term and has an easy and quick application. Taping has many variations, including adding scaphoid felt pads and using Elastoplast instead of athletic tape. All of these can be effective in different practitioners' hands.

The navicular sling strapping is another easy to apply taping that often provides almost immediate pain relief. It serves to offload the plantar fascia and the posterior tibial tendon, and may quickly improve gait dysfunction. It is also a cheap, simple test of the possible efficacy of orthotic therapy. If the patient gets significant relief from the taping, then a well molded, supportive orthotic may provide the same relief without the need to apply tape constantly.

## In Conclusion

Plantar fasciitis can be a very painful condition that inhibits people from performing their normal day-to-day activities. The vast majority of patients respond well to conservative therapy and never require surgical intervention, but the success of the treatments rely on identifying the causative factor and removing it as a source of the problem. Many of the causes are outside of the heel area so a careful history and a complete lower extremity exam are keys to successful resolution of the symptoms and preventing recurrence.