



# Grape seed

## Overview

Grapes (*Vitis vinifera*) have been heralded for their medicinal and nutritional value for thousands of years. Egyptians ate grapes at least 6,000 years ago, and several ancient Greek philosophers praised the healing power of grapes -- usually in the form of wine. European folk healers made an ointment from the sap of grapevines to treat skin and eye diseases. Grape leaves were used to stop bleeding, inflammation, and pain, such as the kind brought on by hemorrhoids. Unripe grapes were used to treat sore throats, and dried grapes (raisins) were used for constipation and thirst. Round, ripe, sweet grapes were used to treat a range of health problems including cancer, cholera, smallpox, nausea, eye infections, and skin, kidney, and liver diseases.

But grapes -- or the chemicals within them, especially **oligomeric proanthocyanidin complexes (OPCs)** -- have been touted as powerful antioxidants. Some people believe they could help treat a number of conditions, from heart disease to cancer to aging skin, although scientific evidence is mostly lacking for those conditions. However, there is good evidence that grape seed extract can help treat chronic venous insufficiency and edema.

A study of healthy volunteers found that taking grape seed extract did substantially increase levels of antioxidants in their blood. Antioxidants are substances that destroy free radicals -- harmful compounds in the body that damage DNA (genetic material) and even cause cell death. Free radicals are believed to contribute to aging, as well as the development of a number of health problems, including heart disease and cancer.

## Plant Description

Grapes are native to Asia near the Caspian Sea, but they were brought to North America and Europe. This plant's climbing vine has large, jagged leaves, and its stem bark tends to peel. The grapes may be green, red, or purple.

## What's It Made Of?

**Vitamin E, flavonoids, linoleic acid, and OPCs are highly concentrated in grape seeds. These compounds can also be found in lower concentrations in the skin of the grape. OPCs are also found in grape juice and wine, but in lower concentrations. Resveratrol is another of grape's compounds which is related to OPCs and found mainly in the skins. Resveratrol has become very popular as an antioxidant and is being studied in connection with a variety of diseases.**

## Medicinal Uses and Indications

Today, standardized extracts of grape seed may be used to treat a range of health problems related to free radical damage, including heart disease, diabetes, and cancer. Grape seed extract has also been shown to protect against bacterial infections, such as *Staphylococcus aureus*. Some studies -- mostly in animals -- support these uses.

Flavonoids found in red wine may help to protect the heart by lowering "bad" LDL cholesterol. The so called "French paradox" is the belief that drinking wine protects people living in France from developing heart disease at the high rates seen in people living in the United States. So far, however, there is no clear evidence that taking grape seed extract helps reduce heart disease. Some researchers speculate that the alcohol in the wine, and not the flavonoids, could be responsible for any healthful effects. Others think it could be the combination of alcohol and flavonoids.

Drinking alcohol to protect against heart disease is not advocated by the American Heart Association and other organizations because of the potential for addiction and other serious problems, such as car accidents and the increased risk of hypertension, liver disease, breast cancer, and weight gain. If you do drink red wine, you should have no more than 2 glasses (20 g ethanol) per day if you are a man, and no more than 1 if you are a woman.

### **Chronic venous insufficiency**

In chronic venous insufficiency, blood pools in the legs, causing pain, swelling, fatigue, and visible veins. A number of high quality studies have shown that OPCs from grape seed can reduce symptoms.

### **Edema**

Edema -- swelling caused by surgery or an injury -- seems to go away faster when people take grape seed extract. Edema is common after breast cancer surgery, and one double blind, placebo controlled study found that breast cancer patients who took 600 mg of grape seed extract daily after surgery for 6 months had less edema and pain than those who took placebo. Another study found that people who took grape seed extract after experiencing a sports injury had less swelling than those who took placebo.

### **High cholesterol**

There isn't enough evidence to say whether taking grape seed extract can lower cholesterol, although two preliminary studies showed promising results. A study of 40 people with high cholesterol looked at whether taking grape seed extract, chromium, a combination of both, or placebo for 2 months would lower cholesterol. The combination of grape seed extract and chromium was more effective than either grape seed alone or placebo in lowering total and LDL ("bad") cholesterol.

