

CHINOOK VASCULAR - ENDOVENOUS LASER ABLATION PROCEDURE

Endovenous Laser Ablation is a minimally invasive option for treating great saphenous vein incompetence (leaky valves). The first stage of your surgery will involve inserting a laser fiber at the level of the knee and feeding it up the great saphenous vein (the root of your problem) under ultrasound guidance. Your leg will then be anesthetized with a local anesthetic agent. During the second stage of the treatment, the laser while firing is removed slowly; as it is removed it destroys the great saphenous vein. This will relieve the backflow pressure, which is causing your varicose veins. Following the procedure you will wear compression stockings which you will sleep in for three nights, and then wear for the next ten days.

Three to five days after surgery, we will evaluate your treated leg with ultrasound for the complication of deep venous thrombosis.

Three months after surgery we will re-evaluate your results using ultrasound. If we find any branches remaining we will destroy them with a procedure called ultrasound guided sclerotherapy or phlebectomy. Utilizing ultrasound, the varicose vein is visualized on a screen and the physician uses this technology to guide the placement of a needle directly into the diseased vein. A sclerosing agent is injected directly into the veins. This causes an irritation to the inner lining of the vein, resulting in closure of the vein.

Ambulatory phlebectomy is a minimally invasive local anesthetic procedure performed in an outpatient setting. The varicose veins are teased out through a small puncture; the puncture is covered with surgical tape.

Varicose Veins and Spider Veins are chronic and recurrent conditions. The variety of treatments available will not offer a cure, but rather a control of the condition. Surgically removed veins cannot come back; veins that are sclerosed will not return. However, your tendency towards developing new veins will not be relieved by this or any other form of treatment.

Preoperative Instructions

You will be receiving a local anesthetic/and an oral sedative during surgery and will not be able to drive home following the procedure. Please arrange for someone to drive you home. You will be in the office approximately 2-1/2 hours. The actual procedure itself takes only about 1-1/2 hours.

Shower or bathe the morning of your surgery. Do not come to the office on an empty stomach. You will **not** be having general anesthesia. We encourage you to have a small meal 1 to 2 hours prior to arriving at the office. Do not use any aspirin products for four days prior to having the procedure. If you are on blood thinners please notify us immediately so we can speak with your primary doctor and determine a course of action.

Post-operative Instructions

Following the laser procedure you will leave with a compression hose in place. Do not remove your compression hose for **3** days (including nights). Then, wear your hose for the next **10** days, removing it at bedtime.

You will have a small gauze dressing over the insertion site covering steri-strips. You may remove the gauze at your first shower or sponge bath of the legs which should be taken **3** days after your procedure. Leave the steri-strips in-place. The steri-strips will begin to come loose **3-5** days after the procedure at which time you can remove them.

Follow up ultrasound appointments will be booked at **3-7** days and **3** months following your procedure. **Please bring your compression hose and gloves to all appointments.**

You may experience some discomfort following the surgery. We will advise you as to what pain medicine/anti-inflammatory you may need to take. If you require any additional prescription drugs please see your family physician or discuss with us.

If you are having unexpected discomfort or bleeding, notify the office immediately. If you are unable to reach the office, the nearest emergency department may be considered. The Lethbridge emergency department has access to the advice of on-call Radiology services whom are familiar with the EVLT procedure. *Please notify our facility in the event of an unexpected admission to hospital within 10 days of your endovenous laser procedure.*

We would like you to continue moving and maintain a normal level of activity throughout your recovery. Walking twice a day for 20 minutes is encouraged and promotes speedy healing. Following the procedure you may get some inflammation along the inner aspect of your thigh. This inflammation is part of the process and is to be expected. Some people describe a cord like sensation along the inner aspect of their leg. Walking and taking your anti-inflammatory medication as prescribed will help to alleviate the discomfort.

Avoid prolonged sitting or standing for the first week and elevate your legs at least three times a day for 5 to 10 minutes. Avoid long car rides (if you must travel, get out and walk hourly). You may return to work/school when able, resume active sports within one week and sexual activity when comfortable. In all likelihood, you will be able to resume your pre-procedure activities (including work) the following day, if necessary. It may be helpful to take off a day or two from work.

Again, feel free to call the office (403-328-1122) if you have any questions.

CHINOOK VASCULAR - FOAM ECHOSCLEROTHERAPY

Varicose veins can be closed using ultrasound guided foam sclerotherapy through a small needle. Following the procedure you will be placed in compression stockings. Do not remove your stockings for three days (**including nights**). Then wear your compression stockings for the next three weeks removing it only at bedtime.

Three to five days after the procedure, we will evaluate your treated leg with ultrasound for the complication of deep venous thrombosis.

