



# Cigna Medical Coverage Policy

## **Subject Varicose Vein Treatments**

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### **Hyperlink to Related Coverage Policies**

#### **INSTRUCTIONS FOR USE**

The following Coverage Policy applies to health benefit plans administered by Cigna companies. Coverage Policies are intended to provide guidance in interpreting certain **standard** Cigna benefit plans. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document **always supersedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations. Proprietary information of Cigna. Copyright ©2013 Cigna

## **Coverage Policy**

**Coverage for treatment of varicose veins is dependent on benefit plan language and may be subject to the provisions of a cosmetic and/or reconstructive surgery benefit. Under many benefit plans, treatment of varicose veins is not covered when provided solely for the purpose of altering appearance or self-esteem or to treat psychological symptomatology or psychosocial complaints related to one's appearance. In addition, some benefit plans specifically exclude coverage for the invasive treatment of varicose veins. Please refer to the applicable benefit plan document to determine benefit availability and the terms, conditions and limitations of coverage.**

**If coverage is available for the treatment of varicose veins, the following conditions of coverage apply.**

**Invasive varicose vein treatments that may be considered for coverage include the following modalities, as a single or combined treatment, when the specific criteria for the procedure(s) outlined below are met:**

- ambulatory phlebectomy
- ligation and excision
- radiofrequency ablation (RFA)
- endovenous laser therapy (EVLT)
- sclerotherapy (liquid, foam, ultrasound-guided, or endovenous chemical ablation)
- subfascial endoscopic perforator surgery

## **COVERAGE CRITERIA FOR HIGH RISK INDICATIONS**

**Cigna covers ambulatory phlebectomy, ligation and excision, RFA, EVLT, and/or sclerotherapy (i.e., liquid, foam, ultrasound-guided, endovenous chemical ablation) as medically necessary for ANY of the following HIGH RISK varicose vein indications:**

- leg ulceration(s) due to saphenous vein insufficiency refractory to conservative management
- recurrent bleeding from the saphenous vein or other varicosity
- history of a significant episode of bleeding from a varicosity

**COVERAGE CRITERIA FOR LOWER RISK INDICATIONS**

**Cigna covers ligation and excision, RFA, and/or EVLT for the treatment of symptomatic saphenous varicose veins as medically necessary for ANY of the following indications:**

- pain resulting in a clinically significant functional impairment (e.g., inability to perform household chores or prolonged standing, interference with essential job functions)
- recurrent phlebitis or thrombophlebitis
- refractory dependent edema
- persistent stasis dermatitis
- chronic cellulitis

**when ALL of the following criteria are met:**

- a Doppler and/or Duplex ultrasonography evaluation and report, performed no more than 12 months prior to the requested procedure, confirms incompetence/reflux and documents vein size  $\geq 3$  mm
- documentation of **BOTH** of the following:
  - previous invasive treatment(s) of varicose veins (if any)
  - failure or intolerance of medically supervised conservative management, including but not limited to compression stocking therapy for three consecutive months
- a clearly defined treatment plan including the procedure (CPT) codes for the planned interventions and whether the proposed treatment is to the left leg, the right leg, or both legs

**Cigna covers ambulatory phlebectomy or sclerotherapy\* (liquid, foam, ultrasound-guided, or endovenous chemical ablation) as medically necessary treatment of symptomatic saphenous varicose veins or tributaries when BOTH of the following criteria are met:**

- reflux at the saphenofemoral or saphenopopliteal junction (i.e., proximal to the incompetence) is concurrently being/has previously been treated
- ambulatory phlebectomy or sclerotherapy\* is being performed as an adjunctive treatment to one of the above listed modalities either 1) on the same date of service or 2) for recurrent varicosities within 12 months of a previously authorized invasive varicose vein treatment

**\*Note: Coverage for sclerotherapy for these indications is limited to a maximum of three (3) sclerotherapy treatment sessions per leg, without additional clinical documentation, when performed within 12 months of the initial invasive varicose vein procedure.**

**COVERAGE CRITERIA FOR ADDITIONAL SCLEROTHERAPY TREATMENT SESSION WITHIN 12 MONTHS OF INITIAL INVASIVE TREATMENT**

**Requests for additional sclerotherapy treatment, extending beyond the maximum three treatment sessions per leg, may be considered for coverage when BOTH of the following additional criteria have been met:**

- submission of a clearly defined treatment plan including the procedure codes requested as well as the number of treatment /procedures clinically indicated
- documentation of EITHER of the following:
  - significant symptoms and physical examination findings (i.e., vein size greater than 3mm), unresponsive to leg elevation and compression, persist following previously approved invasive treatment
  - post-invasive treatment Doppler or Duplex reports and/or standing photographs confirm persistent veins greater than 3 mm in size

## **REQUESTS FOR ADDITIONAL SCLEROTHERAPY TREATMENT SESSION BEYOND 12 MONTHS OF INITIAL INVASIVE TREATMENT**

Requests for treatment sessions extending beyond one year from the initial invasive treatment session will be similarly subject to a new medical necessity review, including submission of the required materials to support medical necessity of the requested new treatments, which may include other invasive treatments.

### **COVERAGE CRITERIA FOR SEPS**

Cigna covers subfascial endoscopic perforator surgery (SEPS) as medically necessary when **ALL** of the following medical necessity criteria are met:

- a Doppler and/or Duplex ultrasonography evaluation and report, performed no more than 12 months prior to the requested procedure, confirms reflux of the incompetent perforator vein and location on the medial aspect of the calf being treated
- failure or intolerance of medically supervised conservative management, including but not limited to compression stocking therapy, for at least three consecutive months
- documentation of at least **ONE** of the following conditions:
  - venous stasis dermatitis/ulceration
  - chronic venous insufficiency

### **NOT COVERED**

Cigna does not cover **ANY** of the following varicose vein treatments because each is considered cosmetic in nature and not medically necessary:

- treatment of telangiectasis or varicose veins that are less than 3 mm in diameter by any method
- sclerotherapy with glycerin/glycerol
- intense pulsed-light source (photothermal sclerosis) treatment of a varicose vein

Cigna does not cover **ANY** of the following varicose vein treatments, because each is considered experimental, investigational or unproven (this list may not be all-inclusive):

- non-compressive sclerotherapy
- transdermal laser therapy
- transilluminated powered phlebectomy (TIPP, TriVex™)
- SEPS for the treatment of venous insufficiency as a result of post-thrombotic syndrome
- sclerotherapy (i.e., liquid, foam, ultra-sound guided, endovenous chemical ablation) when performed for **ANY** of the following indications:
  - sole treatment of accessory, reticular or varicose tributaries without associated occlusion of the saphenofemoral or saphenopopliteal junction
  - incompetence that is isolated to the perforator veins
  - of the Greater Saphenous Vein (GSV), with or without associated ligation of the saphenofemoral junction
  - as a sole (i.e., stand alone) treatment for reflux occurring at the saphenofemoral or saphenopopliteal junction
- endomechanical ablative approach (e.g., ClariVein™ Catheter)
- cryostripping, (including cryoablation, cryofreezing) of any vein

