

Fruit Lowers Blood Pressure and Risk for Diabetes

Analysis by [Dr. Joseph Mercola](#)

✓ Fact Checked

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STORY AT-A-GLANCE

- › Avocatin B is a bioactive compound found in avocados that helps reduce weight gain and improve insulin sensitivity
- › The difference in blood pressure between those with diets highest in flavanols, such as those found apples and berries, compared to those with the lowest was between 2 and 4 mmHg
- › Eating small amounts of fruit can be an excellent way to increase your intake of beneficial antioxidants, vitamins and minerals, but moderation is key, especially if you have metabolic syndrome, high blood pressure and/or Type 2 diabetes
- › Because fruit contains fructose, it can increase your risk of insulin resistance if you eat large amounts; examples of lower fructose fruits that are beneficial for most people include avocados, berries, kiwi and citrus fruits

Eating fruits such as avocados, apples and berries may support your metabolic health, lowering your risk of Type 2 diabetes and supporting healthy blood pressure.

At the core of the condition, Type 2 diabetes is a function of insulin resistance, which in turn is a diet-induced condition. Obesity, high blood pressure and high blood sugar are also signs of metabolic syndrome, a group of risk factors that raise your risk of diabetes.¹

Processed foods loaded with added sugars, processed grains and industrial processed omega-6 vegetable oils are the primary culprits that trigger insulin resistance, Type 2

diabetes and obesity, and while cutting out toxic foods such as these is essential, adding in healthy foods, like certain fruits, can be beneficial.

Optimizing your nutrition can help lower your insulin level, stabilize your glucose level and improve your overall energy. Fortunately, making small positive dietary changes, including eating more of certain healthy fruits, may help reduce your risk of diabetes and lower your blood pressure.

The Mighty Avocado Helps Lower Blood Sugar

Legend has it the early name for avocados — “alligator pear” — came from an early English mispronunciation and misunderstanding.² The name may have continued since the skin has a vaguely reptilian appearance and the fruit is shaped like a pear. But no matter the name or appearance, avocados are superfoods that may also help lower your blood sugar.

Paul Spagnuolo, Ph.D., and a team at the University of Guelph in Ontario, Canada, revealed that a compound called avocatin B, found only in avocados, can beneficially alter cellular processes that increase the risk of diabetes.^{3,4} In Canada, 25% of citizens are obese. This is a condition that increases the risk of Type 2 diabetes. By comparison, the prevalence of obesity in the U.S. was 42.4% in 2018.⁵

The team began the study by feeding mice a high-fat diet for eight weeks, which triggered obesity and insulin resistance. Over the next five weeks, the mice were separated into two groups. One group continued the high-fat diet and the other group's food was supplemented with avocatin B.⁶

At the end of the five weeks, the researchers found the mice that were treated with avocatin B had gained significantly less weight than the control group and, more importantly, had a higher insulin sensitivity.⁷

The team then went on to test supplements in a human clinical trial in which they gave avocatin B as a dietary supplement to participants who were eating a typical Western diet. They found weight reductions in the individuals and no effect on the kidney, liver or

skeletal muscles from the supplement. While speaking to Nutrition Insight, Spagnuolo warned:⁸

"We want to stress that the benefit of this molecule is in its ability to help regulate blood glucose. Reductions in weight are likely a secondary effect. We realize that this is a desirable feature for most, however, urge caution for weight loss as the sole indication."

Spagnuolo also spoke with a reporter from Yahoo! Life about the bioactive ingredient, avocatin B. He believes avocados are a healthy addition to the diet for people with diabetes and prediabetes, explaining:⁹

"When we talk about bioactives, think of it like the nutrients we get from other foods: we get Omega-3 fatty acids from eating fish and Vitamin C from oranges. AvoB is a bioactive ingredient in avocados, which can be an important dietary choice for diabetics and prediabetics."

When your metabolism is working, everything is in balance. You have ideal levels of blood sugar, good cholesterol, blood pressure, etc. ... Science tells us that blood sugar imbalances can have a profound and negative impact on our health.

They can impact our energy levels, concentration, mood, and much more. And for diabetics, unbalanced blood sugars could lead to even more serious health complications like heart attack and stroke."

While the avocado is one of the healthiest foods, rich in monounsaturated fat, fiber, magnesium, potassium, vitamin K and carotenoids, there is also a dark side. Each avocado requires 70 liters (18.49 gallons) of water to produce, which means the fruit can be environmentally destructive.

