Myofascial Release for Plantar Fasciitis

A manual therapy course to improve your treatment of Plantar Fasciitis with Myofascial Release

AdvancedMassageEducation.com
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Plantar fasciitis is estimated to affect 1 in 10 people at some point during their lifetime and most commonly affects people between 40–60 years of age.

In the United States alone, more than two million people receive treatment for plantar fasciitis. The cost of treating plantar fasciitis in the United States is estimated to be $284 million each year.

In this seminar, we’ll focus on Myofascial Release which uses an indirect approach. Other forms of Myofascial Release using a direct approach address the muscles and bones which comprise approximately 20% of our tissue.

Due to the elastic nature of muscles, the results usually only last until the tissue springs back – from a couple of hours to a couple of days.

To create lasting change, one must also release the other 80%, the connective tissue.

Unlike muscles which respond quickly to stretch or manipulation, fascia requires a minimum of 5-7 minutes of gentle, sustained pressure in order to release.
Evolution

This course evolved from speaking in 2016 on Mastering Myofascial Release and I never thought this course on Plantar Fasciitis would end up being my “Rosebud”. Within a short period of time early in my career I developed a long list of Accumulative Trauma Disorders. In fact, that is why I started teaching. It was important to me to be able to share with my participants the problems and pain I had suffered from, with hopes that they could avoid what I had to go through.

Back then, while I was healing I began my search for a soft tissue treatment I could use for my clients that would not injure my aching body any further. Little did I know at the time was I already learned it years before.

I attended many courses described as MFR approved curriculum or Myofascial Release Seminars by John Barnes PT and others. I learned the protocol well, but this technique was never very close to my heart.

MFR reminded me of Cranio Sacral Therapy which is very subtle and the treatment can be very time consuming.

The effects maybe profound but I felt more akin to the deeper work. In fact, people I know are always saying, “If it doesn’t hurt while you are working on me, it is not doing any good”.

Years later I received a neck treatment from Brian Barnes (John’s son). This session lasted for a whole 30 minutes, 30 minutes just on my neck!

As I sat up from this relaxing experience which felt like a nap, I soon realized my neck felt totally different WOW! I told Brian this is the best my neck has felt, which he just smiled. Even with this personal experience I still was not sold on MFR.

Then years later it finally hit me. I have always searched for a non-invasive technique that would not cause the person to be sore the next day. Be able to get so deep to the bone and yet not cause me anymore injuries, to myself or to the person I was treating.
Research has shown that fascia is incredibly strong and resilient. What is not realized by the therapist is the softening or lengthening a therapist may feel during a treatment will often result in fascial tightness creeping back to the level that existed prior to the treatment, along with a small improvement in length and tension.

This means a few more appointments maybe necessary. The other is this treatment can and will be more time consuming to the therapist. Yes, but look at the benefits!

I wonder about other experienced therapists out there that know of MFR but never use it. The model of “no pain, no gain” or it takes too much time, I have so much else to do.

All I can say to these therapists is, try it! Be open to the possibility. It's all about the results, right?

**Mastering Myofascial Release**

In my course Mastering Myofascial Release I teach with a small amount of pressure to feel for the restriction and then, instead of sliding through it, you wait there a minimum of 90 seconds to 5 minutes.

After you get through the first barrier, you get to the second barrier, which has been passed over in traditional therapy lately.

You have to wait there again a minimum of 90 seconds to 5 minutes, pressing into the restriction with a gentle, sustained pressure without sliding.

When you feel the release, it feels like taffy stretching, and then you don’t slide, but instead, you just take the slack out of the system and move to the next barrier.

Without using any more pressure, the body will slowly start to let you in. I feel the body has 10 layers of fascia. Has this been proven medically? Ah no, but I hope you can appreciate the depth that can be felt.

The fascial system is like concentric layers of an onion—there’s barrier after barrier, and you have to be patient, take your time, and go through each barrier.”
To accelerate this release instead of just applying pressure to an area, it is also helpful if possible to encourage a stretch or elongation of the fascial tissue. As in this image she is bending forward in hip flexion to elongate the thoracolumbar fascia of the lower back, while receiving two fascial treatments instead of just one; stretch and pressure.

Applying gentle pressure for a sustained time period can be exhausting. I encourage the therapist to be creative and find a position that their body weight is providing all of the pressure necessary instead of generating this pressure with their muscle strength.

Many participants around the country attending my course Mastering Myofascial Release had so much fun trying to think outside the box and utilize body weight instead of straining muscles and joints. Smarter not harder, is always the best!
In this unique myofascial course I have been able to show the demonstrations and labs focusing on treating primary dysfunctional areas of the low back, neck, shoulder, upper back, hip, knee, and lower leg. Ever since the course’s inception people would ask me, what about the foot?

My response was always the same, utilizing what you have learned in this class about posture, body weight, and light or gentle pressure for a sustained time period and if possible elongation of the area while treating to be most effective.

Connecting the Dots

Treating people in my private practice I would run across the occasional foot problem. The more I would probe the person for feedback or background, I would hear much of the time, “yeah I have been diagnosed with plantar fasciitis, and the cortisone injection I received, physical therapy or arch supports have helped a little, but I still suffer”.

To think I had the answer in front of me the whole time, but it was not until I thought about that question, “What about the foot“?

I don’t remember the actual time frame or date I started using myofascial release to treat plantar fasciitis and it was also dependent on my clients available time.

Eventually, even if primary problems needed to be addressed first and I only had 5 minutes left; every person who walked through my door received a treatment on their plantar fascia.

Oh yes, those occasional foot problem people that were diagnosed with plantar fasciitis that I have been seeing for months, I would always forget to ask them the next time I saw them, until I would remember to ask one day and they would always say, “I have not had any problems with my feet since you started using that new treatment.”

Fascial Anatomy, Function, and Behavior

Because the fascial system is a continuous, uninterrupted 3-dimensional web that runs from the top of the head to the bottom of the feet, it directly impacts and influences every system (e.g. muscles, bones, cells) of the body. So, if there is a restriction in one part of our body, it will have an effect on other parts as well.

In the normal healthy state, fascia is relaxed and wavy in configuration with the ability to stretch and move allowing our body to absorb and adapt to stress, and move without restrictions. With an injury, trauma (e.g. falls or surgery) fascia loses some of its pliability, and begins to shorten limiting normal movement.
The restrictions that develop can result in inflammation of joints and soft tissue, compression of bones and nerves, poor posture and pain. This causes enormous crushing pressures that spread over time like a 'drag' on a sweater to distant areas of the body.

