



A minimally invasive treatment for plantar fascia pain

Plantar Fasciitis Embolization
(PFE)



NORTH STAR
VASCULAR & INTERVENTIONAL



When conservative treatment isn't working...

Plantar fasciitis is the most common type of heel pain in adults. It is caused by painful inflammation of the fascia, the thick band of tissue that runs across the bottom of the foot, connecting the heel bone to the toes. In addition to being painful, it can make it very difficult to walk.

It occurs, most commonly, in those between the ages of 40 and 60. It is more than twice as likely to be experienced by women. Also, because of the repetitive microtrauma to the heel caused by running, it is far more common among runners and at younger ages.

For most patients, conservative treatment such as icing, massage, taping, stretching—or even medication or orthotics—can help manage the condition until it resolves on its own. Unfortunately, up to 20% of those with plantar fasciitis will require more substantial treatment, as will those who cannot wait the 12 months it may take to heal itself.

What causes plantar fasciitis?

Plantar fasciitis is caused by inflammation of the connective tissue within the heel. This is a result of repetitive stress or activities that produce irritation and tiny tears within the plantar fascia tissue.

Some possible causes of this condition include:

- Being overweight (BMI over 27)
- Having flat feet
- Prolonged standing
- Jumping
- Repetitive microtrauma (runners)
- Type II diabetes
- Reduced ankle dorsiflexion (limited motion of the ankle joint, due to tight muscles in the calf)



Treatment options

For those who require another solution, surgery is sometimes used to cut or “release” the fascia to relieve pressure and restore blood flow to the heel. Unfortunately, up to 44% of patients experience swelling and tenderness up to 10 years after the surgery.¹ In addition, complications, such as nerve injury, biomechanical instability and recurrent heel pain can occur.

Other, less invasive options such as extracorporeal shock wave therapy (ESWT) or high intensity laser therapy (HILT)/low-level laser therapy (LLLT) are available. However, these require multiple treatment sessions and have a success rate between 75% (ESWT)² and 50-70% (laser therapy).³ Additionally, healing from these procedures may be slowed with the use of anti-inflammatory medications.⁴ Patients who have had a recent corticosteroid injection and those with open wounds around the treatment site are not eligible for the ESWT procedure. Other treatments, such as botulinum toxin injections, have very little evidence to support their effectiveness.

Fortunately, there is a new and highly effective minimally invasive treatment option: Plantar fasciitis embolization (PFE).





The PFE procedure

During the procedure, a very small catheter is inserted into a blood vessel in the ankle or thigh. Our interventional radiologists use imaging to guide the catheter to the exact location of the blood vessels that are responsible for pain and inflammation. Tiny microparticles are injected into arteries to cut off blood supply to the inflamed tissue, which then heals naturally, reducing pain and discomfort.

PFE has been shown to be highly effective, with an excellent safety profile and success record.⁵

Talk to your doctor about PFE

PFE is a new and less invasive option to treat plantar fasciitis, performed by the experienced doctors at North Star Vascular & Interventional. If you are not a candidate for surgery, or do not wish to have surgery or other treatments, talk with your doctor and share this brochure with them. If you have questions, call us! We are happy to help provide the information you need to make an informed decision with your doctor.

North Star Vascular & Interventional

The doctors at NSVI are pioneers in interventional radiology. Hailing from some of the region's most prestigious healthcare and academic institutions, they were among the first to perform certain imaging-guided procedures in the United States. In fact, NSVI doctors play a leading national role in training other doctors to perform minimally invasive procedures like PFE.

NSVI offers the full range of minimally invasive vascular and interventional radiology services, including cancer treatment, at their state-of-the-art Minneapolis-based outpatient center. Cancer, spine fractures, uterine fibroids, knee osteoarthritis and vascular disease can be treated faster, less expensively and with greater precision and safety than ever before.

To learn more, visit NorthStarIR.com.



NORTH STAR
VASCULAR & INTERVENTIONAL



NorthStarIR.com

P: (952) 960-9399

F: (952) 206-6467

8401 Golden Valley Rd
Suite 340
Golden Valley, MN 55427

1. Rebekah Gibbons et al. Evaluation of Long-Term Outcomes Following Plantar Fasciotomy. *Foot Ankle Int.* 2018 Nov; 39(11):1312-1319.
2. R. Scheuer et al. Approaches to optimize focused extracorporeal shockwave therapy (ESWT) based on an observational study of 363 feet with recalcitrant plantar fasciitis. *International Journal of Surgery* Volume 27, March 2016, Pages 1-7.
3. Dovile Naruseviciute et al. The effect of high-intensity versus low-level laser therapy in the management of plantar fasciitis: randomized participant blind controlled trial. *Clin Rehabil.* 2020 Aug; 34(8): 1072-1082.
4. Reilly JM, Bluman E, Tenforde AS. Effect of shockwave treatment for Management of Upper and Lower Extremity Musculoskeletal Conditions: a narrative review. *PM R.* 2018;10(12):1385-1403
5. Rozil Gandhi, et al. Early outcomes of transcatheter arterial embolization using imipenem/cilastatin for plantar fasciitis refractory to conservative therapy. *Br J Radiol* 2024 Feb 28;97(1155):544-548.