GEELONG LASER VEIN CLINIC
A division of
GEELONG VASCULAR SERVICE

PATIENT INFORMATION

Lower limb vein disease.

The circulatory system of the legs comprises a series of vessels that carry blood. Blood flows into the legs, high in pressure and rich in oxygen, through arteries. Return of deoxygenated blood to the heart, rich in metabolic waste, takes place through veins. Healthy circulation requires that both arteries and veins work normally. While many people have lower limb artery disease, a much greater proportion (over 20%) of the adult population has problems with leg veins.

Venous return to the heart, which often occurs against gravity, is dependent on complex interplay between the calf muscle pump, one-way directional venous valves that prevent backflow of venous blood, and the suction effect of breathing. Disruption of this system leads to **chronic venous disease**, which may present in unsightly surface veins; in pain, itch or leg swelling; or in complications such as thrombosis, bleeding or ulceration. When venous valves fail, blood flows through the affected veins in the wrong direction. This puts increased strain on the normal veins to carry an increased load. Treatment of lower limb venous disease is necessary to maintain a healthy circulation.

Vein Treatment.

In the past, varicose veins were treated by open surgery in hospital. Patients required a general anaesthetic, lay unclothed and immobile on an operating table, had veins "stripped" through cuts in the groin and leg, and spent at least a night in a hospital bed. Postoperative pain saw patients struggle to walk comfortably for at least two weeks during which time they were absent from normal work activity. **This approach is no longer necessary, and rarely recommended in modern vascular practice.** The UK National Institute for Health and Clinical Excellence (NICE) guidelines (CG168, published July 2013) prescribe that patients

with confirmed varicose veins and truncal reflux should be offered thermal or chemical ablative therapies before open surgery in hospital, and this is our practice at Geelong Vascular Service. We offer a combination of laser therapy, microphlebectomies and injection sclerotherapy on an ambulatory basis through our vein clinic. **Vein surgery in hospital is not necessary, and carries greater risk.**

Endovenous Laser Therapy (EVLT).

The objective of any superficial vein treatment is to remove dysfunctional veins from the circuit. This can be achieved by **endovenous laser therapy**. Heat energy, delivered though a laser fibre inserted into the vein lumen, causes vein wall inflammation, collagen denaturation and reactive fibrosis. The end result is closure of the treated vein. It no longer transmits high-pressure blood in the wrong direction, and is eventually converted to a fine linear scar beneath the skin surface. This procedure is much less invasive than open surgery, when it is performed under local anaesthetic, with patients awake and in control of their own breathing, and in the safety of a specialised ambulatory vein clinic. At Geelong Vascular Service minimally invasive laser therapy rarely takes longer than an hour per leg, and most patients return directly home soon after the procedure is finished. It is common for patients to be walking comfortably within 24 hours, and to return to normal work activity in 2-3 days.

How is EVLT performed?

At Geelong Vascular Service laser therapy takes place in our dedicated outpatient treatment room. All procedures are performed personally by Prof McClure; often assisted by a dedicated vascular ultrasonographer, and theatre trained nursing staff.

The treatment steps comprise:-

- You change into theatre shorts; provided for your privacy and comfort; and the affected veins will be marked on your leg with an indelible pen.
- The leg to be treated is cleansed with a disinfectant solution and isolated with sterile drapes.
- A very small injection of local anaesthetic is delivered to where the laser fibre is to be introduced to the vein. Under ultrasound control, a needle is inserted into the faulty vein and a guide wire is advanced through it. An introducer sheath is passed over the wire, which is removed, and the laser fibre is then carefully negotiated through the vein to just beyond its junction with the deep vein system. The position of the fibre tip is confirmed by ultrasound. The passage of the fibre is usually painless.
- A special solution of tumescent anaesthetic; comprising “salt water”

mixed with a very low concentration of xylocaine anaesthetic; is then administered along the length of the vein to be ablated. This serves to ensure that the laser procedure is pain-free, that the heat energy is only delivered to the vein wall and not to surrounding tissues, and that the vein is emptied of blood. Unlike surgery in hospital, bleeding during the laser procedure is very uncommon.

