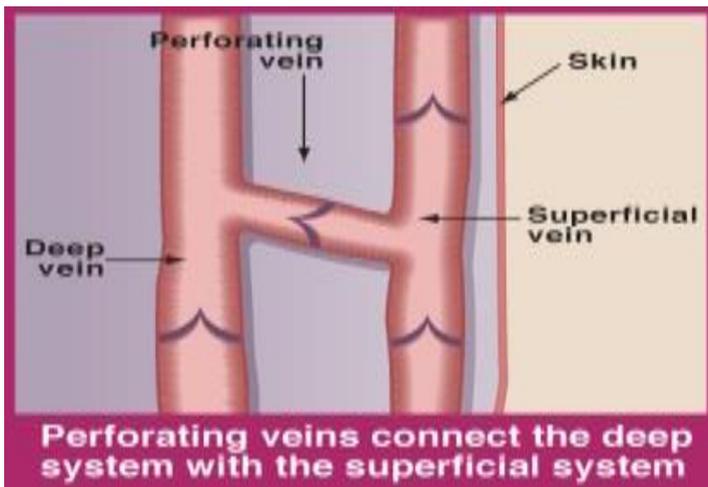




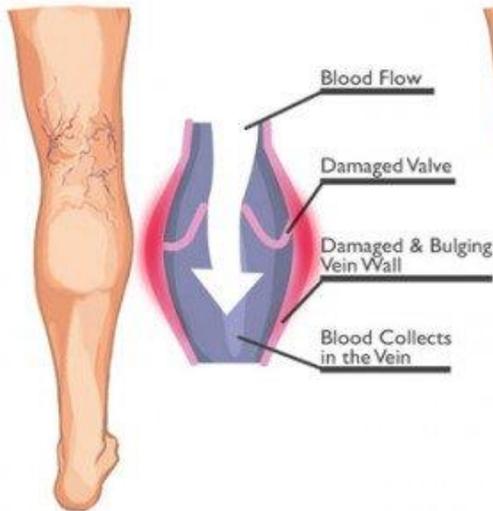
## What are varicose veins and how are they caused?

There are three sets of veins in the leg, superficial veins under the skin, another deep in the leg (deep veins) and perforators that connect the superficial veins to the deep veins. Varicose leg veins are swollen superficial veins just under the skin that look lumpy and bluish through the skin. Leg veins transport blood back to the heart. Within the veins there are valves, which stop blood from flowing backwards down the leg. If the valves weaken or are damaged, the blood can flow in the wrong direction; that is away from the heart and back down the leg thus collecting in the vein, extra blood in the vein puts pressure on the walls of the vein eventually causing it to be swollen and enlarged (varicose). These veins serve no purpose and merely become a reservoir for extra blood.

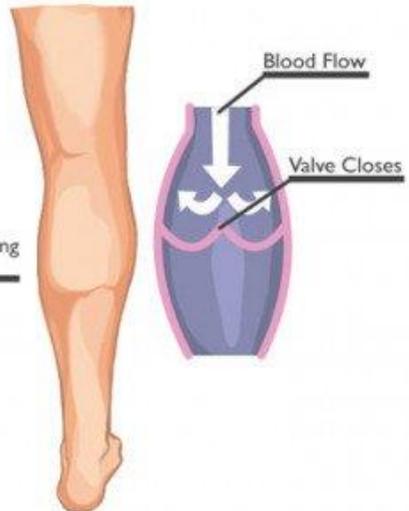


Varicose veins are a sign of underlying venous reflux and are very common affecting 20–30% of adults. Symptoms from varicose veins include fatigue, heaviness, aching, throbbing, itching and cramps in the legs. Chronic venous insufficiency can lead to skin discolouration (lipodermatosclerosis), inflammatory dermatitis and ulceration. Spider veins— a type of varicose vein, are very common and can present as thread veins or vein clusters; are simply a cosmetic concern.

## VARICOSE VEINS



## HEALTHY VEINS



There tends to be an inherited predisposition to developing varicose veins although other factors may influence whether or not they actually develop.

