

Scientific Research on Goji – “*lycium barbarum*”

Goji berry may provide anti-aging, immune-stimulating, glucose regulatory, and liver protective effects.



Also known as *Lycium barbarum* fruit, goji berry grows on a bush and is native to northwestern China. The oblong-shaped berries are bright red and contain 20-40 tiny seeds, and can be eaten raw, or made into a juice or wine, brewed for tea, or prepared as a tincture. But it's the extracted phytochemicals used in nutritional supplements that provide the most potent health benefits.

Goji berry has been used in Traditional Chinese Medicine (TCM) for thousands of years as a health tonic to promote overall health and healthy eyesight, strengthen the immune system, protect the liver, improve circulation and sperm production, and to enhance sexual performance. It has also been used as a remedy for diabetes, anemia, tinnitus, and lung diseases.

In TCM terms, goji berries are sweet in taste and neutral in nature, they act on the liver, lung, and kidney channels and enhance “chi” or life force. Goji berry continues to be a revered and popular health tonic in China. In fact, in 1983 the Ministry of the Public Health of China approved goji berry to be marketed as a botanical medicine.

Goji berry's important phytochemicals:

1. **Polysaccharides** are long-chain sugar molecules and are a distinguishing characteristic of goji berry. They are a primary source of dietary fiber in the intestinal system, and once they are metabolized polysaccharides:
 - support and maintain the health of the colonic mucosal lining
 - lower pH and reduce colon cancer risk
 - enhance mineral uptake
 - stabilize blood glucose levels
 - stimulate the immune system
 - offer antioxidant protection
2. **Zeaxanthin**, an antioxidant in the carotenoid family—a group of naturally occurring, fat-soluble pigments found in plants that play a key role in our immune system support—are abundantly found in goji berry. Zeaxanthin is a powerful vision protector that accumulates in the macula, the prominent, bright yellow spot in the center of the retina that allows you to clearly distinguish fine detail. The concentration of zeaxanthin in the center of the macula is about 85 times greater than its concentration in the periphery. Consequently, many researchers believe zeaxanthin (and lutein, another carotenoid) may be a potent protectant against macular degeneration [1-6](#), and

may retard aging of the lens in preventing cataracts from forming.[7,8](#) So, vision support is another one of goji berry's many health benefits.

3. **Beta-carotene** is a carotenoid pigment in orange-red foods like goji berry, pumpkins, carrots, and salmon. It is important for the synthesis of vitamin A (a fat-soluble nutrient and antioxidant that is essential for normal growth), vision, cell structure, bones and teeth, and healthy skin. Goji berry's beta-carotene content is among the highest for edible plants.

Scientific research

Most of the research on goji berries over the past 30 years has come out of China, but international awareness about its health and therapeutic benefits is growing.

Goji berry supports cardiovascular health

In the book *Discovery of the Ultimate Superfood*, the authors document the science behind goji berry and list 67 medical studies showing how goji berry supports healthy heart function.[9](#) A Taiwanese study of the antioxidant activity of goji berry and two other Chinese herbs found goji berry to be the strongest inhibitor of lipid peroxidation (a major factor in cardiovascular disease) in animal models.[10](#)

Reduces blood glucose and lipids in animal models

After three weeks of eating a diet supplemented with goji berry, laboratory animals with non-insulin dependent diabetes II showed a significant decrease in weight, cholesterol, triglycerides, and insulin levels, leading the researchers to conclude that goji berry may be helpful in improving insulin resistance.[11](#)

Another study found that goji berry contains potent antioxidants that reduced blood glucose levels, and total cholesterol and triglyceride concentrations in rabbits, while increasing high-density lipoprotein cholesterol (HDL)—“good cholesterol” levels after 10 days of treatment.[12](#)

Increases immunity

In a 1988 report published by the State Scientific and Technological Commission of China, researchers discovered that after eating 50 grams of goji berry, human volunteers showed an increase in white blood cell count and a 75 percent increase in the antibody immunoglobulin A (IgA). In a more recent animal study, goji berry polysaccharides stimulated production of interleukin-2, a hormone-like substance that stimulates the growth of blood cells important to the immune system, which protect against cancer cells and microbial invasion.[13](#)

Protects against DNA damage

One of the most amazing things about this berry is that it has been shown to actually protect against DNA damage and reduce DNA damage that has already occurred in animals ... which means it may very well counteract aging. Although studies haven't been done yet on humans, the potential is tremendous.

