VARICOSE VEINS AND TREATMENTS
INFORMATION FOR PATIENTS

BOOKLET 2
We are performing a research study which compares three different treatments for varicose veins: foam sclerotherapy, laser treatment or standard surgery. You will have been provided with the patient study information leaflet on this study (booklet 1). We know that each of the treatments do get rid of varicose veins in the short-term, but they have different advantages and disadvantages. The trial compares how well each treatment works in getting rid of varicose veins and in improving quality of life. It also compares the recovery and the side effects of the different treatments. In addition, the trial will compare the “value for money” of the treatments (that is, how much it costs to give a particular amount of improvement to the quality of people’s lives).

**Information in this leaflet is divided into these sections:**

1. Information about varicose veins and the problems they can cause.

2. A detailed description of:
   - What happens at the time of each treatment
   - The possible problems and side effects which can occur
   - Advice about the recovery and return to activity after treatment

3. A summary of the possible advantages and disadvantages for each treatment.

**For more information, please contact:**
Section 1. Information about varicose veins and the problems they can cause.

What are varicose veins?
Varicose veins are veins under the skin of the legs which have become widened, bulging and twisted. They are very common and do not cause medical problems in most people.

Blood flows down the legs through the arteries, and back up the legs through the veins. There are two main systems of veins in the legs - the deep veins which carry most of the blood back up the legs to the heart, and the veins under the skin, which are less important and which can form varicose veins. All these veins contain valves which should only allow the blood to flow upwards. If the veins become widened and varicose these valves no longer work properly. Blood can then flow backwards down the veins and produce a head of pressure when standing, walking about, or sitting. Lying down or "putting your feet up" relieves this head of pressure and usually makes the legs feel better. Both symptoms and treatment depend on how badly the valves in the veins are working, although the inconvenience people get from their varicose veins is very variable.

What problems can varicose veins cause?
Very many people have no symptoms at all from their varicose veins, except for the fact that they are noticeable, and their appearance can be embarrassing. Simply having varicose veins is not a good reason for having treatment. Other than cosmetic embarrassment the common symptoms of varicose veins are aching, discomfort, and heaviness of the legs, which are usually worse at the end of the day. Sometimes the ankle can swell, too. These symptoms are not medically serious, but can be treated if they are sufficiently troublesome. Although varicose veins can get worse over the years, this often happens very slowly and worry that "they might get worse" is not a good reason for treatment if the veins are not causing symptoms.

In a few people the high pressure in the veins causes damage to the skin near the ankle, which can become brown in colour, sometimes with scarred white areas. Eczema (a red skin rash) can develop. If these changes are allowed to progress, or if the skin is injured, an ulcer may result. Skin changes are therefore a good reason for going to see your GP and for referral to a specialist.
Other problems which varicose veins can occasionally produce are phlebitis and bleeding. Phlebitis (sometimes called thrombophlebitis) means inflammation of the veins, and is often accompanied by some thrombosis (clotting of blood) inside the affected veins, which become hard and tender. This is not the same as deep vein thrombosis and is not usually dangerous. It does not mean that the varicose veins necessarily have to be treated. The risk of bleeding as a result of knocking varicose veins worries many people, but this is very rare. It will always stop with firm pressure and the veins can then be treated to remove the risk of further bleeding.

**How can varicose veins be treated?**

The symptoms of varicose veins can often be improved by wearing support stockings or tights. Compression stockings up to the knee (like “flight socks”) are often prescribed for people with discomfort, swelling or skin trouble. Many people do not get on well with compression stockings because they find them difficult to put on, or they find them hot and uncomfortable.

People who have troublesome symptoms but for whom compression hosiery is not an acceptable long-term solution can have treatment to get rid of their varicose veins.

This trial is comparing three treatments which remove the varicose veins or seal them off so that they shrivel up. These three treatments are described in this leaflet.
Section 2. A detailed description of each treatment, possible problems and side-effects, and advice about recovery and return to activity.

Foam Sclerotherapy - the procedure

How long will I be in hospital for foam treatment?  Foam sclerotherapy is done as an outpatient. The arrangements differ from hospital to hospital: sometimes the procedure is done in an outpatient clinic and sometimes in an operating theatre.

What happens before the treatment?  When you arrive at the clinic a nurse will meet you and will measure your legs for stockings. The surgeon doing the foam treatment will talk with you about what is going to happen. You need to remove your trousers and socks or stockings for the treatment. It is best not to wear tight trousers as you may have difficulty putting them on over the bandage and stocking afterwards.