Another study looked at the effects of a proprietary grape seed extract on lipid peroxidation (the breakdown of fats in the blood) in a group of heavy smokers. In the study, 24 healthy male smokers (aged 50 years or greater) took either placebo or 2 capsules (75 mg of a grape procyanidin extracts and soy phosphatidylcholine), twice daily for 4 weeks. "Bad" LDL cholesterol levels were lower in those taking the grape seed supplement than those taking placebo.

### **High blood pressure**

Theoretically, grape seed extract might help treat hypertension or high blood pressure. Antioxidants, like the ones found in grape seed, help protect blood vessels from damage. Damaged blood vessels can lead to higher blood pressure. In several animal studies, grape seed extract substantially reduced blood pressure. But human studies are needed to see whether grape seed extract helps people with high blood

pressure.

## Cancer

Studies have found that grape seed extracts may prevent the growth of breast, stomach, colon, prostate, and lung cancer cells in test tubes. However, there is no clear evidence yet whether it works in humans. Antioxidants, such as those found in grape seed extract, are thought to reduce the risk of developing cancer. Grape seed extract may also help prevent damage to human liver cells caused by chemotherapy medications. Talk to your doctor or pharmacist before combining antioxidants with any chemotherapy drugs to make sure they interact safely together and that they don't interfere with effects of the chemotherapy medications.

## Other conditions

Grape seed extract is sometimes suggested for the following, although evidence is slight:

- Alzheimer's disease
- Diabetes (improving blood sugar control)
- Improving night vision
- Protecting collagen and elastin in skin (anti-aging)
- Treating hemorrhoids
- Protecting against oxidative rancidity and bacterial pathogens

## Available Forms

Grape seed is available as a dietary supplement in capsules, tablets, and liquid extracts. Look for products that are standardized to 40 - 80% proanthocyanidins or an OPC content of not less than 95%.

## How to Take It

### Pediatric

Grape seed extracts are not recommended for children. Whole grapes, however, make a healthy and safe snack for children.

### Adult

Grape seed often comes in standardized extracts with certain levels of proanthocyanidins. Speak to a knowledgeable provider to find the right dose for your issue.

## Precautions

The use of herbs is a time honored approach to strengthening the body and treating disease. Herbs, however, contain components that can trigger side effects and interact with other herbs, supplements, or medications. For these reasons, you should take herbs with care, under the supervision of a health care provider qualified in the field of botanical medicine. Common side effects include nausea, itching, dizziness, stomach upset, diarrhea, headache, sore throat, cough, and rash.

Pregnant or breastfeeding women should not take grape seed supplements.

## Possible Interactions

Grape seed extract can potentially affect medications broken down by the liver. Numerous medications are broken down by the liver, so check with your physician. Also, OPCs in grape seed extract may interact with the following:

**Anticoagulants (blood thinners)** -- Grape seed extract may act as a blood thinner, and could increase the risk of bleeding if taken with other blood thinners such as warfarin (Coumadin), clopidogrel (Plavix), or aspirin. If you are taking blood thinning medications or have bleeding disorders, ask your doctor before taking grape seed extract.

**Phenacetin** -- Drinking grape juice may increase how quickly the body breaks down Phenacetin to get rid of it. This may decrease the effectiveness of the Phenacetin you are taking.

## Supporting Research

Al-Habib A. Bactericidal effect of grape seed extract on methicillin resistant *Staphylococcus aureus* (MRSA). *J Toxicol Sci.* 2010;35(3):357-64.

Anastasiadi M, Chorianopoulos NG, Nychas GJ, Haroutounian SA. Antilisterial activities of polyphenol-rich extracts of grapes and vinification byproducts. *J Agric Food Chem.* 2009;57(2):457-63.

Bagchi D, Sen CK, Ray SD, et al. Molecular mechanisms of cardioprotection by a novel grape seed proanthocyanidin extract. *Mutat Res.* 2003;523-524:87-97.

Banerjee B, Bagchi D. Beneficial effects of a novel IH636 grape seed proanthocyanidin extract in the treatment of chronic pancreatitis. *Digestion.* 2001;63(3):203-206.

