

## FREQUENTLY ASKED QUESTIONS

### Q: Is the Closure™ procedure painful?

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

### Q: How quickly can I resume normal activity?

A: Patients are encouraged to walk immediately following the procedure, and most patients resume normal activities within 1-2 days.

### Q: How soon after treatment will my symptoms improve?

A: Most patients report a noticeable improvement in their symptoms within 1-2 weeks following the procedure.

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

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

### Q: How is the Closure procedure different from endovenous laser?

A: In the only head-to-head trial of its kind, the ClosureFAST catheter showed statistical superiority over 980nm endovenous laser. Patients treated with the ClosureFAST catheter experienced less pain, less bruising, fewer complications and realized quality of life improvement up to four times faster than those treated with endovenous laser ablation.<sup>1</sup>

### 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 virtually eliminates pain and bruising associated with vein stripping surgery.<sup>2,3</sup>

### Q: Is the Closure procedure covered by insurance?

A: The Closure procedure is covered by most health insurances for patients diagnosed with venous reflux.

#### References

<sup>1</sup>Almeida JJ, Kaufman J, Goeckeritz O, et al. Radiofrequency Endovenous ClosureFAST versus Laser Ablation for the Treatment of Great Saphenous Reflux: A Multicenter, Single-Blinded, Randomized Study (Recovery Study).JVIR; June 2009

<sup>2</sup>LurieF, Creton D, Eklof B, Kabnick LS, Kistner RL, Pichot O, et al. Prospective randomized study of endovenous radiofrequency obliteration. (Closure procedure) versus ligation and stripping in a selected patient population (EVOlVeS Study). J Vasc Surg 2003;38;2:207-14

<sup>3</sup>Hinchliffe RJ; et al.A prospective randomised controlled trial of VNUS Closure versus Surgery for the treatment of recurrent long saphenous varicose veins. Eur J Vasc Endovasc Surg 2006 Feb;31;2:212-218

## Do you experience the discomfort and swelling of varicose veins?

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

Approximately 25 million people in the United States suffer from this condition. 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.



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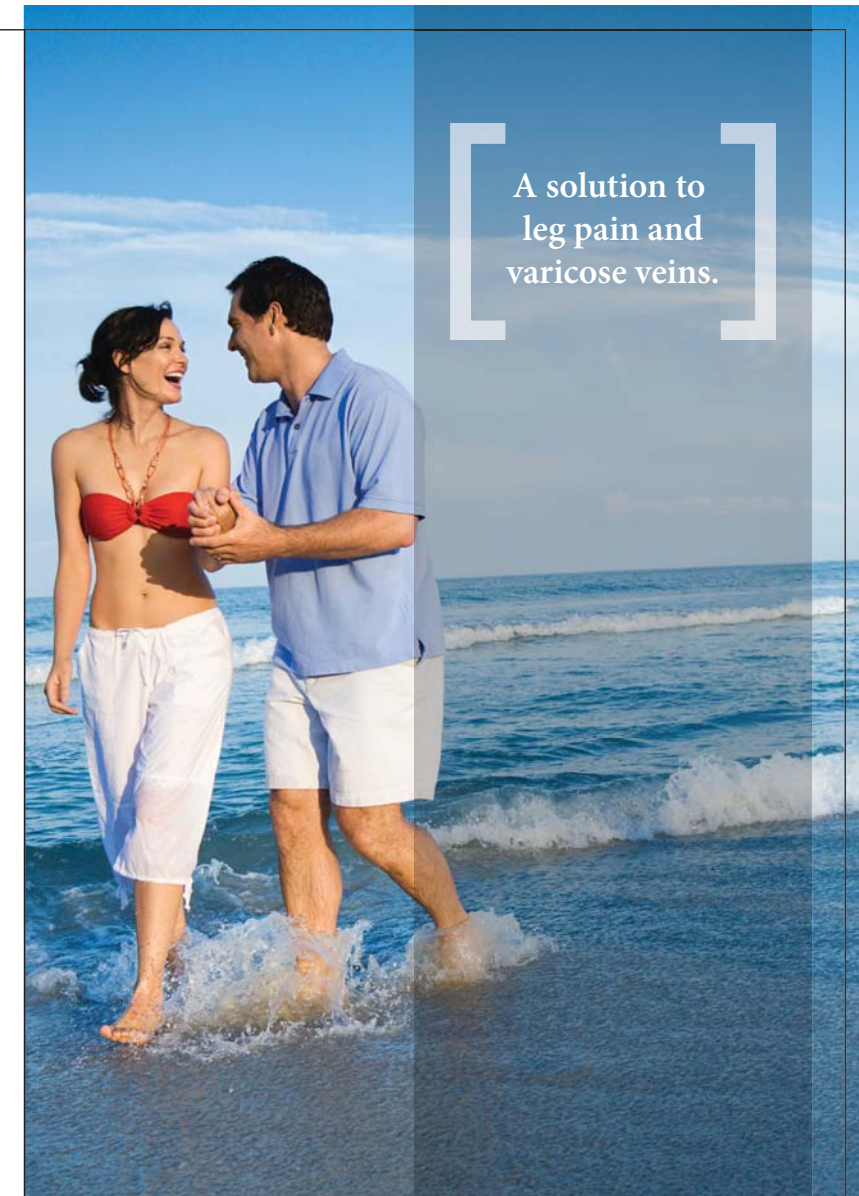
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A solution to  
leg pain and  
varicose veins.