What happens during foam sclerotherapy treatment?  Foam sclerotherapy involves one or more injections into veins of the leg, which are given while you are lying on a couch. These injections are often carried out with the help of ultrasound pictures to be sure that the tip of the needle is correctly positioned in the vein. If the vein is easy to see and feel then ultrasound may not be required. Depending on the vein being injected and the type of needle used, an injection of local anaesthetic may be given first. Sometimes gaining safe and secure access to a vein may need more than one attempt: it is very important to be sure that foam is not injected outside the vein.

After the needles have been secured in selected veins, the leg is usually elevated before foam is injected. Pressure may be applied to the groin or elsewhere to prevent foam entering deeper veins. Nevertheless, after each injection you will be asked to move the foot up and down at the ankle in order to pump blood through the deeper veins, just in case any foam has entered them – movement of the calf muscles flushes away any small amounts of foam.

Following injection, pads and bandages are applied to the leg, and then a firm stocking. These need to be worn for 10 days. During that time you cannot get the bandaged part of the leg wet in a bath or shower.
Foam sclerotherapy treatment takes about half an hour in total. Keep one hour free in case of delays.

After treatment – leaving hospital. You can get up and walk normally immediately after foam sclerotherapy. It is a good idea to go for a walk for about five minutes after getting dressed, to encourage blood flow through the veins. You can leave the hospital shortly after the treatment. We will arrange a follow-up appointment at about 6 weeks after the procedure.

Foam Sclerotherapy - Recovery

How much does it hurt afterwards? Other than the inconvenience of the bandages and stocking, foam sclerotherapy does not usually cause any immediate discomfort after treatment. The varicose veins become hard, lumpy and tender: this can last for several days, and sometimes persists for weeks, but gradually settles. If the veins are particularly uncomfortable or inflamed, you can take an anti-inflammatory painkiller like ibuprofen (Nurofen). Paracetamol is an alternative, particularly if you have had any gastric acid problems or asthma which prevent you from taking medicines like ibuprofen.

What about the bandages and support stockings? Your bandages and stocking must remain in place for 10 days. After this time you can remove them. Throw away the bandages and padding, but keep the stocking (do wash it) in case you need further treatment.

Showering and bathing. Because of the bandages and stocking, you cannot have a normal bath or shower for 10 days after foam sclerotherapy. A shower may be possible by securing a large plastic bag over the leg or by using a special waterproof cover such as a Limbo waterproof protector (Thesis Technology, Chichester OP18 8AT or on prescription). After the bandages have been removed you can shower or bath normally.

Activity. Aim to get back to all your normal activities just as soon as you are able. The only special restriction is bathing and showering, which you cannot do normally for 10 days (see above). The only limitation to your activity might be discomfort and tenderness (which can be minimised by taking painkillers) and the need to wear the bandaging and stocking.
**Walking.** You should start to walk about as soon after foam sclerotherapy as you are able. You can walk as much as you want, as soon as you want. Your thigh may be uncomfortable and tender to the touch in places. You will not cause any damage by walking. Take painkillers if you need them.

There is *no* special advantage in going for a single long walk during the day, although you may walk as far as you wish. Frequent walking is more important than walking a long distance.

**Standing and sitting.** During the first week after foam sclerotherapy, try to avoid prolonged standing, or sitting with the foot on the floor continuously for longer than about half an hour at a time. Every half hour or so, go for a short walk about or do a few “tip-toe” exercises. If you are sitting or resting for any length of time try to put your foot up - either on a stool or couch or on your bed.

**When can I return to work and play sports?**

**Work.** This varies a lot between different people. Most people are able to return to work within two or three days after the treatment. Some people go back to work the following day or even the same day.

**Sports.** You can return to work and sporting activity as soon after foam sclerotherapy as you feel sufficiently comfortable. Avoid contact sports while you are still in support stockings or bandages, and thereafter start with some gradual training, rather than in immediate competition. Do not go swimming until your bandage has been removed.

**Driving.** You can drive as soon as you feel confident that you can make an emergency stop safely: practise this before you drive. We would advise you not to drive yourself home following foam sclerotherapy but other than that you can drive as soon as you feel able.

**Air travel.** The risk of deep vein thrombosis during long air flights or other long journeys in cramped seating is very low, but it is probably best to avoid this kind of travel for about a month after foam sclerotherapy.
What problems can occur after foam sclerotherapy?