Science has shown that adhesions in the fascial network can create pressure on structures in our body of up to 2,000 pounds per square inch. Without the constant balanced pull of the fascial network there is a loss of equilibrium in the body resulting in the dysfunction of one or more of our body systems.

With the therapist's intuitive touch and constant, sustained pressure to treat these restricted regions, not only can the symptoms be effectively treated, but the underlying issue can also be detected and addressed. The focus is on the whole body in every session.

Regardless of which type of myofascial release a therapist might use a direct or indirect approach, the one thing we all have in common is our understanding that fascia is important in our work.

To me one person stands alone in the treatment and importance of fascia in manual therapy. Ida P. Rolf and her model of Structural Integration which became well known since the 1940’s is a pseudoscience and its claimed benefits are not substantiated by medical evidence.

Her main goal was to organize the human bodily structure in relation to gravity.

Each session focuses on specific goals and areas of the body. These sessions are cumulative, as each session builds on the results of the previous session.

As the body is reordered, so are its movement patterns. New, more efficient habits enhance the structural changes, preventing the likelihood of a re-injury or the return of old tension.

Dr. Rolf’s work clearly showed that fascia could be manipulated, but back in her day fascia was only known as connective tissue which was under studied, undervalued, and lacked evidence-based guidelines and policies.
Fascia (also called connective tissue) is a tissue system of the body which is composed of two types of fibers: 80% Collagenous fibers which are very tough and have little stretch ability; 20% Elastic fibers have the quality necessary to stretch, and a small amount of background material called the ground substance.

It surrounds and invades every other tissue and organ of the body, including nerves, vessels, muscle and bone. Fascia is denser in some areas than others.

There exists some controversy about what structures are considered "fascia", and how fascia should be classified. Gray's Anatomy referred to fascia as having a beginning and an end, as in this image.

Current understanding is tendons don’t insert into bone. There are no discrete tendon attachments as pictured in anatomical drawings. Rather, tendons insert into a connective tissue apparatus, which transmits force across joints. In fact, 15-80% of connective tissue fibers extend past the designated tendon insertion (Stecco, 2009).
In the 1983 edition of Nomina Anatomica described *superficial fascia* as the lower most layer of the skin in nearly all of the regions of the body, which blends with the reticular dermis layer.

It is said to be present on the face, at the nape of the neck, over the upper portion of the sternocleidomastoid, and overlying the breastbone. It consists mainly of loose areolar and fatty adipose connective tissue and is the layer that primarily determines the shape of a body.

In addition to its subcutaneous presence, superficial fascia surrounds organs and glands, neurovascular bundles, and is found at many other locations where it fills otherwise unoccupied space. It serves as storage medium of fat and water; as a passageway for lymph, nerve and blood vessels; and as a protective padding to cushion and insulate.

*Visceral fascia* (also called subserous fascia) suspends the organs within their cavities and wraps them in layers of connective tissue membranes. Each of the organs is covered in a double layer of fascia; these layers are separated by a thin serous membrane.

The outermost wall of an organ is known as the parietal layer, while the skin of the organ is known as the visceral layer. The organs also have specialized names for their visceral fasciae. In the brain, they are known as meninges; in the heart they are known as pericardia; in the lungs, they are known as pleurae; and in the abdomen, they are known as peritonea.

Visceral fascia is less extensible than superficial fascia. Due to its suspensory role of the organs, it needs to maintain its tone rather consistently.

*Deep fascia* is a layer of dense fibrous connective tissue which surrounds individual muscles, and also divides groups of muscles into fascial compartments.

This fascia has a high density of elastin fiber that determines its extensibility or resilience. Deep fascia is essentially avascular but is richly supplied with sensory receptors. Examples of deep fascia are fascia lata, fascia cruris, and brachial fascia.

**What we know**

In my course, Mastering Myofascial Release touched upon the huge disconnect between the scientific community and fascial researchers.

On the scientific side of things, the field of fascia research has grown considerably in recent years, though it lacks the consistency of other, more established areas of physiological investigation.
“Most scientists,” says Wallace Sampson, alternative medicine skeptic and professor at Stanford University, “even those wary of alternative therapies, admit that the field of fascia research is a field of neglect, and remains sorely under-investigated.”

And yet, fascia’s “major functions” have yet to reveal themselves. To date, there have been no “home runs” establishing a clear, causal link between fascia’s molecular, cellular, or biomechanical properties and the effective treatment of pain, injury, or disease – at least to the satisfaction of the broader scientific community.

In place of firm theories based on hard data, there’s a lot of speculating about why fascia is important, which leads to some claims that it has clinical properties and functions that are still barely known to science.

Some fascia research is truly intriguing. What many researchers are saying about fascia is reasonable. Many are not reaching awkwardly beyond the data.

Unfortunately, many researchers fascinated by fascia are reaching beyond, way beyond, what the science can actually support, or probably ever will.

In my course I also spoke about the fascial system having the ability to be a sensory organ and the supporting data or lack of it to be realized.

I was able to point to an interesting article by Jonas Tesarz - The Innervation of the Fascia Thoracolumbalis that states: The superficial layers of the thoracolumbar fascia appear to be highly innervated with over 90% of nociceptive fibers in the superficial fascia and subcutaneous layer, few fibers in the inner layer, and none in the middle layer study.2, 3

Robert Schleip, PhD who is one of the world’s leading fascial researchers has always maintained fascia’s ability to be a sensory organ. At the 9th Interdisciplinary World Congress on Low Back & Pelvic Girdle Pain published - The Posterior Layer of Lumbar Fascia as a Potential Source of Low Back Pain4, which was later revised in 2017 as: The Lumbodorsal Fascia as a Potential Source of Low Back Pain: A Narrative Review5.

Regardless of what side of the fence a person stands on, if they are a scientific medical researcher or a complementary and alternative-medicine practitioner must agree they
do not speak the same language. One day I hope the bridge that unites the two together will be through the technology of the future.

And finally an interesting article that I feel sums up all of the current fascia controversy from Paul Ingraham titled “Does Fascia Really Matter”

There is a lot of fascia research going on these days. None of that research is clearly relevant to therapy. Some of it might be, but it’s all quite debatable. There are no slam dunks.

In place of firm theories based on hard data, there’s a lot of speculating about why fascia is important, which leads to some claims that it has clinical properties and functions that are still barely known to science.

