



Grace Medical Skin and Vein Centre

16 Princess Street, Bundaberg East
 Phone: (07) 4152 8667 Fax: (07) 4153 5424
 Email: office@gracemedical.net.au
 www.gracemedical.net.au

Vein Information

Functions of normal veins:

The body's circulatory system consists of arteries and veins that transport blood in a singular direction. The arteries transport blood throughout the body from the heart and the veins return this blood back to the heart. The contraction of leg muscles acts like a one-way valve pumping blood up the veins against the force of gravity preventing blood from flowing back to the feet.

There are two types of veins; deep and superficial. Deep veins are located well below the skin, often within the muscles, and are crucial for maintaining a healthy blood circulation. Superficial veins are located near the surface of the skin and drain into the connected deep veins through junctions and multiple small connections called 'perforating veins'. Valves inside the perforating veins and junctions prevent the flow of blood back into the superficial veins. Blood naturally flows from the superficial veins into the perforating veins and junctions that connect to the deep veins and then back to the heart. Healthy veins have the ability to retain their integrity without retaining blood.

Saphenous veins are the main superficial veins in the legs. Saphenous veins collect blood from other surface veins and drain it into the deep veins. The longest vein, known as the Great Saphenous Vein, is located in the inner aspect of the leg and travels from the ankle to the groin. The small Saphenous Vein is located at the back of the calf muscle and travels from the outer ankle to the back of the knee. The Great Saphenous Vein is the most commonly 'stripped' in varicose vein procedures.

Abnormal Veins:

Abnormal veins have weak walls where the veins collect and contain more blood than normal veins which causing distension. Because of this distension, the valves no longer function properly resulting in leakage, reflux or backflow of blood in the affected vein generating visibly distorted veins. There are three types of abnormal veins frequently seen in combination;

1. Spider Veins (telangiectasias) are fine red/purple capillary veins which are weblike and flat that appear on the surface of the skin.
2. Reticular Veins are large blue veins that are present slightly deeper than the skin's surface.
3. Varicose Veins that are the largest of the abnormal veins and appear to bulge above the skin's surface.

Backflow from larger veins into smaller capillary veins causes distension and the formation of 'spider veins'. Treatment of spider veins in the presence of an underlying varicose vein is not considered appropriate as it does not address the underlying problem. Backflow also leads to congestion of blood in

the leg veins, which can cause symptoms such as pain, fatigue, heaviness, aching, burning, throbbing, cramping and restless legs.

A definitive cause is not known; however a strong family history is a common indication suggesting that some patients inherit veins that are more likely to deteriorate. Women are more likely to suffer from varicose veins at an earlier stage than men with up to 30% of men and women being affected. In women, varicose veins may worsen with fluctuations of hormones, such as during puberty, pregnancy and menopause, and with the use of birth control medications. It is common for pregnant women to develop varicose veins during pregnancy during the first trimester. Pregnancy results in elevated hormone levels and blood volume, which in turn causes the veins to enlarge. In addition, the enlarging uterus causes increased pressure on the leg veins. Varicose veins occurring during pregnancy will often improve significantly within three months after delivery. However, with successive pregnancies abnormal veins are likely to get worse.

Symptoms:

Symptoms of abnormal veins not only include visually bulging veins, they can present as the following;

- Aching, throbbing or burning leg pain
- Heaviness, cramping or restless legs
- Swollen and darkening of the skin around the ankles
- Swelling of the legs
- Skin discolouration
- Ulcers
- Rashes, including an itchy rash known as varicose eczema

Predisposing factors include ageing, standing occupations, lack of mobility, previous venous thrombosis and leg injuries. Some people may not notice symptoms, although presenting symptoms are often made worse by prolonged periods of standing or sitting, pregnancy and menopause, obesity, and a lack of exercise that encourages blood circulation. The presence of a skin rash, small blue veins on the ankles and feet, skin discolouration and ulcers usually indicate advancing vein problems. Severe vein abnormalities can compromise the nutrition of the skin and lead to eczema, inflammation and ulcers of the lower legs.

Diagnosis (Vein Scan/Vein Mapping):

A non-invasive duplex ultrasound is required to determine the severity of abnormal veins, venous incompetence, varicose veins or DVT by scanning the whole venous system, both deep and superficial, of the legs. It is important to know the function of the veins before treatment is commenced, the scan will evaluate the venous valves, reflux of venous blood, perforators and diameters of varicose veins. The results of the examination will be discussed with the doctor where your questions can be answered thoroughly, treatment options advised along with associated costs related to the condition.