Inflammation. The injected veins may be somewhat inflamed and hard for a few days (like phlebitis). This is because the foam sclerotherapy works by causing some inflammation of the vein walls, which helps them glue together. Occasionally inflammation can be more severe and painful. If this occurs then an anti-inflammatory painkiller such as ibuprofen (Nurofen) will help to settle the symptoms.

Lumpiness and hardness. The injected veins sometimes remain lumpy and hard for many weeks after treatment, but they gradually shrivel.

Damage to skin. Rarely, the skin at the injection site may break down and require treatment.

Bruising and discolouration. A little bruising may occur after foam sclerotherapy. In some people, brownish discolouration of the skin occurs in the areas where the veins were. Usually this fades, but occasionally discolouration may persist: this is more noticeable in people with naturally pale skin.

Thread veins. Any kind of sclerotherapy can occasionally be followed by the appearance of tiny red or blue veins in the area which was injected. This is uncommon.

Headache/migraine-like symptoms. Occasionally, people report headache, or migraine-like symptoms after foam sclerotherapy. It is thought that these are more common in people who have experienced frequent or severe migraines in the past. For this reason, in this study, we do not treat people with foam sclerotherapy if they have had frequent or severe migraines in the past.

Deep vein thrombosis (DVT). Deep vein thrombosis causes swelling of the leg and can result in a blood clot passing to the lungs. It is a possible complication after varicose vein surgery, but the risk is considerably reduced if you start moving your legs and walking frequently soon after the operation. Sometimes, injections are given so that blood clots less than normal: this reduces the risk of thrombosis but increases bruising. The risk of DVT is about 1% (1 in 100 patients). Rarely, a clot like this may break up and travel to the lungs.
Injection into the artery. Many thousands of patients have been treated with foam sclerotherapy. Among these, there have been three reported cases of foam being injected into an artery rather than a varicose vein.

Concern about stroke and loss of vision. This has been a cause for concern, but there is no good evidence that it is a real risk when normal amounts of foam are used. The reasons for the concerns have been:

- There is a possibility that small amounts of foam could circulate in the blood stream, and, in particular, they could pass through small ‘holes in the heart’ which are present in some otherwise fit people. Theoretically this could allow foam to pass to small blood vessels – for example those in the eye or brain.
- Some patients have reported temporary disturbance of vision (i.e. blurred vision or loss of vision) after foam sclerotherapy. The risk of this happening is about 1% (1 in 100). There has been concern that any disturbance of vision might be due to tiny bubbles entering small blood vessels in the back of the eye. The very few patients in whom this has been reported have all rapidly recovered their full vision, generally within 30 minutes. The worry that air bubbles might cause permanent loss of vision is a theoretical one: it has not been reported as having happened.
- Stroke and mini-stroke (transient ischemic attack) have been described in a very few patients worldwide. One case of stroke was in a patient in whom a large volume of foam was used (much larger than is now recommended). All the surgeons involved in this study limit the amount of foam that is used at any one time and this minimises the risk of stroke.

Temporary confusion: Among the thousands of patients that have been treated throughout the world with foam, a few patients have experienced some temporary confusion after the treatment. Any confusion is likely to be very short-term (lasting only a few minutes).

Concern about fit. One patient has had a fit following foam, but it is unclear if this was related to the foam treatment.

Anaphylaxis/Allergic reaction. This is rare and may cause a rash and a fall in your blood pressure. In extreme cases you may lose consciousness. In the unlikely event that this may occur, equipment and the necessary drugs will be available to enable the doctor and nurse to treat you immediately.
Varicose veins coming back.
Many people develop a few new varicose veins during the years after foam sclerotherapy. There have not been enough scientific reports on the long term results of foam sclerotherapy to give precise figures. Varicose veins may simply re-grow in the areas which have been dealt with, or they may develop in different veins which were normal at the time of the original treatment. If veins develop again they can be treated.

Laser only or laser plus foam sclerotherapy - Procedure
Laser treatment is used to seal off the main vein under the skin in the thigh or the calf. This takes away the head of pressure which causes varicose veins to bulge and cause symptoms. Sometimes we need to use a combination of laser treatment in the thigh and foam sclerotherapy of the main vein at the knee or upper calf. If required, this will be done at the same treatment session.

Laser treatment alone may cause the varicose veins to disappear or reduce in size, but if visible varicose veins remain after the laser treatment, you may wish to have them treated by foam sclerotherapy. Foam sclerotherapy may be done at one or more later treatment sessions. One hospital in the study uses phlebectomies (removal of veins through tiny incisions) at the same time as laser treatment.