Some fascia research is truly intriguing. What many researchers are saying about fascia is reasonable. Many are not reaching awkwardly beyond the data.

Unfortunately, many therapists fascinated by fascia are reaching beyond — way beyond — what the science can actually support, or probably ever will. In some cases, in fact, we already know enough to know that an interesting property of fascia is only interesting, and irrelevant to working with patients.

Few basic biology facts ever become the basis for any kind of treatment. Certainly a lot of fascia science is “right,” but we should question whether or not it matters that it is right.

What we have learned lately

Some emerging research on the fascia connection to proprioception is receiving much discussion. When mechanoreceptors are stretched, compressed, or sense almost any sort of movement or vibration, they fire off input into your nervous system to give a person what is called "kinesthetic awareness".

In other words, along with mechanoreception; inner ear function and visual input allow for balance and an awareness of where the various parts of your body, are in space.

It is thought that of the three, mechanoreception is the most important. Together, this kinesthetic integration of the musculoskeletal and nervous systems is known as proprioception.

Not only is fascia the most abundant connective tissue in the body, it is known to be filled with various types of mechanoreceptors.⁶

According to Dr. Robert Schleip, "It is now recognized that the fascial network is one of our richest sensory organs. The surface area of this network is endowed with millions of
endomysial sacs and other membranous pockets with a total surface area that by far surpasses that of the skin or any other body tissues.

A myriad of tiny unmyelinated 'free' nerve endings are found almost everywhere in fascial tissues, but particularly in periosteum, in endomysial and perimysial layers, and in visceral connective tissues.

If we include these smaller fascial nerve endings in our calculation, then the amount of fascial receptors may possibly be equal or even superior to that of the retina, so far considered as the richest sensory human organ.7

Paul Ingraham wrote, "There really is a sixth sense: it’s called proprioception. It is the sense of position and movement. It is produced by nerves in our connective tissues (ligaments, bone, and fascia) and our muscles. Without proprioception, you couldn’t stand up. You couldn’t so much as scratch your nose, because you wouldn’t be able to find it”.

Some of this new research includes studies on the relationship between fascia and proprioception not just in an anatomical sense, but in a functional sense as well.

For instance, a handful of studies from the March 2014 issue of the Journal of Motor Behavior (including The Medium of Haptic Perception: A Tensegrity Hypothesis8, The Stresses and Strains of Tensegrity & Proprioception, Tensegrity, and Motor Control)9 each deal with proprioception as related to tensegrity, which is the molecular and microscopic shape / structure that fascia uses to be both firm (strong) and springy (elastic). In other words, tensegrity allows fascia to resist not only mechanical loads that pull on it, but loads that compress it as well.

The fascial connection to proprioception is significant because of our target subject is the plantar fascia which happens to be the cornerstone of movement and balance.
Plantar Fascia, function, and behavior

The Plantar Fascia is thick connective tissue (aponeurosis) which supports the arch on the bottom (plantar side) of the foot.

It runs from the tuberosity of the calcaneus (heel bone) forward to the heads of the metatarsal bones (the bone between each toe and the bones of the mid-foot).

In younger people the plantar fascia is also intimately related to the Achilles tendon, with a continuous fascial connection between the two from the distal aspect of the Achilles to the origin of the plantar fascia at the calcaneal tubercle.

However, the continuity of this connection decreases with age to a point that in the elderly there are few, if any, connecting fibers.

There is an indirect relationship whereby if the toes are extended; the plantar fascia tightens via the windlass mechanism. If a tensile force is then generated in the Achilles tendon it will increase tensile strain in the plantar fascia.

Clinically, this relationship has been used as a basis for treatment for plantar fasciitis, with stretches and night stretch splinting being applied to the gastrocnemius/soleus muscle unit. A complaint of pain in the medial side of the heel, most noticeable with initial steps after a period of inactivity and usually lessens with increasing level of activity during the day. For most patients is resolution of symptoms within one year.

What we know or never realized

The plantar fascia contributes to support of arch of the foot by acting as a tie-rod, where it undergoes tension when the foot bears weight. One biomechanical model estimated it carries as much as 14% of the total load of the foot while contributing to the structural integrity of the foot.

The plantar fascia also has an important role in dynamic function during gait. It was found the plantar fascia continuously elongated during the contact phase of gait.
It went through rapid elongation before and immediately after mid-stance, reaching a maximum of 9% to 12% elongation between mid-stance and toe-off.

During this phase the plantar fascia behaves like a spring, which may assist in conserving energy. In addition, the plantar fascia has a critical role in normal mechanical function of the foot, contributing to the "windlass mechanism".

When the toes are extended in the propulsive phase of gait, the plantar fascia becomes tense, resulting in elevation of the longitudinal arch and shortening of the foot.

**Plantar Fasciitis Statistics:**

1. It is estimated that 1 in 10 people will suffer from plantar fasciitis in their lifetime.\(^\text{10}\)
2. In one study, the combination of foot orthotics and an adjustable dorsiflexion night splint resulted in a 47% decrease in pain.\(^\text{11}\)
3. An incredible 85.\% of patients see a decrease in pain with Botulinum type A, or BTX treatments.\(^\text{12}\)
4. In one study of 250 participants, orthotic inserts improved pain by 37% after a 12-week period.\(^\text{13}\)
5. Plantar fasciitis accounts for between 11-15\% of all adult foot symptoms requiring the care of a medical professional.\(^\text{14}\)
6. Plantar fasciitis has been reported to account for about 10\% of injuries that occur in connection with running.\(^\text{14}\)
7. The annual cost of treatments for plantar fasciitis is estimated to be between $192 and $376 million dollars.\(^\text{15}\)
8. Obesity is a factor in 70\% of plantar fasciitis cases.\(^\text{16}\)
9. In one study, heel pain was either eliminated or much improved at eight weeks in 52\% of patients who were treated with an exercise program to stretch the plantar fascia.\(^\text{14}\)
10. Heel Spurs are found in about 50\% of plantar fasciitis cases.\(^\text{17}\)
11. The Centers for Disease Control and Prevention’s National Center for Health Statistics have found that plantar fasciitis accounts for an average of one million patient visits per year.
12. Favorable outcomes were reported in more than 75\% of patients who underwent surgery in one study.\(^\text{14}\)
13. Several studies have shown that use of night splints results in improvement for 80\% of patients. Additional studies find that night splints are especially helpful for individuals whose symptoms have been present for more than 12 months.\(^\text{18}\)
What we have learned lately

Plantar fasciitis is not well understood scientifically or biomechanically, and most health care professionals are not aware of the full range of treatment options. Plantar fasciitis is basically caused by chronic irritation of the arch of the foot due to excessive strain.

