

## Endovenous Laser Treatment (EVLA)

This information is provided with kind permission from Dr David Jenkins MBBS FACP. Dr Jenkins is a Foundation Fellow and past president of the Australasian College of Phlebology (ACP). He is on the Board of Censors of the ACP and runs the NSW post graduate training program for College Registrars – including journal club, vein school and clinical meetings. He was awarded the medal for clinical excellence at the inaugural convocation of the ACP in 2006. His practice, Sydney Inner West Vein Centre, is an accredited training practice for the ACP in Australia. He continues to be actively involved in clinical work, post-graduate education and teaching.

Endovenous Laser Treatment (EVLA) was developed in the USA and has been performed since 1999. Clinical trials reported in the medical literature have shown it to have the best success rate of any procedure available for the treatment of large varicose veins – up to 99% after two years and 98% after five years. It is best suited to varicose veins greater than 6mm in diameter that are straight and not close to the skin surface. This procedure has made the necessity for surgical stripping obsolete.

Not all varicose veins are suitable for EVLA. A duplex scan (ultrasound) is used prior to the procedure to map the leg veins to determine the direction of venous flow and the extent of the problem. The map is our work plan and a reference point for the future (see Venous Mapping). The initial consultation and mapping will determine if your veins are suitable for EVLA. Our new Endovenous Laser Ablation (EVLA) system allows us to treat large varicose veins without the need for surgery, and with a much higher success rate than traditional procedures.

### **What you should know before having your varicose veins treated**

The following information is offered to help you rapidly assess the best options for your vein problems, so hopefully you can ascertain if your GP has referred you in the right direction. Unfortunately, many patients are presented with only one treatment option when another may be suitable or indeed, preferable. Surgery remains a commonly proposed treatment option in Australia and, as you will see, it has been replaced by less invasive, non-surgical treatments in many Western countries. You will also see, both here and elsewhere on our website, that there is little justification for surgery when non-surgical procedural simplicity, success rates, downtime and cost are taken into consideration. The following topics are addressed:

1. The UK Guidelines for management (2013)
2. The UK Guidelines for referral (2011)
3. The European Guidelines (2015)
4. The US Guidelines (2012)
5. The European Guidelines for Sclerotherapy (2013)
6. Success rates of various procedures
7. Necessity for combined treatments
8. Is treatment urgent?
9. Seeking another opinion

1. **UK Guidelines regarding the Diagnosis and Management of Varicose Veins of the Leg**

The full guidelines can be found at the National Institute for Health and care Excellence (NICE) website: [guidance.nice.org.uk/cg168](https://guidance.nice.org.uk/cg168) (July2013)

Summary:

- Patients should be assessed by duplex ultrasound scanning to determine the extent of the problem and to plan treatment
- **Endovenous Laser Ablation EVLA (or RadioFrequency Ablation RFA) should be offered when appropriate and if this is unsuitable, offer ultrasound-guided foam sclerotherapy**
- If ultrasound guided foam sclerotherapy is unsuitable (virtually no-one), offer surgery
- Consider treating varicose veins visible externally at the same time
- If interventional treatment is unsuitable, consider long-term compression stockings

**UK Guidelines relating to patient referral for varicose vein treatment** can be found at: [Recommendations for the referral and treatment of patients with lower limb chronic venous insufficiency \(including varicose veins\)](#) *Phlebology 2011 26:91*

They state that treatment can

- Significantly improve disease specific and generic health related quality of life
- Relieve a wide range of troublesome lower limb symptoms
- Delay and prevent the onset of complications of chronic venous insufficiency
- Represent a highly cost-effective use of NHS resources

2. **European Guidelines** were published in 2015 by the European Society for Vascular Surgery. The full guidelines can be found at [Management of Chronic Venous Disease Eur/Vasc Endovasc Sug \(2015\) 49, 678-737](#)

They state that EVLA should be used in preference to ultrasound guided foam sclerotherapy and surgical stripping of varicose veins – similar to the NICE Guidelines above

3. **USA Guidelines** for the management of varicose veins:

The first guidelines were published in the USA by two surgical groups (the American Venous Forum and the Society for Vascular Surgery). The full guidelines can be found at [Guidelines for the management of varicose veins P Gloviczki and ML Gloviczki Phlebology 2012:27 Suppl 1:2-9](#)

They stated:

“The need for such guidelines has been evident since imaging techniques and minimally invasive technologies have progressed by leaps and bounds and radiofrequency ablation, laser and sclerotherapy have largely replaced classical open surgery of saphenous stripping... The management of varicose veins has rapidly

progressed in the last two decades and open surgical treatment using the classical high ligation and saphenous stripping is rarely performed today.”

