



Endovenous laser treatment: information for families

Endovenous laser treatment (EVLT) is a way of treating abnormal and enlarged veins so that they shrink and become less troublesome. This information sheet from Great Ormond Street Hospital (GOSH) explains about endovenous laser treatment (EVLT), why it might be suggested and what to expect when your child comes for treatment. An Easy Read information sheet about the procedure is also enclosed for your child.

EVLT might be suggested if your child has additional, enlarged veins, as part of a birthmark such as complex vascular anomaly of the limb with overgrowth (previously known as Klippel-Trenaunay syndrome), for example. Occasionally children develop abnormal veins later in childhood, such as varicose veins, although they are much rarer in children than in adults.

Abnormal veins are usually close to the skin surface so can be unsightly. They usually are enlarged as they cannot pump blood back to the heart so blood 'pools' in the vein. If this occurs in the legs, this can be uncomfortable, making them feel heavy, swollen or achy at the end of the day.

EVLT is carried out in the Department of Radiology by a doctor (radiologist) who specialises in using imaging to carry out procedures. EVLT works by shrinking the inside of the vein using a laser, which gives off lots of heat and burns the lining of the vein. This closes off the vein so that blood cannot flow through it anymore.

What happens before the endovenous laser treatment (EVLT)?

You will already have received information about how to prepare your child for the procedure in

your admission letter. You will need to come to GOSH a few weeks before the EVLT so that your child can have a pre-admission assessment to check that this treatment is suitable for your child. EVLT is not suitable for all abnormal veins.

During this appointment, your child will have a scan to 'map' their veins and check that there are deeper veins that are not abnormal and can take over the work of pumping blood back to the heart once the abnormal veins are treated. This might be an ultrasound scan or magnetic imaging (MRI) scan, depending on your child's particular condition. In some cases, the radiologist may also choose to take some x-rays of your child's veins while contrast is injected through them. Contrast shows up well on x-rays allowing doctors to map the veins more clearly. Your child may need to have a scan under anaesthetic if they are very young. The doctor will discuss these options with you.

If your child already wears a compression garment, please bring this with you so that our occupational therapist can check that it fits correctly. If your child does not currently have a compression garment, they will measure your child and order one for them. It is very important that you bring the compression garment with you on the day of the procedure.

Once your child has a compression garment, they will need to wear this for a few weeks before treatment. If your child does not wear their compression garment as directed, we may not be able to offer treatment. It is vital that your child wears the compression garment immediately after EVLT.

What does endovenous laser treatment (EVLT) involve?

Endovenous laser treatment (EVLT) is almost always carried out as a day case while your child is under a general anaesthetic. It is important that your child does not eat or drink anything for a few hours before the anaesthetic. This is called 'fasting' or 'nil by mouth'. Fasting reduces the risk of stomach contents entering the lungs during and after the procedure.

You will be informed the night before the procedure of the time that your child should be 'nil by mouth' – in other words, have nothing to eat or drink before the anaesthetic. It is equally important to keep giving your child food and drink until those times to ensure they remain well-hydrated and get adequate nutrition. This may involve waking your child in the night to give them a drink which we recommend.

Once your child is under general anaesthetic, the radiologist will use ultrasound to check the position of the abnormal vein and inject local anaesthetic into the area around it to make it numb. Depending on the location of the abnormal vein, the radiologist will usually give the injection near the ankle or the knee.

They will make a very small cut to insert a needle into the vein. A soft guide wire is threaded over the needle, which is then removed. Finally a catheter (thin plastic tube) containing a laser device is threaded over the guide wire into the vein and the guide wire is removed.

The catheter is then threaded through the veins until it is in the area needed. X-rays and

ultrasound are used at various points to guide the catheter in the right direction and to check that it has reached the area that needs to be treated.

The radiologist will then flush the area around the entire length of the vein with a lot of salt water solution (saline), using a small needle through the skin. This protects the tissues around the vein from the heat given off by the laser. They will then turn on the laser and slowly pull out the catheter so that the laser shrinks the vein as it is being pulled out.

Once the catheter has been removed from the vein, the tiny incision is closed with a sticky paper stitch and the area is bandaged or covered with the compression garment. The EVLT procedure takes about an hour.

Are there any risks?

Your child will be having endovenous laser treatment (EVLT) under general anaesthetic. Every anaesthetic carries a risk but this is extremely small. As the laser gives off a great deal of heat, it may affect the tissue around the vein, causing discolouration to the skin over it. Rarely, it may also cause numbness or tingling if any nerves were affected. The large amount of saline flushed into the tissues around the vein should reduce the chance of this happening.