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## **General Background**

Varicose veins result from weakening or incompetence of a one-way valve, leading to a retrograde flow or reflux of blood in the vessel. The varicosity may vary in size from 3–10 mm on average. Symptoms that have been reported as associated with varicose veins of the lower extremities include pain, cramping, aching, burning, throbbing, swelling and the feeling of heaviness or fatigue in the leg. Typically, symptoms are exacerbated by standing and warm weather (Hamper, et al., 2007). Saphenous varicose veins can ultimately result in intractable ulcerations and recurrent bleeding. Patients with larger varicosities (e.g., varicose veins greater than 3 mm in

diameter) are more prone to thrombophlebitis and other complications than those with smaller varicosities. Chronic cellulitis may also be associated with varicosities.

The venous system of the lower extremities is separated into two main systems: the deep venous and the superficial venous system. The two systems are connected by perforator veins. The deep venous system comprises the popliteal and femoral veins; the superficial venous system comprises the greater saphenous and short saphenous veins (formerly called the lesser saphenous vein). The GSV generally measures 3–4 mm in diameter in the upper thigh; the GSV meets the femoral vein at the saphenofemoral junction (SFJ). Approximately 60% of patients who have varicosities have reflux in the GSV (Hamper, et al., 2007). The short saphenous vein is not usually larger than 3 mm in diameter, and connects with the deep veins at the saphenopopliteal junction (SPJ) in the knee area. Incompetence of the superficial venous system typically results from failure of valves at the SFJ and the SPJ with resulting pressure that is worse at the more distal area of the vein. Incompetence of the perforating veins also leads to increased pressure in the superficial venous system due to the pump mechanism of the calf. Varicose tributaries are veins that empty into a larger vein.

Telangiectases are permanently dilated blood vessels, also called spider veins that create fine red or blue lines on the skin. They are similar to varicose veins, but are limited to the dermis and are not usually more than 3 mm in diameter. They are not typically associated with symptoms, and treatment is generally considered cosmetic in nature and not medically necessary.

Varicose veins may develop during pregnancy, although surgery or sclerotherapy is not typically performed, as the treatment is not medically necessary. Most varicosities will spontaneously resolve within 4–6 months after delivery.

Varicose veins of the upper extremity are rare; still there are a few reports in the published, peer-reviewed medical literature dealing with the management of upper extremity varicosities (Welch and Villavicencio, 1994; Duffy, et al., 1999; Lee, 2002; Bowes and Goldman, 2002). However, authors have reported successful outcomes utilizing methods of treatment similar to lower extremity varicosities (e.g., sclerotherapy, ligation and stripping, phlebectomy).

Various ultrasound technologies are used in conjunction with other noninvasive testing to determine the physiological characteristics of the varicosities, as physical exam alone may not be reliable. Duplex ultrasound, Doppler ultrasound and plethysmography may all be used to diagnose varicose veins. In most cases, once the initial vein mapping is performed, it is not essential that follow-up scanning be done for subsequent sclerotherapy sessions. It has not been demonstrated in the published medical literature that repeat Duplex or Doppler studies are essential for the successful outcome of the procedure when performed as part of a series of sclerotherapy sessions. Also, routine use of any of these tools in the absence of venous symptoms or clinical evidence of venous insufficiency or reflux is not considered a medical necessity. Photographs or diagrams are helpful in assessing the size and extent of the varicosities.

The CEAP classification is a method commonly used to document the severity of chronic venous disease and is based on clinical presentation (C), etiology (E), anatomy (A), and pathophysiology (P) (See Table 1). Each classification can be further defined as follows (Eklof, et al., 2004; Glovicki, et al., 2011) (See Table 1):

**Table 1: CEAP Classification**

Class	Definition
<b>C - Clinical Classification</b>	<b>C0:</b> No visible or palpable signs of venous disease <b>C1:</b> Telangiectases or reticular veins <b>C2:</b> Varicose veins <b>C3:</b> Edema <b>C4a:</b> Pigmentation and/or eczema <b>C4b:</b> Lipodermatosclerosis and/or atrophie blanche <b>C5:</b> Healed venous ulcer <b>C6:</b> Active venous ulcer <b>CS:</b> Symptoms, including ache, pain, tightness, skin irritation, heaviness, muscle cramps, as well as other complaints

	attributable to venous dysfunction <b>CA:</b> Asymptomatic
<b>E - Etiology</b>	<b>Ec</b> Congenital <b>Ep</b> Primary <b>Es</b> Secondary (postthrombotic) <b>En</b> No venous etiology identified
<b>A - Anatomy</b>	<b>As</b> Superficial veins <b>Ap</b> Perforator veins <b>Ad</b> Deep veins <b>An</b> No venous location identified
<b>P - Pathophysiology</b>	<b>Pr</b> Reflux <b>Po</b> Obstruction <b>Pr.o</b> Reflux and obstruction <b>Pn</b> No venous pathophysiology identifiable

Classification of disease starts with an initial assessment and may not be entirely completed until after surgery and histopathologic assessment. As a result, it is recommended that CEAP classification value be followed by the date of examination. Venous disease can be reclassified at any given time. It is also recommended that the level of investigation be included, with Level I representing the office visit, Level II representing noninvasive venous laboratory testing and Level III representing invasive assessment and more complex imaging studies.

Various methods of treatment have been investigated and proven effective for the treatment of varicose veins. In a randomized clinical trial comparing endovenous laser ablation, radiofrequency ablation, foam sclerotherapy and surgical stripping, all treatments were found efficacious (Rasmussen, et al., 2011). Foam sclerotherapy was noted to have the highest technical failure rate but was also associated with a more rapid recovery and less postoperative pain.