Three months after the procedure we will re-evaluate your results using ultrasound. If we find any branches remaining, we will close them with liquid sclerotherapy or phlebectomy. A sclerosing agent is injected directly into the veins. This causes an irritation to the inner lining of the vein, resulting in closure of the vein.

It is **not** uncommon to experience localized tenderness, lumpiness, bruising and discoloration of the treated area. Generally this is a result of blood that becomes trapped within the vein during the healing process. Please notify our office, as it may be necessary to drain the trapped blood from the vein in order to alleviate these symptoms and decrease recovery time. Discoloration may be a side effect of the procedure, lasting 12-18 months.

Varicose veins and spider veins are chronic and recurrent conditions. The variety of treatments available will not offer a cure, but rather a control of the condition. Surgically removed veins cannot come back; veins that are sclerosed rarely return. However, your tendency towards developing new veins will not be relieved by this or any other form of treatment.

CHINOOK VASCULAR – FOAM ECHOSCLEROTHERAPY

Preoperative Instructions

Shower or bathe the morning of your surgery. Do not come to the office on an empty stomach. You will **not** be having general anesthesia. We encourage you to have a small meal 1 to 2 hours prior to arriving at the office. You will be in the office for approximately 1.5 hours. Do not use any aspirin products for four days prior to having the procedure. If you are on blood thinners please notify us immediately so we can speak with your primary doctor and determine a course of action.

Post-operative Instructions

You will have a small gauze dressing at the insertion site with Steri-Strips in place, you may remove the gauze at your first shower, leave the Steri-Strip in place. The Steri-Strips may begin to come loose after **3-5** days, at which time you can remove them.

Following the procedure you will wear a compression stocking which you will sleep in for **3** nights and then wear for the next **3** weeks. Follow up ultrasound appointments will be booked at **3-7** days and **3** months following your procedure. **Please bring your compression hose and gloves to all appointments.**

You may have some discomfort following surgery. Some patients find it helpful to take a day or two off work, although we expect you will be able to resume all your pre-procedure activities (including work) the following day, if necessary. We will prescribe pain medicine to be used as needed. We would like you to continue to keep moving and maintain a normal level of activity. Walking twice daily for 20 minutes is encouraged and promotes speedy healing.

It is **not** uncommon to experience localized tenderness, lumpiness, bruising and discoloration of the treated area. Generally this is a result of blood that becomes trapped within the vein during the healing process. Please notify our office, as it may be necessary to drain the trapped blood from the vein in order to alleviate these symptoms and decrease recovery time. Discoloration may be a side effect of the procedure, lasting 12-18 months.

If you are having extreme discomfort or bleeding notify the office immediately (daytime 403-328-1122). If you are unable to reach the office, the nearest emergency department may be considered. The Lethbridge emergency department has access to the advice of on-call Radiology services whom are familiar with the procedure. Please notify our facility in the event of an unexpected admission to hospital within 10 days of your foam echosclerotherapy procedure.

Again, feel free to call the office (403-328-1122) if you have any questions.

Patient Education Materials

TREATMENT OF LEG VEINS

If you suffer from problems related to varicose and spider veins, you are not alone. More than 50 million Americans suffer from some form of venous disorder. While some seek treatment for cosmetic improvements, others are looking for symptomatic relief. Whichever category you may be in, there is help available.

What are varicose and spider veins?

Varicose veins are swollen and/or stretched veins, which protrude in a rope-like manner from the skin. Normal veins, by virtue of one-way valves, channel oxygen-poor blood back to the heart and lungs to become oxygen-rich. When a valve becomes defective it allows blood flow to leak down and collect resulting in congestion and dilation of the vein.

Spider veins or broken capillaries (properly named telangiectasias) are small red, blue, or purple web-like or linear veins (less than 2 mm in diameter, flat or raised) on the surface of the skin.

In addition to being unsightly and often embarrassing, varicose and spider veins can be symptomatic. Pain in the legs is frequently related to these abnormal leg veins. Symptoms, often made worse by prolonged standing or sitting, include fatigue, heaviness, aching, burning, throbbing, itching, cramping and restlessness of the leg. In advanced cases, varicose veins can lead to skin rash, pigmentation changes, inflammation, ulceration and bleeding.

Why me?

Heredity is the number one contributing factor causing varicose and spider veins. Women are more likely to suffer from these abnormal leg veins. Up to 50% of American women may be affected. Hormonal factors include puberty, pregnancy, menopause, and the use of birth control pills; estrogen and progesterone affect the disease. Other factors that can accelerate and aggravate the appearance of veins, beyond gravity and age, include pregnancy, leg injury, obesity, lack of exercise, weight fluctuation, constriction and long periods of sitting or standing.

When and how are veins treated?

The most commonly asked questions are: Do veins require treatment and what treatment would be best?