Belleville J. The French paradox: possible involvement of ethanol in the protective effect against cardiovascular diseases. *Nutrition.* 2002;18(2):173-177.

Bernstein BJ, Grasso T. Prevalence of complementary and alternative medicine use in cancer patients. *Oncology.* 2001;15(10):1267-1272; discussion 1272-1278, 1283.

Bielory L. Complementary and alternative interventions in asthma, allergy, and immunology. *AnnAllergy Asthma Immunol.* 2004;93(2 Suppl 1):S45-54.

Brooker S, Martin S, Pearson A, et al. Double-blind, placebo-controlled, randomised phase II trial of IH636 grape seed proanthocyanidin extract (GSPE) in patients with radiation-induced breast induration. *Radiother Oncol.* 2006;79(1):45-51.

Busserolles J, Gueux E, Balasinska B, et al. In vivo antioxidant activity of procyanidin-rich extracts from grape seed and pine (*Pinus maritima*) bark in rats. *Int J Vitam Nutr Res.* 2006;76(1):22-7.

Carlson S, Peng N, Prasain JK, Wyss JM. Effects of botanical dietary supplements on cardiovascular, cognitive, and metabolic function in males and females. *Gen Med.* 2008;5 Suppl A:S76-90. Review.

Chan MM, Mattiacci JA, Hwang HS, et al. Synergy between ethanol and grape polyphenols, quercetin, and resveratrol, in the inhibition of the inducible nitric oxide synthase pathway. *Biochem Pharmacol.* 2000;60(10):1539-1548.

Chou EJ, Keevil JG, Aeschlimann S, et al. Effect of ingestion of purple grape juice on endothelial function in patients with coronary heart disease. *Am J Cardiol.* 2001;88(5):553-555.

Décordé K, Teissèdre PL, Sutra T, Ventura E, Cristol JP, Rouanet JM. Chardonnay grape seed procyanidin extract supplementation prevents high-fat diet-induced obesity in hamsters by improving adipokine imbalance and oxidative stress markers. *Mol Nutr Food Res.* 2008 Nov 26. [Epub ahead of print]

Faria A, Calhau C, de Freitas V, et al. Procyanidins as antioxidants and tumor cell growth modulators. *J Agric Food Chem.* 2006;54(6):2392-7.

Fitzpatrick DF, Bing B, Maggi DA, et al. Vasodilating procyanidins derived from grape seeds. *Ann N Y Acad Sci.* 2002;957:78-89.

Freedman JE, Parker C 3rd, Li L, et al. Select flavonoids and whole juice from purple grapes inhibit platelet function and enhance nitric oxide release. *Circulation.* 2001;103(23):2792-2798.

Gruenewald J, Brendler T, Jaenicke C. *PDR for Herbal Medicines, 4th ed.* Montvale, NJ: Thomson Healthcare; 2007:405-410.

Hsu CP, Lin YH, Chou CC, Zhou SP, Hsu YC, Liu CL, Ku FM, Chung YC. Mechanisms of grape seed procyanidin-induced apoptosis in colorectal carcinoma cells. *Anticancer Res.* 2009;29(1):283-9.

Hung LM, Chen JK, Huang SS, et al. Cardioprotective effect of resveratrol, a natural antioxidant derived from grapes. *Cardiovasc Res.* 2000;47(3):549-555.

Hu H, Qin YM. Grape seed proanthocyanidin extract induced mitochondria-associated apoptosis in human acute myeloid leukemia 14.3D10 cells. *Chin Med J (Engl).* 2006;119(5):417-21.

Joshi SS, Kuszynski CA, Bagchi D. The cellular and molecular basis of health benefits of grape seed proanthocyanidin extract. *Curr Pharm Biotechnol.* 2001;2(2):187-200.

Kalin R, Righi A, Del Rosso A, et al., Activin, a grape seed-derived proanthocyanidin extract, reduces plasma levels of oxidative stress and adhesion molecules (ICAM-1, VCAM-1 and E-selectin) in systemic sclerosis. *Free Radic Res.* 2002;36(8):819-25.

