

Schisandra Strengthens Your Liver

Anti-Aging Tonic Also Battles Stress and Exhaustion

By now, everyone is familiar with the role antioxidants play in warding off disease and illness . . . and hopefully you're including plenty of them in your diet and health regimen. But there's always room for improvement, and some antioxidants are simply better than others. Schisandra is one of them, here's why.

Although Schisandra (*Schisandra chinensis*) is revered the world over as an adaptogen to improve the body's ability to respond to stress, recover from exhaustion, and fight disease, recent studies have shown that it is a potent antioxidant that exerts a beneficial effect on the mitochondria—the powerhouse within every cell.

Historically schisandra has been used as a lung astringent and kidney tonic, to treat mental illness, night sweats, coughs, thirst, insomnia, chronic dysentery, and sexual dysfunction.¹ Scientists attribute the herb's unique healing abilities to these pharmacologically active constituents:

- Lignans are anti-inflammatory, and appear to protect the liver by activating the enzymes in liver cells that produce glutathione, an important antioxidant substance.⁸⁻¹⁴
- Phytosterols are plant-based oils that appear to have a cholesterol-lowering effect.

Schisandra potentiates glutathione

Recent studies on laboratory animals show that schisandra increases glutathione levels, and provides:

- protection against brain damage^{2,3,4}
- enhanced immunity²
- protection against the formation of cellular peroxides²
- protection against cardiovascular disorders^{5,6,7}

- protection against toxins in the liver [8-14](#)

What is glutathione?

Glutathione is the major antioxidant found in almost every cell that protects it from free radicals. Antioxidants give up an electron to stop oxidation. They play a key role in neutralizing the estimated 10,000 “oxidative hits” each cell suffers a day. In other words, antioxidants are able to destroy free radicals in body cells before they can attack DNA or cause lipids to oxidize, resulting in cellular death and/or mutation. If glutathione is in short supply, free radicals can overwhelm the cell, and consequently disease and illness sets in.

Free radicals are generated in the mitochondria—the powerhouse of each cell. They are unstable molecules that are missing an electron, and frantically bump into and damage other molecules in an effort to replace their lost electron. It is impossible to be alive and not have some oxidative damage, because free radicals are produced by normal processes in the body (like the release of adrenaline), and from environmental sources such as ultraviolet radiation, tobacco smoke, food additives, foods that have been fried in oil that’s been used over and over again (typical in many fast-food restaurants), and other pollutants. Once free radicals are released, they multiply geometrically in chain reactions, unless they are stopped by antioxidants.

Antioxidants not only protect living tissue, but they repair the damage of oxidation. Glutathione also has the ability to recycle other antioxidants such as vitamin C and vitamin E, keeping them in their active state. [15](#)

Glutathione helps the body get rid of toxins and pollutants

It forms a soluble compound with a toxin that can then be excreted through bodily waste. Many drug metabolites and heavy metals are disposed of in this way. Since the liver and kidneys have the greatest exposure to toxins, they contain high levels of glutathione. The lungs are also rich in glutathione. [15](#)

Helps regulate the cell’s vital functions

Glutathione plays a crucial role in maintaining a normal balance between oxidation and anti-oxidation, (or free radicals and antioxidants). This, in turn, regulates many of the cell’s vital functions, such as the synthesis and repair of DNA, the synthesis of proteins, and the activation and regulation of enzymes. [15](#)

Supports strong immune response

Glutathione is required in many of the intricate steps needed to carry out an immune response. For instance, it is used by lymphocytes to multiply in order to develop a strong immune response, and for killer T-cells to fight harmful cells such as cancer cells or cells infected with viruses. The importance of glutathione cannot be emphasized enough. It performs multiple tasks, as indicated, and when you start looking at each system or organ closely, the necessity for glutathione becomes increasingly evident. [15](#)

Glutathione levels decline with age

It is interesting to note that older people who enjoy good health, usually have high levels of glutathione.

Luckily, schisandra helps increase glutathione on the cellular level.

While glutathione levels are important, the most critical place for glutathione protection is within the mitochondria. This is because mitochondria not only produce most of a cell's energy, but also produces the largest amounts of damaging free radicals. Impressively, schisandra has been shown to significantly enhance glutathione protection within mitochondria.¹⁶ Since most other strategies to enhance glutathione only effect glutathione levels within cells, but not in the critical mitochondrial glutathione levels, the potential for schisandra to enhance antioxidant protection, and protect from age-related free radical damage, is very unique and beneficial.