How long will I be in hospital for laser treatment? You will have your treatment performed as an outpatient. The procedure itself takes about 45 minutes. You will be in the hospital for about 2 hours in total, but you should keep half a day free in case of delays.

What happens before the treatment? When you arrive a nurse will meet you and will measure your legs for stockings and show you where to get changed. It is best not to wear tight trousers as you may have difficulty putting them on over the stocking afterwards.

The consultant or a member of the surgical team will talk with you about what is going to happen and will mark your varicose veins with a felt tip pen.

What happens during laser treatment? An injection of local anaesthetic is given to freeze the skin just above, or just below, the knee or in the calf. Once the skin is numb a needle is inserted into a
vein beside the knee. A wire is then passed up the vein to the groin and the laser filament is passed over the wire. You will not feel this. The position of the laser filament is checked using an ultrasound scanner. The area around the vein and the skin is then made numb using cold local anaesthetic injections from the knee to the groin. This usually requires 4 or 5 injections with a small needle.

The laser is fired as it is gradually pulled back down the vein from the groin to the knee. This should not be painful because of the local anaesthetic, but you may feel some pushing, pulling or mild discomfort during the procedure. If you feel anything more than this you should say so: the procedure can then be temporarily stopped to settle this.

The heat from the laser closes (cauterises) the vein from the inside. Lasers are powerful sources of energy and you and all the staff will wear protective goggles during the time that the laser is working.

When the vein has been sealed up, the laser is removed from the leg and a firm stocking is applied. This needs to be worn for 10 days. During that time you cannot get the stocking wet in a bath or shower.

**After treatment – leaving hospital.** Immediately following the procedure, once you have got dressed, you should go for a 10 minute walk. Once you have been for a walk we will offer you a cup of tea and you are then free to go home.

We will arrange a check up for you about 6 weeks after the procedure. By that time most of the varicose veins in your leg should have shrunk and many, or all of them may have disappeared. If there are any left they can be treated by foam sclerotherapy.

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**Laser - Recovery**

**How much does it hurt afterwards?** You may experience some discomfort or pulling on the inside of your thigh following the treatment. This may be most noticeable for about one week after treatment, but it then settles down.

People vary a lot in the amount of pain they experience after laser treatment, though most experience discomfort only. You will be encouraged to get up and walk immediately following the laser treatment.
You will be given a supply of an anti-inflammatory drug, such as ibuprofen (Nurofen) or diclofenac (Voltarol) which are also painkillers. We recommend that you take these regularly for three days. If you have had a stomach ulcer, or asthma then you should not take anti-inflammatory drugs of this kind: tell us and we will supply you with a painkiller which suits you.

If any discomfort occurs after three days, take a simple painkiller such as paracetamol (Panadol).

**What about my wound?** The small cut beside your knee where the laser fibre was inserted is closed with an adhesive strip. It can be removed when your stocking is removed.

**What about the bandages and support stockings?** Your stocking must remain in place for 10 days after which time you can remove it. Do not get the stocking wet during these 10 days. Please keep the stocking (do wash it) in case you need further treatment.

**Bathing and showering.** Because of the stocking, you cannot have a normal bath or shower until 10 days after laser treatment. A shower may be possible by securing a large plastic bag over the leg or by using a special waterproof cover such as a Limbo waterproof protector (Thesis Technology, Chichester OP18 8AT or on prescription).

**What should I expect my leg to be like after laser treatment?** You may be aware of areas of lumpiness on the leg which may be slightly tender. This is caused by some inflammation in the vein that has been treated. It is not harmful and will gradually go away, but this may take several weeks. The inner side of your thigh may be uncomfortable during the first few days.

**Activity.** Aim to get back to all your normal activities just as soon as you are able. The only special restriction is bathing and showering, which you cannot do normally for 10 days (see above). The only limitation to your activity might be discomfort and tenderness (which can be minimised by taking painkillers) and the need to wear the stocking.

**Walking.** You should start to walk about as soon after laser treatment as you are able. You can walk as much as you want, as soon as you want. Your thigh may be uncomfortable and tender to the touch in places. You will not cause any damage by walking. Take painkillers if you need them.
There is *no* special advantage in going for a single long walk during the day, although you may walk as far as you wish. Frequent walking is more important than walking a long distance.

**Standing and sitting.** During the first week after laser treatment, try to avoid prolonged standing, or sitting with the foot on the floor continuously for longer than about half an hour at a time: go for a short walk about or do a few “tip-toe” exercises. If you are sitting or resting for any length of time try to put your foot up - either on a stool or couch or on your bed.