- Increase in age may be a risk factor, as you age, your veins may decrease in elasticity causing them to stretch.
- Occupations that require people to stand for prolonged periods of time put people at a greater risk of developing varicose veins if they have a genetic predisposition.
- Females that have had multiple pregnancies.
- Being overweight puts increased pressure on the legs and can increase the likelihood of developing varicose veins.
- A history of deep vein thrombosis (DVT)

Varicose veins don't always need surgical treatment, however it may be required to ease symptoms and to treat complications.

### **What tests are performed to investigate varicose veins?**

Most varicose veins originate from the incompetent valves at groin level or behind the knee. It is important to accurately locate the site of the incompetent valves.

- A venous duplex is an ultrasound that provides clear images of the affected veins and the amount of blood flow present. This specialised examination will examine all the veins in your legs to determine which superficial and deep veins are competently functioning or not, and will help decide which intervention is appropriate.

### **How are varicose veins treated?**

- I. Compression stockings can be used to alleviate many of the symptoms of varicose veins and can be useful for people in whom surgery is not advisable, for example, pregnant women. The stockings work by exerting pressure on the superficial veins to force blood into the deep veins of the leg and then back to the heart. They stop the blood from pooling and relieve the swelling of the veins.

There are different classes of pressure ranges in the compression stockings: class 1, class 2 and class 3. The appropriate class is chosen according to the severity of the problem. They are available in different sizes and colours with a prescription to ensure that the degree of support is chosen and that they fit correctly.

- II. Varicose veins may not be prevented but certain measures may be taken in order to reduce your risk of developing varicose veins or getting additional ones.
  - Exercising, weight control, elevating your legs, passive movements of the ankle when lying or sitting and changing your sitting or standing position regularly have been shown

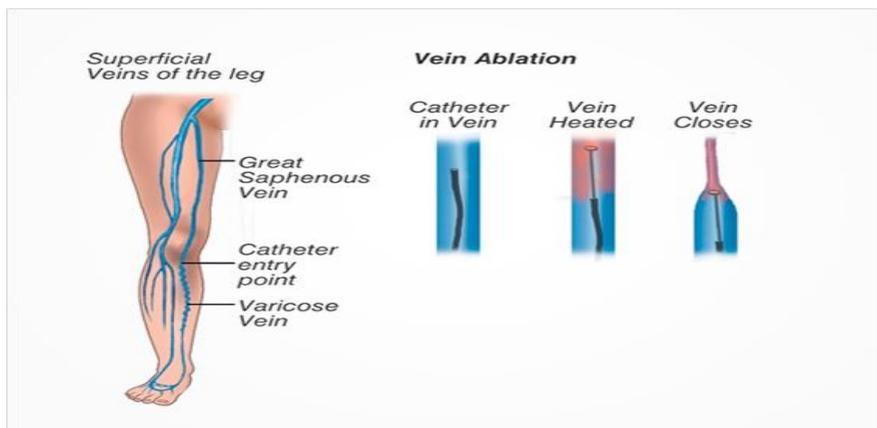
to be helpful; these may also help treat the discomfort you may experience.

### III. Surgical intervention

#### Surgical interventions

Having surgery to treat the varicose veins will be discussed by your Vascular Surgeon. The type of treatment you will receive will depend on your general health and the size, position and severity of your veins.

- **EVLT (EndoVascular Laser Treatment) or RFA (Radio frequency Ablation) for varicose veins** – laser or radio frequency energy is used to heat the vein in order to ablate it. After a local anesthetic is injected into your leg, a laser fiber or RFA is inserted into the vein under ultrasound guidance and advanced to the end of the vein. Additional local anaesthetic is then injected surrounding the area of the vein to be treated. The heat from the laser or radio – energy seals the walls of the vein so that no blood can flow through it and the vein is destroyed as the catheter is removed, forcing the body to remove the vein with natural healing processes. EVLT and RFA avoid the need for an incision in the groin or anywhere in the leg and causes less bruising than other surgeries.