- Before the laser is activated, the nurse will have you wear special glasses to protect your eyes from the laser energy.
- The laser fibre is then activated, and withdrawn from your leg at a constant pre-determined rate. A beeping sound accompanies this process until the treatment is complete.
- The entry point of the laser fibre is then sealed with a steri-strip or small dressing. The incompetent main-stem vein has been ablated!
- Prof McClure may have made additional plans to inject residual varices in your leg, or to remove them under local anaesthetic. He will then proceed to do so, before wrapping your legs in bandages and placing them in compression stockings.

PREPARATION FOR SURGERY

The clinic nurse will call you with an appointment time during the week of your procedure.

PLEASE ARRIVE 20 MINUTES EARLY TO COMPLETE PAPERWORK

There is nothing special you need to do before your treatment.
If you wish to shave your leg please do so two days before the procedure. It is helpful to have a leg shaved before the procedure but if you have never shaved your leg and you have big veins it may not be safe to do so at home.
Please do not moisturize your leg. We recommend that toenails are trimmed so they don't damage the stockings you wear after treatment.
Eat and drink normally.
Take all your normal medications, unless advised to cease any by Prof McClure.
Please inform staff if you require any special assistance.
Wear loose fitting clothing and bring a closed shoe that can be easily tied after the procedure. THONGS ARE NOT APPROPRIATE FOOTWEAR.
We recommend that you travel home on the back seat of the car with your leg elevated on the seat. Please ensure the back seat is available for your use.
You cannot drive home from your procedure.

Post Operative Care

Immediately following EVLT, the leg(s) will be bandaged to apply pressure to the vein, and a compression stocking will be fitted. We recommend the following:

- Elevate the leg for 8 hours post procedure. Going to the bathroom and light duties at home is acceptable, however some people have large amounts of anaesthetic fluid in the leg and find that they are slightly unstable on the treated leg. Anaesthetic fluid may seep through the bandaging, but this is normal.
- We recommend you take an anti inflammatory, such as Voltaren 25 mg three times a day for three days, with meals. This helps control pain from the inflammation induced by the laser. Panadol may also help to reduce pain.
- The bandages (if they have been applied) and the compression stocking(s) are left intact for 1 night. On the second night , please remove the outer layer; the brown stocking. Wash and allow it to dry overnight. On the following morning remove the bandages and any dressings. You may need to soak them off in the shower if they have become adherent to the skin. From this day you may shower as often as you wish, but spending period of longer than 10 minutes in water is not advised. Steri-strips may have been applied to seal wounds where veins have been extracted (phlebectomies). These tapes need to stay in place until they fall off; usually at 2 weeks. All wounds can be patted dry with a clean towel from your bathroom. If any wounds are tender, it may be necessary to place a "panty-liner" between the skin and stockings to prevent local irriation. Please do not seal any wound with a bandaid but use a light cotton dressing if necessary.
- Putting stockings on is not easy, but everyone gets better at it! Rubber gloves with grip fingertips assist in putting the stocking on and adjusting the stocking over the heel and ankle. You may find these very helpful.

FOLLOW UP ARRANGEMENTS

For most patients a follow up ultrasound of the treated vein(s) will be undertaken at Geelong Vascular Ultrasound 2 weeks after surgery. Prof McClure will see you soon thereafter.

What are the potential complications of the procedure?

Every medical procedure carries the risk of complications, and EVLT is no exception. The complication rate with this minimally invasive approach to vein treatment is extremely low, however. Deep vein thrombosis and pulmonary embolism have been reported at rates that are lower than those of vein surgery in hospital under general anaesthetic. As patients are awake, in control of their breathing, are able to move during the procedure, and have early return to full mobilization with EVLT, the lower rates of venous thrombosis are not a surprise. Wound infection and bleeding are also much less common with EVLT than with open surgery, as the former avoids a groin incision and the local anesthetic used compresses the vein to be treated; emptying it of blood.

- Bruising, or hard and tender lumps: can occur in the skin along the line of laser therapy, or about sites of phlebectomy. They are due to the accumulation of clotted blood within the treated vein, or in the path from which vein segments have been removed. They may appear over the first few postoperative days. The bruising usually disappears within 2 weeks, but the lumps may take a month or two to resolve. This is dependent on the body's ability to dissolve clot.
- Sensory loss in the skin: patches of skin numbness sometimes occur when small skin nerves that travel with skin veins are damaged at the time of phlebectomy. The numbness is usually temporary, and present only in small patches. More persistent numbness in a large distribution, which was seen when veins were "stripped" at open surgery, is uncommon with laser therapy.
- Particular risks with laser therapy include inadvertent heat injury to the skin, fracture of the laser fibre or introducing wire, or allergic reaction to the local anaesthetic used. All are extremely rare.