**When can I return to work and play sports?**

**Work.** This varies a lot between different people. Most people are able to return to work within two or three days after the treatment – some people go back the following day or even the same day.

**Sports.** You can return to work and sporting activity as soon after treatment as you feel sufficiently well and comfortable. Avoid contact sports while you are still in support stockings or bandages, and thereafter start with some gradual training, rather than in immediate competition. Do not go swimming until your bandage has been removed. We suggest avoiding strenuous activity like the gym for about 2 weeks after the procedure.

**Driving.** You can drive as soon as you feel confident that you can make an emergency stop safely: practise this before you drive. We would advise you not to drive yourself home following the laser treatment, but other than that you can drive as soon as you feel able.

**Air travel.** The risk of deep vein thrombosis during long air flights or other long journeys in cramped seating is very low, but it is probably best to avoid this kind of travel for about a month after your treatment.

**Laser - risks**

**What problems can occur after the laser treatment?**

**Bruising.** Some bruising is normal, and occasionally the leg becomes very bruised. This bruising appears during the first few days after laser treatment: it will all go away over a period of weeks.
Aches, twinges, and areas of tenderness may all be felt in the legs for the first few days after the laser treatment. These will settle down, and should not discourage you from becoming fully active as soon as you are able.

Tender lumps under the skin are common and are caused by blood clots that have collected in the places where the vein has been treated. They are not dangerous and will gradually disappear. It may take up to 12 weeks for all the lumps to disappear. Occasionally they can be quite painful during the first two weeks or so.

Numbness. Areas of numbness in the skin can occasionally occur at the places where varicose veins were treated. This is because tiny nerves may be damaged by heat from the laser. This will not affect the movement of your foot or your walking. The numbness will usually recover over a period of several weeks.

Thread veins. Laser treatment can occasionally be followed by the appearance of tiny red or blue veins in the area which was injected. This is uncommon.

Deep vein thrombosis (DVT). Deep vein thrombosis causes swelling of the leg and can result in a blood clot passing to the lungs. It is a possible complication after varicose vein surgery, but the risk is considerably reduced if you start moving your legs and walking frequently soon after the operation. Sometimes, injections are given so that blood clots less than normal: this reduces the risk of thrombosis but increases bruising. The risk of DVT is about 1% (1 in 100 patients). Rarely, a clot like this may break up and travel to the lungs.

Damage to major vein. Damage to the major veins in the leg is a rare complication of laser treatment, which we take great pains to avoid.

The risks of additional foam sclerotherapy. Remember that you may require foam sclerotherapy, in addition to laser treatment, to get rid of all your varicose veins.

Will varicose veins come back? Many people develop a few new varicose veins during the years after laser treatment. There have not been enough scientific reports on the long term results of laser treatment to give precise figures. Varicose veins may simply re-grow in the areas which have been dealt with, or they may develop in different veins which were normal at the time of the original treatment. If veins develop again they can be treated.
**Surgery - procedure**

**How long will I be in hospital for surgery?** If you are medically fit and have somebody at home with you then a day case operation is usual. If you have medical conditions, if you live some distance away or if you are having surgery for extensive varicose veins in both legs, then you may have your operation as an in-patient (you may be admitted the day before your operation for the doctors and nurses to assess your needs; or on the morning of the operation, and then stay overnight).

**What happens before the treatment?** A member of the surgical team will check that all the necessary preparations have been made and will mark your varicose veins with a felt tip pen. **Be sure that all the veins you would like dealt with have been marked, and ask about any which have not.**

Shaving may be done before your operation or in the operating theatre. If you are going to have an incision in the groin, this area will need to be shaved, but there will be no need to shave all the pubic hair. The leg will need to be shaved, at least in the areas of the varicose veins which are going to be removed. This makes marking of your varicose veins easier and means that hairs do not get into the wounds during the operation.

**What happens during surgery?** Surgery is usually done under a general anaesthetic. An incision (2 – 4 cm long) is made over the top of the main vein in the crease of the groin or behind the knee. It is tied off just where it joins the deep vein, so relieving the “head of pressure” on the varicose veins further down the leg. This incision is closed with stitches, which are hidden under the skin.

The vein is removed by passing a fine wire down it and making a small incision (less than 1 cm long) near the knee – “stripping”. This helps to guard against varicose veins forming again. Blood flows up the many other veins in the leg after this vein has been removed and it is therefore safe to remove this vein.

