

Why Watermelon Is Good for Your Cardiometabolic Health

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

June 02, 2023

STORY AT-A-GLANCE

- › Only 6.8% of U.S. adults have optimal cardiometabolic health, while an estimated 47 million have cardiometabolic disorders
- › Watermelon contains L-citrulline and L-arginine, which are nitric oxide (NO) precursors; NO helps relax blood vessels and widen arteries
- › Consuming watermelon juice attenuates reductions in heart rate variability (HRV) after high sugar consumption; low HRV is associated with increased risk of cardiovascular disease and mortality
- › Compared to people who don't eat watermelon, those who do have healthier quality diets and increased nutrient intake
- › Among overweight or obese adults, eating watermelon led to greater satiety, including lower hunger, food consumption and desire to eat and greater fullness, compared to eating low-fat cookies

Only 6.8% of U.S. adults have optimal cardiometabolic health,¹ while an estimated 47 million have cardiometabolic disorders that increase their risk of heart disease and Type 2 diabetes.² Risk factors for cardiometabolic disease include high blood pressure, abdominal obesity, elevated fasting blood sugar, dyslipidemia and elevated triglycerides.³

Factors that lower these risks are therefore beneficial for cardiometabolic health. This includes lifestyle factors like eating right, exercising and maintaining a healthy weight.

Specifically, in the realm of dietary strategies, watermelon has an ideal mix of nutrients to support cardiometabolic health, making it among the best food choices.

Watermelon Juice Is Good for Heart Rate Variability

Heart rate variability (HRV) is an indicator of your body's capacity to respond to stress. It measures the variations in time between your heartbeats — a function controlled by your autonomic nervous system (ANS). As such, HRV is said to be a “proxy of autonomic activity” that's associated with executive functions, emotional regulation and more.⁴

HRV can help assess autonomic dysfunction, which, according to researchers with Louisiana State University in Baton Rouge, is an “emerging mechanism in the development of cardiometabolic disease.”⁵ Low HRV, for instance, is associated with increased risk of cardiovascular disease and mortality. Reduced HRV is also linked to the accumulation of visceral fat, hyperglycemia, endothelial dysfunction and increased inflammation.

Watermelon contains L-citrulline and L-arginine, which are nitric oxide (NO) precursors. NO helps relax blood vessels and widen arteries. When consumed orally, L-citrulline is converted to L-arginine. These compounds show promise for heart health, in part via their effect on HRV. According to the Louisiana State University team:⁶

“The amino acid L-arginine serves as the substrate for NO synthase to promote the enzymatic formation of NO. In healthy participants, increasing the plasma concentrations of L-arginine resulted in improved vagal control of heart rate. Other NO-promoting therapies, such as nitrates and beetroot juice, have also shown some promise in improving HRV.”

Watermelon Juice Attenuates Reductions in HRV

The team previously found that consuming watermelon juice for two weeks increases NO bioavailability. It's believed that loss of NO bioavailability may play a role in reduced HRV.⁷ They conducted a randomized, double-blind, placebo-controlled trial to determine

the effects of daily watermelon juice consumption for two weeks on HRV during an oral glucose challenge (OGC), or high sugar consumption. OGC has previously been shown to reduce HRV.

The trial involved 18 participants who drank either 500 milliliters (ml) of watermelon juice or a placebo daily for the study period. It found that watermelon juice attenuated the reductions in HRV caused by OGC. According to the study:⁸

“Using a rigorous study design, we show the efficacy of a naturally rich source of amino acids, L-citrulline, and L-arginine, to preserve HRV during a hyperglycemic episode.

These findings build on our previous work that shows WMJ supplementation protects vascular function during hyperglycemia. NO bioavailability is potentially a link between these two integrated physiological systems, but more work is required to develop a mechanistic understanding of this relationship.”

Eating Watermelon Linked to Healthier Diet

Separate research, published in the journal *Nutrients*, used data from the National Health and Nutrition Examination Survey (NHANES) to look into the associations between watermelon intake, nutrient intake and diet quality. Previous studies have linked watermelon extracts or supplements to a number of health benefits, including decreased pulse pressure and lower systolic and diastolic blood pressures.⁹

However, the extracts used in the studies equate to watermelon intakes of more than 2 pounds a day.¹⁰ The featured study set out to determine if eating smaller quantities of fresh, raw watermelon would also yield beneficial effects. About 98% of the study participants, which included both children and adults, consumed raw watermelon.¹¹

Among children, usual intake was 125 grams, or 5/8 cup, a day, while adults typically consumed 161 grams, or about 2/3 cup, daily.¹² Compared to people who didn't eat watermelon, those who did had healthier quality diets and increased nutrient intake. The study found:¹³

“Children and adult watermelon consumers had greater than 5% higher intake of dietary fiber, magnesium, potassium, and vitamin A as well as more than 5% lower intake of added sugars ... as well as higher intake of lycopene and other carotenoids. This study suggests watermelon can increase nutrient intake as well as diet quality in both children and adult Americans.”

