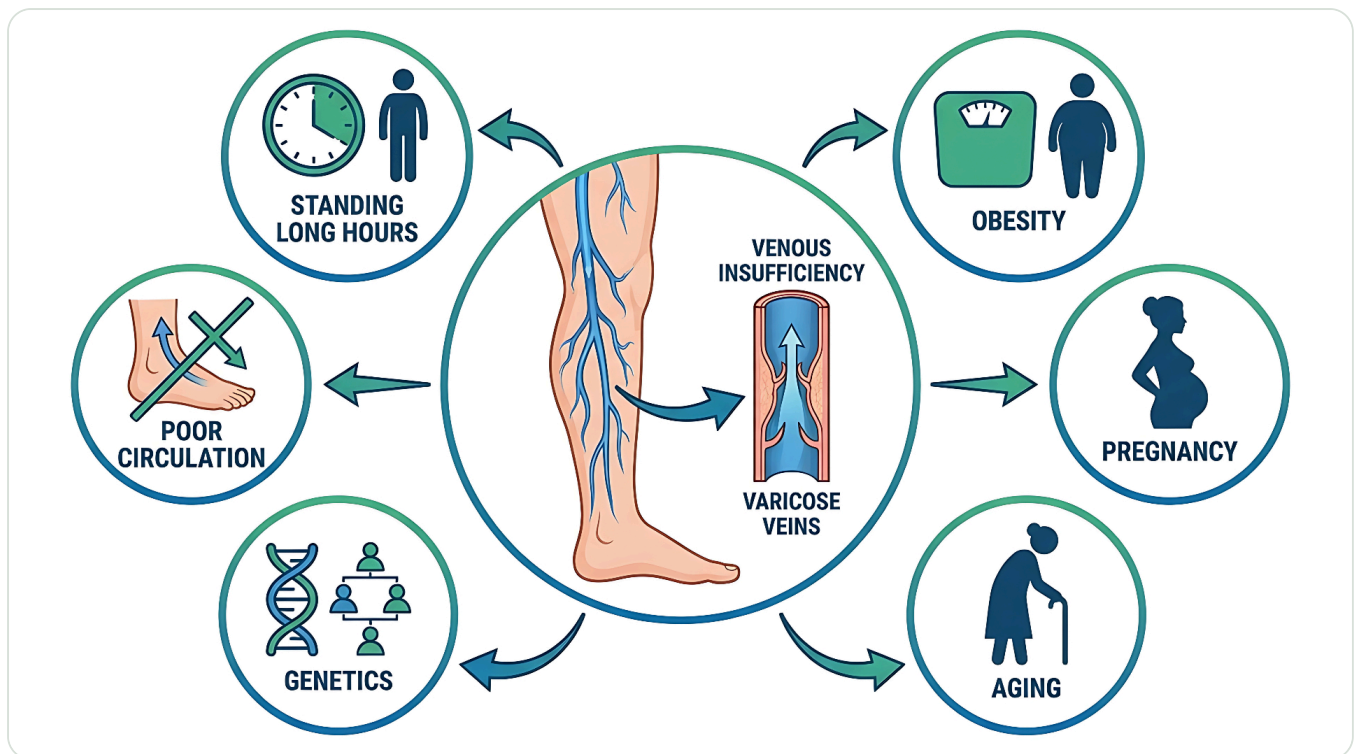


Varicose Veins and Heredity: Is Your Family to Blame?



Many patients with varicose veins say that "it runs in the family" - and research backs them up. Genetics is one of the strongest single risk factors for varices (varicose veins), and if both parents have varicose veins, their children have up to a 90% lifetime risk of developing them too [1].

How Significant Is the Hereditary Component?

Twin studies and large cohort studies have shown that:

- **Heredity accounts for 40-60%** of the risk for varicose veins [2]
- If **one parent** has varicose veins, the risk is approx. 25-40%
- If **both parents** have varicose veins, the risk increases to ~90% [1]
- If **neither parent** has varicose veins, the risk is approx. 20%

A recent large-scale genomic study (UK Biobank, 493,000 participants) identified 30+ genetic loci associated with varicose veins - many of them related to the collagen and elastin in the vein wall, valve function, and venous development [3].