While many patients with lower limb vein disease have symptoms of pain, itchiness, swelling, restlessness etc., other disease states can also produce these complaints. Vein treatment removes abnormal veins from the circulation, but may not resolve all leg symptoms if they are due some other cause.

Frequently asked questions.

Is loss of this vein a problem?

No. There are many normal veins in the leg that have been carrying an increased load to compensate for the blood leaking through the abnormal ones. Removing the damaged veins from the circulation relieves pressure from the normal veins and improves the health of the leg.

Am I at risk from the laser?

If viewed directly, laser light can cause eye damage. To protect you from this, you will be given a pair of special glasses to wear for when the laser is active.

What is the alternative to this treatment?

Traditionally, incompetent leg veins have been treated with surgical ligation and stripping, under general anesthetic. This surgery requires at least two surgical incisions for the faulty vein to be ligated and removed. EVLT under local anaesthetic on an outpatient basis has a lower risk, a shorter recovery period with less discomfort, and produces less scarring than open vein surgery.

Will my varicose veins return?

Varicose veins are usually of genetic origin. Patients are not ever "cured" of varicose veins, and always carry a tendency to develop new varices. If treatment to incompetent main-stem superficial veins is undertaken properly, however, it is uncommon to develop new varicose veins in the treated territory. At Geelong Vascular Service all procedures are undertaken with ultrasound control so all abnormal veins can be obliterated. Our post procedure surveillance ultrasound studies are important so that the appearance of new veins can be identified well before they cause a clinical problem.

Pain after the operation

While significant pain is uncommon, most people have some tenderness along the line of the lasered vein for a week or so. We recommend use of 25mg Voltaren three times a day for the first three postoperative days, to reduce pain from local inflammation. Panadol is also useful. Some patients experience heel pain on the first postoperative night. This is usually due to the pressure of the compression stocking. Standing on the leg and walking about for a few minutes usually relieves the pain. If it is unbearable, it may be necessary to remove the outer (brown) stocking.

What about my wounds?

All patients will be fitted with a full-length compression stocking on the treated leg. If microphlebectomies have been performed, a bandage over the small stab incisions will be placed beneath the stocking. This bandage stays on for two days before being removed; to be replaced by the stocking alone. The stocking can be removed each day thereafter for showering, but is otherwise worn constantly for two weeks. Stab incisions will have steri-strips that are to stay in place until they fall off over 1-2 weeks.

Sometimes a little fluid will ooze from the wounds during the first 12 to 24 hours postoperatively. This is likely to be due to leak of the anaesthetic fluid, stained with blood, from the needle puncture sites in the skin. It is of no consequence and resolves spontaneously.

When can I drive a car?

You can drive as soon as you feel confident of being able to stop in an emergency. This is usually after the second postoperative day, when the bandages and you are in stockings only. Long period of immobilization, as in car or plane travel longer than 4 hours, is best avoided for 4 weeks following laser therapy.

When can I return to work and play sports?

You can return to work and sporting activity as soon as you feel able to do so. In general, if there is no pain in the leg when you are engaged in a given activity, you will be fine to continue it. If your job involves prolonged standing or driving, you should not consider going back for at least one week. Walking at regular frequency provides the best exercise, and you will find the more you walk the less pain you'll feel. When you are not walking about, try to put your foot up – either on a couch or on your bed. Avoid standing, or sitting with the foot on the floor, as much as you can, for about two weeks after the operation.

Active sport is best avoided while you are in compression stockings. If you have had small incisions in the leg, swimming should be avoided for 4 weeks so the wounds do not become macerated.

How do I pay for treatment?
What if I have private medical insurance?

The balance of your fee needs to be paid on the day of your procedure. Please ensure your credit card has authority from the bank to pay the entire outstanding amount if you wish to use it. We accept bank cheques and cash, but personal cheques must be cleared before the procedural day. Medicare will provide a rebate on the procedural cost upon the basis of receipts you receive. There will be two for your procedural package; one on the day of your laser therapy, and one on the

day of your first post procedural ultrasound. Some private health insurers will provide a rebate on the cost of compression stockings. A receipt for this can be provided if necessary.

Healthy veins for healthy legs

Modern vein treatment for quality care