Kar P, Laight D, Rooprai HK, Shaw KM, Cummings M. Effects of grape seed extract in Type 2 diabetic subjects at high cardiovascular risk: a double blind randomized placebo controlled trial examining metabolic markers, vascular tone, inflammation, oxidative stress, and insulin sensitivity. *Diabet Med.* 2009;26(5):526-31.

Kaur M, Agarwal R, Agarwal C. Grape seed extract induces anoikis and caspase-mediated apoptosis in human prostate carcinoma LNCaP cells: possible role of ataxia telangiectasia mutated-p53 activation. *Mol Cancer Ther.* 2006;5(5):1265-74.

Kaur M, Agarwal C, Argarwal R. Anticancer and cancer chemopreventive potential of grape seed extract and other grape-based products. *J Nutr.* 2009;139(9):1806S-12S.

Kaur M, Mandair R, Agarwal R, Agarwal C. Grape seed extract induces cell cycle arrest and apoptosis in human colon carcinoma cells. *Nutr Cancer.* 2008;60 Suppl 1:2-11.

LaValle JB, Krinsky DL, Hawkins EB, et al. *Natural Therapeutics Pocket Guide.* Hudson, OH:LexiComp;

2000: 451-452.

Nassiri-Asl M, Hosseinzadeh H. Review of the pharmacological effects of *Vitis vinifera* (Grape) and its bioactive compounds. *Phytother Res*. 2009 Jan 12. [Epub ahead of print]

Natella F, Belelli F, Gentili V, et al. Grape seed proanthocyanidins prevent plasma postprandial oxidative stress in humans. *J Agric Food Chem*. 2002;50(26):7720-5.

Preuss HG, Wallerstedt D, Talpur N, et al. Effects of niacin-bound chromium and grape seed proanthocyanidin extract on the lipid profile of hypercholesterolemic subjects: a pilot study. *J Med*. 2000;31(5-6):227-246.

Preuss HG, Bagchi D, Bagchi M. Protective effects of a novel niacin-bound chromium complex and a grape seed proanthocyanidin extract on advancing age and various aspects of syndrome X. *Ann N Y Acad Sci*. 2002;957:250-9.

Ramchandani AG, Karibasappa GS, Pakhale SS. Antitumor-promoting effects of polyphenolic extracts from seedless and seeded Indian grapes. *J Environ Pathol Toxicol Oncol*. 2008;27(4):321-31.

Vigna GB, Costantini F, Aldini G, et al. Effect of a standardized grape seed extract on low-density lipoprotein susceptibility to oxidation in heavy smokers. *Metabolism*. 2003;52(10):1250-7.

Vitseva O, Varghese S, Chakrabarti S, et al. Grape seed and skin extracts inhibit platelet function and release of reactive oxygen intermediates. *J Cardiovasc Pharmacol*. 2005;46(4):445-51.

Waffo-Teguo P, Hawthorne ME, Cuendet M, et al. Potential cancer-chemopreventive activities of wine stilbenoids and flavans extracted from grape (*Vitis vinifera*) cell cultures. *Nutr Cancer*. 2001;40(2):173-179.

Wang YJ, Thomas P, Zhong JH, Bi FF, Kosaraju S, Pollard A, Fenech M, Zhou XF. Consumption of grape seed extract prevents amyloid-beta deposition and attenuates inflammation in the brain of an Alzheimer's disease mouse. *Neurotox Res*. 2009;15(1):3-14.

Yamakoshi J, Saito M, Kataoka S, et al. Safety evaluation of proanthocyanidin-rich extract from grape seeds. *Food Chem Toxicol*. 2002;40(5):599-607.

Zhang HJ, Ji BP, Chen G, Zhou F, Luo YC, Yu HQ, Gao FY, Zhang ZP, Li HY. A combination of grape seed derived procyanidins and gypenosides alleviates insulin resistance in mice and HepG2 cells. *J Food Sci*. 2009;74(1):H1-7.

## Alternative Names

*Vitis vinifera*



## Version Info

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- Steven D. Ehrlich, NMD, Solutions Acupuncture, a private practice specializing in complementary and alternative medicine, Phoenix, AZ. Review provided by VeriMed Healthcare Network.

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