

Medtronic

Relief from varicose veins is possible.

See and feel a difference in your legs.

Understanding the cause

About vein disease

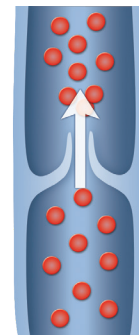
Healthy leg veins have valves that keep blood flowing to the heart.

Venous reflux develops when the valves stop working properly and allow blood to flow backward (i.e., reflux) and pool in the lower leg veins.

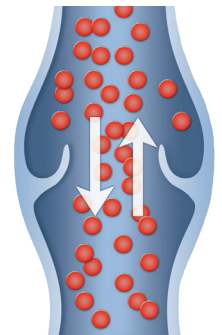
Chronic venous insufficiency

If venous reflux is left untreated, it may worsen over time and develop into a more serious form of vein disease called chronic venous insufficiency (CVI).¹

Normal vein
Valves ensure blood flows in one direction



Diseased vein
Valves that cannot close allow blood to drain and pool



CVI symptoms and risk factors

If CVI is left untreated, symptoms can worsen over time. Using ultrasound to scan your leg(s), your physician will determine if vein disease is present.

Signs and symptoms in the legs or ankles^{2,3}

- Varicose veins
- Aching or pain
- Swelling
- Cramping
- Heaviness or tiredness
- Itching
- Restlessness
- Skin changes and/or discoloration
- Open sores or ulcers

Risk factors²

- Family history
- Lack of exercise
- Leg injury or trauma
- Prolonged sitting or standing
- Obesity or excess weight
- Current or previous pregnancies
- Smoking
- Blood clot (deep vein thrombosis)

CVI and varicose veins are more common than you think. More than 30 million people in the United States have venous reflux or the more serious disease, CVI.³

Treatment options for lasting relief

With proper treatment, the progressive symptoms of venous reflux are preventable. Your doctor can help determine which treatment is right for you.

Photos shown are for the ClosureFast™ procedure, before treatment and six weeks after treatment. These photos are illustrative of general results a patient might expect with the ClosureFast procedure or the VenaSeal™ procedure. Individual results may vary. Talk to your doctor about which treatment option might be right for you. Photos courtesy of Dr. Jonathan Calure.

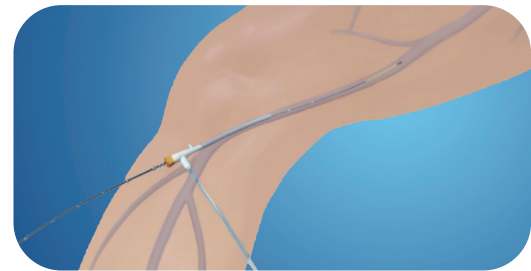


Two treatment options

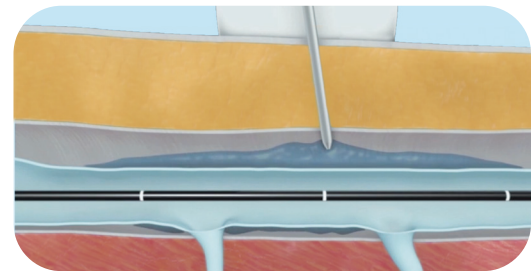
Treatment option 1 – thermal vein closure

The ClosureFast™ procedure uses radiofrequency energy or heat to close the diseased vein, which redirects blood flow to healthy veins, relieving symptoms.

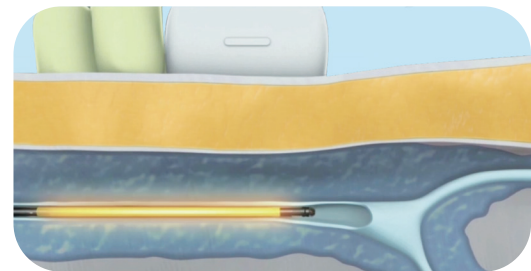
Possible complications of the ClosureFast procedure may include nerve injury, hematoma, phlebitis, thrombosis, and/or pulmonary embolism. Talk to your doctor about the risks and benefits.