After obtaining a history and performing a physical exam, the patient undergoes a noninvasive Doppler ultrasound and color ultrasound imaging to determine areas of venous disease (dilated veins, faulty valves, and area of clot). Based on the above information, an individual treatment plan is formulated and discussed with the patient. Veins that are cosmetically unappealing or cause pain or other symptoms are prime for treatment.

There are many treatment options; they can be classified into two forms:

***Supportive** measures, which include the 5 Es – exercise, elevation, emollient (moisturizing lotion), elastic support, and evaluate.

***Corrective** methods include minimally invasive procedures – sclerotherapy, laser, ambulatory phlebectomy, and an invasive procedure – ligation and stripping.

Sclerotherapy

Sclerotherapy (injections) can be used to treat both varicose and spider veins.

The procedure is simple. A tiny needle injects the veins with a medication that irritates the lining of the vein. Over a short time, in response to the irritation, the vein closes and is reabsorbed. The blood from the closed vein is routed to properly working veins, restoring correction circulation. Sclerotherapy relieves symptoms due to varicose and spider veins in most patients. With this procedure, veins can be dealt with at any early stage, helping to prevent further complication and unsightliness.

You may need one to several sclerotherapy sessions for any vein region, and the number of injections varies per session. Generally, normal activities can be resumed after sclerotherapy, medically prescribed support hose and/or bandages may need to be worn for one to several weeks to assist in resolution of the veins. The procedure, performed at the Vein Institute of New Jersey, usually causes only minimal discomfort. Bruising and pigmentation may occur after sclerotherapy. If bruising occurs it usually disappears within 1-2 weeks. Although pigmentation almost always fades, it can last for several months. Scarring and other complications are rare.

Laser Treatment

Laser treatment is used primarily in the treatment of the smallest spider veins or broken capillaries on your legs or face.

Lasers emit a specific wavelength of high-energy pulsed light, delivered in variable durations. After the energy passes through the skin, the light is absorbed by the red blood cells in the spider vein. The energy is then converted to heat, thereby injuring the vein wall. Within a few weeks the spider vein seals and disappears from sight.

On the legs, spider veins are usually treated by sclerotherapy and lasers are complementary.

Ambulatory Surgery

Surgical techniques to treat veins include **ligation** (tying off the vein), **stripping** (removal of a long segment of vein by pulling it out with a special instrument), **ambulatory phlebectomy** (removal of veins through tiny incisions), and **VenaCure procedure** (sealing the great saphenous vein by laser). Surgery may be performed using local, spinal or general anesthesia. Patients return home the same day as the procedure.

Ligation and Stripping

Ligation and stripping surgery generally takes less than one hour. Patients return home approximately two hours later, and to normal activities within one to two days.

Usually, this procedure requires only two small hidden incisions – one in the pubic area and the other in the inside of the leg by the knee or, rarely, at the ankle. During surgery, damaged branches of the main vein can also be removed by a technique called **ambulatory phlebectomy**.

Ambulatory Phlebectomy

Ambulatory phlebectomy is a minimally invasive surgical technique performed under local anesthesia. Punctures are tiny (sutures are generally not necessary) and typically leave nearly imperceptible scars. Ambulatory phlebectomy is the preferred surgical treatment for varicose veins.

VenaCure Laser Venous System

VenaCure is a minimally invasive outpatient procedure that is an alternative to surgical stripping of the great saphenous vein. A small catheter is inserted through a needle puncture in the skin into the damaged vein. The laser fiber is then inserted into the vein, and goes up to the groin area. The doctor then numbs the vein, and turns on the laser. It's targeted energy heads and seals the vein shut. This procedure is performed using a local anesthetic in usually one hour. The patient is immediately ambulatory and ready to resume normal activities.

VenaCure Laser Venous System

The VenaCure Laser Venous System treatment method is an innovative, minimally invasive procedure to treat superficial vein reflux of the great saphenous vein. This procedure provides the patient an alternative to radial surgical vein stripping or ligation.

It is estimated that 25% of women and 15% of men worldwide have varicose veins. In the United States, more than half of adults over the age of 65 suffer from painful and unsightly venous disease. It is estimated that varicose veins and spider veins affect over 80 million people in the U.S.

Due to impaired return of venous blood from the leg, the patient experiences a range of painful symptoms:

- Leg fatigue
- Swollen & painful limbs
- Ulcerations on the lower leg
- Visible varicosities
- Edema

Superficial vein reflux is a result of the failure of the venous valves in the leg veins and over-dilation of the vein diameter. Normal venous valves prevent the blood in the vein from flowing backward and pooling when standing, sitting or walking. Failure of the valve will cause over-dilation of the vein. Surgical removal of the diseased veins is the current treatment choice for most patients with great saphenous vein incompetence. Surgical ligation and stripping has a high success rate but with many documented disadvantages.

Vein Ligation & Stripping Disadvantages

This is a surgical procedure performed in the operating room under general anesthesia and may require overnight hospitalization with up to 2 weeks inactive recovery time.