The "itis" suffixes in fasciitis mean "inflammation," but the tissue is rarely inflamed the way we usually understand it (maybe at first, not for long). Instead, the plantar fascia shows signs of collagen degeneration and disorganization.

In 2003, Lemont looked at 50 cases and found so little inflammation that they declared that plantar fasciitis “is a degenerative fasciosis without inflammation, not a fasciitis.19 “It would be better to use a more generic suffix like opathy (diseased) or osis (condition).

The degeneration is “similar to the chronic necrosis of tendinosis” (non-inflammatory degeneration of a tendon). It’s Latin for “tissue death.”

In plantar “fasciitis,” the plantar fascia is not just hurting; it’s dying eroding like a rotten plank. And this isn’t just to make you squeamish: inflammation and “necrosis” are not the same medical situation, and understanding the difference is essential for effective treatment.

Traditional leading causes although helpful might not be telling the whole story.

- **Bone spurs** There is good evidence that, when there is pain, it’s not the spur that hurts but the plantar fascia itself or other soft-tissue structures.20
- **Flat feet and/or pronation** Many people that have flat-footed pronation and high-arched people that supinate in fact do not have plantar fasciitis. And many people who do have plantar fasciitis have completely normal arches, and neither pronates nor supinates excessively. Arch height and pronation are almost certainly risk factors21
- **Tight calves** “Loose” calves are also a problem. There are other calf muscles, like the posterior tibialis, that are actually crucial for supporting the arch and relieving strain on the plantar fascia.22

Possibly, some cases of plantar fasciitis are chronic and incurable because the plantar fascia decays beyond the point of recovery. The list of contributing factors should also not be overlooked, while remembering this condition is considered a repetitive strain.
Bone tissue - Just as the fascia can degenerate under strain, so can the bone it is attached to. “bone fatigue” A case of plantar fasciitis with a significant component of bone fatigue is more likely to cause a deeper, more aching pain, and probably somewhat further back - less in the arch, more in the heel.

Hypersensitivity - You cannot be sure that pain is actually worse than it “should” be, because there is nothing to compare it to except your own memories of pain. Neurological problems or immune system disorders would also fit into this category.

Over use - Some cases worsen until they force a certain amount of rest, which, ironically, often finally helps the condition.

Trigger points - May actually be more painful themselves than the plantar fascia. For instance, this may explain why a bone spur can be removed, yet the pain does not stop although one problem is removed, the arch muscles may continue to burn with discomfort. This referred pain could be coming from the calf or glutes.

Achilles tendinitis - Pain is limited to the back of the heel, and much more clearly aggravated by calf stretching and contraction than plantar fasciitis. Usually the tendon itself is extremely sensitive to touch, the signature symptom of that condition.

Tarsal tunnel syndrome It may also cause diffuse symptoms all over the bottom of the foot, not just the arch. The “tarsal tap” test is a quick and easy way to confirm or deny if this is the culprit. If you firmly tap behind the inside ankle bone, your symptoms will flare right up.

Stress fracture - Although both stress fractures and plantar fasciitis hurt when you stand, stress fracture pain will be more closely correlated with weight-bearing and impact plantar fasciitis may not hurt instantly when you bear weight on the foot, but a stress fracture typically will. Plantar fasciitis produces more discomfort on the toes.

Plantar fascia thickness - Ultrasound can be considered a reliable imaging technique for assessing plantar fascia thickness, monitoring the effect of different interventions and guiding therapeutic interventions in patients.23
Non-surgical treatments

This list of treatments may be found currently depending on the type of practitioner. Many have shown improvement, some with even more success by combining a few on the list together.

*Altered running technique*

*Contrasting hot and cold*

*Corticosteroid injections*

*Extracorporeal shock wave therapy (ESWT)*

*Foot Circles*

*Friction massage*

*Ibuprofen or other NSAIDs*

*Icing*

*Inexpensive arch support*

*Iontophoresis*

*Large bracing boot*

*Night splints*

*Orthotics, arch support, or heel cups*

*Rest*

*Shoes with good arch support*

*Strengthening*

*Stretching calf and toe extensors*

*Ultrasound*

**Most optimal position**

Following a few guidelines will help in finding the most comfortable position to apply pressure to the plantar fascia is of most importance to minimize strain of the therapists’ joints and to avoid muscle fatigue.
The easiest way to visualize this is to picture holding a push up while being on your finger tips for 15 minutes. How could you do this?

The most efficient tool at your disposal is your fingertips, other tools such as knuckles or IASTM devices might save the fingers, but the tendency to slip over the sensitive plantar fascia or not be able to judge the optimal amount of pressure is too great.

- The finger joints must be locked together to minimize strain so you will be applying pressure with one individual unit.
- Pressure should be initiated with the pads of the fingers directed to the center of the foot, (not the finger nails) while gently extending the toes and dorsiflexing the ankle.
- The elbow and wrist joints should also be locked to apply efficient pressure. Curling the fingers, bending the elbows will eventually fatigue even the strongest individual.
- Discovering a position that allows the therapist to use their body weight instead of muscle tissue to provide pressure is the ultimate goal.
- Remembering this treatment will be for an extended time period. The person being treated does not have to be in the supine position, seated in a chair, prone, or side lying position is also acceptable.
- If a position of the therapist or the person being treated needs to be changed, the transition should be completed within 60 seconds.
Here are a few possible suggestions for the most optimal positions, along with critiques.

Good position, but the toes are not extended or dorsi flexed ankle.

The elbow is not locked or the wrist.

The elbow is not locked or the hip.
Excellent except wrist is bending.

Excellent but the toes are not extended.

Good position and the toes are positioned against the hip. Table height will dictate amount of pressure.
Introduction of treatment techniques

After the most optimal position to apply pressure to the plantar side of the foot is found, a practice treatment with less treatment time is advised, to preview the treatment, to develop stamina, and most of all patience.

1. Position the person being treated, (as well as the therapist) so they can remain comfortable.

2. Apply pressure to the toes to move into toe extension. If at any time this is painful, try to find a comfortable angle of extension. If none can be found, omit toe extension.

3. With the same hand, push and move the ankle into dorsi flexion. If at any time this is painful to the person, try to find a comfortable angle of dorsi flexion. If none can be found, omit ankle dorsi flexion.