- **Sclerotherapy** – is a treatment that involves small injections which are part of a procedure. Sclerotherapy treatment is quick and pain-free. It begins where the affected leg is elevated to drain blood away from the treatment site. Your doctor will then use a tiny needle to inject a liquid chemical called a sclerosant into the affected vein. Your vascular surgeon might find that using only a very small amount of the liquid chemical is all that’s needed for your fine vein issues.

Sometimes, larger veins require “foam sclerotherapy” where the solution is made into a foam. In this procedure varicose veins are treated by injecting with a sclerosing agent forcibly mixed with air into the vein. This turns the liquid into a foam consistency, like shaving foam. This chemical works as an irritant to the vein, causing the vein wall to swell, stick together and seal shut. The flow of blood to that vein harmlessly stops, over time the vein is reabsorbed by the body and fades away. Foam Sclerotherapy can be performed during the same session to close off varicose veins.

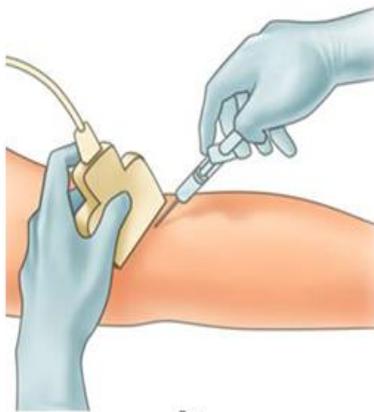


fig.1

**FIG 1:**

*Utilizing ultra sound technology, the varicose vein is located to allow for precision injection of the sclerosant agent.*

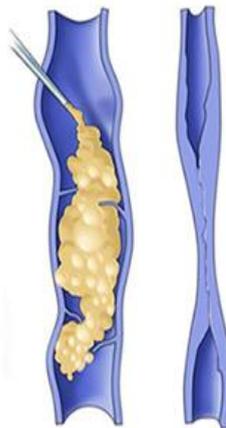


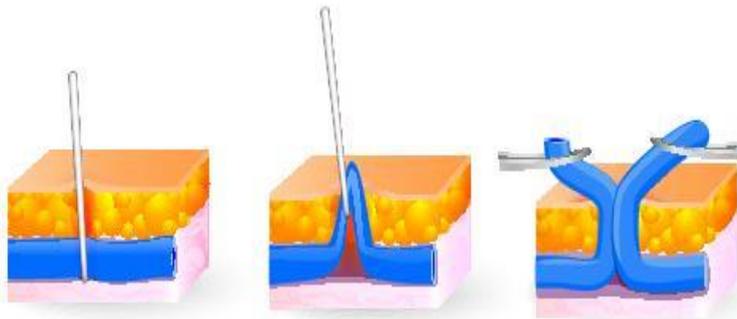
fig.2

**FIG 2:**

*Once the sclerosant agent is injected into the vein, it causes the varicose vein to collapse.*

- **Phlebectomy (also known as microphlebectomy, ambulatory phlebectomy, or stab avulsion)** is a technique to remove varicose veins. In this procedure, several tiny cuts (incisions) are made in the skin through which the varicose vein is removed. Stitches are not usually required.

## PHLEBECTOMY



A hook is inserted into a tiny incision

A section of the vein is hooked

The vein is removed

### Pre procedure instructions

You will have a pre-operative assessment prior to your procedure date; this will determine which anaesthetic will be most suitable. Your anaesthetist will discuss this with you.

You will be fasting from midnight before surgery. You may be permitted to take your regular medications that morning however this will be discussed during your pre-operative assessment. If you are on blood thinners (anti-platelets or anti-coagulants) your surgeon will discuss whether they need to be stopped or taken as regular on the days prior to surgery. If required, you will be given a blood thinner injection on day of procedure to prevent a blood clot.

Be sure to arrange transport home after surgery, as we will NOT permit you to drive yourself even if the procedure is done under local anaesthetic.

The surgeon who will be performing your operation will visit you immediately before the procedure. He will mark up your veins with a waterproof pen.

Wear loose, comfortable clothing such as long pants, shorts or a skirt.

