

Varicose Veins Ultrasound Scan



ARTERY AND VEIN DIAGNOSTICS



Penrith | Suite 3, Level 1, Nepean Private Specialist Centre, 1A Barber Avenue,
Kingswood NSW 2747

Macquarie Park | Wise Clinic, Level 1, 11 Khartoum Road, Macquarie Park NSW 2113



02 9037 7353



02 9037 7352



info@arteryvein.com.au

Patient Information

1. Understanding Varicose Veins and Venous Insufficiency

Varicose veins and **chronic venous insufficiency** (CVI) are common conditions affecting the veins of the legs. Healthy veins contain one-way valves that help blood return to the heart. When these valves weaken or fail, blood can flow backwards — a process known as **reflux**. Over time, this backward flow increases pressure in the veins, causing them to stretch, bulge, and become visible at the skin surface.

CVI can lead to a range of symptoms, including:

- Aching or heaviness in the legs
- Swelling around the ankles
- Restless or tired legs
- Skin discolouration, pigmentation or dryness
- Itching or eczema around the lower leg
- Visible varicose veins
- In advanced cases, venous ulcers

A **venous insufficiency ultrasound scan** is the most accurate, non-invasive way to assess how well your veins are functioning. It uses sound waves — not radiation — to create real-time images of your veins and measure blood flow. This scan is considered the gold standard for diagnosing venous reflux and guiding treatment decisions.

2. Why You Have Been Referred for This Scan

Your doctor may recommend this scan if you have:

- Visible varicose veins
- Symptoms that worsen with standing and improve with elevation
- Swelling or heaviness in the legs
- Skin changes around the ankles
- A history of venous ulcers
- A family history of varicose veins
- Previous vein treatments with recurring symptoms

The scan helps identify the underlying cause of your symptoms and ensures any treatment — whether conservative or procedural — is targeted and effective.

3. What the Scan Examines

A comprehensive venous insufficiency ultrasound follows the principles outlined in the Australasian Sonographers Association's (ASA) CVI Ultrasound Guideline, which recommends assessment of the deep, superficial, and perforator venous systems.

Your scan will evaluate:

3.1 Valve Function

- Whether valves are opening and closing properly
- Presence, duration, and severity of reflux
- Reflux measured during specific manoeuvres (e.g., calf squeeze, Valsalva), as recommended in clinical guidelines

3.2 Blood Flow Patterns

- Direction of flow in the great saphenous vein (GSV), small saphenous vein (SSV), anterior saphenous vein (ASV) and their tributary (branch) veins.
- Identification of abnormal flow patterns that may contribute to symptoms

3.3 Vein Anatomy and Mapping

- Size and course of the superficial veins
- Identification of accessory or duplicated veins
- Mapping of varicose tributaries
- Assessment of perforator veins that may be contributing to reflux

3.4 Obstruction or Clots

- Screening for **deep vein thrombosis (DVT)** if clinically indicated
- Assessment for narrowing or compression of veins

3.5 Source of Varicose Veins

- Determining which veins are feeding visible varicosities
- Essential for planning treatment such as sclerotherapy or cyanoacrylate glue ablation

This detailed mapping ensures that any treatment targets the correct veins for the best long-term results.

4. How to Prepare for Your Scan

Most patients **do not** need special preparation. However:

- Wear loose, comfortable clothing that can be easily rolled up.
- Avoid applying moisturisers or oils to your legs on the day of the scan.
- If you wear compression stockings, you may be asked to remove them before the examination so your veins can be assessed under natural conditions.
- If you have wound dressings in place, the sonographer will advise whether they should remain on or be adjusted for the scan.
- If you prefer a male or female sonographer, please let the practice know when booking.

If you have mobility concerns or difficulty standing, please inform the sonographer beforehand so adjustments can be made.

5. What to Expect During the Scan

A venous insufficiency ultrasound is safe, painless, and performed by a highly trained vascular sonographer with advanced expertise in venous disease assessment.

5.1 Duration

The scan typically takes **30–45 minutes**, depending on your vein anatomy and symptoms.

5.2 Positioning

To accurately assess reflux, the scan is performed with you **standing and/or sitting**, as this position increases venous pressure and reveals valve dysfunction more clearly.

You may also be examined lying down for portions of the deep venous assessment.

5.3 The Procedure

- A small amount of warm gel is applied to your skin.
- The sonographer gently moves a handheld probe (transducer) along your leg, scanning from the groin down to the level of the ankle or foot to assess the entire venous system.
- You may feel light pressure, but the scan is not painful.
- The sonographer may ask you to perform simple breathing or foot movements to help assess blood flow.
- In some cases, a small cuff may be inflated around the leg to simulate pressure changes, as recommended in venous reflux assessment guidelines.
- If you have a preference for a male or female sonographer, please let the practice know when booking your appointment so we can accommodate your comfort wherever possible.

