Varicose Veins and Venous Insufficiency
What is venous insufficiency?

Valve prevents backwards bloodflow

Faulty valve allows backwards bloodflow
Spectrum of Disease

- Spider veins and telangiectasias

Small reddish and purple veins near the skin surface (treatment usually considered cosmetic and not reimbursed by insurance)
Spectrum of Disease

- **Reticular veins**

  Blue or green deeper veins under the skin surface (treatment usually considered cosmetic and not reimbursed by insurance)
Spectrum of Disease

- **Varicose veins**

  Large bulging veins that are easily palpable to the touch (usually symptomatic and treatment most often covered by insurance)
Venous ulcers

Breakdown of the skin related to Failure of the venous system and Venous insufficiency (usually symptomatic and treatment most often covered by insurance)
Common myths and misconceptions surrounding varicose veins...

- “They are something I will have to learn to live with…”
- “They are only of cosmetic concern…”
- “There is nothing I can do about them…”
- “I don’t want to undergo major surgery…”
- “My doctor said he doesn’t treat them…”
- “Just elevate your legs…”
- “Don’t treat these veins…you might need them later for heart surgery…”
Prevalence of Venous Insufficiency

Venous disease is more common in women and increases with age.

Causes of Varicose Veins and Venous Insufficiency

- **Heredity**
  - There are no specific “varicose vein genes”, but they do tend to run in families

- **Occupational**
  - Those with jobs requiring long periods of standing are more commonly affected
Causes of Varicose Veins and Venous Insufficiency

- **Sex and hormones**
  - During the menstrual cycle veins become more distensible (dilated) due to hormonal influence
  - Pregnancy causes the veins to distend

- **Age**
  - Parts of the vein wall thin and lose elasticity
Common Symptoms

- Leg heaviness and aching
- Exercise intolerance
- “Restless” legs
- Night cramps
- Edema (swelling)
- Paresthesias (“pins and needles” sensation)
- Pain or tenderness along the course of a vein
- Skin changes
  - Edema and hyperpigmentation (swelling and darkening of the skin)
  - Stasis dermatitis (skin becomes rough, dry, scaling, thickened)
  - Ulceration
Common Symptoms

- Symptoms generally are least in the morning and worsen throughout the day
- Worsened by long periods of standing
- People often report use of over the counter medication and support stockings
- Veins often worsen during pregnancy
- Progressive worsening of veins and symptoms
Superficial Venous Insufficiency

**Etiology of Primary Disease**

- Normal valves in the veins allow blood to flow only towards the heart
- As these valves fail and no longer function, blood flow and pressure can now flow back towards the feet
- Veins in the leg dilate and varicose veins form
- Deeper veins act as the “root of the problem” and cause veins near the skin to dilate – these are the varicose veins that we see and feel
Superficial Venous Insufficiency

Etiology of Primary Disease
Ultrasound shows a dilated vein arising in the deeper tissues – this is the “root of the problem” causing more superficial veins to dilate
Superficial Venous Insufficiency

This ultrasound image shows reversal of the normal flow direction and shunting of blood towards the feet.
Surgical Ligation and Stripping

- Traditional therapy
- Possible complications of surgery
  - Paresthesia, infection, bleeding, scars, blood clots
- Prolonged recovery period
- Increased costs
- Greater risks and costs associated with general anesthesia
Endovascular Varicose Vein Rx

Therapy of varicose veins has been *revolutionized* by endovascular techniques such as endovenous laser therapy.
Endovascular Varicose Vein Rx

The search for less invasive techniques to treat varicose veins has led to the development of:

- EVLT – use of laser to treat veins
- Ultrasound Guided Sclerotherapy (liquid and foam)

Diomed 810 nm Diode Laser
EVLVT Procedure

- EVLVT procedure replaces more invasive traditional surgery
- The procedure uses laser to “seal” the vein
Post-procedure

Ultrasound confirms closure of the treated vein
Other Treatments of Varicose Veins

- Phlebectomy
  - Used on larger varicose veins
  - After cleaning the skin with a surgical prep, the skin is numbed with a local anesthetic
  - “Micro-incisions” are made with a needle
  - Varicosities are removed with a specially designed instrument
  - This is repeated over the course of the enlarged varicose vein
Other Treatments of Varicose Veins

- Sclerotherapy
  - Usually used for smaller spider veins, but can be used on any size vein
  - Injection of a sclerosant agent chemically seals the vein

- Variations
  - US guided
  - “foam”
Other Treatments of Varicose Veins

- Sclerotherapy
All patients are evaluated by one of our physicians at our Vein Center in Galloway.

Ultrasound examination and physical examination will determine which treatment is best suited to your needs.

All procedures and follow up appointments will be at the Galloway office.

Procedures are done as an outpatient with light oral sedation and local anesthetic.

Minimal recovery time is needed.
The Vein Center at Atlantic Medical Imaging

Dr. Michael Schmidling

- Board certified radiologist with fellowship training in Interventional Radiology
- Certificate of Added Qualification in Vascular and Interventional Radiology
- Co-Director of Vein Center
- Previous experience opening Vein Center in central New Jersey
The Vein Center at Atlantic Medical Imaging

- Dr. Rajesh Patel

  - Board certified radiologist with fellowship training in Interventional Radiology
  - Certificate of Added Qualification in Vascular and Interventional Radiology
  - Co-Director of Vein Center
Results

Pre-Treatment 1 Wk Post-EVLT
Results

Pre-Treatment 2 Wks Post-EVLT
Results

Pre-Treatment 2 Wks Post-EVLT
Results

Pre-Treatment

Post-Treatment
Results

Pre-Treatment  Post-Treatment
Results

Pre-Treatment  Post-Treatment
Results

Pre-Treatment

Post-Treatment
Results

Pre-Treatment 4 Wks Post-EVLT
Results

Pre-Treatment  Post-Treatment
Results

Pre-Treatment

Post-Treatment
Results

Pre-Treatment

Post-Treatment
# Endovenous Laser Treatment - Results

<table>
<thead>
<tr>
<th>Follow-Up (Yrs)</th>
<th>Closed / No. Treated</th>
<th>Continued Occlusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Year</td>
<td>218 / 231</td>
<td>94 %</td>
</tr>
<tr>
<td>1 – 2 Years</td>
<td>245 / 247</td>
<td>99 %</td>
</tr>
<tr>
<td>2 – 3 Years</td>
<td>151 / 151</td>
<td>100 %</td>
</tr>
<tr>
<td>&gt; 3 Years</td>
<td>72 / 72</td>
<td>100 %</td>
</tr>
</tbody>
</table>

- Followed 3 – 42 months (mean of 20 months)
Endovenous Laser Treatment -

**Results**

- 98% (686/701) closed at 3 - 42 months
- 223 limbs followed at least 2 years demonstrate continued occlusion

Endovenous Laser Treatment -

**Results**

- > 99% of patients report resolution of symptoms
- > 99% of patients would recommend EVLT to others
- Bruising & mild / moderate tenderness (resolving in < 2 wks)
- *NO* skin burns, DVTs, or paresthesias
Endovenous Laser Treatment -

Conclusions

- Successful ablation of > 97% of limbs treated with endovenous laser
- Continued closure of more than 220 vein segments followed for > 2 years
- Results comparable or superior to other options available for treatment of GSV reflux
- EVLT offers these benefits with lower rates of complication and avoidance of general anesthesia
Bottom line