Even compared to other foods, such as oatmeal, mango and nuts, watermelon consumption was associated with the highest positive percent changes. For instance, eating watermelon was linked to a 3% increase in total vegetables among children and a 10% increase in adults. Protein increased 5% in children who ate watermelon, and fatty acid ratio had a 9% increase.¹⁴

Watermelon is a nutrient-dense food, so it makes sense that eating it daily gives your nutrition a healthy boost. The Nutrients researchers noted, “Studies focused on raw watermelon intake are less common but have reported reduced triglycerides and LDL cholesterol, body weight, BMI, lower risk of prostate, lung, and breast cancer, as well as higher antioxidant capacity.”¹⁵

Regarding the lower sugar intake among watermelon consumers, the researchers suggested, “It’s possible the sweetness of watermelon curbed the desire to have other foods with added sugars.”¹⁶ A 100-gram serving of watermelon (about 1/2 cup) provides a wealth of important nutrients, including:¹⁷

112 milligrams (mg) potassium

8.1 mg vitamin C

28 µg vitamin A

10 mg magnesium

3 µg folate

0.4 grams of dietary fiber

Watermelon Is a Bioavailable Source of Antioxidants

Watermelon is also unique in that it’s a rich source of antioxidants, including lycopene, beta-carotene, beta-cryptoxanthin, lutein and zeaxanthin.

"Watermelon has over ten and six times higher beta-carotene and beta-cryptoxanthin content, respectively, than other commonly consumed fruits," the researchers noted. "Encouraging Americans to consume watermelon could benefit intake of certain nutrients as well as unique components with antioxidant properties."¹⁸

Diets rich in the carotenoids beta-carotene, lutein and lycopene confer greater resistance against oxidation of low-density lipoprotein (LDL) cholesterol,¹⁹ which plays a role in the development of atherosclerosis. Higher plasma concentration of carotenoids was also associated with lower DNA damage.²⁰

Plasma levels of antioxidants such as lutein, zeaxanthin, vitamin E, beta-cryptoxanthin, lycopene and alpha- and beta-carotene are also inversely correlated with congestive heart failure severity.²¹

Lycopene, a carotenoid antioxidant that gives watermelon its pink or red color, is especially noteworthy, as research suggests it may significantly reduce your risk of stroke. A study that followed men in their mid-40s to mid-50s for more than 12 years found those with the highest blood levels of lycopene were 55% less likely to have a stroke than those with the lowest levels.²²

L-citrulline, meanwhile, may have therapeutic usefulness for cardiovascular disease. According to a study in Cardiovascular Drug Reviews:²³

"Supplemental administration [of] L-arginine has been shown to be effective in improving NO production and cardiovascular function in cardiovascular diseases associated with endothelial dysfunction, such as hypertension, heart failure, atherosclerosis, diabetic vascular disease and ischemia-reperfusion injury, but the beneficial actions do not endure with chronic therapy.

Substantial intestinal and hepatic metabolism of L-arginine ... makes oral delivery very ineffective ... In contrast, L-citrulline is not metabolized in the intestine or liver ... L-citrulline entering the kidney, vascular endothelium and other tissues can be readily converted to L-arginine, thus raising plasma and tissue levels of L-arginine and enhancing NO production."

A 2022 meta-analysis further highlighted watermelon consumption for improvement of cardiometabolic risk factors, calling out l-citrulline intake as well:²⁴

“To conclude, longer-term l-citrulline supplementation and watermelon consumption may improve vascular function, suggesting a potential mechanism by which increased l-citrulline intake beneficially affects cardiovascular health outcomes in adults.”

More Reasons to Eat Watermelon

Another study looked at the effects of consuming “whole blenderized watermelon,” which refers to whole watermelon, including the flesh and rind, blended together.²⁵ Overweight or obese children between the ages of 10 and 17 consumed either 1 cup of blenderized watermelon or a sugar-sweetened beverage daily for eight weeks.

Watermelon intake significantly decreased body mass index (BMI), BMI percentile, body fat percentage and HbA1c – a test that measures average blood sugar levels over three months. “Watermelon is a potential alternative to unhealthy snacks for improving anthropometry and some risk factors related to obesity in children,” the study concluded.²⁶

Watermelon, which is 91% water by weight,²⁷ also helps keep people hydrated, and this is another reason it’s so good for you. It also boosts satiety, which has benefits for weight management. In a study of 33 overweight or obese adults, participants consumed either 2 cups of watermelon or low-fat cookies daily for four weeks.²⁸

The watermelon led to greater satiety, including lower hunger, food consumption and desire to eat and greater fullness. Eating watermelon also led to significantly decreased body weight, BMI, systolic blood pressure and waist-to-hip ratio compared to cookie consumption, which led to increased blood pressure and body fat. The watermelon group also enjoyed lower oxidative stress and increased antioxidant capacity. The researchers noted:²⁹

“This study shows that reductions in body weight, body mass index (BMI), and blood pressure can be achieved through daily consumption of watermelon, which also improves some factors associated with overweight and obesity.”

A review of the evidence surrounding watermelon and l-citrulline for cardiometabolic health, spanning studies conducted from 2000 to 2020, further supported watermelon for reduced blood pressure and, potentially, weight control. Emerging evidence even suggests watermelon may boost brain and gut health by increasing NO bioavailability in all tissues.³⁰

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