4. With the combination of dorsi flexion and toe extension this will apply tension to the plantar fascia. This tension will magnify any pressure put directly on the plantar fascia and would be very painful. **This direct pressure should not be attempted at any point directly on the plantar fascia.** Only at the end of the treatment indirect pressure may be attempted.

5. Apply a small amount of pressure media (or above) to the inside aspect of the plantar fascia. It isn’t as important how much pressure you start with, but where you finish is.

6. Direct the angle of pressure toward the 1st or 2nd metatarsal for 15 minutes.

7. The fascial system is like concentric layers of an onion, there’s barrier after barrier, and you have to be patient, take your time, and go through each layer. Without using more pressure, you should be able to sense the fascia letting you in, continuing to go deeper.
Principles and procedures

Myofascial Techniques

The approach was promulgated by Andrew Taylor Still, the founder of osteopathy and osteopathic medicine and with the help of his early students.

The term "myofascial" was first used in medical literature by Janet G. Travell in the 1940s in reference to musculoskeletal pain syndromes and trigger points.

The exact phrase "myofascial release" was coined in the 1960s by Robert Ward, an osteopath who studied with Ida Rolf, the originator of Rolfing.

Ward, along with physical therapist John Barnes, is considered the two primary founders of Myofascial Release.

Some practitioners use the term "myofascial therapy" or "myofascial trigger point therapy" referring to the treatment of trigger points.

The phrase has also been loosely used for different manual therapy techniques, including soft tissue manipulation work such as connective tissue massage, soft tissue mobilization, foam rolling, and strain-counterstrain techniques.

Myofascial techniques can be described as passive (patient stays completely relaxed) or active (patient provides resistance as necessary), with direct and indirect techniques used in each. According to Emily Jacobs, Myofascial Release (MFR), as designed by
John F. Barnes PT, is unlike any form of therapy today because it focuses on treating the fascia, or the connective tissue system.

MFR utilizes techniques that are very different from other forms of manual therapy, such as deep tissue or general therapeutic massage. The therapist finds restrictions in your myofascial system and gently stretches, or “releases”, those adhesions to minimize pain and improve function.

Myofascial Rebounding according to John Barnes, PT

This method is great for creating relaxation in areas that are binding from strain or injury. It is also used in sports massage and it reminds me of a movement therapy called Trager work.

A good visual of rebounding is taking a bowl of water and moving it and seeing the water rock back and forth. The human body is over 70% water with much fluid going through vital organs and structures, all surrounded by the fascial system.

Rebounding is accomplished by standing at the side of the treatment table and gently rocking the client. The therapist attempts to connect with the rhythm of their body, not leading.

Once a rhythm is established, stay with that rocking motion. A variation on the therapist part is the amount of pressure started with or change during the technique, which will depend on their response as well as what may be trying to accomplish.

This procedure can last for just a few minutes, or for a much longer period of time. It can be done supine or prone, local or global.

Rebounding helps use the fluid in the body to break free of some restrictions- kind of like a wave that repetitively breaks against the shore can wear away the land.

My view of rebounding is less of a procedure and more of a therapeutic response to myofascial release.

Research has shown that fascia is incredibly strong and resilient.

The softening or lengthening a therapist may feel during a treatment will often result in fascial tightness creeping back to the level that existed prior to the treatment, along with a small improvement in length and tension.

With small changes as this more treatment sessions are advised. Generally, acute cases are typically resolved with a few treatments.

The more chronic the problem, the longer it usually takes to bring lasting results.
Principles and procedures

Palpation skills tune-up

Two of my teachers of the past shared their thoughts with me about developing sensitivity while touching. I feel this ability cannot be understated to truly master this work we do.

Palpation of tissue structures seeks to determine the texture, resilience, warmth, humidity and the possibility of moving, stretching or compressing these structures.

Concentrating on the tissue palpated, and pushing aside one layer after another, we distinguish skin, subcutaneous tissue, muscle and bone; we recognize the transition to the tendon, and finally the insertion."

Chaitow says, "Later on, critical judgment may be used in interpreting what was felt, but the process of 'feeling' needs to be carried out with that faculty silenced."

No one has better expressed this need than John Upledger, DO, OMM, the developer of CranioSacral Therapy. He states: "Learning to trust your hands is not an easy task.

You must learn to shut off your conscious, critical mind while you palpate for subtle changes in the body you are examining.

You must adopt an attitude so that you may temporarily accept without question those perceptions which come into your brain from your hands.

After you have developed your palpatory skill, you can criticize what you have felt with your hands. If you criticize before you learn to palpate, you will never learn to palpate."
Principles and procedures

Comparing other forms of myofascial release

The term Myofascial Release can now surprisingly describe hundreds of soft tissue and manual therapy techniques. It could be everything from soft tissue to deep tissue treatments. Not that this is totally incorrect because most manual therapy addresses the muscle, which Latin for this is “myo” and it does affect the fascia, because fascia is all encompassing.

Myofascial Release can be subdivided into 2 general areas with a few examples below:

**Direct approach**
- BONNIE PRUDDEN MYOTHERAPY
- HELLERWORK
- MYOSKELETAL ALIGNMENT TECHNIQUE
- ROLFING
- DEEP TISSUE MASSAGE
- ACTIVE RELEASE TECHNIQUE

**Indirect approach**
- CRANIOSACRAL THERAPY
- MUSCLE ENERGY TECHNIQUE
- BOWEN TECHNIQUE
- JOHN F. BARNES METHOD OF MYOFASCIAL RELEASE
- ENERGY MASSAGE
- STRAIN-COUNTERSTRAIN

The American Cancer Society state that "There is little scientific evidence available to support proponents' claims that myofascial release relieves pain or restores flexibility" and caution against using it as a substitute for conventional cancer treatment.

The poor quality of research into the use of myofascial release for orthopedic conditions precludes any conclusions being drawn about its usefulness for this purpose.\(^{24}\)
Utilizing myofascial release and other modalities in related structures

One of my favorite techniques is a movement “Dynamic Extension Technique”. It is commonly known as a massage concept called “pin-and-stretch”, which is applying pressure to a muscle as you elongate it.

In addition, Sherrington’s law of reciprocal inhibition (Sherrington, 1907) states that a hypertonic antagonist muscle may be reflexively inhibiting their agonist. Therefore, in the presence of tight and/or short antagonistic muscles, restoring normal muscle tone and/or length must first be addressed before attempting to strengthen a weakened or inhibited muscle.

