

# HORSE CHESTNUT



**Venous circulation** or return circulation composed of a wide network of veins whose function is to carry blood from different tissues to the heart. Among the diseases that can affect the venous system, it stands out for its frequency in the population and its importance: *chronic venous insufficiency (CVI)*, with its main manifestation, **varicose veins**.

**The causes of poor blood circulation** → are mainly:

- Periods of prolonged immobility
- Tight clothing or footwear
- Obesity, diabetes, hypertension, etc.
- Advanced age

**Chronic venous insufficiency** → This disease is characterized by inadequate drainage of venous blood and venous hypertension. This may be due to valve damage, venous obstruction, or a combination of both mechanisms. Because of this, the veins of the lower limbs are not able to carry out the blood in return to the heart, with the appearance of the following symptoms:

- Leg swelling
- Tired legs
- Varicose veins
- Pain
- Calf cramps
- Feeling of heaviness

**Types of therapies** → The main natural and pharmacological remedies to treat CVI are:

- **Compression stockings:** External compression of the limb reduces the diameter of the veins and makes the valves competent again.
- **Physical Exercise:** Stimulates the function of the muscle pump and venous return.
- **Hydrotherapy:** Showers and massages with cold water or altering cold water with warm water to stimulate venous tone.
- **Pharmacotherapy:** Phlebotonic or venoactive drugs (Ex: Hydrosmin, Diosmin)
- **Phytotherapy:** There is a great variety of medicinal plants and trees with vasoprotective and venotonic properties, such as Horse Chestnut, which will be discussed throughout this infographic.

## Horse chestnut



The Horse Chestnut (***Aesculus hippocastanum***), is native from northern Asia, but due to its showy flowers it is cultivated all over the world as an ornamental plant.

It is a tree that can measure up to 40 m in height, with compound leaves and large inflorescences. Its fruit has the shape of green capsules covered with spicules, and in the inside there are shiny and brown seeds that constitute the therapeutic compound of this medicinal tree.

### CHEMICAL COMPOSITION:

- **Triterpenic saponins:** The active principle of the seed is called Escin and constitutes a mixture of more than 30 different saponins.
- **Flavonoids:** Quercetin and Kaempferol glycosides.
- **Tannins:** Proanthocyanidins.
- **Carbohydrates:** Mainly Starch and Oligosaccharides.

## Properties

The **ESCIN** increases vascular resistance and decreases capillary permeability (vitamin P effect). Numerous *in vitro* and *in vivo* tests show that the seeds of this type of tree have the following therapeutic indications:

- **Venotonic:** Aescin increases the production of the mediator PGF2 $\alpha$ , which entails an inhibition of the catabolism of the venous tissue and the improvement of its contractility.
- **Anti-inflammatory:** It is due to the decrease by the Aescin of leukocyte migration and the blocking of the release of inflammatory mediators.
- **Antiedematous:** This saponin inhibits the activity of enzymes that participate in the degradation of proteoglycans located in the extravascular matrix. Therefore, vascular permeability decreases and capillary resistance increases, which leads to the reduction of the edema.



## Reactivation blood flow

The European Medicines Agency (EMA) approves the use of the Horse Chestnut seed for:

- Treatment of **Chronic Venous Insufficiency (CVI)**, characterized by leg swelling, feeling of heaviness, pain, tiredness, itching, tension and cramps in the calves.
- It is also approved its traditional use, in topical application, for the treatment of symptoms such as discomfort and **heaviness of the legs** related to minor venous disorders and for the relief of signs associated with **bruises** such as local edema.

## Bibliography

1. de Membiela, M. T. S. (2012). Fitoterapia para el tratamiento de la insuficiencia venosa crónica. El castaño de indias/Phytotherapy for the Treatment of Chronic Venous Insufficiency. The Buckeye. Revista Internacional de Ciencias Podológicas, 6(1), 31.
2. Vanaclocha, B. (2017). Castaño de Indias (*Aesculus hippocastanum* L.): mejora de la circulación venosa. Acofar: revista de la distribución farmacéutica cooperativista, (548), 32-33.

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