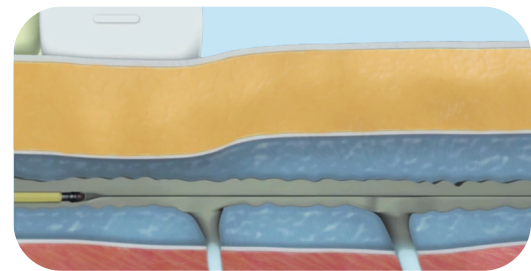
● A thermal catheter is placed in the vein.



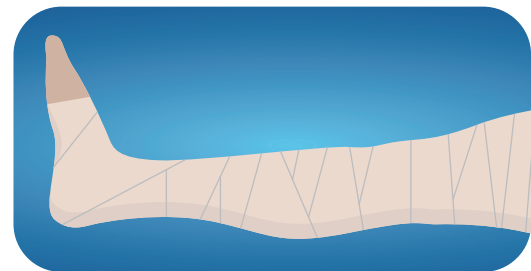
● A series of injections places numbing medication around the vein.



● The vein is heated and the catheter is withdrawn from the vein.



● The vein is “heat-sealed” along its length.

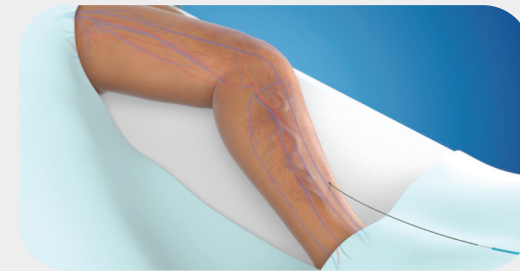


● The catheter is removed and a multilayer compression wrap is applied from foot to groin.

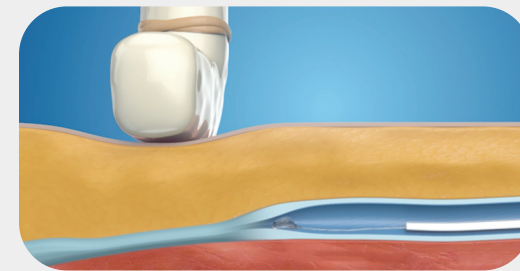
Treatment option 2 – nonthermal vein closure

The VenaSeal™ procedure delivers a small amount of a specially formulated medical adhesive to close the diseased vein, which redirects blood flow to healthy veins, relieving symptoms.

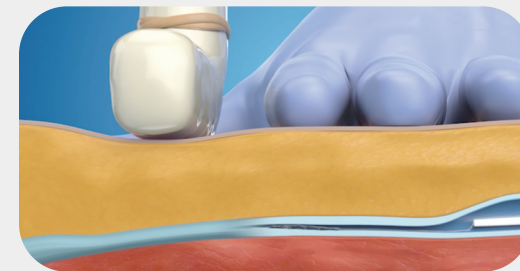
Possible complications of the VenaSeal procedure may include allergic reaction, inflammation, phlebitis, deep vein thrombosis, and/or pulmonary embolism. Talk to your doctor about the risks and benefits.



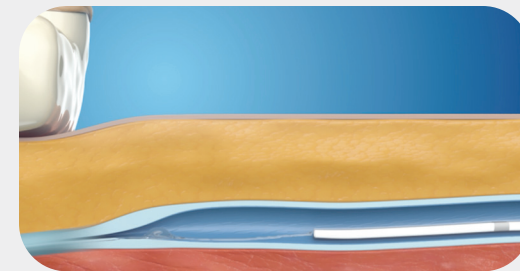
● A delivery catheter is placed in the vein.



● Advanced medical adhesive is applied.



● Light external pressure is applied to adhere the vein walls together.



● These steps are repeated for the length of the vein.



● The catheter is removed and a single adhesive bandage is applied.

If you're ready to see and feel a difference in your legs, talk to your doctor to learn if the ClosureFast or VenaSeal procedure could be right for you.