As a muscle contracts the motor nerve has been activated which is commonly known as a concentric contraction. The opposite or antagonist muscle relaxes known as an eccentric contraction.

If pressure is applied to a muscle while it is in the relaxed or lengthened eccentric state it will encourage the elongation of muscle tissue with less discomfort for the patient.

One of the obstacles I face with treating people is lack of awareness of their bodies. With athletes, many train way past their pain threshold. In fact, the average person may suppress nagging discomfort with their day to day lives.

As this warning signal is suppressed more and more the person may not be aware of a nagging irritation that has grown into a full blown injury until the therapist addresses it on the treatment table.

An added benefit of Dynamic Extension Technique is by having the person actively contract the opposite muscle of the one being treated will encourage awareness of this dysfunctional area and help to restore proper function and range of motion.
Achilles tendon

Because of the narrow structure of the Achilles tendon and the area inserting into the heel, Instrument assisted soft tissue mobilization (IASTM) is useful to save your hands and treatment is very specific, if a tool is available. For our purpose a Wonton spoon (anything with a straight edge) will be used to treat the middle of the calf to the heel.

In the 2003 study, Lemont found tissue death of the plantar fascia. This fasciosis is caused by lack of blood flow. Ray McClanahan, DPM found this is caused by a tight abductor hallucis muscle. Shoe shape he found, can cut off necessary blood supply to the Plantar Fascia restricting the ability for the tissues in your foot to regenerate.

Precautions and treatment

Only a few strokes are necessary in a given area because of the irritating nature.

A lubricant is helpful to limit irritation.

At no point should the amount of pressure illicit pain, feedback from the person is of most importance. Uncomfortable is ok, painful never.

Treatment is contraindicated with history of: anticoagulant drugs, bruising, diabetes, open wound or sutures, peripheral neuropathy, skin hypersensitivity.

1. In the prone position with the feet off the end of the treatment table or chair.
2. By demonstrating have the person slowly move the toes into extension and the ankle into dorsi flexion.
3. Apply a small amount of lubricant to the area to be treated.
4. With only a few strokes move over the treatment area from the heel to the middle of the calf muscle with a gentle flowing movement.
5. This stroke not only gives you information as to the structure of the leg and muscle development, but also muscle tightness or dysfunction.
6. Using 20% resistance on the top of the foot (or pushing into the end of the table), have the person move into toe extension as well as dorsi flexion while the area is treated with “a few” short gentle strokes only.
7. Include the abductor hallucis muscle area during this treatment on the superior part of the arch under the ankle. Dynamic Extension is adduction of the great toe.
**Gastrocnemius**

1. In the prone position with the feet off the end of the treatment table or chair.
2. By demonstrating have the person slowly move the toes into extension and the ankle into dorsi flexion.
3. Apply a small amount of lubricant to the area to be treated.
4. With only a few strokes move over the treatment area from the middle of the calf to below the back of the knee with a gentle flowing movement.
5. This stroke not only gives you information as to the structure of the leg and muscle development, but also muscle tightness or dysfunction.
6. Using 20% resistance on the top of the foot (or pushing into the end of the table), have the person move into toe extension as well as dorsi flexion while the area is treated with “a few” gentle strokes only.
7. Using the forearm stroke medial to lateral to treat the medial head of the muscle, as you stroke pull up and around the medial head feel for any muscle fiber or fascial adhesions.
8. If any adhesions are found, go against the grain and smooth out any restrictions.
9. To release the outside head, push lateral to medial in the same fashion as the medial head.
Position to provide most efficiency

Applying pressure for a sustained time period can be exhausting. I encourage the therapist to be creative and find a position that their body weight is providing all of the pressure necessary instead of generating this pressure with their muscle strength.

Sitting on the edge of the table will minimize strain on the lower back and whenever possible I prefer to use my forearm when working on the rest of the body.

The joints and muscles of the hand are small in comparison to other areas of the body. They are also relatively fragile, and are extremely vulnerable to over-strain injuries. The hands are better suited to precise and specific work.

If we use fingers or thumbs to transmit force to the client, the joints that are applying the force are in alignment with each other, and are stabilized in whatever manner possible, and then sideways strain is eliminated.

Make sure that your wrists and hands are always relaxed. If they are not, the muscles of the hands and forearm will become fatigued faster and you will lose sensitivity in feeling the tissues you are working.

Cross grain compared to with grain

Palpation of tissue structures will often reveal an ease in one direction and the opposite in the other.

To go totally against the grain will certainly release stuck areas or adhesions quicker, but maybe too aggressive or at the very least, time consuming.

To go with the grain may appear to be not as effective. If I sense a road block I may combine the two to end up going diagonal.
Tissue barrier and beyond

When you move into tissue with gentle pressure you should have a sense of sinking to the first barrier or layer, you might be able to go through that barrier with more pressure, but there is a chance the tissue may resist or tighten.

With myofascial release you feel for the restriction and then, instead of sliding through it, you wait there a minimum of 90 to 120 seconds. You should feel the tissue soften.

After you get through the first barrier, you get to the second barrier, which has been passed over in traditional therapy lately.

You have to wait there again a minimum of 90 to 120 seconds, pressing into the restriction with a gentle, sustained pressure without sliding.

When you feel the release, it feels like taffy stretching, and then you don’t slide, but instead, you just take the slack out of the system and move to the next barrier.

The fascial system is like concentric layers of an onion—there’s barrier after barrier, and you have to be patient, take your time, and go through each barrier.”
Longitudinal Plane Releases

Larger or longer areas of the body do well with this type of release. In some cases I may use my forearms to give my hands a break, going with the fibers of a muscle.

With hypersensitivity these longer releases may be preferred, as this is less invasive to going against the grain of the tissue.

Combining Techniques

In an area where a stretch can be applied using the hand or forearm releases, it will magnify the release in a shorter time.

Plantar Fascia treatment

Proper positioning

- The most efficient tool at your disposal is your fingertips, other tools such as knuckles or IASTM devices might save the fingers, but the tendency to slip over the sensitive plantar fascia or not be able to judge the optimal amount of pressure is too great.

- The finger joints must be locked together to minimize strain so you will be applying pressure with one individual unit.

- Excessive pushing of the toes in extension will cause the fascia to inhibit releasing.

- Pressure should be initiated with the pads of the fingers, not the finger nails.

