



Diabetes and Diet: Here's What You Need to Know

By Courtney Davison
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Around 34 million Americans—roughly 1 in 10—[have some form of diabetes](#), and another 88 million have prediabetes. Read on for an overview of how diabetes works; how type 1 differs from type 2; common symptoms; and how you can prevent, manage, or (in the case of type 2 diabetes) even reverse it.

What Is Diabetes?

Diabetes, or diabetes mellitus, is a group of chronic conditions in which the body is unable to efficiently convert food into energy.

When we eat, our body breaks food down into glucose (sugar), which is released into our bloodstream to be absorbed by cells as needed. Insulin, a hormone secreted by the pancreas, helps glucose make its way into cells.

In people with diabetes, the pancreas either doesn't produce enough insulin or the body is unable to properly use insulin. This leads to too much sugar in the bloodstream, which can cause serious health problems over time.

Type 1 Diabetes vs. Type 2 Diabetes

Type 1 diabetes (T1D) is an autoimmune condition in which the pancreas produces little to no insulin. With T1D, the immune system attacks the pancreas and destroys the cells that would produce insulin. Formerly known as juvenile-onset diabetes, T1D is usually diagnosed during childhood. Type 1 is less common than type 2 diabetes, representing about 5–10 percent of total diabetes cases in the United States. However, rates have been [steadily increasing](#) in recent years. Type 1 diabetes is primarily treated with insulin, oral medications, and blood glucose monitoring. Proper nutrition can help manage symptoms and reduce complications.

Of the 34 million Americans who have diabetes, the vast majority (around 90–95 percent) have type 2 diabetes (T2D). With this form of diabetes, the pancreas produces insulin, but cells stop responding normally to it (a process called insulin resistance). The pancreas tries to compensate by secreting more insulin into the blood. This [works at first](#), but eventually, the pancreatic cells responsible for producing insulin become dysfunctional from the excess workload. At this point, blood glucose levels begin to rise to the diabetic range. T2D is primarily treated through lifestyle measures, though insulin and oral medications are sometimes prescribed.

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Gestational Diabetes

Due to physical changes including hormonal fluctuations, some people develop diabetes while pregnant. This is known as gestational diabetes. The [CDC estimates](#) that the condition impacts as many as 10 percent of pregnancies. Around half of people who develop gestational diabetes go on to develop T2D after pregnancy. Anyone who's pregnant should talk to their medical providers about being tested for gestational diabetes.

Causes of Type 2 Diabetes

At the core of prediabetes and type 2 diabetes is insulin

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resistance: a condition in which the body's tissues become "blind" to insulin. The precise cause of insulin resistance still isn't fully understood, but a number of factors, both environmental and genetic, seem to contribute. One of the [primary risk factors](#) is being overweight or obese. For a fascinating deep dive on insulin resistance, see ["Everything You Need to Know About Insulin Resistance and Diet."](#)

The Role of Fat

Scientific evidence points to fats, particularly saturated fats, as a major culprit behind insulin resistance and type 2 diabetes. That's because excess fat has the effect of "gumming up the locks," preventing insulin from importing glucose into cells, as Michael Greger, MD, [explains](#): "Fat in the bloodstream can build up inside the muscle cells, create toxic fatty breakdown products and free radicals that can block the signaling pathway process. So, no matter how much insulin we have out in our blood, it's not able to open the glucose gates, and blood sugar levels build up in the blood."

What About Sugar?

Because diabetes leads to elevated blood sugar, there's a popular misconception that sugar causes diabetes. The reality is more complicated.

While diets high in added sugars have indeed been [linked to an increased risk](#) of type 2 diabetes, there are a number of potential reasons for this link. For one, refined sugars (and other [ultra-processed foods](#)) make it easy to exceed one's caloric needs, promoting weight gain, obesity, and a heightened risk of insulin resistance and T2D. Another possible explanation is that people who consume a lot of added sugars tend to have [unhealthy overall dietary patterns](#) or other lifestyle habits that would increase their risk for T2D.

Additionally, sugars consumed as part of whole plant foods—e.g., a piece of fruit—do not appear to increase the risk of diabetes. In fact, research suggests the opposite: A [large-scale observational study](#) found that greater consumption of whole fruits was associated with a decreased risk of type 2 diabetes.

Diabetes Symptoms

The following symptoms can be warning signs of type 2 diabetes, according to the American Diabetes Association.

- Urinating often
- Feeling very thirsty
- Feeling very hungry despite eating enough
- Extreme fatigue
- Blurred vision
- Cuts or bruises that are slow to heal
- Tingling, pain, or numbness in the hands or feet

If you're experiencing any of these symptoms, let your physician know.

How to Get Tested

Two common tests used for diagnosing diabetes are the A1C test and the fasting blood glucose test.

A1C

Also known as an HbA1c test or hemoglobin A1C test, the A1C test looks at a blood sample to determine your average blood sugar over the past three months. Below are the ranges used to interpret A1C results.

Normal	Below 5.7%
Prediabetes	5.7% to 6.4%
Diabetes	6.5% or above

Source: American Diabetes Association

Fasting Blood Glucose Test

A fasting blood glucose test (or fasting blood sugar test) looks at the level of glucose in the blood. In preparation for a blood glucose test, your doctor will likely require you to not eat or drink anything (except water) for at least eight hours. Below are the ranges used to interpret fasting blood glucose tests, according to the CDC.