High Flavanol Diet May Help Lower Blood Pressure

People with metabolic syndrome also have difficulty regulating their blood pressure. In what researchers called the first-of-its-kind study in the U.K., scientists used objective measures for dietary intake across thousands of residents, using data for 25,618 people in Norfolk, U.K., and compared the data against their blood pressure measurements.¹⁰

Most other studies look at links between nutrition and health but rely on the study participants' self-reported data. In this analysis, the researchers measured the participants' flavanol intake using nutritional biomarkers present in the blood. They then compared those against their blood pressure measurements.¹¹

The data revealed blood pressure measurement differences between people with the highest 10% of flavanols as compared to the lowest 10% between 2 and 4 mmHg. The researchers wrote this was comparable to the difference measured when a person switched to a Mediterranean diet or the Dietary Approaches to Stop Hypertension (DASH) diet.

Nutritionist Gunter Kuhnle at the University of Reading led the study. He talked about the importance of how the data were collected and the implications for consistent dietary intake of foods with flavanols, saying:¹²

"Previous studies of large populations have always relied on self-reported data to draw conclusions, but this is the first epidemiological study of this scale to objectively investigate the association between a specific bioactive compound and health. We are delighted to see that in our study, there was also a meaningful and significant association between flavanol consumption and lower blood pressure.

What this study gives us is an objective finding about the association between flavanols – found in tea and some fruits – and blood pressure. This research confirms the results from previous dietary intervention studies and shows that the same results can be achieved with a habitual diet rich in flavanols. In the British diet, the main sources are tea, cocoa, apples and berries."

The subclass of flavanols measured in the study were flavan-3-ols,¹³ commonly found in tea, berries, apples and cocoa-based products.¹⁴ These same flavonoids have demonstrated benefits in other studies.¹⁵

Researchers have found those who drank tea consistently had a lower risk of all-cause mortality and were free of atherosclerotic cardiovascular disease for 1.41 years longer than those who did not drink tea.¹⁶ Of the tea tested, green tea was the most healthful.

The High Cost of Diabetes

In 2011, the Centers for Disease Control and Prevention reported that diabetes affected 25.8 million people in the U.S.¹⁷ This was 18.8 million who were diagnosed and 7 million who were undiagnosed, representing 8.3% of the population. A short nine years later those numbers had jumped drastically higher.

In 2020, the CDC reported that 34.2 million people with diabetes, 26.9 million of which are diagnosed and 7.3 million are undiagnosed.¹⁸ The total represents 10.5% of the U.S. population. They also estimate the number of people with prediabetes who are over 18 years as 88 million people or 34.5% of the adult population.

In total, 45% of the U.S. population is affected by diabetes or prediabetes, which can lead to long-term complications including cardiovascular disease, nerve damage and Alzheimer's disease.¹⁹

The combination of many individuals with diabetes and the number of complications associated with the condition contribute to the staggering financial costs of the disease. According to the American Diabetes Association, people with diabetes have 2.3 times more health care costs than those without diabetes.²⁰

Annually, this totals \$327 billion, which means 1 in every 7 health care dollars is spent on treating people for diabetes and its complications. The largest expenditures are on inpatient care, prescription medications, diabetes supplies and physician office visits. There are also indirect costs to the individuals and employers, including \$26.9 billion lost in reduced productivity and \$3.3 billion lost in absenteeism.

Address Mitochondrial Dysfunction and Insulin Sensitivity

At the center of the pathology behind diabetes is mitochondrial dysfunction. Eating a high-carbohydrate diet that bathes your mitochondria in glucose can suppress mitochondrial metabolism.²¹

As I've written before, your mitochondria are energy producers inside most of your cells and are the primary sources of energy to keep your body functioning. Mitochondrial dysfunction is at the heart of several disease pathologies, including cardiovascular diseases²² and neurological dysfunction.²³

While there is no easy answer, I believe the foundational first step to addressing metabolic defects responsible for mitochondrial dysfunction, Type 2 diabetes and obesity is to make food choices that boost mitochondrial health. I discussed this in detail in my book [Fat for Fuel](#).

In my book I discussed the importance of metabolic flexibility and insulin sensitivity. Achieving this through nutritional ketosis helps to support your mitochondrial health. To reverse Type 2 diabetes, you need to recover insulin and leptin sensitivities. The best way to address those metabolic conditions is through proper diet and exercise.

As for fruit consumption, eating small amounts can be an excellent way to increase your intake of beneficial antioxidants, vitamins and minerals. But moderation is key, especially if you have metabolic syndrome, high blood pressure and/or Type 2 diabetes.

Because fruit contains fructose, it can increase your risk of insulin resistance if you eat large amounts. Examples of lower fructose fruits that are beneficial for most people include avocados, berries, kiwi and citrus fruits.

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