Varicose veins marked before the operation are removed through tiny cuts (“phlebectomies”). These cuts can be closed with stitches or adhesive strips.

**After treatment – leaving hospital.** You can get up and walk about as soon as the effects of the anaesthetic have worn off, shortly after the
operation. If you are being treated as a day case, after two or three hours you should feel fit enough to go home. Before you leave the hospital staff will check your leg. They will give you a note for your GP, and some painkillers to take with you. They will make arrangements for you to visit a practice nurse the next day (or if necessary for a nurse to call) to check on you and change your bandages for a support stocking.

If you are treated as an inpatient, the bandages on your leg/s will be changed on the morning after your operation for a support stocking. You will normally be able to go home shortly afterwards.

**Surgery - recovery**

*How much does it hurt afterwards?* We inject a long acting local anaesthetic into the groin wound at the end of the operation. This is usually the most uncomfortable area. People vary a lot in the amount of pain they experience after the operation, though most experience mild discomfort only. It is more uncomfortable to get up and walk after operation to both legs than when only one leg has been dealt with. In either case you will be encouraged to get up and walk on the day of your operation when the effects of the anaesthetic have worn off sufficiently.

Painkillers such as paracetamol or anti-inflammatory painkillers like ibuprofen (Nurofen) or diclofenac (Voltarol) will be prescribed for you to take after the operation. It is important that you should take these if you need them to walk about and to rest with comfort. You should not need them for more than a few days, but the duration of discomfort varies from person to person. Occasionally tender lumps of old blood clot (haematoma) beneath the skin can become inflamed and very tender. This is not infection, but you may require to take anti-inflammatory drugs for a longer period.

*Will I have dressings or stitches?* Stitches are placed under the skin in the groin and do not have to be removed. If the surgeon has used a dressing on the groin, this can be removed after 48 hours. The groin wound can be washed and gently dried from 48 hours after the operation, to keep the area fresh and clean.

The small incisions further down the leg are closed with adhesive strips and it is best to keep these dry for 10 days. 10 days after the operation you can remove the strips yourself: this is often easiest in the bath or
shower which helps to loosen them. After that time there is no restriction at all in taking a shower or bath.

**What should I expect my leg to be like after surgery?** Bruising is common after varicose vein operations. It is sometimes quite extensive and may take a month or more to settle. In particular it can occur on the inner side of the thigh, where may be no incisions. This is caused by removing the main vein under the skin from this area. Hard lumps are also common – they represent bruising in places where the varicose veins used to be. Any bruising and lumpiness may be tender but you will do no harm by becoming active. Take painkillers if you need them.

**What about bandages and support stockings?** Your bandages will be changed for support stocking/s the day after operation. Wear these for 10 days after the operation. There is no need to wear the stockings after removing the adhesive strips 10 days after the operation (but if you feel more comfortable with them for another few days this is quite alright). If you find the stocking/s uncomfortable or excessively hot, it is reasonable to remove them four or five days after the operation, provided you are easily and frequently active. An alternative is to remove them at night only, and to put them on each day – but some people find it difficult putting them back on. They are mainly intended to support the leg while you are up and about during the day.

**Bathing and showering.**

*Groin wounds:* You can wash your groin wound gently after 48 hours, as described above.

Keep all the other wounds dry for 10 days so that they properly heal. At 10 days you can soak the adhesive strips off in a bath or shower.

You cannot have a normal bath or shower until 10 days after the operation. Before 10 days, some people manage a shallow bath by putting their leg up on the side of the bath to keep it dry, if there are no wounds or dressings above the knee. A shower may be possible before 10 days by securing a large plastic bag over the leg or by using a special waterproof cover such as a Limbo waterproof protector (Thesis Technology, Chichester OP18 8AT or on prescription). If any of the adhesive strips do come off early, the little wound beneath it is likely to be quite alright but you can cover it with a plaster (e.g. Bandaid) if you want.
**Activity.** Aim to get back to all your normal activities just as soon as you are able. The *only* special restriction is bathing and showering, which you cannot do normally for 10 days (see above).

The only limitation to your activity should be discomfort and tenderness from bruising which can be minimised by taking painkillers. If you can get back to all the things you would like to do within a few days of the operation, then do so. The time taken to get fully back to all activities varies quite a lot between different people. If you had many large veins then you are more likely to be bruised and tender. Do not let this put you off becoming active: you will do no harm.