**VNUS Closure™ Procedure**

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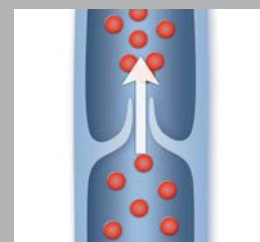


## UNDERSTANDING VENOUS REFLUX DISEASE

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:

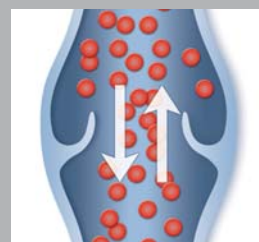
- Varicose veins
- Pain
- Swollen limbs
- Leg heaviness and fatigue
- Skin changes
- Ulcers

Healthy Vein Valve



Healthy valves keep blood moving in one direction

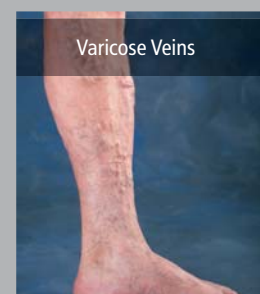
Diseased Vein Valve



Diseased valves cause blood to move in both directions, elevating venous pressure

## VENOUS REFLUX DISEASE IS PROGRESSIVE — SYMPTOMS CAN WORSEN OVER TIME IF LEFT UNTREATED.

### A Serious Progressive Disorder



Varicose Veins



Swelling and Skin Discoloration



Skin Color and Texture Changes



Venous Ulcers

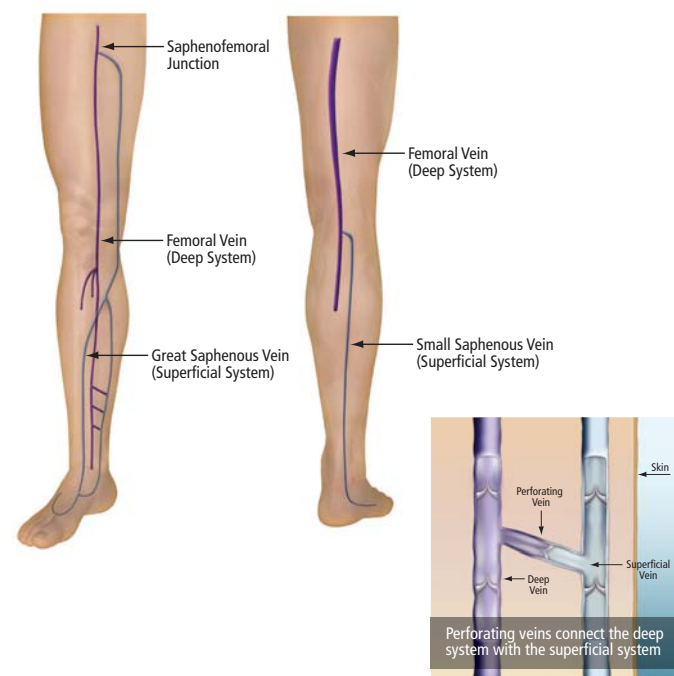
Photos courtesy of Rajabrata Sarkar, MD, PhD.

## 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 the superficial venous system, often the underlying cause of painful varicose veins.



Perforating veins connect the deep system with the superficial system

## EXPERIENCE THE VNUS CLOSURE™ PROCEDURE

The Closure procedure is performed on an outpatient basis. Using ultrasound, your physician will position the ClosureFAST™ catheter into the diseased vein through a small opening in the skin. The tiny catheter powered by radiofrequency (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.



Disposable catheter inserted into vein



Controlled heat collapses vein



Catheter withdrawn, closing vein

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

Most patients who undergo the Closure procedure typically resume normal activities within 1-2 days.

## ARE YOU A CANDIDATE?

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

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

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

## PROCEDURAL HIGHLIGHTS

- Relief of symptoms
- Outpatient procedure
- Can be performed under local anesthesia
- Most patients resume normal activities within 1-2 days
- Good cosmetic outcome with minimal or no scarring, bruising or swelling<sup>1</sup>

## VISUAL RESULTS<sup>1</sup>



Pre-treatment



Post-treatment\*

\* Individual results may vary.

<sup>1</sup> Photo courtesy of Vein Institute of the North Shore, Beverly, MA

**INDICATIONS:** The VNUS Closure™ procedures treat leg veins in the superficial and perforating systems that have venous reflux, the underlying cause of varicose veins and venous ulcers. Individual results may vary based on each patient's condition.

**CONTRAINDICATIONS:** Patients with thrombus (blood clots) in the vein segment to be treated should not have the VNUS Closure™ Procedures.

**POTENTIAL COMPLICATIONS:** As with all medical procedures, potential risk and complications exist including vessel perforation (when the catheter punctures the vein wall), thrombosis, pulmonary embolism (when a blood clot travels to the lungs), phlebitis (inflammation of the vein), infection, nerve damage, arteriovenous fistula (an abnormal connection between an artery and a vein), hematoma (bruising), and skin burn. Consult with a physician to receive more information.