Schisandra helps to fight cellular oxidative damage from the inside out, and strengthens the immune system.

While most initial research into the beneficial effects of schisandra centered on its ability to enhance antioxidant protection, recent studies have shown that schisandra may have a more profound mechanism of action. Specifically, researchers have found that schisandra enhances the cellular levels of “heat shock proteins.”

What are heat shock proteins?

Heat shock proteins (HSPs) are an essential component of all living cells. HSPs function to protect proteins from the deleterious effects of stressors by stabilizing, and properly refolding proteins. They also assist in protein folding, assembly, transport and degradation. As their name suggests, they were first discovered to be made by cells in response to heat stress.

Because all living things utilize proteins to control metabolism and cellular functions, keeping proteins properly folded and functioning is absolutely essential to life. Heat, as you can imagine, reeks havoc on this system. Heat causes proteins, which must be properly folded to function, to unfold. This ruins the protein's functions and causes extreme cellular stress. Ultimately, many different HSPs have been found inside living cells. They are now known to be produced in response to not only heat, but also many different toxins and free radical stress.¹⁷

As you can imagine, the proper functioning of HSPs is absolutely vital to our health. The exciting thing about schisandra is that scientists have found that some of our most important HSPs are actually induced by schisandra, and that this HSP enhancement is responsible for part of schisandra's potent, protective effect against stressors, damaging chemicals, and free radicals.¹⁸

Schisandra enhances cognitive function

Schisandra is one of the major herbs almost always used in Chinese mind tonic formulations. It has traditionally been used to:

- treat mental and emotional illness
- improve mental clarity, concentration, and coordination, reduce forgetfulness, irritability, nervous exhaustion, stress, depression, and anxiety¹⁹

According to new research, schisandra shows potential as a protectant against brain damage. An in vitro study at the College of Pharmacy and Research Institute of Pharmaceutical Science, Seoul National University, Korea examined the results of schisandra extract on rodent brain cells and found 1) an improvement in the glutathione defense system, 2) an increase in the level of glutathione, and 3) an inhibition in the formation of cellular peroxide (a free radical). The researchers concluded that schisandra is a potential therapeutic aid against oxidative neuronal damage.²

A study at the Department of Biochemistry, Hong Kong University of Science & Technology, China, found that schisandra enhances cognitive function in mice, and protects the liver against toxicity from tacrine (Cognex®, an acetylcholinesterase inhibitor used for Alzheimer's disease), leading the investigators to believe that schisandra may protect Alzheimer's patients from the liver toxicity associated with taking tacrine.¹¹

Researchers at the Department of Pharmacology, Chinese Academy of Medical Sciences, Beijing, found that two lignans in schisandra inhibit the swelling and disintegration of brain mitochondria, reducing the possibility of brain damage from stroke and aging.²¹

Schisandra has also been shown to help in the treatment of liver disease, including hepatitis, and poor liver function.^{22, 23} Animal studies suggest schisandra may protect the liver from toxic damage, improve liver function, and stimulate liver cell regrowth.²⁴⁻²⁹ These findings led to its use in human trials for treating hepatitis. In a Chinese study of 189 people with hepatitis B, those given

schisandra reportedly improved more rapidly than those given vitamins and liver extracts.[29](#)

A powerful adaptogen

Studies have demonstrated the adaptogenic effects of schisandra. For example, in sports medicine, one of the important adaptogenic effects is a faster recovery time—physically and biochemically. When schisandra was given to thoroughbred horses in a single dose of 12 grams, 30 minutes before exercise and race time, the herb produced a significant effect in reducing cardiac and respiratory frequency, and the accumulation of lactate in the horses—contributing to a faster recovery time.[30](#)

How safe is schisandra?

Schisandra is very safe when used as directed. However, it should not be used during pregnancy or nursing, or in conjunction with drugs that cause drowsiness. Consult with your health practitioner before using schisandra if you have seizure disorders or high blood pressure.

Schisandra is a safe, potent antioxidant with a number of significant therapeutic effects. Numerous scientific studies have validated the historical use of the herb, in particular as an adaptogen, liver protector, cardiovascular protector, brain protector and cognitive enhancer. Schisandra contains a complex mixture of constituents that not only complement each other, but potentiate each other and glutathione. It is definitely a nutritional supplement worth adding to your arsenal of antioxidants.

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