These guidelines recommend that:

- Evaluation of patients with varicose veins should include duplex ultrasound scanning of the deep and superficial veins
- Endovenous thermal ablation (endovenous laser/RF) should be used in preference to surgical stripping when available
- Compression therapy should be used as the primary treatment to aid healing of venous ulceration
- To decrease recurrence of venous ulcers, compression therapy should be supplemented with ablation of the incompetent superficial veins
- Phlebectomy or sclerotherapy is recommended to treat varicose tributaries
- Foam sclerotherapy (UGFS) is suggested as an option to treat the incompetent saphenous vein. UGFS for treatment of the incompetent saphenous vein is much more popular in Europe than in the USA and supporting evidence on both its efficacy and safety is steadily increasing
- The committee recommended against selective treatment of perforating vein incompetence in patients with simple varicose veins

4. **The European guidelines for Sclerotherapy** recommend sclerotherapy for *all* types of veins. The full guidelines can be found at: [European guidelines for sclerotherapy in chronic venous disorders](#) E.Rabe, FX Breau, A Cavezzi, P Coleridge Smith, A Frullini, JL Gillet, JJ Guex, C Hamel-Desnos, P Kern, B Partsch, AA Ramelet, L Tessari, F Pannier and for the Guideline Group *Phlebology* published online 3 May 2013

Objectives of sclerotherapy are:

- Ablation of varicose veins
- Prevention and treatment of complications of chronic venous disorder (CVD)
- Improvement and/or relief of venous symptoms, improvement of quality of life
- Improvement of venous function
- Improvement of the aesthetic appearance

Recommendations:

They recommend sclerotherapy for all types of veins, in particular:

- Incompetent saphenous veins
- Tributary varicose veins
- Incompetent perforating veins
- Reticular varicose veins
- Telangiectasias (spider veins)
- Residual and recurrent varicose veins after previous interventions
- Varicose veins of pelvic origin

- Varicose veins in proximity of leg ulcers
- Venous malformations

**5. Success rates**

There are numerous reports of success rates for the various treatment options. The long-term success rates (greater than five years) for the various treatment options average out at approximately:

- EVLA/RF > 95%
- UGFS 70-80%
- Surgery < 75%

The most recent results relating to surgical stripping showed 82% of legs had some evidence of recurrence beyond five years.

[Alexander E Ostler, Judy M Holdstock, Charmaine C Harrison, Barrie A Price and Mark S Whiteley; Strip-tract revascularization as a source of recurrent venous reflux following high saphenous tie and stripping: results at 5-8 years after surgery. Phlebology 2015, Vol. 30 \(8\) 569-572](#)

Procedure	General Anaesthetic	Local Anaesthetic	Hospital Inpatient	Rooms/Outpatient	Days lost from work
UGFS	No	No	No	Yes	1
EVLA	No	Yes	No	Yes	1
Surgical stripping	Yes	No	Yes (1 or 2 days)	No	14 (or more)

- Unlike surgery, UGFS is simple and readily repeated
- In the unlikely event that success was not achieved with EVLA or RF, the vein is normally not suitable to be retreated the same way again. However, UGFS will complete the treatment well
- Individual doctors may have better or poorer success rates than those quoted above, UGFS is a much simpler procedure than stripping with very good results when performed proficiently. EVLA/RF consistently have the highest success rates – though be mindful that treating a relatively small vein (average diameter > 4mm) may be like cracking a peanut with a sledge hammer!
- For surface veins, sclerotherapy is considered the gold standard with the external lasering of surface veins through the skin coming a poor second. (Lasering through the skin is a totally different use of lasers compared to EVLA – which is from within the vein)
- Ultrasound guided foam sclerotherapy is the least expensive treatment, followed by EVLA/RF and surgery is generally the most expensive. The cost of the different treatments can vary widely from one doctor to another

**6. Combination Treatment** is needed for varicose veins

There are a number of different procedures used to treat varicose veins. Mostly they need to be used in combination to get a thorough and lasting good long-term result.

EVLA needs additional UGFS and sclerotherapy to surface veins (if required) to achieve a good clearance. UGFS needs superficial sclerotherapy to achieve a good cosmetic result, while surgery needs phlebectomy or ultrasound guided sclerotherapy plus sclerotherapy of surface veins to achieve a good cosmetic result and a good long-term outcome. If you are told you only need one of the above procedures or you have inadequate follow-up, it is likely you will achieve a suboptimal result

**7. Is having your varicose veins treated an urgent issue?**

Generally, no. Doctors will inform you of potential complications of not treating varicose veins – that you could get clots in your legs, leg ulcers or your varicose veins may bleed, sometimes with the implication that if you don't have them treated soon you could be in big trouble. Providing the skin of your lower legs is in good condition, there is generally little risk of imminent problems. Many patients have large varicose veins for many years without any problems. If you have skin ulceration, superficial vein thrombosis (clotting in veins) or bleeding, is it wise to act sooner rather than later. Treating varicose veins that are not symptomatic can help prevent complications in the long-term and when treated early, the less invasive, less expensive option of UGFS can work very, very well.

**8. Seeking another opinion**

There is a significant body of evidence showing that *varicose vein surgery promotes the development of new varicose veins*. This information has been available since 2001 to 2005. As you can see from the above guidelines, surgery is no longer the recommended treatment; EVLA has been available for over 15 years in Australia and it is not new. *To be told your veins are too bad for anything but surgery is completely untrue, and you should question the credibility of that advice.* Any doctor interested in venous disease will be well aware of UGFS, EVLA and RF and the 'best practice' guidelines. When you consult a specialist, you should be aware to expect that:

- i. You have been given an honest opinion and the information provided is up to date
- ii. The information given is a fair representation of current treatments and methods
- iii. You should be told
  - What to expect if you choose to do nothing
  - What to expect if you opt for conservative treatment over more invasive treatment
  - What the proposed treatment involves, its risks and complications
  - The alternative treatment options
  - An approximation of the expected cost
- iv. You should then have the capability of making an informed and appropriate decision once health issues, quality of life and financial considerations have been addressed. Signing a consent form implies all of the above have been given due consideration