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Normal	99 mg/dL or lower
Prediabetes	100 to 125 mg/dL
Diabetes	126 mg/dL or higher

The results were consistent with a [similar study](#) published in 2018, which linked whole grains to a 34-percent reduction in T2D risk for men and a 22-percent reduction in T2D risk for women.

Whole grains offer benefits for people who already have diabetes, as well. Unlike refined grains, whole grains are rich in fiber, which can slow digestion and [help with blood sugar regulation](#).

Complications of Diabetes

Left untreated, diabetes can pose serious health risks. Over time, persistently elevated blood sugar can damage blood vessels and impair the nerves that control the heart muscle, [leading to heart disease](#). Other complications of diabetes include vision loss, neuropathy (nerve damage), chronic kidney disease, and poor mental health.

Diabetic ketoacidosis is another potentially serious condition: Unable to properly use glucose, the body begins breaking down fat tissue to use as fuel, creating a buildup of acids in the bloodstream. Diabetic ketoacidosis is more common in people with type 1 diabetes than type 2 diabetes, as people who have type 2 diabetes still produce some insulin.

Best Foods for Preventing and Treating Type 2 Diabetes

Whole grains, fruits, vegetables, and overall plant-based eating patterns may help prevent type 2 diabetes and improve outcomes for people who already have diabetes. Let's take a look at the research.

• Whole Grains

A [2020 study](#) out of Harvard examined the relationship between whole grains and diabetes risk. Reviewing data from nearly 195,000 participants over the course of 24 years, researchers found that participants who consumed the most whole grains had a 29 percent lower rate of type 2 diabetes, compared with participants who ate the fewest whole grains.

• Fruits and Vegetables

A [number of studies](#) indicate that eating lots of fruits and veggies can significantly cut the risk of diabetes. A [2020 study](#) of more than 23,000 people found that those who ate high amounts of fruits and vegetables were about 50 percent less likely to develop diabetes than those who consumed less of these foods. The correlation held even after controlling for other factors such as age, body mass index, and physical activity.

• Plant-Based Diets and T2D

Unsurprisingly, healthy plant-based eating patterns—rich in whole grains, fruits, and vegetables—have been linked to [significantly lower rates of type 2 diabetes](#) and improved outcomes in people who already have the condition.

A [2018 report](#) published in *BMJ Open Diabetes Research & Care* found that for people with type 2 diabetes, plant-based diets were more beneficial than several diabetes associations' recommended diets, offering greater improvements in emotional and physical well-being. The report also found that plant-based diets showed potential to improve diabetic neuropathic pain and triglyceride levels in type 2 diabetes patients.

Besides being low in saturated fat, healthy plant-based diets are rich in dietary fiber, antioxidants, and micronutrients, all of which help cells properly absorb and utilize nutrients in tissues

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throughout the body.

Barbaro in their book *Mastering Diabetes*. But “fruit is not to blame for elevated blood glucose; it’s the high-fat foods you ate before eating fruit that makes it difficult for your muscles and liver to metabolize glucose effectively.” In the long term, high-fat, low-carb diets also [increase the risk](#) of heart disease and premature death from all causes.

Managing Type 1 Diabetes with Nutrition

Eliminating animal products and moving to a diet rich in whole and minimally processed plant foods can significantly reduce the problems created by type 1 diabetes. Although there’s no cure for this type of diabetes, Cyrus Khambatta, PhD, who co-founded the [Mastering Diabetes](#) program with Robby Barbaro, MPH, notes that following a low-fat, WFPB lifestyle can:

- Boost insulin sensitivity and reduce insulin use by more than 40 percent within six months.
- Lead to more predictable blood glucose levels, making it easier to manage diabetes.
- Increase blood flow to tissues in the body and reduce the likelihood of diabetes-related nerve damage.
- Reduce the burden on the kidneys, decreasing the chances of developing kidney disease.

The Dangers of Low-Carb Diets

If you have diabetes, you may have been told at some point to eat a low-carb, high-fat diet, such as the [ketogenic diet](#). While these diets can help normalize blood sugar levels in the short term, they fail to address the underlying cause of type 2 diabetes: insulin resistance.

This is why people on high-fat diets might experience high blood glucose immediately after eating fruit, whole grains, or other carb-rich foods. “From a biological perspective, this makes perfect sense, because the more fat you eat, the less tolerant of carbohydrates your muscles and liver become,” explain Khambatta and

Real-Life Success Stories of Type 2 Diabetes Reversal

If you’ve already been diagnosed with prediabetes or type 2 diabetes, you can likely improve your outcomes by eating more whole plant foods and avoiding animal products and highly processed foods.

For inspiration, check out these first-person testimonials from people who reversed type 2 diabetes after adopting a whole-food, plant-based diet.

- [A Carb-Centric Diet Helped Me Recover from Type 2 Diabetes](#)
- [NYC Mayor-Elect Eric Adams on Overcoming Type 2 Diabetes with a Vegan Diet](#)
- [I Went Plant-Based for Diabetes, to Amazing Results](#)
- [Reversing Type 2 Diabetes and Dropping 100 Pounds](#)
- [I Went Plant-Based and Reversed Gestational Diabetes](#)
- [I Reversed Diabetes in 5 Months on a Plant-Based Diet](#)
- [How I Reversed Diabetes With a Vegan Diet](#)