Benefits of treatment:

Early treatment of abnormal veins may reverse the symptoms of venous congestion and minimise the risk of varicose vein related complications and further progression of the condition. Treatment becomes more urgent if there are co-existing complications such as bleeding, inflammation (Phlebitis), clots (Thrombosis), dermatitis or ulcers. In general, it is much easier to treat abnormal veins when they are smaller, as early treatment tends to be less complicated and less involved. It is recommended that varicose veins are treated before pregnancy as complication such as clotting and bleeding can develop during pregnancy. Varicose veins that have worsened during pregnancy may not fully recover after and may require more involved and complicated treatment than would have been required previous to pregnancy. Spider veins should be treated only after varicose veins have been successfully treated.

The good thing about having abnormal veins is the ability to treat them with various forms of treatment options. There is a 80-90% success rate for treatment depending on factors that include age, health, severity of abnormal veins, healing rate, other medical conditions, and how well you adhere to the post-treatment recommendations. Vein abnormalities treated by Endovenous Radiofrequency Ablation (RFA) and sclerotherapy are less likely to return, although they sometimes look worse initially after treatment as the veins may darken due to trapped blood or bruising, but this will disappear in a number of weeks.

Varicose veins and spider veins are unhealthy superficial veins that do not function properly leading to deeper vein deterioration. Normal veins will have to work harder to compensate the lack of function from abnormal veins, although once the abnormal veins are treated,

Sclerotherapy:

Sclerotherapy is a non-surgical treatment of abnormal veins by injecting the affected veins with a fine needle containing a safe irritant solution (Sclerosant) that irritates the vessel causing them to close and shrivel up. Over a period of four (4) to six (6) weeks, the body will remove the treated vein by gradually absorbing it. This procedure is usually reserved for the treatment of small, blue superficial veins (Reticular), spider veins and sometimes small visible varicose veins. Even though sclerotherapy will get rid of around 80% of existing varicose veins, new veins can form later, doing a Ultrasound Guided Sclerotherapy of the deeper feeding veins of the superficial venous system can reduce the reoccurrence of varicose veins. Some veins may need to be injected more than once and a six (6) monthly or annual follow up review via ultrasound may be needed. The treatment will take 30 minutes and you will be required to wear compression stockings after the procedure and go for a 30 minute walk to stimulate the blood flow in the legs.

Ultrasound Guided (USG) Sclerotherapy:

USG sclerotherapy is a safe and effective modern approach to treat saphenous veins, perforating veins, and varicose veins deep under the skin. The ultrasound technology precisely displays the abnormal hidden veins which allows accurate guidance and placement of a number of sclerosant injections avoiding vital structures. USG Sclerotherapy is not a cure for varicose veins, it does not prevent the development of new varicose veins but will treat the exiting abnormal veins and slow down any new developing varicose and

spider veins. The treatment will take 30 minutes and you will be required to wear compression stockings after the procedure and go for a 30 minute walk to stimulate the blood flow in the legs.

Endovenous Radiofrequency Ablation (RFA):

RFA involves a combination of radiofrequency and ultrasound techniques to treat the main trunks of abnormal Saphenous veins. A fine laser fibre is inserted into the vein, using general or local anaesthetic, heating the inner layer of the vein causing the vein to collapse and seal shut which prevents the accumulation of blood and stopping the blood flow in the abnormal vein. RFA has a high effective rate all over the world and a relatively painless procedure that enables an individual to return to normal daily duties immediately after the procedure with no requirement of bed rest. RFA may take up to two (2) hours depending if a singular legs is treated or both (Bilateral), you will be required to wear compression stockings after treatment and go for a 30 minute walk. A follow up ultrasound is required one week post-treatment and the requirement of wearing compression stockings a 30 minute walk daily.

Ambulatory Phlebectomy:

Ambulatory Phlebectomy is the surgical removal of superficial varicose veins. This is usually done in the practice using local anaesthesia. a small needle or scalpel is used to make a small incision to remove the veins, this procedure are does not usually require stitches and only leaves minimal scarring.

Deep Vein Thrombosis (DVT):

DVT is a blood clot that forms in the deep venous system most often in the calf, thigh or pelvis. DVT can be a serious life threatening situation where the blood clot can dislodge, travelling through the blood stream. If the clot reaches the lungs, it is known as a pulmonary embolism; a critical and life threatening condition. Symptoms of DVT may include a swollen calf that can not be relieved, shortness of breath, coughing (with or without blood sputum) and chest pain. If you develop any of these symptoms in relation to pre-treatment and post-treatment of vein abnormalities, please present to your nearest emergency department or phone triple zero (000).