A recent study at the Fudan University in Shanghai, China, found that when goji berry polysaccharides were given to laboratory animals with DNA damage and non-insulin dependent diabetes, the animals showed a decrease in blood glucose levels and an increase in serum levels of superoxide dismutase (SOD)—an important antioxidant. Additionally, goji berry decreased DNA damage, possibly by decreasing oxidative stress levels, leading the researchers to theorize that goji berry extract supplementation may prevent the development of complications or even the tendency for diabetic animals to develop other health problems.[14](#)

Protects testicle cells in animal study

Another animal study at the same university found that goji berry polysaccharides also protected against DNA damage in testicle cells that were pre-treated with goji berry and then exposed to hydrogen peroxide.[15](#) This study could be of particular interest to men who have fertility issues.

Supports brain health

Alzheimer's disease is predicted to become an epidemic for Baby Boomers, and there are currently about 70,000 scientists working around the world to find a cure. In a recent study at the University of Hong Kong, researchers theorized that since goji berry extract has anti-aging effects, it probably also has neuroprotective effects against toxins in neurodegenerative diseases, namely Alzheimer's disease. They were right. Goji berry extract protected the brain neurons of laboratory animals from the toxic effects of beta amyloid protein—a culprit in Alzheimer's disease. The researchers concluded that studies on anti-aging herbal medicine like goji berry might open up a new therapeutic window for the prevention of Alzheimer's disease.[16](#)

Inhibits cancer growth

Thousands of studies have been done using a variety of dietary supplements, with most of them on animals. A clinical trial done in China in 1994 on goji berry showed very promising results.

Seventy-nine advanced cancer patients were treated with LAK/IL-2 (a cancer drug) combined with goji berry. Initial results indicated that regression of the cancer was achieved in patients with malignant melanoma, renal cell carcinoma, colorectal carcinoma, lung cancer, nasopharyngeal carcinoma, and malignant hydrothorax. The response rate of patients treated with LAK/IL-2 plus goji berry was 40.9%, while that of the patients treated with just LAK/IL-2 was 16.1% (P<0.05). The remission period in the patients treated with LAK/IL-2 plus goji berry also lasted significantly longer. The results indicate that goji berry could be useful as an adjuvant (an agent added to another drug to enhance its medical effectiveness) in the treatment of cancer.[17](#)

In a more recent in vitro study, goji berry inhibited the growth of human leukemia cells.[18](#)

Protects the liver

Goji berry is a potent hepatoprotective, or liver protector.

- One study discovered that goji berry helps counteract carbon tetrachloride toxicity in the liver.[19](#)
- A goji berry compound called cerebrosides—a combination of sugar and fat (glycolipids)—was shown to protect liver cells from a toxic dry-cleaning chemical better than the well-known liver protectant milk thistle. [20](#)
- Pyroles, another hepatoprotective compound in goji berry, are unusual molecules that have a nitrogen atom in their central ring and were found to outperform goji berry cerebrosides in protecting the liver. [21](#)

Drug contraindication

It should be noted that in a study of herbal medicines on pharmaceutical drugs, goji berry was found to increase the anti-coagulation effect of warfarin.[22](#) Therefore, persons on anti-coagulant therapy should only use goji berry under medical supervision.

Conclusion

Based on scientific studies, we now know that goji berry's unique polysaccharides provide potent antioxidative effects and anti-tumor, immune-stimulatory, and cytoprotective benefits. We're bound to learn more in the near future about the physiological effects that the "King of the Berries" provides. So take advantage of the modern research and ancient wisdom of China, now. After all, the Chinese have been using goji berry for thousands of years. Isn't it time that you tried it?

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