Conservative medical practices that may be used in the management of varicose veins include leg elevation, analgesia for symptom relief and avoidance of prolonged periods of standing. Compression therapy, the use of custom-fit compression stockings with pressure gradients, a mainstay of initial/conservative management, is routinely attempted prior to stripping, ligation, sclerotherapy or other, more invasive procedures. The amount of compression required for treatment of stasis dermatitis or ulceration is between 35 and 40 mm Hg, for varicose veins, for mild edema and leg fatigue the recommended pressure is 20 to 30 mm Hg (Habif, 2009). When conservative measures fail, treatment options rely on identifying and correcting the site of reflux and on redirecting the flow of blood through veins with properly functioning valves. No single method of treatment is universally employed in the literature; the intervention selected is generally dependent upon the competency of deep and perforating veins, and the site and degree of reflux. Surgery is commonly used to treat mainstem varicose veins. Many patients require a combination of techniques to correct symptoms associated with venous insufficiency, most of which can be performed in a single treatment session. Endovenous thermal ablation procedures include radiofrequency ablation (RFA) and endovenous laser therapy (EVLT). While staging of procedures is generally not required, repeat sclerotherapy sessions may be required for an unsuccessful vein occlusion. Typically, a treatment plan includes thermal ablation of the incompetent vein segment for greater saphenous vein reflux and associated larger varicosities. Once this segment is treated, if there are associated varicosities greater than 4mm in diameter phlebectomy is often performed during the same session, and for smaller veins, sclerotherapy is employed as the treatment of choice (Kouri, 2009).

Complications associated with varicose vein treatment vary and are dependent on the type of treatment employed. Complications that may result from sclerotherapy and phlebectomy include but are not limited to hyperpigmentation, allergic skin reactions, migraine-like symptoms (particularly from foam sclerosants), pain at the injection site, superficial and deep thromboembolic events and subcutaneous hematomas. Most complications are transient and resolve with conservative measures. Subcutaneous hematoma formation is easily managed with warm compresses and nonsteroidal anti-inflammatory medications. Thromboembolic events although rare can be life-threatening and may require anticoagulation (Lew, Weaver, 2010; Alaiti, 2010). Complications associated with thermal ablation techniques are usually minor and self-limiting; serious events are rare.

## Invasive Approaches

**Sclerotherapy:** Sclerotherapy is an invasive procedure used to eradicate small to medium sized varicose veins of the superficial venous system (greater and small saphenous veins). When reflux is present at the junction, sclerotherapy should be performed in addition to surgical ligation and division of the junction, promoting control of the point of reflux. Injection of the vein at its junction and of the incompetent perforating veins has been proposed as an alternative to ligation; however, the scientific literature does not support the efficacy of this procedure. Sclerotherapy has not been shown to be effective as a sole treatment of larger incompetent veins and is often used with other approaches to treat significant varicosities. According to the American Academy of Cosmetic Surgery (AAC) guidelines for sclerotherapy (2003) effectiveness approaches 90-95% when sclerotherapy is used for the treatment of small diameter vessels, for vessels larger than 4mm in diameter treatment failures average 25%, with recurrences noted in 10% of large diameter vessels. A recent systematic review (Leopardi, et al., 2010) also supports sclerotherapy is indicated for patients with minor, superficial veins not related to reflux in the saphenous system. Corabian et al. (2004) noted the role of sclerotherapy in the management of GSV and perforator incompetence has not been clearly defined, although sclerotherapy may be indicated for treatment of large saphenous veins without reflux (Corabian, et al., 2004).

During sclerotherapy, the abnormal vein is injected with a sclerosing agent that irritates the lining of the vein, causing it to thrombose and stenose, ultimately leading to resorption into the surrounding tissue.

Echosclerotherapy using liquid or foam sclerosant, also referred to as ultrasound-guided sclerotherapy and endovenous chemical ablation (ECA), employs real-time ultrasound during the sclerotherapy procedure to help locate deep or inaccessible sites. Echosclerotherapy is indicated for treatment of veins below the surface, such as deep veins and other varices that are difficult to visualize (Corabian, et al., 2004). According to the ACP, (2008) the use of image guided techniques such as ultrasound is essential for the safe and effective performance of endovenous chemical ablation and reflects the current standard of care.

Foam sclerotherapy, which involves the use of a sclerosing solution that has been forcibly mixed with air or gas (e.g., carbon dioxide) to create a foam agent, is often used in large-diameter vessels and with the use of ultrasound. Ultrasound is used to monitor the foam distribution. Foam sclerosant forces blood out of the vein and allows for less dilution of the sclerosant and more contact with the endothelium (Lew, Weaver, 2010). Overall, authors generally agree foam sclerotherapy is a safe and effective method of treating varicose veins (Rabe, et al., 2004; Wright, et al., 2006; Kendler, et al., 2007; Urto, et al., 2007; Subramonia and Lees, 2007; Jia, et al., 2007; Darvall, et al., 2009). In addition, this method is supported by several professional societies and organizations as being safe and at least equally if not more effective than liquid sclerotherapy (American Academy of Cosmetic Surgery [AAC] 2003; National Institute for Clinical Excellence [NICE], 2007; American College of Phlebology, 2008; German Society of Phlebology [Rabe, Pannier, 2010]).

As with sclerotherapy in general, the need for repeat treatment sessions when utilizing any of these methods of treatment has been reported in the literature (Barrett, et al., 2004; Darke, and Baker, 2006). Although echosclerotherapy has been investigated as an alternative to traditional saphenous vein ligation and stripping (Min, Navarro, 2000; Bountouoglou, et al., 2006), there is insufficient evidence in the medical literature to support safety, efficacy and improvement in long-term clinical outcomes when used for this indication. Evidence consists mainly of case series with few comparative trials and mixed reported clinical outcomes.

There is no consensus in the published scientific literature regarding the optimal number of sclerotherapy treatments required to reduce the symptoms associated with varicose veins and the number of treatments needed to resolve symptoms varies among patients. The AAC (2003) reports sclerotherapy is the treatment of choice for varicose veins that are 2-4 mm in diameter and large areas of veins can usually be eradicated using two to three treatment sessions. Vessels 4-6 mm in diameter may be treated by sclerotherapy or ambulatory phlebectomy. Weiss et al. (1992) reported that, in some cases, four or more separate sclerosing treatments may be necessary to completely eradicate groups of varicose veins; such a course of treatment might include 1-4 treatments for a region of the leg or three treatments for a larger vein coursing several regions of the leg.

The primary aims of sclerotherapy are to prevent complications of varicose disease and relieve symptoms; cosmetic improvement in the leg's appearance is an added benefit. Treatment provided solely for cosmetic purposes is not considered a medical necessity. Sclerotherapy is a palliative solution and cannot prevent the formation of new varicosities. New varicosities may form, either because of an underlying illness or condition, or, in some cases, because of a genetic predisposition.

In compressive sclerotherapy, the most commonly performed method of sclerotherapy, compressive dressings are applied after injection of the sclerosing agent, while the limb is elevated and the vein is drained. External compression and internal decompression (e.g., walking) stimulates fibrosis, which contributes to obliteration of the entire vein wall (Labas, et al., 2003). Non-compressive sclerotherapy involves injecting a sclerosant into the non-elevated (blood-filled) vein without applying a compressive dressing. This method of therapy has not been shown to be effective in producing long-term obliteration of the incompetent veins.