- The elbow and wrist joints should also be locked to apply efficient pressure. Curling the fingers, bending the elbows will eventually fatigue even the strongest individual.

- Discovering a position that allows the therapist to use their body weight instead of muscle tissue to provide pressure is the ultimate goal.

- Remembering this treatment will be for an extended time period. The person being treated does not have to be in the supine position, seated in a chair, prone, or side lying position is also acceptable.

- If a position of the therapist or the person being treated needs to be changed, the transition should be completed within 60 seconds.
**Manual sequence preparation**

An effective position and a much more gentle treatment will be to start at the attachment point just past the calcaneus to the metatarsal heads.

Position the person being treated, (as well as the therapist) so they can remain comfortable.

Apply pressure to the toes to move into toe extension. If at any time this is painful, try to find a comfortable angle of extension. If none can be found, omit toe extension.

Excessive pushing of the toes in extension will cause the fascia to inhibit releasing and will be uncomfortable for the person. A balance must be achieved to apply just enough tension.

With the same hand (toe extension), push and move the ankle into dorsi flexion. If at any time this is painful to the person, try to find a comfortable angle of dorsi flexion. If none can be found, omit ankle dorsi flexion.

Because the foot is wider at the distal end a few rows may be necessary.
Manual sequence preparation pressure

Depending on the person’s sensitivity and the degree of injury, a good rule of thumb question would be “is this pressure painful or uncomfortable”? If it is painful, no way, back off a bit. If it is uncomfortable, that is good. No lubrication will be necessary.

If you use almost no pressure, it will take too long to receive much benefit. I stay at the level of uncomfortable, but not painful. If you always push the edge, that’s when things will change. The risk of the person being sore the next day will be much less.

After a few minutes of this pressure, you should sense the tissue becoming softer. At this point you can use just a fraction more pressure. It is as if the body is letting you in.

Continue deeper a few layers before moving up the foot to the next position (one row of fingers or half an inch) toward the toes.

The medial side of the foot (arch) could be much thicker and more sensitive. As you approach this area, you may have to adjust your amount of pressure or decrease the angle of toe extension or dorsi flexion to achieve that uncomfortable pressure without pain.

Continue up the foot until the ends of metatarsals are reached.

This entire treatment may take up to 15 minutes for each foot. If your fingers are too fatigued after this treatment, using less pressure or adjust position to provide most efficiency may be helpful.

Other tools of contact could also be tried. Knuckles or heal of your hand or elbow. If you use Instrument assisted soft tissue mobilization (IASTM), remember you will lose much of your sensitivity (which is key to being effective and not causing more injury). IASTM treatment is also contraindicated with history of: anticoagulant drugs, bruising, diabetes, open wound or sutures, peripheral neuropathy, skin hypersensitivity.

In my opinion, I would not use Instrument assisted soft tissue mobilization on the plantar side of the foot. It is interesting that this tool is commonly used across the country, with less than stellar results.
Manual sequence

1. Position the person being treated, (as well as the therapist) so they can remain comfortable.
2. Apply pressure to the toes to move into toe extension. If at any time this is painful, try to find a comfortable angle of extension. If none can be found, omit toe extension.
3. With the same hand (towel or body part), push and move the ankle into dorsi flexion. If at any time this is painful to the person, try to find a comfortable angle of dorsi flexion. If none can be found, omit ankle dorsi flexion.
4. With the combination of dorsi flexion and toe extension this will apply tension to the plantar fascia. This tension will magnify any pressure put directly on the plantar fascia and would be very painful. This direct pressure should not be attempted at any point. Only at the end of the treatment indirect pressure may be attempted.
5. Apply a small amount of pressure media (or above) to the inside aspect of the plantar fascia. It isn’t as important how much pressure you start with, but where you finish is.
6. Direct the angle of pressure toward the 1st metatarsal for 5 minutes. Without using more pressure, you should be able to sense the fascia letting you in, continuing to go deeper.
7. While still in this same position, change the angle of pressure toward the 2nd metatarsal for 5 minutes. Without using more pressure, you should be able to sense the fascia letting you in, continuing to go deeper.
8. Every 5 minutes change the angle to the next metatarsal, being careful to not slide off the lateral edge.
9. After the 5th metatarsal is treated slowly move on top of the medial edge of the plantar fascia (which should be much softer). Slowly move through the plantar fascia for 5 minutes.
Appropriate pressure

As you can see this treatment is very demanding on the fingers. If the therapists’ hands are fatigued after this, you must realize that you used too much pressure. And there is a good chance the client or patient might be sore after this treatment. After 30 minutes of sustained pressure neither should be in discomfort.

Multiple treatment sites

It is not uncommon during the beginning of the treatment to find a raised or thicker aspect of the medial plantar fascia; I would usually treat this area first. Also if a person has a longer foot you might have to treat the area close to the metatarsal heads as well as having to treat an area close to the heel, as well as the abductor hallucis area.

Dynamic stretching

Lack of awareness

One of the obstacles I face with treating people is lack of awareness of their bodies. With athletes, many train way past their pain threshold. In fact, the average person may suppress nagging discomfort with their day to day lives.
As this warning signal is suppressed more and more the person may not be aware of a nagging irritation that has grown into a full blown injury until the therapist addresses it on the treatment table.

An added benefit of Dynamic Stretching is by having the person actively contract the opposite muscle of the one being treated will encourage awareness of this dysfunctional area and help to restore proper function and range of motion.

Dynamic Stretching Protocol for the calf and foot

The guide I use for treating the lower leg with Dynamic Stretching is to determine the action of the target muscle (agonist) I will be working with.

Next is to find the opposite muscle, determine the action of this antagonist.

Demonstrate to the person how to shorten or contract the antagonist muscle.

Have the person practice shortening the antagonist muscle a few times slowly.

As the person continues to shorten the antagonist muscle (into extension), gently stretch the target muscle for 2 seconds for 10 repetitions. With each stretch as the tissue releases more pressure should be able to be tolerated.

If the target muscle is very sore or hypersensitive, resist with 20% pressure of the antagonist muscle while stretching the target muscle.

Contraindications to stretching

The following should be kept in mind as contraindications or precautions to stretching:

Joint Instability

Joint instability can be the result of a prior dislocation, fracture, or sprain. Get advice from your doctor before stretching an area of previous injury.

Diseases Affecting the Tissues Being Stretched

Conditions such as rheumatoid arthritis or osteoporosis can leave joint structures weakened. Those with connective tissue disorders also have altered connective tissue viscoelastic properties. Stretching can lead to disability, instability or deformity.

