

# Ultrasound Guided Sclerotherapy for Varicose Veins.



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### The Disease

There are two systems of **veins** which drain the blood out of your leg – the *deep system* and the *superficial system*. The **superficial system** has two main veins (called the long saphenous and the short saphenous vein), and these have multiple branches. See *figure 1*. The two main systems are connected to each other at the groin and behind the knee at the **sapheno-femoral** and **sapheno-popliteal** junctions respectively. There are a number of **valves** in the veins and at the junctions to prevent blood running back into the leg. These valves are very thin and quite fragile.

Varicose veins usually occur when the valves in the superficial system fail (becoming *incompetent*), allowing blood to flow backwards (*reflux*) into the leg. This creates higher pressures, causing the veins become wider and longer - **varicose veins**.

There are occasionally rarer causes of varicose veins.

The increased venous pressures can force blood cells out into the subcutaneous fat under the skin, causing colour change, inflammation, pain, thickening and ultimately ulcers.

### Symptoms and Complications of Varicose Veins

- **Ache** after prolonged periods of standing.
- **Bleeding** when the skin over the large varicosities is broken with minor trauma.
- **Cosmetic** – multiple varicosities, spider veins and reticular veins have a cosmetic impact.
- **Superficial Thrombophlebitis** – a condition where a blood clot forms in a varicose vein, resulting in inflammation and pain.
- **Deep Vein Thrombosis (DVT)** – can occur if the clot from the superficial thrombophlebitis spreads into the deep system.
- **Lipodermatosclerosis** – a permanent staining of the skin, associated with thickening.
- **Ulceration** – can result in infection and limb loss in rare cases.

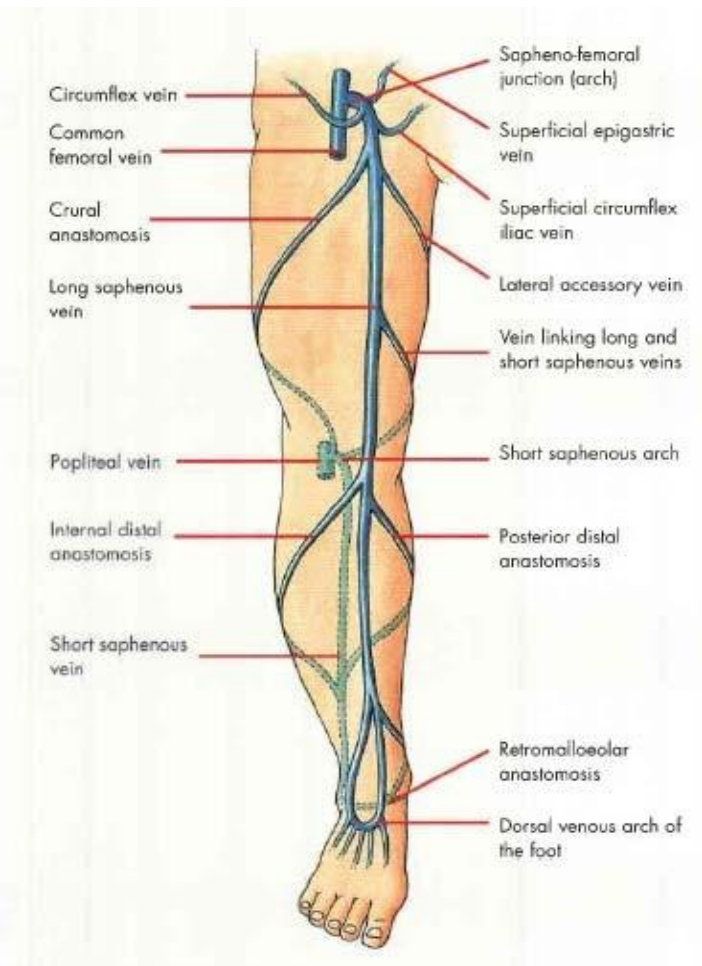


Figure 1. The Venous System



### Treatment Options

The required treatment depends on the system/s affected, the exact nature and anatomy of the problem, previous treatments and your preference.