Sclerosing agents currently approved by the U.S. Food and Drug Administration (FDA) to treat varicose veins of the lower extremities and most commonly used include sodium tetradecyl sulfate (Sotradecol<sup>®</sup>) and polidocanol (Asclera<sup>®</sup>); polidocanol was approved by the FDA March 2010 for the treatment of small spider veins and reticular veins. According to the manufacturer Asclera has not been studied in varicose veins larger than 3mm. Other agents such as morrhuate sodium (Scleromate<sup>™</sup> morrhuate sodium) although FDA approved are not used as commonly. Glycerin/ glycerol is an osmotic dehydrating agent which is primarily used for the treatment of residual telangiectasias (Duffy, 2010). Nonetheless, there is no evidence-based consensus on the optimal type, dosage or concentration of the sclerosing agent.

**Transdermal Light/Laser Therapy:** Photothermal sclerosis, such as PhotoDerm<sup>®</sup> Vasculite<sup>™</sup>, is also referred to as intense pulsed-light source. Used as an alternative to or to complement sclerotherapy in treating small varicose veins and telangiectases (spider veins), this type of light therapy utilizes small pulses of light energy which travel through the skin, are absorbed by the blood, are then changed to heat and ultimately destroy the vein. Successful treatment requires adequate heating of the veins, and several treatments are usually required for optimal results.

Transcutaneous laser ablation, also known as transdermal laser treatment, is a type of laser therapy similar to light therapy that involves the use of a laser to treat small varicose and spider veins. Small laser pulses are delivered to the vein, causing heat, which will ultimately lead to destruction of the vein. This modality is not generally useful as a primary treatment of spider veins of the lower extremity; instead, it is employed to treat superficial vessels on the face. The treatment may result in superficial skin burns and permanent pigmentation changes.

Laser or light therapy has been indicated for the treatment of telangiectasis and cutaneous vascular lesions (Raulin, et al., 1997; Angermeier, 1999). However, evidence in the published scientific literature indicates that transdermal light/laser therapy has not been shown to be as effective for the lower extremities as for facial telangiectasis and smaller varicosities (Weiss, Dover, 2002). The vessels in the lower extremities are located deeper and have thicker surrounding tissue. Deeper vessels require a longer wavelength and longer pulse duration to damage the vessel effectively. Additionally, because spider veins and varicosities smaller than 3 mm do not usually cause symptoms, they are considered cosmetic; hence, treatment for them is not medically necessary.

**Ligation, Division and/or Excision:** The traditional surgical treatment of saphenous-vein varicosities consists of surgical ligation and stripping. When the GSV and SSV have reflux or incompetence, junction ligation with or without vein stripping is often recommended; in most cases, ligation is followed by GSV stripping. During the procedure, the saphenous vein and other smaller veins are exposed through an incision in the groin, where the veins are then ligated (i.e., tied off) with sutures. A second incision is made just below the knee or at the ankle to allow access for stripping the vein. When both ends of the vein are free, a wire-like instrument is threaded through the vein, extending up to the second incision in the groin area. The vein is then pulled (i.e., stripped) and removed from the leg. Removal of the superficial symptomatic vein restores venous circulation and provides relief of symptoms. Operative excision of the vein is most often reserved for large varicosities and for those located in the medial or anterior thigh.

**Cryostripping:** Cryoablation uses extreme cold to cause injury to the vessel. Cryostripping of the GSV may be considered an alternative approach to traditional ligation and stripping. During this procedure, a cryoprobe is passed through the GSV, the probe freeze attaches to the GSV and stripping is performed by pulling back the probe. Theoretically cryosurgery requires less time, has fewer complications and results in less hospital day. Evidence evaluating cryosurgery techniques are limited in quantity and quality with mixed results. In one randomized clinical trial (n=494) comparing cryostripping with conventional stripping of the GSV (Klem, et al., 2009) the authors reported that cryostripping accounted for higher failures and residual GSV and offered no benefits over conventional stripping. Menyhei et al. (2008) compared conventional stripping and cryostripping

and assessed quality of life outcomes and complications (n=160) in a randomized trial. The authors reported significantly improved quality of life scores for both groups, with no difference between the two groups at six months. There was less bruising in the cryo group but no difference in post-operative pain scores between the two groups. The results of another randomized trial (n=120) indicated that EVLT and cryostripping were similarly effective at two years follow-up (recurrent incompetence 77% and 66%, for EVLT and cryostripping, respectively), however EVLT was superior with regard to duration of operation, postprocedural pain, induration and resumption of normal activity (Disselhoff, et al., 2008). Results of cryotherapy procedures for treatment of varicose veins in the published scientific literature are mixed and do not lend strong support to improved clinical outcomes when compared to more conventional methods of varicose vein treatment. Further studies are needed to demonstrate safety, efficacy and the clinical utility of cryostripping.

**Ambulatory Phlebectomy/Stab Phlebectomy:** Ambulatory phlebectomy is also widely accepted as an alternative to sclerotherapy, performed for the treatment of secondary branch varicose veins. It is also referred to as miniphlebectomy, hook phlebectomy or stab avulsion. In ambulatory phlebectomy, multiple small incisions are made, and the varicose veins are grasped with a small hook or hemostat. They are then clamped, divided and finally extracted. The entire varicosity can be extracted with multiple small incisions. Compression therapy has been shown to reduce bleeding and improve resorption following this method of treatment and is thus widely used for that purpose. Effectiveness is dependent on the type of vein treated; the results of a recent systematic review (Leopardi, et al., (2010) indicated that phlebectomy appears to be a treatment of choice for smaller veins such as the lateral accessory veins, and that for larger veins such as the saphenous veins, phlebectomy may not provide the same level of success as sclerotherapy.

**Transilluminated Powered Phlebectomy (TIPP):** TIPP, which is similar to ambulatory phlebectomy, is another minimally invasive alternative to standard surgery for the treatment of symptomatic varicosities. Also known as the TriVex™ (Smith & Nephew Inc., Andover, MA) procedure, TIPP involves endoscopic resection and ablation of the superficial varicosity.

Subcutaneous transillumination and tumescent anesthesia help visualize and locate the varicosity, while subcutaneous vein ablation is performed using a powered resector to obliterate the vein. Tumescent anesthesia involves the infusion of large amounts of saline and lidocaine to reduce hemorrhage and of epinephrine to delay absorption of the lidocaine. During this procedure, the veins are marked with a marker, and a bright light is introduced into the leg through a small incision (2–3 cm) to enhance visualization of the veins. The power vein resector is then inserted to cut and remove the vein through suction.

Proponents of this method suggest that the illuminating light allows quicker and more accurate removal of the vein, leading to a more effective yet less traumatic procedure. TIPP is intended for patients who are suitable candidates for conventional ambulatory phlebectomy, and may also be used as an adjunctive method to other varicose vein treatments (e.g., ligation and stripping).