**Walking.** You should start to walk about as soon after the operation as you are able. You can walk as much as you want, as soon as you want. Getting up from a seated position or bed is sometimes a little uncomfortable during the first two or three days after the operation, particularly where the groin or the area behind the knee has been operated on. The whole leg may be stiff, and tender to the touch in places. You will not damage any of the wounds by walking. Take painkillers if you need them.

There is *no* special advantage in going for a single long walk during the day, although you may walk as far as you wish. Frequent walking is more important than walking a long distance.

**Standing and sitting.** During the first week after surgery, try to avoid prolonged standing, or sitting with the foot on the floor continuously for longer than about half an hour at a time: go for a short walk about or do a few “tip-toe” exercises. If you are sitting or resting for any length of time try to put your foot up - either on a stool or couch or on your bed.

**When can I return to work and play sports?**

**Work.** You can return to work as soon after the operation as you feel sufficiently well and comfortable. After an operation on one leg there is no reason to anticipate being away from “office” or sedentary work for more than two or three days. If your job involves prolonged standing (without the opportunity to walk about) or driving, then you should wear the support stocking if you return to work within two weeks of the operation. We hope that people will be back at work within a week after surgery to one leg and two weeks after surgery to both legs – but there is no reason to remain off work that long if you can manage with reasonable comfort.
**Sports.** Be guided by how your legs feel: bruising and tenderness may limit you from being very active or from some activities in the first few days after the operation, but you can do whatever is comfortable. Avoid very strenuous leg exercise (e.g. running) during the first week, and thereafter it is usually best to start with some gradual training, rather than in immediate competition. Do not go swimming until all the wounds are healed and dry (at least 10 days).

**Driving.** You should not drive within 24 hours of a general anaesthetic. Thereafter you can drive as soon as you feel confident that you can make an emergency stop without pain: practise this before you drive.

**Air travel.** The risk of deep vein thrombosis during long air flights or other long journeys in cramped seating is very low, but it is probably best to avoid this kind of travel for about a month after your operation.

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Surgery - risks

**What problems can occur after surgery?**

**Discomfort.** Aches, twinges, and areas of tenderness may be felt in the legs for the first few weeks. These will settle down, and should not discourage you from becoming fully active as soon as you are able.

**Lumps.** Tender lumps under the skin are common (especially in the thigh) and are caused by blood clots which have collected in the places where the veins were removed. They are not dangerous and will gradually disappear but this can take several weeks. Occasionally they can be quite painful during the first two weeks or more. It is common for the area under the groin wound to feel tender for a few days and thickened for a few weeks.

**Infection.** Infection is an occasional problem, particularly in groin wounds. It is more of a risk in people who are overweight and after operation for recurrent varicose veins. Infection usually settles with antibiotic treatment. If the wound was closed by a stitch under the skin, this may need to be removed to allow the infection to clear up. If an abscess forms, this may need to be drained at an operation under general anaesthetic and the wound will then require dressings – sometimes for up to a month.
**Scars and blemishes.** The scars on your legs are easily noticeable to start with, but will continue to fade for many months after the operation. Very occasionally, some people develop a little brown staining where the veins were removed. Another uncommon but disappointing problem is the appearance of tiny thread veins or “blushes” on the skin in the areas where varicose veins were removed.

**Nerve damage.** Nerves under the skin can be damaged when removing varicose veins close to them and small areas of numbness are quite common. If a nerve lying alongside one of the main veins under the skin is damaged, then a larger area of numbness can be caused. If this happens after surgery to the main vein on the inner side of the leg, then numbness will result over the inner part of the lower leg and foot. If a main vein behind the knee needs to be dealt with, then there is a risk to the nerve which conducts feeling from the skin on the outer part of the lower leg and foot. Areas of numbness often get better over weeks or months, but sometimes they persist in the long term.

**Damage to major structures.** Damage to major arteries, veins, and the main nerve which allows the leg to move normally have all happened during varicose vein operations, but are very rare complications (less than 1 in 10,000), which we take great pains to avoid.

**Swelling.** Damage to the tiny lymphatic vessels which drain tissue fluid from the foot and leg, and which run close to the veins, can occasionally cause problems. Swelling of the foot and ankle can occur, which usually settles over a period of several weeks, but very rarely it may persist. Tissue fluid may rarely collect under the groin wound, forming a swelling (which usually goes away after a time) or very occasionally tissue fluid may leak from the groin wound. These problems are all more common after operations for recurrent varicose veins.