Which Genes Are Involved?

Researchers have demonstrated a link with:

- **CASZ1** - a transcription factor in venous development
- **PIEZO1** - a mechanosensory ion channel in the vessel wall
- **FOXC2** - known from hereditary venous diseases
- **HFE** and haemochromatosis genes
- **MTHFR** - related to homocysteine and venous thrombosis

These genes affect the strength of the vein wall, the function of the valve system, and the composition of the connective tissue [3,4].

Heredity vs. Environment

Genetics determine your vulnerability - but not whether you will actually develop varicose veins. **Modifiable risk factors** play a major role:

- Sedentary or standing work
- Being overweight
- Pregnancies (see [varicose veins during pregnancy](#))
- Lack of exercise
- Smoking
- Age (the incidence increases by 2-3% annually after the age of 40)

Even in individuals with a strong familial predisposition, lifestyle can significantly delay the onset and worsening of the condition [5].

Should You Be Screened if It Runs in Your Family?

Routine screening is not recommended, but it is sensible to be aware of early symptoms:

- Heavy, tired legs at the end of the day

- Swelling around the ankles
- Night cramps
- Visible, winding veins on the thigh or calf
- Spider veins (telangiectasias) - often the first clinical sign
- Itching, brownish discolouration or eczema in the ankle area

If symptoms are present, a **Doppler ultrasound** of the leg veins is performed. This is a painless examination that maps the valve function and reflux in each individual vein. It is the gold standard for investigating chronic venous insufficiency [6].

Prevention if It Runs in the Family

- **Exercise:** 30 minutes daily - walking, cycling, and swimming activate the "muscle pump" in the calf
 - **Weight management:** Every extra kilo increases the pressure in the leg veins
 - **Avoid prolonged static positions:** Alternate between standing and sitting; do heel raises at your workplace
 - **Elevate your legs** above heart level for 15-20 minutes daily
 - **Wear graduated compression stockings** for standing work or long-haul flights [7]
 - **Stop smoking** - nicotine weakens the vessel wall
 - **Take the first symptoms seriously** - early treatment prevents skin complications such as ulceration
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If You Do Develop Varicose Veins

Modern endovenous laser treatment (EVLT) has replaced classic vein stripping as the standard treatment and offers:

- A 95% closure rate after 5 years [8]
- Treatment under local anaesthetic, with patients going home the same day
- A quick return to work (1-3 days)
- Significantly fewer complications than traditional surgery [9]

At our clinic, we offer investigation with Doppler ultrasound and endovenous laser treatment through the public healthcare system. You can also read our article on [varices](#).

References

1. Cornu-Thénard A, et al. *Importance of the familial factor in varicose disease*. J Dermatol Surg Oncol 1994;20(5):318-26.
2. Brinsuk M, et al. *Heritability of venous function*. Arterioscler Thromb Vasc Biol 2004;24(1):207-10.
3. Fukaya E, et al. *Clinical and genetic determinants of varicose veins: prospective, community-based study of ~500,000 individuals*. Circulation 2018;138(25):2869-80.
4. Krysa J, Jones GT, van Rij AM. *Evidence for a genetic role in varicose veins and chronic venous insufficiency*. Phlebology 2012;27(7):329-35.
5. Beebe-Dimmer JL, et al. *The epidemiology of chronic venous insufficiency and varicose veins*. Ann Epidemiol 2005;15(3):175-84.
6. Gloviczki P, et al. *The 2022 SVS/AVF/AVLS clinical practice guidelines for the management of varicose veins*. J Vasc Surg Venous Lymphat Disord 2023;11(2):231-61.
7. Lim CS, Davies AH. *Graduated compression stockings*. CMAJ 2014;186(10):E391-8.
8. Rasmussen LH, et al. *Randomized clinical trial comparing endovenous laser ablation, radiofrequency ablation, foam sclerotherapy and surgical stripping for great saphenous varicose veins*. Br J Surg 2011;98(8):1079-87.
9. Hamann SAS, et al. *Five-year results of great saphenous vein treatment: a meta-analysis*. Eur J Vasc Endovasc Surg 2017;54(6):760-70.