The individual components of the TriVex system were approved for use by the FDA in 1999, however since that time, several other illumination and powered-resection devices have been approved and are available for use.

Evidence evaluating TIPP for the treatment of varicose veins is primarily in the form of published reviews, few comparative trials (few involving randomized groups) and both retrospective and prospective case series involving small populations and evaluating short-term outcomes (Kim, et al., 2012; Franz and Knapp, 2008; Passman, et al., 2007; Scavée, 2006; Chetter, et al., 2006; Aremu, et al., 2004; Shamiyeh, et al., 2003; Scavée, et al., 2003; Chesire, et al., 2002; Spitz, et al., 2000). Two controlled studies specifically compared TIPP to phlebectomy (Aremu, et al., 2004; Scavée, et al., 2003), although neither of these studies were blinded. In addition, the outcomes measured in most studies include operative time, number of incisions, complications, and cosmetic satisfaction with few patient-oriented outcomes being reported. Generally, the results of these studies demonstrate that TIPP is associated with fewer incisions (Luebke, et al., 2008; Chetter, et al., 2006; Aremu, et al., 2004; Shamiyeh, et al., 2003; Scavée, et al., 2003; Spitz, et al., 2000). Operative time varies among authors and with experience. Despite reports in the published literature of a reduced number of incisions, an increase in bruising, postoperative pain and decreased quality of life during the early postoperative period has been reported. Moreover, it has been reported in the literature that technical complications may be associated with inexperience. The published, peer-reviewed, scientific literature does not lead to strong conclusions that TIPP results in clinical outcomes (e.g., improved pain, less varicose vein recurrence) that are

as good as treatment with standard conventional methods (i.e., hook phlebectomy). Furthermore, long-term safety and efficacy of the procedure has not been adequately demonstrated.

ECRI Institute published an emerging technology report (2008) evaluating TIPP for treatment of varicose veins. According to the report, the available data are promising for demonstrating the safety and efficacy of TIPP relative to hook phlebectomy and stab avulsion to treat varicose veins. However, ECRI also reported that the available evidence is inadequate to draw firm conclusions about its relative short- and long-term effectiveness, or its purported advantages over existing methods in terms of complications, operating time, pain, varicose vein recurrence, and cosmetic outcomes.

In 2004 NICE issued an Interventional Procedure Guidance for TIPP. The advisory committee indicated that, although the evidence suggested that the procedure is effective, the data are too limited to be conclusive and there are no long-term follow-up data (NICE, 2004a).

**Endoluminal Radiofrequency Ablation (RFA):** Radiofrequency ablation, also known as endovascular occlusion, is a treatment for symptomatic varicose veins that involves delivery of controlled radiofrequency (RF) energy through a catheter inserted into the affected vein. The heat generated by the RF energy causes the vein to contract and become occluded. The treatment is intended as a minimally-invasive alternative to standard surgery for symptomatic varicosities located mainly below the saphenofemoral or saphenopopliteal junction. RFA has also been investigated as a treatment of incompetent perforator veins (Singh and Sura, 2008; Uchino, 2007; Roth, et al. 2007; Peden and Lumsden, 2007; Gibson, et al, 2007a), however data supporting safety and efficacy is limited and further clinical studies are needed to support widespread use for this indication.

RFA using the VNUS® Closure System is a three-part procedure that begins with imaging of the greater saphenous vein, followed by the administration of anesthesia between the vein and the skin. Next, the closure catheter is inserted into the vein, and electrodes are implanted in the venous wall. RF energy is released until the venous wall temperature reaches approximately 85 °C. The temperature is maintained for 30 seconds; then the catheter is slowly retracted, causing the entire length of the vein to collapse on it. If the assessment following treatment indicates any areas of steady flow, those areas may be re-treated, as long as the catheter is reinserted immediately (Chandler, et al., 2000; VNUS, 2000). Possible complications include vessel perforation, pulmonary embolism, phlebitis, hematoma, infection, paresthesia and skin burns (Chandler, et al., 2000; Goldman, 2000; VNUS, 2000).

Evidence in the peer-reviewed published scientific literature supports the safety and efficacy of RFA for the treatment of symptomatic varicose veins. Most early studies were small case series with short-term follow-up (Ogawa, et al., 2005; Goldman, 2002; Weiss, 2002; Goldman, 2000), and only two included direct comparisons with standard treatments (Lurie, 2003; Rautio, 2002). RFA has been shown in a prospective nonrandomized trial to be more effective than foam sclerotherapy for closure of the GSV at one year follow-up (Gonzalez-Zeh, et al., 2008). More recently, RFA has been compared to procedures such as EVLT (Almeida, et al., 2009) and has been evaluated with and without ligation of the saphenofemoral junction (Disselhoff, et al, 2008) in randomized controlled trials. Compared to EVLT, at one month following treatment, RFA was significantly superior for measures evaluating post procedure recovery and quality of life parameters. When performed with and without ligation, at two years post procedure, there was no difference in outcomes (recurrence, degree of ablation and venous clinical severity scores) from adding the ligation procedure. The short-term results of several other studies have demonstrated that the procedure effectively occludes incompetent veins following RFA treatment (Proebstle, et al., 2011; Helmy, et al., 2011; Merchant and Pichot, 2006; Hinchliffe et al., 2006; Welch, 2006; Lurie, et al., 2005). Long-term occlusion rates were reported by Merchant and Pichot (2005). This group of authors collected data to evaluate the long-term treatment outcomes of endovascular RFA and to determine risk factors that affect treatment efficacy. In their study, the authors reported on five-year follow-up results of 1006 patients (1222 limbs) treated with radiofrequency obliteration (RFO). Immediate vein occlusion was achieved in 96.8% of limbs confirmed by Duplex ultrasound examination one week or less after the procedure. The vein occlusion rate at six months, one, two, three, four and five years was 89.2%, 87.1%, 88.2%, 83.5%, 84.9% and 87.2%, respectively. The absence of reflux rate was 91.3%, 88.2%, 88.2%, 88.0%, 86.6% and 83.8%, respectively. Over a five-year follow-up period, anatomical failure was identified in 185 limbs, 19 of which received reintervention. RFA also resulted in improved pain and less bruising compared to ligation and stripping in some studies (Hinchliffe, et al., 2006). Early studies, in addition to the more recent studies cited above, do support the safety and efficacy of RFA for the treatment of symptomatic saphenous varicosities, and is considered an appropriate alternative to conventional procedures.

