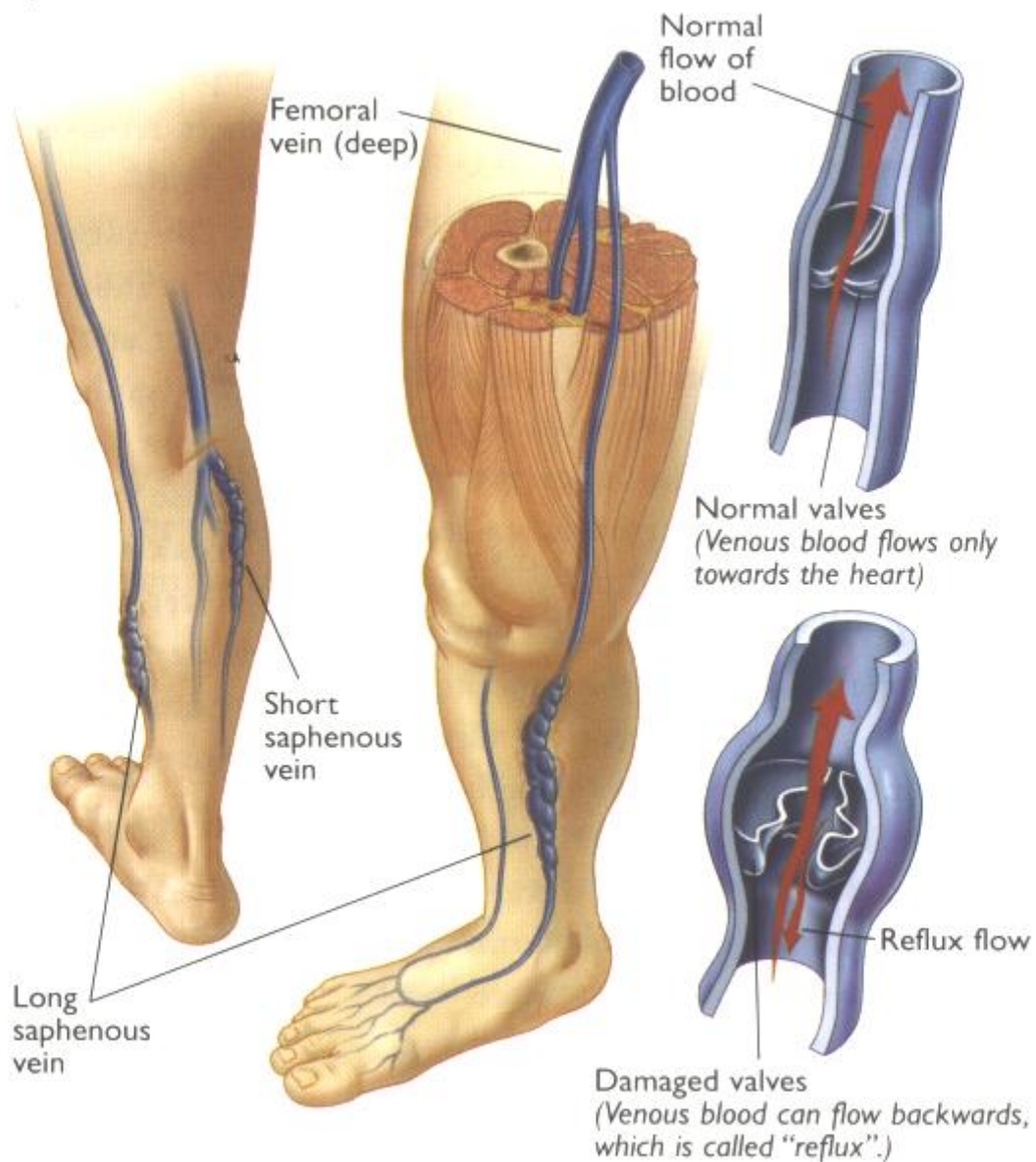


Open Surgery for Varicose Veins.



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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.

