

The Longwood Herbal Task Force  
(<http://www.mcp.edu/herbal/>) and  
The Center for Holistic Pediatric Education and Research  
(<http://www.childrenshospital.org/holistic/>)

**Clinician Information Summary**

**HORSE CHESTNUT**  
(*Aesculus hippocastanum*)

**SUMMARY**

Horse chestnut seed extract (HCSE) is primarily used to decrease edema due to chronic venous insufficiency. It is also used to reduce swelling associated with bruises, fractures, cerebral injury, surgery, soft-tissue injury, and acute thrombophlebitis. Randomized, double-blind controlled trials support its use alone or as an adjunct to compression stocking therapy in treating lower extremity edema caused by venous insufficiency. HCSE has a wide therapeutic range and a low incidence of toxicity, allergic reactions have occurred. There are no studies specifically evaluating its safety during pregnancy, lactation or childhood.

**POPULAR USES:** Treatment for edema due to chronic venous insufficiency, trauma or surgery.

**CHEMICAL CONSTITUENTS:** Aescin, a mixture of triterpenoid saponin glycosides; aesculin, a coumarin derivative; flavonoids, tannins, and others.

**SCIENTIFIC DATA**

*In vitro:* Aescin prevents hypoxia-induced neutrophil recruitment, adherence and activation in the vein wall. Aescin stimulates the release of prostaglandins (PGF<sub>2</sub>á) in the perfused isolated rat lung. Aescin increases venous tone in canine and human saphenous veins.

*In animals:* HCSE significantly decreases edema caused by vasoactive agents, irritant chemicals, and vitamin C deficiency in rats, rabbits, and guinea pigs. Aescin is more effective than indomethacin in decreasing lymphatic flow due to prostaglandins. Aesculin has a moderate diuretic effect, significantly increasing renal loss of sodium and potassium.

*In humans:* Aescin reduces the transcapillary filtration of water and protein and enhances the

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constricting effect of noradrenaline on the veins. Case series and randomized controlled trials in patients with chronic venous insufficiency report that HCSE decreases leg volumes, transcapillary filtration coefficients, leg pain, pruritis and leg fatigue. HCSE was as effective as compression stockings, and slightly less effective than oxyruten, in decreasing lower extremity edema. In European accident victims with cerebral trauma, IV aescin reduced the rise in intracranial pressure, shortened the duration of unconsciousness, and decreased mortality in comparison to patients receiving traditional corticosteroid therapy.

### **TOXICITY AND SIDE EFFECTS**

*Poisonings* from whole unprepared horse chestnut seeds have occurred.

*Allergy:* Anaphylactic reactions have occurred with intravenous administration of aescin.

Contact dermatitis has been reported from topical preparations.

*Side effects* including nausea, stomach irritation, dizziness, headache and pruritis have been reported in up to 3% of patients taking HCSE. Controlled-release preparations decrease stomach upset. Toxicology studies and decades of patient use have not reported chronic harmful effects.

*Interactions with other medications:* Unknown. Theoretically, aesculin may interact with anticoagulation therapy, resulting in increased bleeding time. Aescin binds to plasma proteins and could theoretically affect the binding of other drugs.

*Contraindications:* Unknown.

*Pregnancy and lactation:* No safety studies.

*Pediatric use:* IV aescin is used in pediatric patients in Europe. There are no studies specifically addressing HCSE's safety for pediatric use.

### **ADDITIONAL RESOURCES**

- HOME: <http://www.mcp.edu/herbal/>
- Horse Chestnut Complete Monograph:  
<http://www.mcp.edu/herbal/horsechestnut/horsechestnut.pdf>
- Horse Chestnut Patient Fact Sheet:  
<http://www.mcp.edu/herbal/horsechestnut/horsechestnut.ph.pdf>