Acute Injury

Consult a doctor prior to initiating a stretching program with recent injuries as scar tissue takes time to mature. Premature stretching can cause re-injury and the deposition of more scar tissue prolonging the rehabilitation process.
Vascular injury

Talk to your doctor if you are recovering from a vascular trauma or are taking an anticoagulant. Premature or excessive stretching can lead to further vascular injury and thromboembolism.

Excessive Pain When Stretching

If stretching is excessively painful you may be suffering from an underlying medical condition. Consult your doctor.

Inflammation or Joint Effusion

Be careful when starting a stretching program around an area of inflammation. Inflammation can change the viscoelastic properties of connective tissues and can cause injury if not undertaken correctly. Stretching a joint with an effusion (or water on the knee) can damage capsular structures.

Calf stretch (supine) Action: plantar flexion of the ankle; opposite action: dorsi flexion.

- Lightly touch the opposite muscle: tibialis anterior (antagonist), so the person will realize which muscle to contract.
- Instruct the person to bring their foot upwards into dorsi flexion as far as possible, contracting the anterior shin muscles and exhale during movement.
- Therapist provides gentle assistive stretch at the end of the movement by using the hand to provide a gentle pushing effort.
- If the target muscle is very sore or hypersensitive, resist with 20% pressure of the antagonist muscle while stretching the target muscle.
- 10 repetitions for 2 seconds each.
Calf stretch 20% resist (supine) Action: plantar flexion of the ankle; opposite action: dorsi flexion.

- Lightly touch the opposite muscle: tibialis anterior (antagonist), so the person will realize which muscle to contract.
- Instruct the person to bring their foot upwards into dorsi flexion as far as possible, contracting the anterior shin muscles and exhale during movement.
- Therapist provides gentle assistive stretch at the end of the movement by using the hand to provide a gentle pushing effort.
- **If the target muscle is very sore or hypersensitive, resist with 20% pressure of the antagonist muscle while stretching the target muscle.**
- 10 repetitions for 2 seconds each.
**Sole of the foot stretch (supine)** Action: flexion of the toes and plantar flexion of the ankle; opposite action: extension of the toes and dorsi flexion.

- Lightly touch the opposite muscle: extensor digitorum and tibialis anterior (antagonist), so the person will realize which muscle to contract.
- Instruct the person to bring their toes upwards into extension and dorsi flexion as far as possible, contracting the anterior shin muscles, and top of the toes and exhale during movement.
- Therapist provides gentle assistive stretch at the end of the movement by using the hand to provide a gentle pushing effort upwards of the toes.
- If the target muscle is very sore or hypersensitive, resist with 20% pressure of the antagonist muscle while stretching the target muscle.
- 10 repetitions for 2 seconds each.
Conclusion

Flexor digitorum brevis

I ran across an interesting study of the flexor digitorum brevis muscle, which is above the plantar fascia.

While the connection between low arches, increased plantar fascial tension, and the development of heel spurs is generally accepted in the medical community, recent research proves that the plantar fascia is not responsible for the formation of heel spurs.

A detailed study of 22 heel bones with spurs revealed that bone spurs form at the origin of a small muscle that goes to the toes (the flexor digitorum brevis muscle), not the plantar fascia.\textsuperscript{26}

This research emphasizes the important interactions occurring between the plantar fascia and the flexor digitorum brevis muscle: the plantar fascia functions passively to store and return energy, while the flexor digitorum brevis muscle plays a more dynamic role in “variable load sharing.”

Because flexor digitorum brevis plays an important role in distributing pressure away from the plantar fascia, successful treatment of plantar fasciitis almost always involves checking to see if the flexor digitorum brevis is weak. The easiest way to evaluate flexor digitorum brevis strength is with the paper grip test.

- To do this test, sit in a chair with your hips, knees, and ankles positioned at 90° angles.
- Have a friend place a standard business card beneath your second through fifth toes while you try to stop the card from being pulled away by pushing down to the floor with the tips of your toes.
- When flexor digitorum brevis is strong, your friend will have difficulty pulling the card out from beneath your toes.

A nice way to exercise this muscle if it is weak is to push the four smaller toes into the floor or a rolled up face cloth.

**Homework for the client or patient**

A discussion of possible home treatments is covered in the section on *Non-surgical treatments* of this manual on page 18, along with:

**Stretching calf, toe extensors and ball rolling**
If it is true that many clinician’s say that the Achilles tendon has a continuing connection to the plantar fascia, it would be prudent to stretch the calf (or foam roll). A good many sufferers report improvement from this alone.

**Calf stretch**

With hands against the wall, extend one hip and leg backward to stretch with the foot firmly planted on the floor.

Another great calf stretch would be on a set of stairs, holding onto the railing while dropping the heels and only having your toes to contact the step.

Visualize for a moment that the plantar fascia is always under tension, especially during toe extension. (Image page 14)

If you were to pull off your shoes and socks right now, would your toes be straight or would they be bent a little in extension. Chances are they would be in extension.

Many possible reasons could be from wearing dresser shoes with a heel elevation. With some shoes that we wear the toe of the shoe is not touching the ground until we push off in extension during the push off phase of walking. If you are sleeping on your back with a heavy blanket over you, chances are your toes are in extension because of the heavy weight.

By stretching your shin and toe extension muscles, it will create a better balance between the front and back lower leg structures and relieve some tension on the plantar fascia.

I’m reminded of a friend of mine, when we did yoga together. The class would end in child’s pose and like clockwork; his feet would have a horrible cramp. In the relaxed face up position his toes were in extreme extension constantly. I would say relax your
toes, his reply was always, “they are”. To this day, his feet do not cramp anymore, he said “it only took me 10,000 times being in child’s pose.

**Toe extensor stretch**

Raise the upper body with the toes touching the floor.

If possible, bend the knees and sit back on your heels (if your feet cramp at this point, place a small rolled up towel under your ankles while the toes are touching the floor).

**Ball rolling**

I was introduced to ball rolling by a friend that swears by it. She prefers 1 inch semi hard balls found at children toy stores. Golf balls seem to be too hard.
Ball rolling

Just a few minutes each foot every few days is an excellent way to increase circulation, release muscular and fascial tension.

Rolling motion or static pressure on one spot at a time will give you new feet, amazing!

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Daniel Max Top 5 Shoes for Heel Spurs and Plantar Fasciitis

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