EVLT is not always successful. Despite shrinking it with the laser, blood may still flow through the vein causing the same symptoms as before. A new but also abnormal vein may also open up to take the blood flow. If this occurs, further treatments may be needed.

Are there any alternatives?

Compression garments may be an alternative to endovenous laser treatment. They work by squeezing the limb so that blood is forced to travel back to the heart and does not pool in the abnormal veins. Compression garments are very effective when worn as directed but do not offer a

permanent solution. As soon as the compression garment is removed, blood flow through the vein returns to normal.

Abnormal veins can also be tied or stripped out during an operation. This is most commonly used in adults with varicose veins but is also suitable for children. A certain amount of scarring is common with this procedure and care must be taken to avoid blood clots while the leg is healing.

Sclerotherapy is another alternative but is rarely suitable for long veins such as those running the entire length of the leg. It works by injecting a medicine into the veins, which irritates them encouraging them to scar and shrink. Sometimes, your doctor may suggest a combination of EVLT and sclerotherapy for your child.

What happens afterwards?

Your child will return to the ward after they have recovered from the anaesthetic. Some children feel sick and vomit after a general anaesthetic. Your child may have a headache or sore throat or feel dizzy, but these side effects are usually short-lived and not severe. Your child can start eating and drinking as normal once they feel like it.

Going home

You will be able to go home once the doctors are happy that your child is recovering well. Your child's leg will ache for the next few days – the amount of discomfort varies from child to child. Regular pain relief should be enough to deal with any discomfort.

The saline flushed into the tissues surrounding the vein will start to leak out through the skin over the first 24 hours after the procedure. This is quite normal but will make the compression garment damp so you may need to change it regularly.

Your child should wear the compression garment constantly and keep the leg dry for the first three days. They can then take off the compression garment and have a cool bath or shower. Do not have the water too hot as this can make the leg more painful. After the bath or shower, your child should put the compression garment back on and keep it on, day and night, for another four days.

It is important that your child keeps moving in the first few days after the procedure. Gentle exercise every day such as walking or cycling helps encourage the blood to flow through the normal veins and not pool in the abnormal ones as before. When your child is resting in the evening, having exercised during the day, they should raise their leg up on a cushion or pillow to reduce any swelling. Your child should be well enough to go back to school three to five days after the operation.

The doctors will tell you if your child needs further procedures and if so, when. Your child might need to have a routine outpatient appointment a few weeks afterward before this decision is made. We will send you a letter with the planned date of the outpatient appointment or next treatment session.

You should call the hospital if:

- Your child is in a lot of pain and pain relief does not seem to help
- The skin over the treated area is blistered or blackened or the skin becomes sore
- Your child complains of numbness or 'pins and needles' near the treated area or there are signs of muscle weakness or spasm
- The treated area is unusually hot, red and painful and your child is general unwell with a high temperature or not eating or drinking as usual

Further information and support

If you have any questions, please telephone 020 7405 9200 and ask for the ward from which your child was discharged

Having your veins lasered



You have lots of veins in all areas of your body. They carry blood back to the heart and lungs to be given oxygen (said: ock-see-jen). Blood carries oxygen and goodness to every part of your body. Your body needs oxygen and food to work.



Sometimes a vein can go wrong so that blood collects in it. This makes the vein go lumpy. They might not look very nice.



They might hurt a bit, often in the evenings. Your legs might feel heavy and sore.



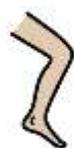
The doctors may suggest having laser (said: lay-zer) treatment to make your veins less sore.



You will have an anaesthetic (said an-ess-thet-ick) for the laser treatment. You will not be able to feel anything or know what is happening.



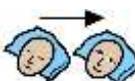
The doctor will use an ultrasound (said: ull-tra-sow-nd) scan to look at the inside of your veins.



The doctor will put a thin bendy tube containing the laser into a vein in your leg. They will inject lots of water around the vein to stop your skin getting too hot from the laser.



They will turn on the laser and pull it back through your vein. This annoys the vein and makes it smaller.



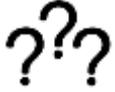
At the end, they will put a plaster on your leg and you will be able to wake up from the anaesthetic. You will have a stretchy bandage over the treated area.



The area treated will feel a bit sore for a few days. You can take pain relief if you want. It will also feel a bit wet but this is normal.



You should do your exercises to help the treated area get better.



Please ask us if you have any questions.