

Horse Chestnut

Aesculus hippocastanum



Part Used

The seeds

Common/Potential Uses

- Chronic venous insufficiency
- Varicose veins
- Hemorrhoids

Active Constituents

Aescin (also known as escin)—a complex mixture of saponins

How It Works

Helps promote healthy tone in the walls of the veins and helps strengthen capillaries. The improved tone of the veins promotes more efficient return of blood to the heart, particularly from the veins in the lower extremities. Aescin also has anti-inflammatory actions and reduces swelling when applied topically to injuries such as sprains or strains.

Recommended Use

Internal use: Horse chestnut seed standardized extract containing 16 to 20 percent aescin—300 milligrams (approximately 50 milligrams of aescin) two to three times daily. External use: Gel or cream containing 2 percent aescin—apply topically to affected area three to four times daily.

Side Effects

Side effects with standardized extracts of horse chestnut seed are rare. They can include itching, nausea, upset stomach, and calf spasm. Because of reports of intravenous aescin causing worsening of kidney function in persons with kidney disease, it is probably best for persons with kidney disease to avoid internal use of the extract. Individuals with liver disease should also avoid horse chestnut seed extract.

Safety Issues/Drug Interactions

The literature lists no known contraindications to the internal use of horse chestnut seed extract during pregnancy or lactation. However, you should consult with a doctor before using the extract. While there have been no reports of drug interactions, aescin does have a blood-thinning action and should be probably be avoided if you are taking aspirin or anticoagulant medications such as warfarin (Coumadin®).

THE shiny, nearly round seed of horse chestnut is something many of us have grown up playing with in some children's games. However, recognition of the medicinal benefits of these brown seeds is a relatively recent occurrence in this country. Again, with hats off to our herbally sophisticated friends in Europe, the development of a standardized extract of horse chestnut seeds has led to a safe and effective approach to managing

difficult circulatory disorders such as chronic venous insufficiency (CVI). While that's not a condition many of us hear about on a daily basis, consider the following: CVI is one of the most common health care problems afflicting both men and women (please see Part 6 for an explanation of CVI).

Estimates place the prevalence at 10 to 15 percent of men and 20 to 25 percent of women.¹ Early-stage intervention is optimal, but the primary choices used in the United States are compression stockings and diuretic medications. Compression stockings can be inconvenient and uncomfortable, which often leads to low compliance.

The addition of horse chestnut seed extract to the treatment options for CVI as well as varicose veins promises to give many men and women relief from the annoying heaviness and pain that they experience with these conditions. Even as a long-term follow-up to compression stocking therapy (with or without diuretics) for CVI, the extract offers a long-term approach to improving the tone of the veins in the legs and improving blood flow.

PLANT FACTS

The horse chestnut (*Aesculus hippocastinum*) tree is native to parts of Asia and northern Greece but is now widely cultivated throughout Europe and the United States.² The tree produces fragrant pink and white flowers in the summer that turn to prickly fruits. These fruits are harvested in September when they become leathery and fall from the trees. The seed inside this fruit is used in modern medicinal extracts. Although the bark and leaves of the tree have been used for centuries by practitioners of traditional herbal medicine, their therapeutic efficacy has not been proven in clinical trials.

HISTORY

Horse chestnut leaves and bark have been used as a cough remedy in the treatment of bronchitis and whooping cough. The bark and leaves have also been used internally in the treatment of intermittent fevers.³ Horse

chestnut has a long history of use for reducing pain and inflammation of arthritis and rheumatism. In fact, superstition suggested that carrying a horse chestnut seed in your pocket would prevent or cure arthritis or rheumatism.⁴ The use of horse chestnut seeds for varicose veins, venous congestion, and bruising dates back to sixteenth-century Europe. Extract made from the seeds was being used medicinally in France in the early 1800s, and early clinical reports suggested its use for hemorrhoids.⁵

The development of a horse chestnut seed extract (HCSE) standardized to aescin concentration has become a leading treatment in Europe today for chronic venous insufficiency (see “Health Care Applications” later). Additional applications for HCSE consist of internal use for varicose veins and capillary fragility. Although hemorrhoids are still listed as an indication for HCSE, this is based on historical use and not modern clinical research. Topical preparations containing aescin are used to treat swelling secondary to trauma such as sprains. Finally, intravenous preparations of aescin are sometimes used in Europe to reduce swelling following surgery.

