

THE INTERVENTIONAL ORTHOPEDICS SOLUTION FOR  
**FOOT AND ANKLE PROBLEMS**



## The Interventional Orthopedics Solution for Foot and Ankle Problems

Our feet and ankles don't often get the attention they deserve, yet they are a crucial piece in our musculoskeletal puzzle. Not only do they hold and balance our entire body weight, but they are also the body's first line of shock absorption as our feet make contact with the ground below.

In interventional orthopedics, we recognize that the body is actually one interconnected machine, not a collection of individual parts and pieces. The hip, knee, ankle and foot are all controlled by spinal nerves in your low back and operated by an interconnected system of tendons and ligaments, which work as finely orchestrated interconnected pulleys. With this focus in mind, [we know an issue in the ankle or foot \(e.g., arthritis or injury\) can affect anything up the musculoskeletal chain](#). And, likewise, a problem in the spine, hip, knee, and so on can affect the foot and ankle. In interventional orthopedics, our focus is on treating the whole musculoskeletal system.

There are many problems that can occur in the feet and ankles. Some of the more common include ankle ligament tears and instability, foot or ankle arthritis, plantar fasciitis, bunions, and tendon injuries. Let's review these problems, some of the potential sources, and the traditional and interventional orthopedics solutions for feet and ankle problems.

### Ankle Ligament Tears and Instability

An elaborate system of very strong ligaments articulate the movement of the foot at the ankle. Because of the enormous weight in motion that the ankle joint handles, it is particularly prone to sprains in which the ligaments are stretched, or damaged. [Joint instability happens when the ligaments that hold an ankle joint together get loose](#). This means that the joint surfaces move around too much, and this extra motion occurs because ligaments get stretched out or have partial tears. While these lesser tears may be slowly frying the ankle joint, they are frequently ignored in our orthopedic surgical care system, which is only adept at identifying complete or complete retracted tears of ligaments. The problem with ignoring sprains, instability, and partial tears is that the cumulative wear and tear can lead to arthritis, bone spurs, and other problems if left untreated.

When surgery is performed to repair a complete ligament tear, this involves cutting out the torn ligament and replacing it with a patellar or hamstrings tendon graft harvested from the patient. Yet our body has no spare parts, meaning [one area \(in this case the site of the tendon harvest\) undergoes controlled damage to accomplish a goal in another area \(the replaced ligament\)](#), and neither will continue to function like the original.

[With interventional orthopedics, most damaged and torn ankle ligaments can be easily treated through precise orthobiologic injections](#). These regenerative medicine solutions, like platelet rich plasma (PRP) or stem cells or even simpler treatments, like prolotherapy, involve injections of the patient's own platelets and stem cells, which cause a brief inflammatory healing reaction to address the ankle ligament tears and instability.

## Foot or Ankle Arthritis

Arthritis can occur in the foot or the ankle. [In the ankle, the single biggest cause arthritis that we see consistently in the clinic is occult instability.](#) This is where someone sprains an ankle and while they seem to recover, the ligaments that protect the ankle joints are stretched out. Over time, the slight extra motions in the ankle lead to breakdown in the joint, and arthritis develops.

In the foot, [hallux valgus, or a bent big toe, is an early sign of arthritis](#) setting into the metatarsophalangeal (MTP) joint at the base of the big toe. It's best to address it as soon as possible, not only to address discomfort, such as pain and stiffness, but also to try to head arthritis off at the pass, before it advances to hallux rigidus, which means that the toe becomes so arthritic that it gets locked in one position and can't bend.

Unfortunately, orthopedic surgeons like operate on joints in the feet and ankles. [In the big toe, the toe bones are fused together or the joint is amputated and replaced](#), both of which are big surgeries with lengthy recoveries and can cause more problems down the line. Just like a [back fusion leads to disease in the adjacent segments](#), a [big toe fusion causes problems in the ankle and other toe joints](#) as they have to bear the extra load. [In the ankle, fusions are also big, drastic surgeries](#) that reduce range of motion and stop movement at three key ankle joints. Ankle replacements are less common, but are also bad-news surgeries that should be avoided.

Interventional orthopedics focuses on nonsurgical regenerative medicine solutions, such as a high-dose PRP or stem cell injections, for foot or ankle arthritis.