If you already wear compression stockings bring them along with you as you will be wearing them post procedure. Do not wear them on day of surgery.

### **Side effects from the procedure**

- Infection – Any operation carries a small chance of wound infection. If indicated, you may be given an intravenous antibiotic, just before the start of the operation.
- Pain over the vein.
- Bleeding – there is a small risk of bleeding after the surgery. This usually happens in the first couple of hours and is very minor. An extra bandage may have to be applied.
- Bruising – depending on the type of surgery, there is usually extensive bruising in the leg, particularly down the inside of the thigh. This bruising usually lasts for 4 – 6 weeks, but can last longer. Removal of the superficial veins means that blood returns to the heart through the deep veins more efficiently than before the operation.
- Nerve damage – the superficial veins that have to be removed lie close to some nerves. There is a small chance that the process of removing the vein may damage these nerves, resulting in a numb leg or foot. This, can rarely lead to chronic pain.
- Redness or swelling (inflammation) of the vein.
- Blood clots – Deep vein thrombosis (DVT) or clots on the lung (Pulmonary Embolism) may on rare occasions develop following varicose vein surgery. The risk is extremely low. The risk of DVT is 1

in 300. The risk of PE is approximately 1 in 1000. All patients receive an injection in their abdomen just before surgery to reduce the risk of deep vein thrombosis or clots on the lung.

- Changes in skin colour over the treated vein.
- Recurrence – With any treatment for varicose veins, there is a chance that more varicose veins may develop over time. This may be due to new veins developing or leaky valves developing in veins elsewhere in your leg. Sometimes further treatment may be required.

### Post Procedure instructions

**Anaesthesia** – The local anaesthesia will last for approximately 1-2 hours after the procedure is over. General anaesthetic will take longer. You will usually be taken to the theatre recovery area after the operation where you will wake up. When you are fully awake (usually 20-30 minutes) you will be returned to the ward. Arrange for a lift home after the procedure as it is unsafe to drive. Do not drive until you feel confident that you can perform an emergency stop without discomfort.

**Pain** – You may experience mild discomfort after the anaesthesia wears off. Most patients experience the greatest discomfort within the first week after the procedure as the treated vein begins to contract. This is generally described as a pulling sensation with tenderness along the treated vein. It should ease once you take analgesia.

**Day Case** – You will normally be discharged home the evening of your operation. A small number of patients who are admitted for day-surgery require an overnight stay because of nausea or drowsiness after general anaesthesia.

**Wound dressing** – After your procedure, you will have a dressing on your leg and you will be fitted with a compression stocking. Some of the smaller incisions may bleed a little over the first 24-48 hours. Do not get the dressing wet. After that you should continue to wear the stocking day and night for

the next 14 days, removing it only to shower and washing purposes. On rare occasions bleeding through the bandages may occur. Lie down, elevate your leg and apply direct pressure until bleeding has stopped.

If there is concern, an appointment will be arranged at 6 weeks with your Vascular Surgeon. This will be arranged by the appropriate secretary.

**Activity** – Avoid strenuous exercise such as aerobics, weight training, bicycling, and running for 2 weeks. Light exercise is encouraged. Avoid prolonged sitting or standing for the first week. You may elevate your leg throughout the day to alleviate discomfort. Walking during the first week is highly encouraged and will help with your healing and discomfort. It is recommended that you walk a minimum of 5-10 minutes, 2-3 times a day. We expect you to resume nearly all of your pre-procedure activities, including work. It is important to keep moving and maintain a normal activity level.

**Work** – Your surgeon will advise on a suitable day for returning to work.

**Flying** – is not advisable for at least 6 weeks following surgery due to increased risk of clotting (deep vein thrombosis).

## Questions

If you have any questions or queries you can contact your GP, or alternatively the secretary of your consultant surgeon

- Prof. Eamon Kavanaghs secretary University Hospital Limerick: 061482761
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- Mr Mekki Medani's secretary University Hospital Limerick: 061588249
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- Limerick Vascular: 061315080

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