ECRI Institute published an evidence report evaluating endovenous radio-frequency ablation (VNUS) for the treatment of varicose veins (ECRI, 2006). After reviewing the available evidence ECRI concluded that RFA offered a less invasive alternative to surgical stripping and ligation for patients with symptomatic varicose veins. ECRI noted that patients returned to work sooner and suffered less pain and fewer infections. Nonetheless, the benefits of RFA compared to surgery were supported on follow-up periods that were short term and consisted of a few days to one month posttreatment.

In 2003 NICE issued an Interventional Procedure Guidance for RFA and reported that safety and efficacy appeared adequate to support use of the procedure as an alternative to sapheno-femoral ligation and stripping.

**Endovenous Laser Therapy (EVLT):** EVLT, also commonly referred to as endovenous laser ablation of the saphenous vein (ELAS), is a treatment alternative to surgical stripping of the greater saphenous vein. EVLT is also considered an effective treatment for the SSV (Bhayani, Lippitz, 2009) however it is not typically used for smaller veins. EVLT is performed by threading a catheter through the greater saphenous vein and inserting an optical fiber through the catheter. The optical fiber is then connected to a surgical laser, allowing high-intensity laser light to induce photocoagulation of blood and occlusion of the vein. As the catheter is withdrawn, light pulses can be repeated at regular intervals to prevent any further blood flow through the vein. The procedure is typically used to treat larger varicose veins since catheters cannot be easily passed through a tortuous vein or a vein with several turns or bends. Small dilated branches that persist after EVLT may require additional treatments with sclerotherapy or phlebectomy (Radiological Society of North America, 2009).

The FDA has granted several approvals for ablative technologies, including: Diomed 810nm laser (Diomed, Inc.); Dornier diode laser systems (Dornier MedTech, Kennesaw, GA); Biolitec, Inc. (East Longmeadow, MA); Angiodynamics, Inc. and Vascular Solutions Inc. (Minneapolis, MN).

Evidence in the medical literature evaluating EVLT for the treatment of saphenous vein reflux consists of both retrospective and prospective case series, published reviews, and randomized controlled clinical trials (Rass, et al., 2012; Disselhoff, et al., 2011; Huisman, et al., 2009; Nijsten, et al., 2009; Kalteis, et al., 2008; Darwood, et al., 2008; Desmyttere, et al., 2007; Sharif, et al., 2007; Gibson, et al., 2007; Rasmussen, et al., 2007; Ravi, et al., 2006; Puggioni, et al., 2006; Min, et al., 2003; Ho, 2003; Chang and Chua, 2002; Proebstle, et al., 2002; Navarro and Min, 2001). There is a growing body of evidence to suggest that more minimally invasive techniques, which include both RFA and EVLT, are beneficial in the treatment of varicose veins when used alone (van den Bos, et al., 2009; Ravi et al., 2006; Sadick, 2005; Beale, et al., 2004; Teruya and Ballard, 2004; Elias and Frasier, 2004). Sample size and follow-up periods vary widely across studies; follow-up periods typically range at least one to four years on average. In some of the studies, duplex ultrasound demonstrated successful vein occlusion after initial treatment and throughout the various follow-up periods (Kalteis, et al., 2008; Gibson, et al., 2007; Desmyttere, et al., 2007; Ravi, et al., 2006; Puggioni, et al., 2006; Min, et al., 2003). Some of the measured outcomes, such as complication rates, return to work, patient satisfaction and quality of scores, are mixed—some authors report improvement compared to traditional surgical methods while others have not. Success rates and recurrence rates have been promising with several studies supporting clinical efficacy. Van den Bos, et al. (2009) published the results of meta-analysis demonstrating success rates of 78%, 84%, and 95% for ultrasound guided sclerotherapy, RFA and EVLT respectively, after three years. Min and associates (2003) reported a recurrence rate of less than 7% at a two-year follow-up, although the study had a significant number of patients lost to follow-up. Nonetheless, the authors noted their results were comparable or superior to those reported for other treatment options, including surgery, ultrasound-guided sclerotherapy, and radiofrequency ablation. Puggioni et al. (2006) concluded from a retrospective review that the overall success rate of endovenous ablation techniques for occluding the incompetent greater saphenous vein was 94% at one month, although the EVLT group developed more frequent postoperative complications compared to an RFA group. Ravi et al., (2006) reported that no GSV recanalization was found at three years post EVLT and that no saphenous vein could be identified in 82.5% of limbs in their study group. Closure rates at one month, one year, two year, three year and four year follow-up were reported by Desmyttere, et al. (2007) as follows: 98.4%, 96.8%, 97.8%, 99.3% and 97.1%, respectively. Overall, much of the evidence available suggests that endovenous closure techniques are as good as or superior to conventional ligation and stripping of the greater saphenous vein.

ECRI Institute published an evidence report evaluating laser ablation of the greater saphenous vein (ECRI, 2004) and concluded that based on the available evidence endovenous laser ablation effectively occluded the

greater saphenous vein for up to one year following treatment, complications were mild, and the retreatment rates were low. Data on quality of life was lacking.

NICE issued an Interventional Procedure Guidance for EVLT of the long saphenous vein. The guidance committee accepts the evidence on safety and efficacy as adequate to support the use of this procedure (NICE, 2004b). The evidence for efficacy was based on five case series with a mean follow-up of one to 17 months. Saphenous vein closure rates were between 90% and 100%. The authors noted that although procedure seems effective in occluding the vein, few studies have reported on patient-oriented outcomes such as improvement in symptoms.

A position statement issued by the Society of Interventional Radiology in December 2003 calls the use of endovenous ablation therapy, performed with either laser or radiofrequency devices under imaging guidance and monitoring, an effective treatment of extremity venous reflux and varicose veins. The statement reports that the success rate for vein ablation ranges from 90–95% and that long-term results demonstrate recurrence rates of less than 7% at two-year follow-up. Lower rates of recurrence may be the result of the fact that imaging guidance enhances the ability to target and treat only the abnormal, incompetent venous segments. The society recommends using Duplex ultrasound prior to the procedure to map the necessary anatomy of the venous system, during the procedure for correct catheter placement and anesthetic delivery, and as necessary for follow-up. Currently, the 2003 position statement remains unchanged.

**Endomechanical Ablative Approach:** Minimally invasive treatment methods for treatment of varicose veins continue to evolve. A method under current investigation is the endomechanical ablative approach to varicose vein treatment utilizing a percutaneous infusion catheter. The procedure is also referred to as mechanical occlusion chemically assisted ablation (MOCA), mechanic-chemical endovenous ablation (MCEA), and mechanically enhanced endovenous chemical ablation (MEECA). The approach involves the use of a special catheter (ClariVein™ [Vascular Insights, LLC, Madison, CT]) which combines two modalities of treatment for varicose veins: endovenous mechanical vein destruction with a rotating wire and the simultaneous infusion of an FDA approved liquid sclerosant, sodium tetradecyl sulfate to enhance venous occlusion. This mechanical-chemical ablative modality (endomechanical ablative approach) is described as minimally invasive and purported to accomplish great saphenous vein occlusion without the use of tumescent anesthesia. Information available from the manufacturer of ClariVein indicates the catheter has received 510(k) clearance from the United States Food and Drug Administration (FDA) for infusion of physician-specified agents in the peripheral vasculature.