## Plantar Fasciitis

Plantar fasciitis is a problem involving the tough supporting structure on the bottom of the foot, the plantar fascia, which is a band of tissue, or a ligament, that goes from the base of the toes and attaches at the bottom of the heel. When this area is overloaded, it can develop microtears, and [heel pain can become quite severe](#). One of the hallmarks of plantar fasciitis is the sharp pain that occurs with the first few steps in the morning. The critical thing to understand is that your heels are supplied by the nerves in your lower back. Many patients who have a back issue don't experience much back pain. So in this case, heel pain could actually be a warning sign of a back issue. It's important to address the low back issue when the heel pain, the warning sign, first appears.

When conservative treatment, such as physical therapy, rest and ice, stretching the calf muscles, and supporting the arch with various contraptions, doesn't work, surgery is often the next step in the traditional orthopedics model. However, [plantar fasciitis release surgery comes with a prolonged and difficult recovery and generally poor outcomes](#). Another disturbing surgery we've seen for plantar fasciitis and heel pain is a [gastrocnemius recession](#). The purpose for the surgery is to lengthen a tight calf muscle, the gastrocnemius, and it involves surgically cutting the calf muscle and either letting it heal or surgically

sewing it back together after partially cutting its tendon. Nonsurgical treatment should be considered before resorting to a drastic, and oftentimes unnecessary, surgery for plantar fasciitis.

In interventional orthopedics, our first step to tracking and getting rid of heel pain is a one- to two-hour assessment of how each and every major joint and body system functions. This includes all of the muscles and nerves from the neck through the foot. With the Regenexx ProActive program, we use a simple method called [the SANS approach](#), which looks at stability, articulation, neuromuscular status, and symmetry. We also recognize the studies as well as our own results that [have shown that PRP can help the problem](#) without surgery or steroids.

## Bunions

A bunion is a bone spur that forms off the first metatarsal toe joint to stabilize a foot that pronates all the time. Pronation is where the foot and ankle tip inward, unevenly distributing weight onto the inside edge of the sole of the foot. You don't get bunions when you're young because the joint has enough native stem cells to support the cartilage. When you're older, the repair capabilities of the joint go down and it begins to break down with the added pressure caused by pronation. All too often the [cause of the bunion is irritated nerves in the low back causing weak leg muscles](#). Back pain will not necessarily be a symptom; the nerves just have to be irritated enough to impact the muscles as they control your foot. Accompanying [big toe numbness](#), however, can be a sign that there's an issue in a spinal nerve.

[Conservative options that may help support the foot and alleviate pronation](#) include high-quality custom orthotics, night-time braces that can help straighten the toe, and strengthening your leg muscles. If these options have been exhausted, orthopedic surgeons may want to operate. [Surgical bunion removal, or bunionectomy, destabilizes the foot](#), and turns it into a pronating mess, so it's a good idea to seek nonsurgical solutions for bunions.

With interventional orthopedics, advanced biologic injections in the joint, like precise image-guided platelet rich plasma or stem cells, should help preserve the joint and keep it from collapsing. Additionally, [we can track it to the source, such as the lower back, and treat this area as well to address the reason the bunion formed](#) in the first place.

## Injury to the Flexor Hallucis Longus Tendon

[An injury to the flexor hallucis longus \(FHL\) tendon](#), which runs along the bottom of the big toe, can be debilitating and extremely painful. Injuries to this tendon can disrupt the ability to flex the big toe and also disrupt ankle stability as well as many other issues. The FHL tendon attaches to the plantar plate, a fibrocartilage plate that resides on the bottom of the big toe and other MTP joints, and helps protect the joint from the forces of impact.

At the side of the MTP joints, there are two ligaments, the accessory collateral ligament (ACL) and the proper collateral ligament (PCL). These ligaments stabilize the plantar plate. Any of these structures can become injured, especially in active people, such as runners. A snapped FHL tendon, for example, can completely take you off your feet.

Conservative treatment, such as physical therapy, acupuncture, boot immobilization, massage therapy, chiropractic care, and many other options may be explored and may work. However, when these do not work, it's a bad idea to turn immediately to surgery. Surgeries come with long and often painful recoveries and can lead to more problems, and the foot will never function like it once did.