Compression Stockings:

Compression stockings are designed to aid in preventing the development of Deep Vein Thrombosis (DVT), alleviate symptoms of abnormal veins both before and after treatment, help in the healing of ulcers, treat superficial thrombophlebitis (when blood clots form in the vein causing painful inflammation), support varicose veins during pregnancy, and supports the success of Sclerotherapy. Compressing stockings apply external pressure with the greatest support beginning at the ankle and decreasing in compression at the thigh. Please view our pre-treatment and post-treatment instructions for further information and recommendations.

Possible Complications and Procedural Risks:

There are some common risks and side effects with RFA and Sclerotherapy, these can include, but not limited too;

- Bruising: there can be bruising around the injection sites which occurs due to leaking of the blood from the veins, this will usually resolve in a few weeks.
- Blood trapping: Blood trapping is where the collapsed veins may have blood trapped in them which is normally drained at the review appointment. Blood trapping is common in vein treatments although you may experience some tender lumps, they may only persist for a few weeks, but it is a sure sign the treatment has worked.
- Mild pain and swelling: Aching in the legs more commonly occurs when larger veins have been treated, although walking for 30 minutes each day as directed will help relieve the aches. Any swelling of the lower limbs and ankles is also common and can be alleviated with using compression stockings, walking and elevation of the leg/s. Avoid bed rest.
- Matting: Some patients develop a small network of fine capillaries after treatment. Matting may resolve itself within a few months or may require further treatment, this can also be resolved by wearing compression stockings.
- Numbness: numbness is rare and temporary, usually located in the back of the calf muscle due to irritation to the nerves close to the proximity of the treated veins.
- Pigmentation: Some brown pigmentation can occur in the area of the treatment as a result from iron released from the veins. In most instances, this will clear naturally over time, however, some patients may continue to have pigmentation after 12 months. This can be reduced by wearing compression stockings and drainage of any trapped blood in the treated veins.
- Allergic reaction/Anaphylaxis: Rashes on the body can occur as an allergic reaction to the sclerosant which will disappear in a day without any further treatment. Very rarely anaphylaxis can occur due to severe reaction to the sclerosant.
- Thrombophelbitis: Pain, redness and swelling due to inflammation of the treated veins. This can be reduced by wearing compression stockings, regular walking and in rare instances by a mild anti-inflammatory medication.
- Ulcers: Small ulcers can occur due to spilling of sclerosant into the tissue around the injected veins or into the arterioles connecting the veins. Ulcers from RFA can result at the entry site from the heated tip of the FA catheter.
- Device Malfunction: RFA catheter may break off and will need to be retrieved by making a small incision, this rarely happens
- Lymphocele: Is sight swelling generally around the inside of the knee due to impaired lymphatic drainage which is usually seen after RFA and will settle in due time.
- Limb Ischaemia: Very rarely if the sclerosant is accidentally injected into an artery, the limb may become ischaemic and gangrenous.
- Intra-arterial injection: is an extremely rare complication since using USG sclerotherapy that results in significant muscle and skin damage and loss of limb.
- Deep Vein Thrombosis (DVT): DVT is the formation of clots in the deeper veins. Even though the incidence is low, this can happen if Sclerosant spills into the deeper veins or the RFA catheter is advanced into the deeper veins. Symptoms are severe aching and swelling of the legs or thighs which will become worse when walking. Other symptoms include shortness of breath, coughing (with or

without blood sputum) and chest pain. Compression stockings after vein treatment can reduce the risk of developing DVT. Any suspicion of DVT requires you to contact the doctor immediately. To help minimise the risk of developing DVT it is advised to not travel more than four (4) hours after treatment for at least four (4) weeks, although a travel plan can be discussed with the doctor. If you develop any symptoms of DVT, phone the doctor immediately or present to the nearest emergency department, or phone triple zero (000). DVT can lead to Pulmonary Embolism.

- Pulmonary Embolism: Very rarely do blood clots travel to the lungs and block the blood vessels causing pulmonary embolism; a critical and life threatening condition. Symptoms are chest pain, breathlessness and collapse in severe cases. Call the doctor immediately, present to the nearest emergency department or phone triple zero (000).