5.4 Safety

Ultrasound uses sound waves — not radiation — making it safe for all patients, including those who are pregnant.

Some patients, particularly younger individuals, may occasionally feel **light-headed**, **dizzy** or experience **hot flushes** while standing. If you notice any of these symptoms, please let the sonographer know immediately so we can pause the scan and organise a break to ensure your comfort and safety.

6. How the Scan Helps Guide Treatment

The results of your venous insufficiency ultrasound provide a detailed map of your venous system and pinpoint the exact cause of your symptoms. This information helps your doctor determine the most appropriate treatment, which may include:

6.1 Conservative Management

- Compression stockings
- Leg elevation
- Exercise and weight management

- Skin care for venous eczema

6.2 Minimally Invasive Treatments

- Cyanoacrylate glue ablation — a non-thermal, non-tumescent technique that seals the vein using a medical adhesive. This method avoids the need for multiple anaesthetic injections and allows for a rapid return to normal activity.
- Sclerotherapy — effective for treating small branch veins and reticular veins. A sclerosant solution is injected into the vein, causing it to collapse and gradually fade.
- Ultrasound-guided foam sclerotherapy — used for targeted treatment of refluxing tributaries or veins not suitable for other procedures. The foam allows precise placement under ultrasound guidance.
- Endovenous thermal ablation — if recommended by your treating specialist. This includes endovenous laser ablation (EVLA) and radiofrequency ablation (RFA), both of which use controlled heat to close the affected vein. These treatments are minimally invasive and have strong long-term success rates.

6.3 Surgical Options

In rare cases, surgery may be recommended for complex or recurrent venous disease, or when minimally invasive options are not suitable. Surgical treatment is typically performed in hospital under general anaesthesia and may involve one or more of the following techniques:

- Vein stripping — removal of the great or small saphenous vein through small incisions. This is an older but still effective method for certain patterns of disease.
- Stab avulsion (phlebectomy) — tiny incisions are made along the leg to remove visible varicose veins. This is often combined with other treatments to improve cosmetic and symptomatic outcomes.

These procedures generally require a short recovery period and may involve postoperative compression and wound care.

Some international techniques, such as CHIVA (Conservative Hemodynamic Cure for Varicose Veins), are recognised overseas but are not currently available in Australia.

Accurate ultrasound mapping is essential for selecting the correct treatment pathway and improving long-term outcomes, ensuring that any surgical or minimally invasive procedure targets the true source of venous reflux.

7. After the Scan

7.1 Review of Images

Your scan images and measurements are reviewed by a vascular specialist or reporting sonographer trained in CVI assessment.

7.2 Report Delivery

A detailed report is sent to your referring doctor, usually within 24–48 hours. This report includes:

- Anatomical mapping
- Vein diameters
- Reflux pathway and measurements
- Identification of incompetent perforators
- Summary of findings and clinical relevance

7.3 Next Steps

Your doctor will discuss the results with you and outline treatment options tailored to your symptoms and lifestyle.

8. Frequently Asked Questions

Is the scan painful? No. You may feel mild pressure, but the scan is not painful.

Why do I need to stand? Standing increases venous pressure and helps reveal valve dysfunction that may not be visible when lying down.

Can I drive afterward? Yes. There are no restrictions after the scan.

Will this scan treat my veins? No. This scan is diagnostic only. It provides the information needed to plan treatment.

Do I need to stop medications? No. Continue your usual medications unless your doctor advises otherwise.

Do I need to see my nurse practitioner for wound dressings if compression or dressings were removed? Yes, you may need to. Our sonographers are highly skilled in applying compression garments, but they do not perform wound dressings, and the vascular lab may not have the specific dressings you require. If any dressings are removed or adjusted for the scan, please follow up with your nurse practitioner for appropriate wound care.

9. Why Choose Our Vascular Lab

State-of-the-art ultrasound technology for high-resolution imaging and precise haemodynamic assessment.

Comprehensive, clinically focused reporting to support accurate diagnosis and tailored treatment planning.

Patient-centred care, with an emphasis on comfort, clear communication, and a supportive experience throughout your visit.

Examinations performed in accordance with ASA CVI Guideline standards, ensuring consistency, accuracy, and best-practice methodology.

Australia's most experienced vascular sonographers, with advanced training in varicose veins assessment, including ultrasound specialists with PhD-level expertise in venous imaging and ongoing involvement in leading research.