MEDICALLY ACTIVE CONSTITUENTS

The dried seeds of the horse chestnut contain a mixture of triterpene saponins collectively called aescin (sometimes shortened to *escin*).⁶ Horse chestnut seeds naturally contain about 3 to 6 percent aescin. Standardized extracts of horse chestnut seeds typically contain a much higher concentration of 16 to 20 percent aescin. As we’ll note later, aescin is the primary driving force behind HCSE’s ability to strengthen and tone veins and capillaries and improve blood flow from the veins in the legs back to the heart.

Other constituents in the seed include coumarins, flavonoids, tannins, allantoin, amino acids, choline, and phytosterols.

HOW HORSE CHESTNUT WORKS

Aescin is a full-service tonic for the veins and capillaries. First and foremost, it helps improve the strength and tone in the walls of the veins and

capillaries.⁷ Some researchers call this a “vascular tightening” effect—probably not much different from the effect we get when we put astringent creams on our face. This improves the return of blood to the heart and discourages the pooling of blood and resulting edema (fluid retention) that is often seen in the ankles and lower legs of persons with CVI. This anti-edema effect is also enhanced by aescin’s ability to help pooled fluid drain from surrounding tissues back into the capillaries.

The events leading to varicose veins and CVI also include the release of enzymes that attack the walls of the veins and capillaries as well as chemicals that encourage inflammation. Aescin to the rescue again! In addition to leaping tall buildings in a single bound, our herbal hero has also been shown to reduce the activity of the enzymes beta-*N*-acetylglucosaminidase (I think I dated her in high school), beta-glucuronidase, and arylsulphatase that break down the compounds needed for healthy vein and capillary walls.⁸ Additionally, aescin reduces the actions of other damaging enzymes, elastase (no relation to Elastic Man) and hyaluronidase, which have been found to be high in persons with CVI.⁹

Aescin’s anti-edema and anti-inflammatory actions have contributed to its success as a topical treatment for traumatic injuries such as strains and sprains.¹⁰ Since this is an isolation of one constituent from horse chestnut and not an herbal extract, we’ll concentrate our focus in the next section on use of HCSE for CVI.

HEALTH CARE APPLICATIONS

In 1998, the *Archives of Dermatology* published an extremely favorable review of the clinical studies on HCSE for CVI.¹¹ Using predetermined criteria for good-quality studies, the authors narrowed their search to thirteen clinical studies for review. Eight of these studies were placebo controlled, and five were comparisons to other medications (e.g., oxerutins) or standard therapies (e.g., compression stockings and diuretics). The authors conclude that HCSE is a safe and effective treatment for CVI and that future studies should explore the use of HCSE with compression stockings for the long-term management of CVI.

Most of the studies summarized in the *Archives of Dermatology* review used a commercial HCSE known as Venostasin[®] retard (Klinge Pharma, Germany). The product delivers 50 milligrams of aescin per capsule, typically recommended at a dose of one capsule in the morning and one in the evening with meals.

One of the first studies investigating the action of the product involved 118 patients ages 30 to 70 years with CVI.¹² Patients were given either one capsule of the HCSE or placebo twice daily for 20 days. At the end of the first 20 days, all patients switched treatments—the HCSE folks went over to placebo and vice versa. While taking the HCSE, patients noted significant reductions in edema, pain, and leg cramping. Also noted were reductions in itching, tiredness, and leg heaviness. Persons taking placebo had essentially no improvement. Side effects were rare, with two patients taking HCSE having to stop treatment due to discomfort, and three in the placebo group stopped the therapy due to adverse events.