Evidence in the scientific peer-reviewed literature evaluating endomechanical ablation is in the form of a published review (Mueller, Raines, 2013), one multicenter prospective observational report (Bishawi, et al., 2013) and retrospective or prospective case series involving small sample populations and evaluating short-term outcomes (Boersma, et al, 2013; Elias, Raines, 2012). Elias and Raines (2012) reported a 97% total occlusion rate of the treated vein segment at 6 months post procedure (N=30) in an early trial. All 22 subjects available for follow-up at one year had total occlusion of the vein treated and at two years 96% had total occlusion. Van Eekeren and colleagues (2013) reported the results of prospective observational study comparing RFA (N=34) and MOCA (N=34) of the greater saphenous vein. Outcome measures included RAND-36 short-form health survey, the Aberdeen Varicose Vein Questionnaire, and a 100 point VAS measured at two weeks and six weeks following surgery. Treatment time was significantly shorter in the MOCA group (P=.02). At two weeks subjects who were treated with MOCA reported significantly less postoperative pain than subjects who underwent RFA. This group also required significantly less time to resume normal activities and return to work. At six weeks there were no major complications in either group and improvement in disease specific quality of life and health status was reported for both groups. Limitations of the study included small sample size and short-term follow-up with lack of randomization.

NICE issued an Interventional Procedure Guidance of endovenous mechanochemical ablation for varicose veins (NICE, 2013). NICE recommends that individuals who choose to undergo this procedure be aware of the uncertainty about how well it works, as well as the uncertainty surrounding potential risks of the procedure, particularly the risk of venous thromboembolism (blood clots in the veins). Current evidence on the safety and efficacy of endovenous mechanochemical ablation for varicose veins is inadequate in quantity and quality. Therefore this procedure should only be used with special arrangements for clinical governance, consent, and audit or research.

Evidence in the peer-reviewed published scientific literature supporting safety and efficacy of endomechanical ablative approaches to treatment of varicose veins is currently lacking, further studies are needed to support the clinical utility of this approach.

**Subfascial Endoscopic Perforator Surgery (SEPS):** SEPS is a minimally invasive procedure for treating chronic venous insufficiency, in which incompetent perforating veins located in the calf are believed to be a contributing factor. Incompetent perforator veins result in pooling of blood in the lower extremity area, leading to vein enlargement, pain, swelling, skin discoloration and ulcers, and typically lead to chronic venous insufficiency.

An alternative to open subfascial perforator vein surgery (i.e., the Linton procedure), SEPS is recommended for patients in whom conservative measures have failed to treat chronic venous insufficiency and ulceration. The Linton procedure has been associated with a high incidence of postoperative wound healing complications (Townsend, 2004). Direct visualization through endoscopy has been suggested as a more desirable approach than the Linton technique. During SEPS, an endoscope is inserted in an incision located away from the ulcer site, and a balloon dissection is performed. The veins are ligated with clips and subsequently dissected, reducing pressure. Authors claim that stasis ulcer healing rates and maintenance of healing at five years after SEPS are 90% for patients with normally functioning deep venous systems and 75–80% for patients with deep venous insufficiencies (Elias, Frazier, 2004; Gloviczki, et al., 1999). The overall goal of SEPS in treating chronic venous ulcers is to interrupt the incompetent perforating veins in order to decrease reflux and pressure in areas above the ankle.

Evidence in the form of randomized clinical trials and both retrospective and prospective case series support the safety and efficacy of SEPS as an alternative to open procedures when performed for the treatment of incompetent medial calf perforator veins (Di Battista, et al., 2012; Nelzen, Fransson, 2007; Kianifard, et al., 2007; de Rijcke, et al., 2003; Lee, et al., 2003; Kalra and Gloviczki, 2003; Sybrandy, et al., 2001; Pierrek, et al., 1997). In contrast, SEPS performed for the treatment of post-thrombotic syndrome is controversial. Studies indicate that SEPS produces poorer outcomes, specifically, less ulcer healing and higher recurrence rates when used to treat limbs with post-thrombotic syndrome than when used to treat limbs with peripheral vascular insufficiency (Gloviczki, et al., 1999).

NICE issued an Interventional Procedure Guidance for subfascial endoscopic perforator vein surgery. One randomized controlled trial, two non-randomized comparative studies and two case series were reviewed. The NICE specialty advisors noted that based on the evidence reviewed, efficacy of the procedure is unproven and the indications are not well established. Reported complications include nerve injury and deep vein thrombosis. There was evidence to support lower wound infection rates compared to the open procedure. Length of stay was shorter for SEPS. The rate of primary ulcer healing and cumulative ulcer recurrence rates was comparable for both open and SEPS procedures. Although SEPS has been used for individuals with post-thrombotic valvular incompetence, there is evidence when used for this indication individuals may have poorer outcomes compared with individuals with primary valvular incompetence. In summary, the advisors noted careful patient selection is particularly important and there are uncertainties regarding safety of the procedure (NICE, 2004c).

### **Professional Societies/Organizations**

In 2011 the Society for Vascular Surgery and the American Venous Forum (Gloviczki. et al., 2011) developed clinical practice guidelines for care of patients with varicose veins of the lower limbs and pelvis. Although not all-inclusive, the main recommendations of the committee may be summarized as follows:

- in patients with varicose veins or more severe chronic venous disease (CVD), a complete history and detailed physical examination are complemented by duplex ultrasound scanning of the deep and superficial veins
- the use of CEAP classification for patients with CVD and the revised Venous Clinical Severity Score to assess treatment outcome
- regarding Duplex scanning results:
  - a cutoff value of 1 second for abnormally reversed flow (reflux) in the femoral and popliteal veins
  - a cutoff value of 500 ms for abnormally reversed flow (reflux) for the great saphenous vein, the small saphenous vein, the tibial, deep femoral, and the perforating veins
  - in patients with chronic venous insufficiency, duplex scanning of the perforating veins is performed selectively; the definition of “pathologic” perforating veins includes those with an outward flow of

- duration of  $\leq$  500 ms, with a diameter of  $\leq$  3.5 mm and a location beneath healed or open venous ulcers (CEAP class C5-C6)
- compression therapy (pressure 20-30 mm Hg):
  - is suggested for patients with symptomatic varicose veins
  - as the primary treatment to aid healing of venous ulceration
  - in addition to ablation of incompetent superficial veins in order to decrease the recurrence of venous ulcers
  - is not recommended as the primary treatment if the patient is a candidate for saphenous vein ablation
- ligation and stripping for the treatment of incompetent great, small saphenous and superficial veins
- recommend the following:
  - endovenous thermal ablation (radiofrequency or laser) for treatment of incompetent saphenous vein rather than high ligation and inversion stripping of the saphenous vein to the level of the knee
  - phlebectomy or sclerotherapy to treat varicose tributaries
  - foam sclerotherapy as *an option* for the treatment of the incompetent saphenous vein (endovenous thermal ablation is recommended over foam sclerotherapy)
  - treatment of pathologic perforating veins (outward flow duration  $>500$  ms, vein diameter  $>3.5$  mm) located underneath healed or active ulcers (CEAP class C5-C6)
- recommend against selective treatment of perforating vein incompetence in patients with simple varicose veins (CEAP class C2).

