

The Venous System Anatomy

The venous system is made up of a network of veins, including:

- Superficial veins- veins located close to the surface of the skin.
- Deep veins- larger veins located deep in the leg.
- Perforator veins- veins that connect the superficial veins to the deep veins.

The Closure procedure treats venous reflux disease in superficial venous system, often the underlying cause of painful varicose veins.

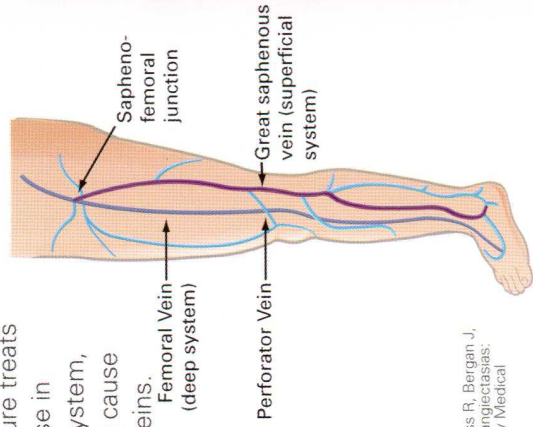


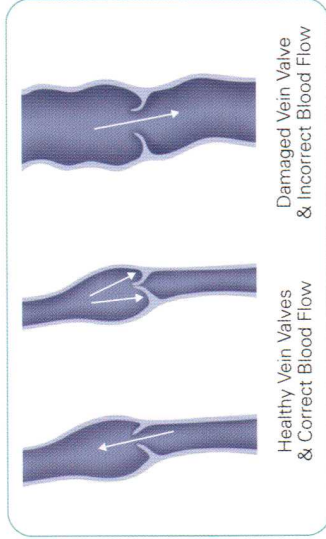
Image source: Goldman M, Weiss R, Bergan J, et al eds. Varicose Veins and Telangiectasias. Diagnosis and Treatment. Quality Medical Publishing, Inc. 1999

Understanding Venous Reflux Disease

Healthy leg veins contain valves that open and close to assist the return of blood back to the heart. Venous reflux disease develops when the valves that keep blood flowing out of the legs and back to the heart become damaged or diseased. As a result, vein valves will not close properly, leading to symptoms of:

- Varicose veins
- Leg heaviness and fatigue
- Pain
- Skin changes and skin ulcers
- Swollen limbs

Superficial venous reflux disease is progressive — symptoms can worsen over time if left untreated.



Are You a Candidate?

Many factors contribute to the presence of venous reflux disease, including:

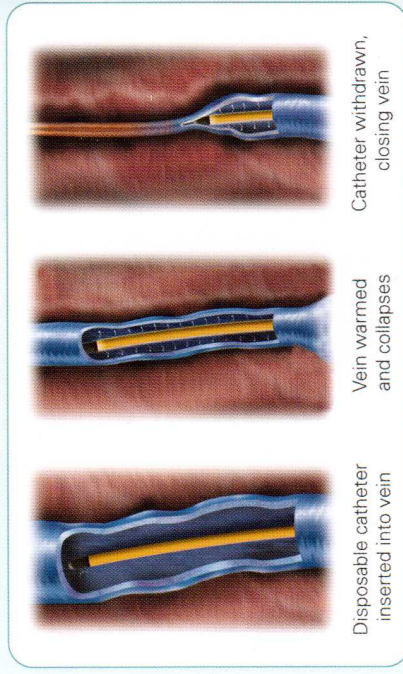
- Age
- Multiple pregnancies
- Gender
- Obesity
- Family history
- Standing profession

Using ultrasound to scan your leg(s), your vascular surgeon will determine if superficial venous reflux is present.

Speak with your surgeon about determining your candidacy for the Closure procedure.

Experience the VNUS Closure® Procedure

The Closure procedure can be performed on an outpatient basis. Using ultrasound, your surgeon will position the Closure catheter into the diseased vein through a small opening in the skin. The tiny catheter powered by radio-frequency(RF) energy delivers heat to the vein wall. As the thermal energy is delivered, the vein wall shrinks and the vein is sealed closed. Once the diseased vein is closed, blood is re-routed to other healthy veins.



