



Concord Grape Juice – Research Update

Biomedical researchers have been studying the health benefits of Concord grape juice for well over a decade. A number of studies have highlighted the antioxidant activity of grape juice or have demonstrated beneficial effects from Concord grape juice consumption relating to cardiovascular health, cognitive function, immunity, weight management and more. Recent research published or presented in these areas is reviewed below.

Cardiovascular Health

Studies on the cardiovascular benefits of Concord grape juice have focused on platelet aggregation, arterial function, and the mechanisms of action involved. More recently, Concord grape juice has been evaluated for its role in vasodilation, blood pressure and cholesterol levels.

- A study published in *Cardiovascular Research* showed that Concord grape juice works in a similar fashion to red wine to promote healthy arterial function. Concord grape juice was able to stimulate the production of nitric oxide in endothelial cells to produce a pronounced vasorelaxant effect. By promoting arterial relaxation, Concord grape juice may contribute to healthy blood pressure. Further, researchers found that Concord grape juice produced this relaxation effect by stimulating the same reactions in the arteries that are activated by red wine, showing it is the components of the grape, rather than alcohol, which are responsible for these specific cardio-protective effects. These findings are particularly noteworthy because the beneficial effects of Concord grape juice were observed in arteries of the heart.¹ This research complements previous work by Dr. Jane Freedman and colleagues, which showed increased production of nitric oxide from blood platelets in subjects drinking Concord grape juice,² and may explain why subjects drinking Concord grape juice have shown improved arterial flexibility in some studies^{3,4} and decreased blood pressure in others.⁵ Additionally, Dr. Schini-Kerth has shown that Concord grape juice stimulates a prolonged effect of nitric oxide production, lasting up to six hours.⁶ This extended effect has not been reported with red wine.
- Employing an animal model widely used to study the development of atherosclerosis, researchers from the University of Wisconsin saw lowering of blood pressure in study subjects fed Concord grape juice with a hypercholesterolemic diet, as well as lowering of total cholesterol and the inhibition of atherosclerosis, versus a control group.⁷
- A Boston University study has shown that consumption of Concord grape juice may have a beneficial impact on blood pressure regulation and, in particular, nocturnal blood pressure. This research compared the effects of





Concord grape juice on measures of blood pressure, fasting glucose and insulin levels to the effects of a calorie-matched placebo beverage and found that drinking Concord grape juice had favorable effects on nocturnal blood pressure, while body weight, blood glucose and fasting insulin levels were not impacted. Results from the placebo group reported the opposite effect with a reduction in the nocturnal dip in blood pressure and a rise in fasting glucose. Clinical evidence suggests that the reduction of this nocturnal dip is associated with an increased risk for future cardiovascular events. While the research did not find a significant decrease in 24-hour ambulatory blood pressure, the study results suggest that consumption of Concord grape juice may have a beneficial impact on blood pressure regulation.⁸

Aging and Cognitive Function

With growing evidence, many scientists believe that consumption of antioxidant-rich foods, such as fruits and vegetables and their juices, may help preserve cognitive function and perhaps reverse memory decline in certain populations.

- A study from the University of Cincinnati, College of Medicine was one of the first placebo-controlled human studies to investigate whether regular consumption of a polyphenol-rich food or beverage could have beneficial effects against age-related cognitive decline. Participants who drank Concord grape juice had significant improvement in list learning and trended toward improved short-term retention and spatial memory.⁹
- A characteristic hallmark of Alzheimer's disease is the accumulation of beta-amyloid peptides and their formation into plaques in the brain. Researchers at Mount Sinai School of Medicine found that polyphenol extracts from Cabernet Sauvignon and Concord grape juice reduced the generation and accumulation of beta-amyloid peptides in experimental models of Alzheimer's disease.¹⁰
- In a study conducted at the USDA-ARS Human Nutrition Research Center on Aging at Tufts University, older animals were tested for short-term memory and neuro-motor skills. Scientific lead, Dr. James Joseph, noted improved cognitive function with a number of high-antioxidant fruits and vegetables however, only Concord grape juice and a few other fruits have demonstrated improvements in motor functions as well.¹¹

Immune Function/Anti-Viral Activity

Welch's 100% Grape Juice may play a role in supporting a healthy immune system.

- In a recent study out of the University of Florida, healthy participants who drank Welch's 100% Grape Juice daily showed a significant increase in a specific type of immune cell – the gamma delta T cell – which detects





potential pathogens and alerts the immune system that a response is necessary.^{12,13}

- Additionally, a study presented at the 2009 American Society for Microbiology conference demonstrated that in an *in vitro* laboratory model, natural compounds found in Concord grape juice protected cells from viral infection. This preliminary research suggests that Concord grape juice may help protect against gastrointestinal viral infection. The researchers believe that the natural polyphenols within grape juice, specifically proanthocyanidins, blocked cells' viral receptor sites which inhibited a type of virus, specifically rotavirus, from getting into the cells and reduced the virus' ability to replicate. Grape juice was shown to have a protective effect when added to the cells either before the virus was introduced or after the cells were infected by the virus, suggesting that consumption of grape juice may have a protective effect in the digestive system prior to or soon after virus infection.¹⁴

Weight Management

Concord grape juice has no significant impact on body weight.

- In a 12-week, double-blind, placebo-controlled trial, regular consumption of 100% Concord grape juice did not cause significant weight gain, was not associated with changes in appetite and was shown to reduce waist circumference. To the contrary, participants who drank the placebo beverage gained on average 1.6 kg / 3.4 lbs ($p < 0.05$) and experienced a significant decline in self-reported fullness when compared to baseline.¹⁵ Consumed in moderation, grape juice made from Concord grapes can be a great complement to whole fruits and a convenient way to consume more fruit as part of a balanced diet.

References

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