**Use Outside of the US:** The National Institute of Clinical Excellence (NICE, 2013) issued guidance for the treatment of varicose veins and recommends the following interventional treatments for individuals with confirmed varicose veins and truncal reflux:

- endothermal ablation using radiofrequency or laser ablation
- if endothermal ablation is unsuitable, offer foam sclerotherapy with ultrasound guidance
- if foam sclerotherapy is unsuitable, offer truncal vein stripping
- if incompetent varicose tributaries are present treatment should be considered at the same time

## Summary

Several treatment options are available for the treatment of symptomatic varicose veins, including ligation and stripping, subfascial endoscopic surgery and ablative procedures. Procedures such as sclerotherapy and phlebectomy are effective for treatment of secondary varicose tributaries when performed either at the same time or following an initial invasive procedure. The peer-reviewed scientific literature supports safety and efficacy of these procedures, with most patients obtaining improvement in clinical outcomes. While varicose vein surgery is a very common surgical procedure, there is no general consensus regarding the best surgical approach. Additionally, recurrences have been reported requiring second treatment sessions for some procedures.

Evidence in the medical literature evaluating procedures such as transilluminated powered phlebectomy, endomechanical ablative approaches and cryoablative procedures is primarily in the form of case series, lack randomization and controls, and involve small sample populations evaluating short-term outcomes. Strong evidence based conclusions cannot be made regarding safety, efficacy, and improvement of net health outcomes. Further clinical studies are needed to support the safety and efficacy of these procedures.

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## Coding/Billing Information

**Note:** 1) This list of codes may not be all-inclusive.  
2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

**The treatment of varicose veins is covered only when coverage is available under the plan for varicose vein treatment. Benefit exclusions and limitations may apply. Invasive treatment of varicose veins is excluded under many plans and therefore the services listed below may not be covered.**

## Sclerotherapy

Covered when medically necessary:

CPT®* Codes	Description
36470	Injection of sclerosing solution; single vein
36471	Injection of sclerosing solution; multiple veins, same leg

HCPSC Codes	Description
S2202	Echosclerotherapy

## Radiofrequency Ablation

Covered when medically necessary:

CPT®* Codes	Description
36475	Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, radiofrequency; first vein treated
36476	Second and subsequent veins treated in a single extremity, each through separate access sites (List separately in addition to code for primary procedure)

## Endovenous Laser Ablation

Covered when medically necessary:

CPT®* Codes	Description
36478	Endovenous ablation therapy of incompetent vein, extremity, inclusive of all imaging guidance and monitoring, percutaneous, laser, first vein treated
36479	Second and subsequent veins treated in a single extremity, each through separate access sites (List separately in addition to code for primary procedure)

## Ligation and Excision

Covered when medically necessary:

CPT®* Codes	Description
37700	Ligation and division of long saphenous vein at saphenofemoral junction, or distal interruptions
37718	Ligation, division, and stripping, short saphenous vein
37722	Ligation, division, and stripping, long (greater) saphenous veins from saphenofemoral junction to knee or below
37735	Ligation and division and complete stripping of long or short saphenous veins with radical excision of ulcer and skin graft and/or interruption of communicating veins of lower leg, with excision of deep fascia

## Ambulatory Phlebectomy

Covered when medically necessary:

CPT®* Codes	Description

37765	Stab phlebectomy of varicose veins, one extremity; 10-20 stab incisions
37766	Stab phlebectomy of varicose veins, one extremity; more than 20 incisions
37780	Ligation and division of short saphenous vein at saphenopopliteal junction (separate procedure)
37785	Ligation, division, and/or excision of varicose vein cluster(s), one leg
37799 <sup>†</sup>	Unlisted procedure, vascular surgery

<sup>†</sup>**Note:** Covered when medically necessary and used to report stab phlebectomy of varicose veins, one extremity; less than 10 incisions.

### Subfascial Endoscopic Perforator Surgery

**Covered when medically necessary:**

<b>CPT* Codes</b>	<b>Description</b>
37500	Vascular endoscopy, surgical, with ligation of perforator veins, subfascial (SEPS)
37760	Ligation of perforator veins, subfascial, radical (Linton type), with or without skin graft, open
37761	Ligation of perforator vein(s), subfascial, open, including ultrasound guidance, when performed, 1 leg

### Sclerotherapy: Telangiectasia

**Cosmetic/Not Covered/Not Medically Necessary:**

<b>CPT* Codes</b>	<b>Description</b>
36468	Single or multiple injections of sclerosing solutions, spider veins (telangiectasia); limb or trunk
36469	Single or multiple injections of sclerosing solutions, spider veins (telangiectasia); face

### Mechanical Ablative Approach

**Experimental/Investigational/Unproven/Not Covered when used to report endomechanical ablative approach for treatment of varicose veins:**

<b>CPT* Codes</b>	<b>Description</b>
37204	Transcatheter occlusion or embolization (eg, for tumor destruction, to achieve hemostasis, to occlude a vascular malformation), percutaneous, any method, non-central nervous system, non-head or neck (Code deleted 12/31/2013)
37241	Vascular embolization or occlusion, inclusive of all radiological supervision and interpretation, intraprocedural roadmapping, and imaging guidance necessary to complete the intervention; venous, other than hemorrhage (eg, congenital or acquired venous malformations, venous and capillary hemangiomas, varices, varicoceles) (Code effective 01/01/2014)
37244	Vascular embolization or occlusion, inclusive of all radiological supervision and interpretation, intraprocedural roadmapping, and imaging guidance necessary to complete the intervention; for arterial or venous hemorrhage or lymphatic extravasation (Code effective 01/01/2014)
75894	Transcatheter therapy, embolization, any method, radiological supervision and interpretation

\*Current Procedural Terminology (CPT®) ©2012 American Medical Association: Chicago, IL.

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