**Deep vein thrombosis (DVT).** Deep vein thrombosis causes swelling of the leg and can result in a blood clot passing to the lungs. It is a possible complication after varicose vein surgery, but the risk is considerably reduced if you start moving your legs and walking frequently soon after the operation. Sometimes, injections are given so that blood clots less than normal: this reduces the risk of thrombosis but increases bruising. The risk of DVT is about 1% (1 in 100 patients). Rarely, a clot like this may break up and travel to the lungs.

**The risks of a general anaesthetic.** Varicose vein operations are almost always done under a general anaesthetic. General anaesthetics
have some risks, which may be increased if you have chronic medical conditions, but in general they are as follows:

Common temporary side-effects (risk of 1 in 10 to 1 in 100) include bruising or pain in the area of injections, blurred vision and sickness (these can usually be treated and pass off quickly).

Infrequent complications (risk of 1 in 100 to 1 in 10,000) include temporary breathing difficulties, muscle pains, headaches, damage to teeth, lip or tongue, sore throat and difficulty speaking.

Extremely rare and serious complications (risk of less than 1 in 10,000). These include severe allergic reactions and death, brain damage, kidney and liver failure, lung damage, permanent nerve or blood vessel damage, eye injury, and damage to the voice-box. These are very rare and may depend on whether you have other serious medical conditions.

**Varicose veins coming back.** Many people develop a few new varicose veins during the years after a varicose vein operation and five years after operation about one person in eight has troublesome varicose veins again. Varicose veins may simply re-grow in the areas which have been dealt with, or they may develop in different veins which were normal at the time of the original operation. If veins develop again they can be dealt with by injections or a further operation should they be troublesome.
Section 3. Summary of the possible advantages and disadvantages for each treatment

Possible advantages and disadvantages of foam sclerotherapy.
- Foam sclerotherapy is done under local anaesthetic, but sometimes no anaesthetic is required at all.
- No surgical incisions are required.
- The veins which have been treated may remain lumpy, hard and sometimes tender for several weeks or even months.
- More than one treatment session may be required, particularly for varicose veins on both legs and for veins which are very extensive.
- You can become fully active as quickly as you want after foam sclerotherapy treatment.
- Bandages and a support stocking are put on the leg after foam sclerotherapy treatment, and need to be worn for about 10 days. These must be kept dry.
- Varicose veins may gradually reappear in the years after foam sclerotherapy treatment: this is rather more likely than after surgery. They can be treated with further foam sclerotherapy if required.
- In summary, foam sclerotherapy is a simple treatment to have but firm compression from support stockings is important afterwards. The treated veins may be hard and tender for some time and there may be some brown staining. Repeat treatment sessions may be needed, particularly if there are varicose veins in both legs. New veins may gradually appear.

Possible advantages and disadvantages of laser treatment.
- Laser treatment can be done under local anaesthetic, rather than general anaesthetic.
- No incision is needed in the groin
- It avoids the bruising which can sometimes occur after standard surgery, but you may experience some lumpiness and tenderness in the thigh which can take several weeks to settle.
- Foam sclerotherapy or phlebectomies may be required to get rid of all the varicose veins. This may mean returning for treatment on another occasion.
- You can become fully active as quickly as you want after laser treatment.
- Most surgeons advise wearing a support stocking for 10 days and avoiding getting the legs wet (in a bath or shower).
• Laser treatment seems to give results as good as surgery up to five years but varicose veins may gradually reappear over the years.
• In summary, laser treatment can be done under local anaesthetic, requiring several injections into the thigh. Additional treatment may be needed to get rid of all the varicose veins.

**Possible advantages and disadvantages of standard surgery.**
• Standard surgery removes all the varicose veins at a single procedure. It should not be necessary to have anything more done to get rid of any remaining varicose veins.
• Varicose vein surgery is normally done under a general anaesthetic.
• Bruising is common. People with smaller varicose veins may get very little bruising but people with big varicose veins may be very bruised. All the bruising goes away.
• There may be some discomfort from the groin wound and occasionally the groin wound can become infected.
• You can become fully active as quickly as you want after standard surgery.
• Most surgeons advise wearing a support stocking for the first 10 days and avoiding getting the legs wet (in a bath or shower) during this time.
• Standard surgery gives a good long term result to many people but varicose veins may gradually reappear over the years.
• It is a tried and tested treatment which has been used for many years.
• In summary, surgical treatment involves a general anaesthetic, an incision in the groin and often some bruising. However, all the varicose veins can be dealt with thoroughly by a single treatment, in one or both legs.