The interventional orthopedics approach to injuries to the FHL and the structures supporting it is to precisely place (using ultrasound and fluoroscopy guidance) orthobiologics, such as stem cells or platelet rich plasma via a same-day injection procedure. [This patented process involves harvesting the patient's own stem cells and reinjecting them back into the ligaments and other injured structures of the foot.](#)

### **Steroids, NSAIDs, and Other Drugs Not Recommended**

Other treatments you will likely be presented with in the traditional orthopedics model for foot and ankle problems include steroid shots or pain medications, such as nonsteroidal anti-inflammatory drugs (NSAIDs) and opioids. [NSAIDs come with a long and growing list of dangerous side effects, such as sudden-death heart attacks, stroke, and GI bleeding, and addiction and overdose due to prescription opioids have reached epidemic proportions in the U.S.](#)

[Steroid shots have been shown to destroy local cartilage in the joint](#) (which can only progress arthritis) while providing no significant pain improvement. And the list of problems with steroid injections just keeps growing:

[Steroid injections weaken the tendons.](#)

[Steroid injections damage tissues.](#)

[Steroid injections are toxic to joint cartilage cells.](#)

[Steroid injections kill stem cells.](#)

[Steroid injections suppress brain function.](#)

Some supplements can be a good alternative for pain and inflammation. [Chondroitin and glucosamine have been shown to be effective pain relievers, and they preserve cartilage. Curcumin can also relieve pain from arthritis](#) and other issues.

## Conclusion

Your body is tuned to micromillimeter precision, and trying to rearrange the biomechanics of the body with surgery is almost always a terrible idea. It's also important to understand that where it hurts may or may not be where the primary damage is located. If you have foot or ankle pain and treatment there is having no effect, ask your doctor to take a closer look at your back before you make the drastic decision to undergo any invasive surgery.

Taking care of a foot or ankle problem while it's a small problem, when the issue first appears, will be much easier than trying to take care of it when it becomes a big issue that goes thermonuclear. While conservative options may help in some cases if the problem is rooted in the foot or ankle, if the problem is rooted further up the kinetic chain, such as in the back, or conservative options have failed, seek interventional orthopedics solutions.