Find a doctor at: [Medtronic.com/FindVeinDoctor](https://www.medtronic.com/FindVeinDoctor)

Learn more at: [Medtronic.com/VaricoseVeins](https://www.medtronic.com/VaricoseVeins)

References

¹ Eberhardt RT, Raffetto JD. Chronic venous insufficiency. *Circulation*. July 22, 2014;130(4):333-346.

² Johns Hopkins Medicine. Chronic Venous Insufficiency. Available at: <https://www.hopkinsmedicine.org/health/conditions-and-diseases/chronic-venous-insufficiency>. September 28, 2022.

³ Gloviczki P, Comerota AJ, Dalsing MC, et al. The Care of Patients with Varicose Veins and Associated Chronic Diseases: Clinical Practice Guidelines of the Society for Vascular Surgery and the American Venous Forum. *J Vasc Surg*. May 2011;53(5 Suppl):2S-48S.

VenaSeal™ Closure System

Brief Statement

Intended Use/Indications: The VenaSeal closure system (VenaSeal™ system) is indicated for use in the permanent closure of lower extremity superficial truncal veins, such as the great saphenous vein (GSV), through endovascular embolization with coaptation. The VenaSeal system is intended for use in adults with clinically symptomatic venous reflux as diagnosed by duplex ultrasound (DUS). **Contraindications:** Separate use of the individual components of the VenaSeal closure system is contraindicated. These components must be used as a system. The use of the VenaSeal system is contraindicated when any of the following conditions exist: previous hypersensitivity reactions to the VenaSeal adhesive or cyanoacrylates, acute superficial thrombophlebitis, thrombophlebitis migrans, acute sepsis.

Potential Adverse Effects of the Device on Health: The potential adverse effects (e.g., complications) associated with the use of the VenaSeal system include, but are not limited to, adverse reactions to a foreign body (including, but not limited to, nonspecific mild inflammation of the cutaneous and subcutaneous tissue), arteriovenous fistula, bleeding from the access site, deep vein thrombosis (DVT), edema in the treated leg, embolization, including pulmonary embolism (PE), hematoma, hyperpigmentation, hypersensitivity or allergic reactions to cyanoacrylates, such as urticaria, shortness of breath, and anaphylactic shock, infection at the access site, pain, paresthesia, phlebitis, superficial thrombophlebitis, urticaria, erythema, or ulceration may occur at the injection site, vascular rupture and perforation, visible scarring.

Warnings, precautions, and instructions for use can be found in the product labeling at [manuals.medtronic.com](https://www.manuals.medtronic.com).

CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.



Learn more at
[medtronic.com/varicoseveins](https://www.medtronic.com/varicoseveins)

ClosureFast™ Endovenous Radiofrequency (RFA) Ablation Catheter

Reference Statement:

Indications for Use: The ClosureFast™ endovenous radiofrequency ablation (RFA) catheter is intended for endovascular coagulation of blood vessels in patients with superficial vein reflux.

Contraindications: The ClosureFast catheter is contraindicated for use in patients with thrombus in the target vein segment.

Potential Adverse Effects of the Device on Health: The potential complications include, but are not limited to, the following: adjacent nerve injury, hematoma, pulmonary embolism, thrombosis, infection, phlebitis, skin burn or discoloration, and vessel perforation. **Important:** Please reference the Instructions For Use (IFU) for a complete listing of indications, contraindications, warnings and precautions, adverse effects, and suggested procedure.

CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.

ClosureRFG™ Radiofrequency Generator

Reference Statement:

Indications for Use: The ClosureRFG generator is used with radiofrequency catheters intended for vessel and tissue coagulation.

Contraindications: Refer to the applicable radiofrequency catheter instructions for use for a list of contraindications related to a ClosureFast system procedure.

Potential Adverse Effects of the Device on Health: Refer to the applicable radiofrequency catheter instructions for use for a list of potential complications related to a ClosureFast system procedure.

Important: Please reference the Operation Manual for a complete listing of indications, warnings, precautions safety notices, and operational information.

CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.

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