

# Why are Spider Veins of the Legs a Serious and a Dangerous Medical Condition?

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**Spider veins**– also known as– **Venous telangiectasia** of the legs, are acquired lesions caused by **venous hypertension** which leads to proliferation of blood vessels in the skin and subcutaneous tissues of the legs. This is because of the release of **endothelial growth factors** from fibroblasts and adult endothelial stem cells, present in the skin and subcutaneous tissue, causing **neogenesis (new development) of blood vessels**.

**(Spider veins should not be confused with varicose veins.)**

**Varicose veins**, on the other hand, are due to dilatation of the pre-existing veins in the legs, and should not be confused with spider veins. The underlying cause of the varicose veins is also venous hypertension.

**More than 60% of the patients with spider veins of the legs are known to be symptomatic;** and these spider veins are usually due to venous hypertension caused by venous insufficiency. It is well known that the spider veins are associated with incompetent perforator veins connected to the superficial or the deep veins of the legs. **The spider veins are, therefore, a manifestation of venous insufficiency.**

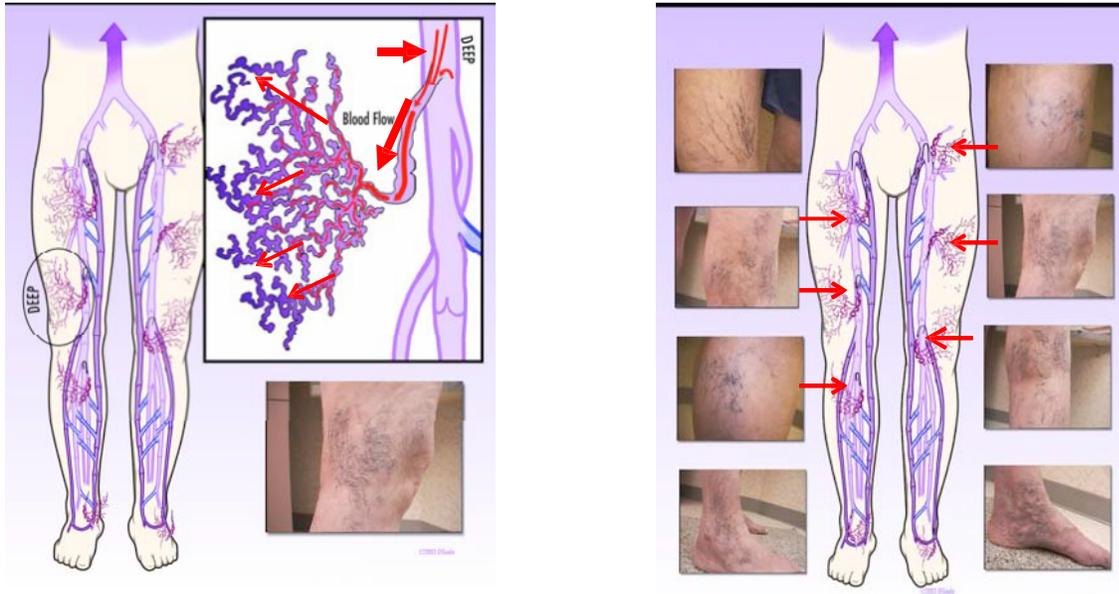
Every cluster of spider veins has one or more incompetent perforator veins connected to the deeper veins. If there are multiple clusters of spider veins in the legs, they can cause a large amount of reflux blood flow in the wrong direction causing extra burden to the deep veins from overflow of this blood, thus leading to progressive dilatation of the deep veins. The deep veins once dilated remain incompetent. **The spider veins are, therefore, a manifestation of venous insufficiency.** The medical literature clearly shows that **superficial venous insufficiency leads to deep venous insufficiency; and the treatment of superficial venous insufficiency leads to recovery of deep venous insufficiency.** The spider veins, just like varicose veins, are superficial venous lesions and can be responsible for both superficial and deep venous insufficiency.

**Superficial venous insufficiency occurs at three levels in the legs:**

1. Great saphenous vein (**sapheno-femoral valve**)
2. Lesser saphenous vein (**sapheno-popliteal valve**)
3. Perforator veins
  - a. Named perforators (Hunter, Dodd, Boyd, Cockett)
  - b. **Unnamed perforators associated with clusters of spider veins**

The following pictures demonstrate the connection of spider veins of the legs to the deep veins and the mechanism of deep venous valvular insufficiency. If not treated, the deep venous insufficiency continues to deteriorate and eventually causes serious complications.

### Spider veins and their connection to the deep veins



(Arrows point to the areas of leakage of blood into spider vein complexes)

The spider veins can cause significant symptoms:

- Pain
- Itching
- Burning
- Swelling
- Phlebitis
- Cellulites
- Bleeding
- Ulceration
- Restless legs

Untreated spider veins may lead to serious medical complications:

- Superficial and deep venous thrombosis
- Aggravation of the already established venous insufficiency
- Hemorrhage
- Post-phlebotic syndrome
- Chronic leg ulceration
- Pulmonary embolism

Untreated spider vein clusters are responsible for persistent low-grade inflammation; many recent peer-reviewed medical studies have shown a definite association of chronic inflammation with obesity, diabetes, arthritis, cardiovascular disease, stroke, Alzheimer's disease, and cancer.

The most effective method of treating the symptomatic spider veins is the use of electromagnetic energy in the form of intense pulse light, laser, and more recently a combination of laser and radiofrequency. There are many reputable companies offering equipment utilizing ND: YAG laser, IPL (intense pulse light) or radiofrequency.

Since the majority of patients with symptomatic spider veins have associated venous insufficiency, it is recommended that saphenous venous insufficiency be treated at the same time utilizing endovenous laser ablation or inversion PIN stripping along with high ligation of the incompetent saphenous vein. High ligation is useful because it prevents the possible complication of deep venous thrombosis due to extension of clot formed at the most proximal part of the saphenous vein into the deep system. In addition, there is little chance of recurrence from the possible left over venous tributaries near the saphenofemoral junction.

#### **In conclusion:**

The entity, spider veins of the legs, is not a cosmetic condition because this disease can be associated with significant symptoms and venous insufficiency. The spider veins can cause significant morbidity due to disabling symptoms and serious complications which may be the direct result of untreated spider veins. In many patients, initially, the spider veins are not associated with venous insufficiency; however, if not treated in a timely fashion, they do cause venous insufficiency from the overload stress, on the deeper veins of legs, produced by large volumes of reflux backflow of blood from the many incompetent perforators connecting the spider vein clusters to the deeper veins. Chronic inflammation associated with spider veins may lead to many degenerative diseases such as cardiovascular disease, diabetes, arthritis, Alzheimer's disease, and cancer in later life.