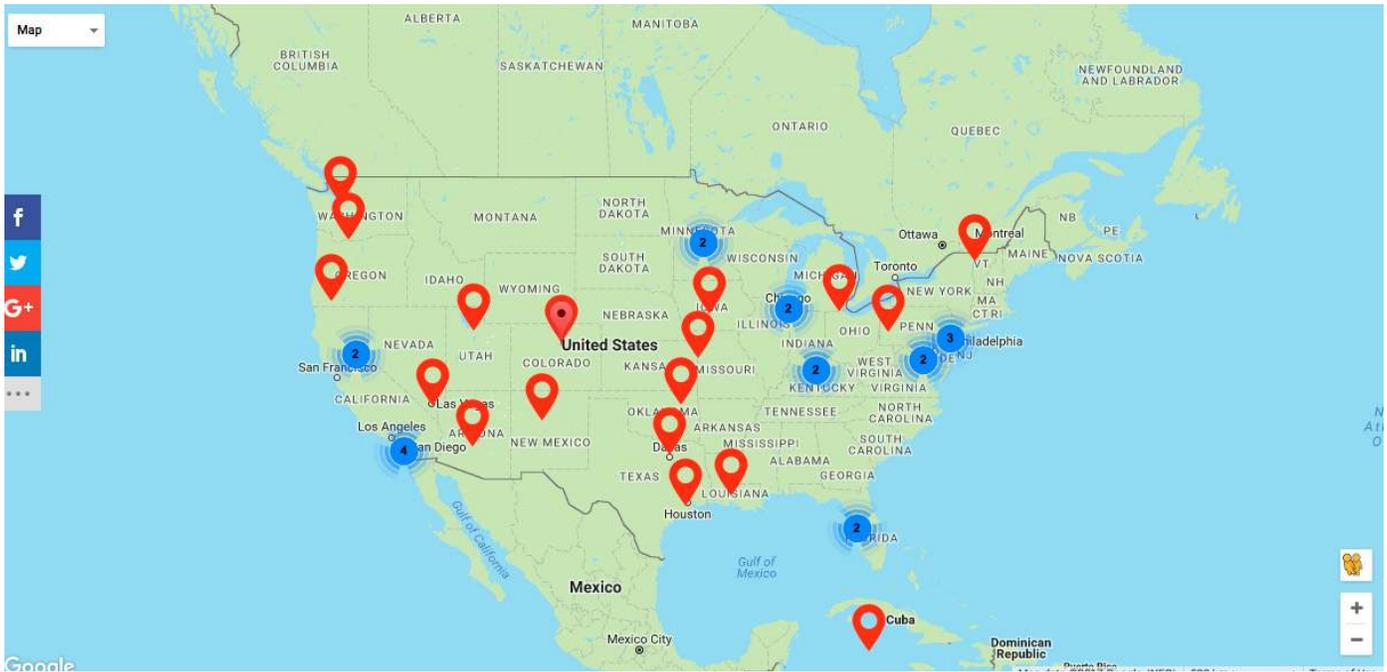
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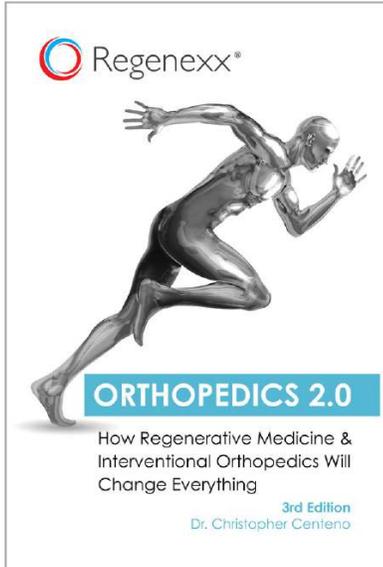
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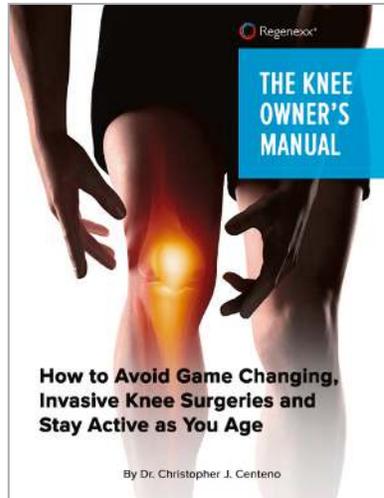


## Orthopedics 2.0

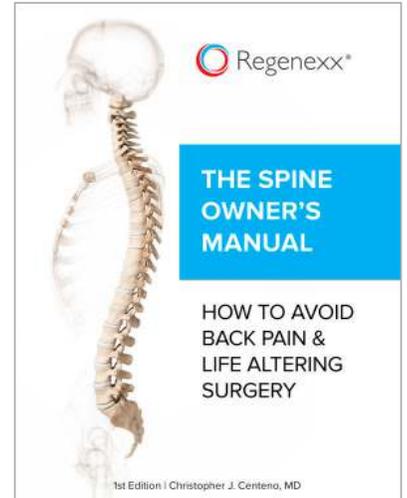
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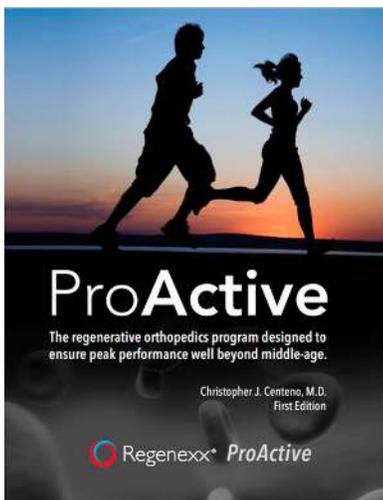
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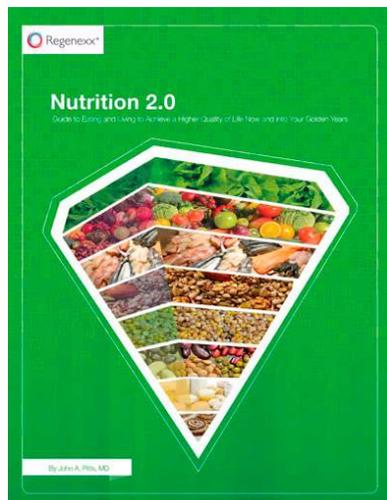
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