Patients have operative incisions that can lead to visible scarring and significant bruising.

Post-operative infection risk, pain, and tenderness.

High cost for procedure time and hospital recourses.

VenaCure Treatment Method Patient Advantages

- Immediate return to normal activity.
- 45-minute out-patient procedure.
- Quick recovery.
- No scarring.
- Minimal post-operative pain.
- Effective immediate visual result.

The VenaCure alternative uses a low-power laser to provide an efficient source of heat energy to coagulate and shrink the vein wall, creating a permanent occlusion with reduced trauma to the adjacent tissue.

The VenaCure treatment method can be performed in a stand-alone surgery center or an office-based facility with an experienced physician performing the 45-minute procedure using a local anesthesia. The VenaCure procedure eliminates pain, swelling and leg fatigue as fast as one week after treatment with no resulting discomfort or hematoma. Patients return to their normal lifestyle and activities immediately. All venous procedures, including the VenaCure treatment method, could result in numbness or tingling (paresthesia), skin burns, blood clots, and temporary tenderness in the treated limb. Patients should consult their physicians to determine if their individual condition presents any special risks.

95% of all patients reported they would recommend the VenaCure treatment method to a friend.

Patients with a pacemaker or internal defibrillator, patients with thrombus in the vein segment to be treated, and patients with peripheral artery disease are not recommended to have the VenaCure treatment method. Consult your physician if you have questions regarding this.

Potential Risks and Side Effects

All surgical interventions carry on inherent risk of infection, allergic reaction, bleeding and anesthetic complications including cardiopulmonary complications. Below are possible risks and side effects that are specific to Endovenous Laser Ablation (EVLT). These may be temporary or permanent.

Allergic reaction: Very rarely, a patient may have an allergic reaction to the anesthetic agent. The risk of this is greater in patients who have a history of allergies.

Pain: Patients may experience moderate to severe pain following the procedure. The leg may be tender to the touch after treatment, and an uncomfortable sensation may run along the vein route. This discomfort is usually temporary.

Swelling: Usually occurs after treating veins in the leg. It usually resolves in a few days but may last a few weeks, especially after treatment of large varicose veins. Wearing the prescribed compression hose lessens leg swelling.

Skin Burns: Utilizing laser therapy carries a risk of skin burns, which usually requires further surgical treatment.

Damage to the eyes: Laser therapy carries a risk of damage to the unprotected eye. You will be provided with safety goggles to protect your eyes.

Deep vein thrombosis (DVT): is a very rare complication; the dangers of phlebitis include the possibility of pulmonary embolus (a blood clot carried to the lungs) and post-phlebitic syndrome, resulting in a permanent swelling of the leg. The risk of developing a DVT following EVLT is 1 – 4 %.

Transient hyperpigmentation: Patients who have had Endo Venous Laser Therapy may notice some discoloration after treatment. This discoloration is almost always transient and will resolve in about three months. In rare cases this darkening of the skin may persist up to a year or longer.

Nodularity: Nodularity at the site of vein removal may persist for up to a year. This occurs when there are pieces of the vein that remain in the body and have scarred down and become hard. With time, the body will absorb and soften these areas but some may persist.

Skin ulceration: Post injection therapy at the site of injection, a skin ulcer may develop. This is a rare complication. In the event of a skin ulcer it may take months for the area to heal.

Nerve Trauma: Occasionally there can be trauma to surrounding nerves, which can result in a transient numbness that will resolve on its own with time. In rare instances the localized numbness may be permanent.

Reoccurrences of new veins: When a patient has varicose veins it is usually an ongoing problem. Several years after the vein has been treated the body will attempt to repair itself by taking veins that were insignificant and make them significant. We recommended a yearly follow-up with ultrasound so that we can detect any new problems and treat them accordingly as they arise.

Spider Veins: Occasionally occur along the path of the area treated with laser.

Amputation: In rare circumstances loss of the treated limb may be a consequence of complications arising from treatment.

Stroke: In rare situations a transient or permanent stroke may result from treatment. Pre-existent migraine headaches and heart abnormalities may increase this risk.

In addition to the risks listed above, there are other risks that may accompany any surgical procedure, such as loss of blood, infection, and inflammation in the venous system with formation of a thrombus (clot), postoperative bleeding, and nerve trauma that may lead to temporary or permanent numbness.

Alternative Treatments: Varicose veins and spider veins are not life-threatening conditions. Some patients get adequate relief of symptoms from wearing graduated support stockings.

Both endovenous laser and surgical stripping may be used to treat large varicose veins. Surgical stripping may require a hospital stay and usually is performed while the patient is under general anesthesia. Risks of vein stripping are similar with the additional risk of general anesthetic.

The other option is to receive no treatment at all.