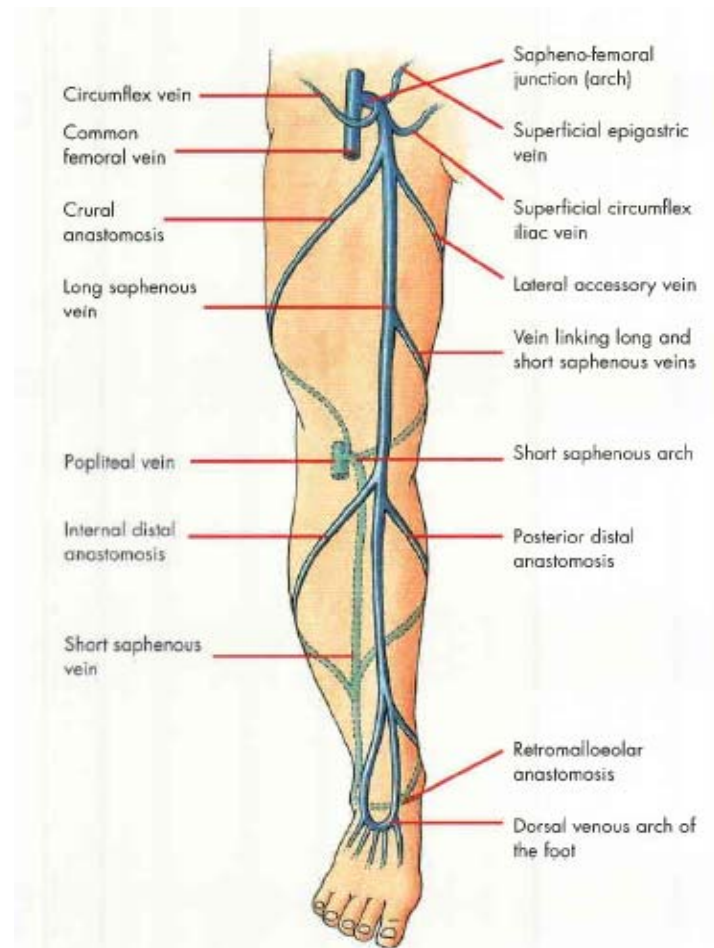


Figure 1. The Venous System

Treatment Options

The required treatment depends on the system/s affected, the exact nature of the problem (incompetence vs. blockage), the exact location of the pathology, previous surgery or treatment and your preference.

Treatment options include:-

- **Conservative Management** (Compression stockings, elevation, analgesia, antibiotics and other modalities).
- **Open Surgery.**
- **Injection Sclerotherapy.**
- **Ultrasound guided Injection Sclerotherapy.**
- **Endovenous Laser** or radiofrequency ablation of the refluxing vein.
- **Combinations** of the above can be used.



Open Surgery

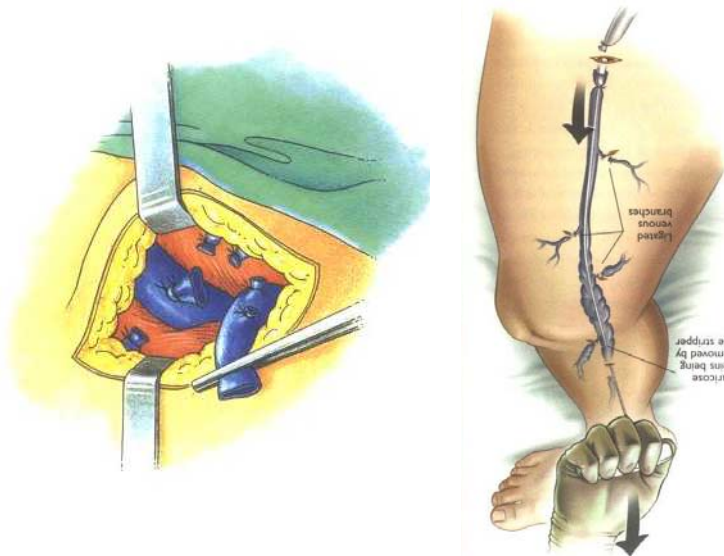


Figure 2. Open Surgery showing disconnection of the incompetent superficial system vein from the deep system and stripping of the incompetent superficial vein.

While it has been eclipsed by the more modern minimally invasive treatments, well performed, accurately planned open surgery is still an effective treatment of varicose veins. Its aim is to correct the **cause** of the varicose veins as well as to remove the varicosities. Open surgery does require a full anesthetic and has a higher complication profile.

In some cases, the exact position of the incompetent junctions and perforators are marked with ultrasound guidance pre-operatively.

After anaesthetic, an incision is made in the skin over the incompetent junction, usually at the groin or behind the knee. The incompetent junction is dissected out and tied off before disconnecting it from the deep system. Often the vein is then **stripped** out to the level of the knee (See figure 2). Further incisions may be required over incompetent perforators or other incompetence junctions which are likewise disconnected from the deep system. Multiple tiny incisions are used to remove the varicosities from under the skin.

Compression dressings are applied. These are usually changed to a pre-fitted compression stocking the next morning or in several which is required for 2 weeks.

Relative contra-indications for open surgery include:-

- Patient preference
- Significant or predominant deep vein disease.

- Medically frail and high anaesthetic risk.
- Pregnancy.
- Active/ recent DVT.
- Severe arterial disease.

Expectations

The results from open surgery are usually excellent.

Some pain at the operative site should be controllable with oral analgesia. Some bruising along the strip tract is very common even with compression.

Potential Complications

While not an exhaustive list, the more common and important risks are listed below. Re-do surgery has greater risks associated with it.

Potential risks include the general risks of anaesthesia and surgery:-

- **Death**
- **Heart Attack**
- **Stroke**
- **Wound Infection**
- **Pulmonary Embolus**
- **Excessive Scarring**

The specific risks related to the surgery include:-

- **Recurrence** – Approximate 10 - 15% over 5-10 years.
- **Deep Vein Thrombosis (DVT)** – Approximately 1-2% cases. Risk reduced by blood thinning medications, compression stockings and walking. The oral contraceptive pill and hormone replacement therapy increases the risk of this slightly.
- **Bleeding** – rarely requiring a blood transfusion. A tourniquet is often used to prevent excessive blood loss.
- **Nerve Damage – sensory/numbness** – especially to patches of skin in the lower leg. Chronic pain along the distribution of the nerve is very rare.
- **Nerve Damage – to muscles** – rare.
- **Arterial Damage** – rarely the main artery of the leg can be damaged.

