

FRESH CALIFORNIA GRAPES

Grapes and Health: An Overview

- Fresh grapes are a favorite fruit among consumers who love their crisp textures and juicy-sweet flavors. In addition to their simple taste appeal, a growing body of research on grapes and grape compounds suggests that grapes may offer significant health benefits as well.
- Per capita consumption of table grapes in the U.S. continues to rise and today, on average, every American eats 7.73 pounds of fresh grapes each year. Since 1992 table grape consumption has grown 13% which is significant since total fruit and vegetable consumption in the U.S. has declined nearly 14% in that same time period.
- A $\frac{3}{4}$ cup serving of grapes contains just 90 calories, no sodium or cholesterol and virtually no fat. Grapes contain vitamin C and potassium, as well as a small amount of fiber. Despite their sweet flavor, grapes are actually a low glycemic index food.
- Grapes are rich in plant compounds known as phytonutrients. Phytonutrients are biologically active substances within plants that are responsible for giving plants their odor, color and flavor as well as helping to protect the plant against stresses such as bacteria, excessive sunlight and pests. Recent research indicates that phytonutrients in plants may fight disease and enhance health in humans.
- Several key phytonutrients found in grapes have garnered significant attention from the scientific community for their potential health benefits. Grapes are one of the main dietary sources of resveratrol, and they are important sources of flavonoids, including catechins, quercetin, procyanidins and anthocyanins. Grapes also contain the carotenoid lycopene, widely recognized for its disease-fighting capabilities.
- Grape phytonutrients are well-known antioxidants that can protect cells from free radical damage, and they appear to have additional disease-fighting properties: grape phytonutrients have been shown to impact key steps in combating certain types of cancer, as well as heart disease, and several other age-related diseases.

Grapes and Cancer Prevention

Resveratrol

Resveratrol is a key phytonutrient found mainly in the skins of grapes. It is gaining notoriety for its anti-inflammatory properties and has been linked to the prevention of specific types of cancer, as well as the reduction of heart disease. In just the past year, a variety of cell and animal studies on resveratrol showed that it:

- May contribute to increased longevity
- Prevented premature cell death
- Provided anti-tumor activity against neuroblastoma, an aggressive childhood cancer, in mice
- Promoted cell death of neuroblastoma cells in mice
- Exhibited unique, non-steroidal anti-inflammatory activity
- Inhibited the proliferation of human breast cancer cells

Resveratrol is credited as a key source for the beneficial effects of drinking red wine, because red wine is made using the skins of the grape, where white wine is not. A recent study showed that drinking four or more glasses of red wine per week cut the risk of prostate cancer in half. The same amount of resveratrol can be found in approximately two and a half cups of fresh grapes.

Other Grape Constituents

A number of studies have shown a link between grape constituents and cancer prevention including the ability of grape compounds to inhibit the growth of cancer cells through a wide variety of mechanisms. Specific cancer types include breast, colon, stomach and leukemia.

One observational study found that increased consumption of grapes was associated with reduced risk of oral cancer.

Resveratrol and Brain Health

Resveratrol has also been linked to improved brain health and is believed to have the potential to protect against acute and chronic neurological diseases.

- Resveratrol added to drinking water was shown to protect animals against brain damage caused by a powerful neurotoxin.
- Resveratrol belongs to a family of compounds that effectively inhibit the formation of tiny structures around nerves called fibrils, a hallmark of Alzheimer's disease and other degenerative nerve diseases.
- In Parkinson's disease, areas around nerves become abnormally enriched with iron, which makes the nerves more susceptible to oxidative damage. In one study, resveratrol and other antioxidants effectively protected Parkinson's-like nerve cells against iron-enhanced oxidative damage.

Grape Phytonutrients and Heart Health

Grape phytochemicals are believed to interfere with the development of atherosclerosis in several ways:

- The grape antioxidants have been shown to reduce the susceptibility of low-density lipoprotein cholesterol (LDL-C) to oxidation. Oxidized LDL is believed to play a critical role in the early stages of the atherosclerotic process.
- Grape polyphenols decrease platelet aggregation and formation of arterial lesions by stimulating the release of Nitric Oxide (NO).
- Protective substances in grapes have also been shown to cause arterial relaxation and other favorable metabolic effects.

Flavonoids, such as those present in grapes – including quercetin, catechin and anthocyanin – are being shown to play a role in preventing heart disease and cancer.

- A number of studies have shown that the flavonoids in grape juice exhibit anti-clotting effects similar to aspirin.
- A study found that table grapes from California protected the heart and blood vessels against oxidative tissue damage, similar to the well-known effects of red wine.
- Grape juice has been shown to reduce the susceptibility of LDL cholesterol to oxidation.

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