The success seen in this early study prompted the completion of another placebo-controlled study with thirty-nine CVI patients.¹³ Patients were again split into two treatment groups—one receiving two 300 milligram HCSE capsules daily and the other placebo. Treatment lasted for 28 days. Using a device to measure the volume of blood in the lower legs and feet, the researchers found that those taking HCSE had a significantly reduced amount of blood pooling in those areas. In addition, edema was reduced in those taking HCSE, as noted in reduced size of the area around the shinbone and ankle. As was the case previously, symptoms such as pain, itching, and heaviness were also significantly decreased in those using HCSE.

So, you're probably thinking, "All that placebo stuff is nice, Dr. Brown, but how does this stuff really match up to accepted treatment for CVI?" (in other words, "Cut the medical crap and give us the low-down already!"). A 1996 study in the British medical journal *Lancet* compared HSCE with compression stocking/diuretic therapy in 240 patients with CVI.¹⁴ By the way, they snuck a placebo in this one too! Treatment lasted for 12 weeks. Using the same blood volume measure as before (known as *plethysmography*), they found that volume in the lower leg was reduced

equally in both the HSCE and compression stocking/diuretic groups. Leg volume increased in the placebo group. This study suggests that HCSE is a logical alternative for those that feel compression stockings are too cumbersome or uncomfortable.

HOW TO USE HORSE CHESTNUT

Remember to use a standardized extract with an adequate concentration of aescin. For treatment of CVI or varicose veins, use 300 milligrams of HCSE (standardized to 50 milligrams of aescin) two to three times daily in the morning and evening (add an afternoon dose if you go up to three times daily—most people do fine at the lower dose) with adequate water or other liquid during meals.¹⁵

While studies have lasted for at least 12 weeks, persons with CVI or varicose veins should consider HCSE a long-term treatment. For topical use, a gel or cream containing 2 percent aescin can be applied topically three to four times daily until improvement of swelling is noted. Please note that at the writing of this chapter, topical ointments or gels made according to the standards established in Germany and other European countries (e.g. Reparil®, Madaus AG, Germany; and Aesculaforce®/Venaforce®, Bioforce, Switzerland) have not made their way to into the U.S. marketplace.

Please remember that circulation disorders may be the signs of a serious condition. It's important to work with your health care professional to figure out what's going on first, before self-treating with HCSE. Same thing goes for swelling that you may think about using topical HCSE or aescin to treat.

At the recommended dosage, HCSE is generally safe for long-term use. In clinical studies, side effects were reported in 0.9 to 3 percent of the persons taking HCSE and included gastrointestinal upset, itching, nausea, and dizziness.¹⁶ Because of reports of intravenous aescin causing worsening of kidney function in persons with kidney disease, it is probably best for persons with kidney disease to avoid internal use of the extract.^{17,18} Persons with liver disease should also avoid horse chestnut seed extract. Topical use of aescin-containing gel has been known to cause skin rashes.¹⁹ Don't use it on broken skin or burns.

It's important to note that safety has only been determined for a standardized extract made from the seeds of horse chestnut. Do not eat the seeds, twigs, or leaves of the tree as they can be poisonous.

The German Commission E monograph for HCSE lists no known contraindications to the use of the extract for pregnant or lactating women.²⁰ However, I recommend that you consult with your doctor or midwife before deciding to self-treat with HCSE during pregnancy. Because HCSE may have a mild blood-thinning effect (probably due to the coumarin content in the seeds), it's best to avoid using it together with aspirin or blood-thinning medications such as warfarin (Coumadin®) or antiplatelet aggregation medicines such as ticlopidine (Ticlid®).²¹ This potential blood-thinning effect means you need to tell your surgeon you're taking HCSE and stop using it a couple of weeks before surgery.

Product update: The Venostasin retard product (Klinge Pharma, Germany) is sold in the U.S. by Pharmaton as Venastat™.

Acknowledgment: I'd like to thank Dr. Ron Reichert for his translation and summary of the German studies on HCSE that he so kindly let me use for this chapter.

RELATED CONDITIONS DISCUSSED IN PART 6

- Chronic venous insufficiency
- Strains and sprains