Following the procedure, a simple bandage is placed over the insertion site, and additional compression may be provided to aid healing. Your surgeon may encourage you to walk, and to refrain from extended standing and strenuous activities for a period of time.

Patients who undergo the Closure procedure typically resume normal activities within a day.

“The veins on my legs were beginning to look like a road map! My legs were painful with ankle swelling and itching. Skirts were not worn except with thick tights and shorts certainly didn't feature in my wardrobe. I had the Closure procedure and was back at work the next day! I am so pleased with the results and apart from the cosmetic improvement I no longer have leg pain. It's great that I am not covering up and wearing shorts again.”

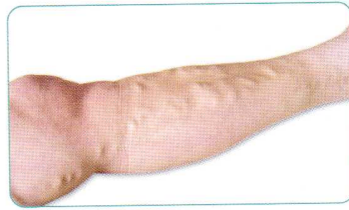
- Christine T

Procedural Highlights

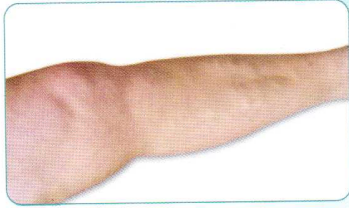
Closure procedural highlights include:

- Relief of symptoms
- Local or general anesthesia
- Resume normal activities within 1-2 days
- Good cosmetic outcome with minimal or no scarring, bruising or swelling

Visual Results¹



Pre-treatment



One week
post-treatment*

¹Individual results may vary.

The Closure procedure results in good cosmetic outcome with minimal to no scarring, bruising or swelling.

¹ Before and after images courtesy of Michael Vasquez, MD.

The Closure procedure is covered by most health insurance companies.

Safety Summary

As with any medical intervention, potential risks and complications exist with the Closure procedure. You should consult your physician to receive further information.

The Closure System is intended for endovascular coagulation of blood vessels in patients with superficial venous reflux. It is contraindicated in patients with thrombus in the vein segment to be treated.

Potential complications include, but are not limited to, vessel perforation, thrombosis, pulmonary embolism, phlebitis, hematoma, infection, paresthesia, skin burn.

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Frequently Asked Questions

Q: Is the Closure procedure painful?

A: Patients report feeling little, if any, pain during and after the procedure.

Q: How quickly can I resume normal activity?

A: Patients are walking immediately following the procedure, and patients typically resume normal activities within one day.

Q: How soon will my symptoms improve?

A: Many patients notice an immediate relief of symptoms such as pain, leg heaviness and fatigue. The full benefits of the procedure may take 1-2 weeks.

Q: Is there any scarring, bruising, or swelling after the procedure?

A: Patients report minimal to no scarring, bruising, or swelling following the Closure procedure.

Q: How is the Closure procedure different from vein stripping?

A: During vein stripping, incisions are made in the groin and calf, and a stripper tool is threaded through the diseased vein, to pull the vein out of the leg. With the Closure procedure, only one small incision is made at the insertion site and the vein is then closed and left in place. This minimally invasive approach eliminates pain and bruising associated with vein stripping surgery.

Q: What if I need the vein for bypass surgery in the future?

A: The Closure procedure treats diseased veins only, which are not appropriate for bypass surgery. Surgeons can use other healthy vessels should bypass surgery be necessary.

Q: Is the Closure procedure covered by insurance?

A: Most major health insurers cover the Closure procedure. Your surgeon can discuss your coverage further at the time of the consultation.

> Do you experience discomfort, swelling & varicose veins?

If so, you may be suffering from superficial venous reflux disease.

Traditionally, patients diagnosed with venous reflux would undergo vein stripping surgery.

Now, patients can be treated with the VNUS®

Closure® procedure — a minimally invasive and more comfortable alternative to painful vein stripping surgery.

Over 300,000 procedures performed with VNUS Closure® Catheters.