Treatment options include:-

- **Compression Stockings**
- **Surgery.**
- **Endovenous laser or Radiofrequency Ablation**
- **Ultrasound guided Injection Sclerotherapy**
- **Combinations** of the above.

### Ultrasound Guided Sclerotherapy (UGS)

**Ultrasound Guided Sclerotherapy** is a treatment for the varicosities (including varicose veins) and is often combined with other treatments. It may be the only required treatment in some cases. It allows for a thorough **walk-in, walk-out minimally invasive treatment** of varicose veins which **does not need an anaesthetic**.

The treatment has 2 main parts:-

- The Ultrasound Guided Sclerosant injection
- Compression.

Ultrasound Guided Sclerotherapy is done with the aid of ultrasound guidance to allow the puncture of an incompetent major superficial vein, such as the long saphenous vein or one of its branches. Sclerosant is a medicine which cause inflammation of the inner lining of the vein **causing the vein to close**, and the vein to become invisible. The sclerosant is mixed with a small amount of air to form a foam. The target vein is cannulated under ultrasound guidance and the foam watched as it enters the target vein. The foam is then 'milked' to the other target veins. A small amount of discomfort may be felt.

After the injection, compression will be applied with either a bandage, a stocking or both, and be required for 2 weeks.

Multiple treatments may be required for the full effect. The final effect of the treatment may take weeks to months to complete, depending on the number of varices.

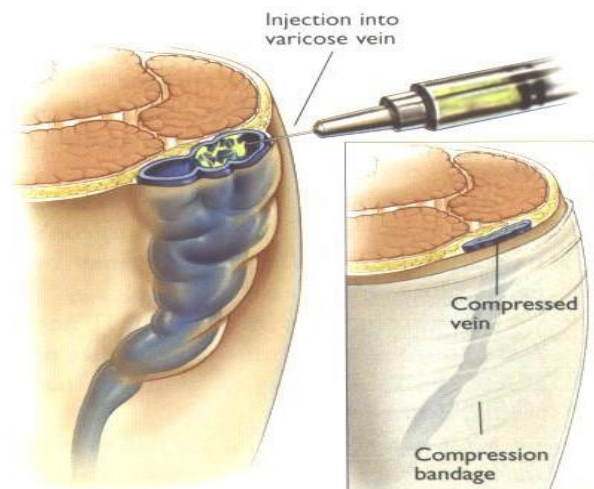


Figure 2. Injection and Compression



Figure 3. Ultrasound Guided Injection



### **Expectations**

Not all cases of varicose veins are suitable for ultrasound guided sclerotherapy treatment. Relative contra-indications to the procedure are:-

- Large or extensive varicosities (may need multiple treatments)
- History of severe allergies or asthma.
- Inability to perform regular walking.
- Pregnancy or lactation.
- Previous allergic reaction to sclerosant.

After injection sclerotherapy, the injected veins will often become hard, with some associated redness and tenderness. There is often some bruising around the injection site as well. This will take 3-6 weeks to resolve, and longer if multiple large varices.

The majority of patients are very satisfied with the results obtained. The long term recurrence of reflux in the treated veins is approximately 7% at 1-2 years.

### **Possible Side Effects**

Some of the more common or important side effects are listed below. A copy of the product information is available on request.

- **Allergic Reaction** – An uncommon complication which can range from a rash to a life threatening reaction (very uncommon). The treatment is usually performed in a centre attached to a major hospital for safety.
- **Pigmentation** – Some brown pigmentation is possible along the line of the vein. It usually fades over time (up to two years) but occasionally is permanent. Some skin types are more prone to this than others.
- **Ulceration/Skin necrosis** – Uncommon. Can take 4-8 weeks to heal.
- **Telangiectatic Matting/Flare** - This is the formation of multiple fine veins at the site of injection.
- **Deep Vein Thrombosis (DVT)** - A rare complication. The risk is reduced by the application of compression stockings and regular walking.
- **Pulmonary Embolus** – An uncommon complication of a DVT which involves part of the deep clot breaking off and traveling to the lungs. It can be life threatening.
- **Migraine Like Symptoms/ Visual effects.**
- **Stroke** – This is a very rare complication.

