

Article Link: <http://www.webmd.com/diabetes/how-sugar-affects-diabetes?page=2>

Diabetes Health Center

Listen  {shareThisContent}

High Blood Sugar, Diabetes, and Your Body

In this article

[How Blood Sugar Affects Your Body](#)

[What Are Normal Blood Sugar Levels?](#)

[Diagnosis](#)

[Sugar and Your Body](#)

How Blood Sugar Affects Your Body

When you have [diabetes](#), your [blood sugar](#) (glucose) levels are consistently high. Over time, this can damage your body and lead to many other problems.

How much sugar in the [blood](#) is too much? Why is high [blood sugar](#) so bad for you? Here's a look at how your sugar level affects your health.

What Are Normal Blood Sugar Levels?

A normal sugar level is less than 100 mg/dL after not eating ([fasting](#)) for at least 8 hours. And it's less than 140 mg/dL 2 hours after eating.

During the day, levels tend to be at their lowest just before meals. For most people without [diabetes](#), blood sugar levels before meals hover around 70 to 80 mg/dL. For some people, 60 is normal; for others, 90.

What's a low sugar level? It varies widely, too. Many people's sugar levels won't ever fall below 60, even with prolonged fasting. When you diet or fast, the [liver](#) keeps sugar levels normal by turning fat and muscle into sugar. A few people's levels may fall somewhat lower.

Diagnosis

Doctors use these tests to find out if you have diabetes:

- **Fasting plasma glucose test.** The doctor tests your blood sugar level after fasting for 8 hours and it's higher than 126 mg/dL.
- **Oral glucose tolerance test.** After fasting for 8 hours, you get a special sugary drink. Two hours later your sugar level is higher than 200.

- **Random check.** The doctor tests your blood sugar and it's higher than 200, plus you're peeing more, always thirsty, and you've gained or lost a significant amount of [weight](#). He'll then do a fasting sugar level test or an oral glucose tolerance test to confirm the diagnosis.

Any sugar levels higher than normal are unhealthy. A level that's higher than normal, but not reaching the point of full-blown diabetes, is called [prediabetes](#).

According to the American Diabetes Association, 86 million people in the U.S. have prediabetes. These people are five to six times more likely to get diabetes over time. Prediabetes also raises the risk for [cardiovascular disease](#), although not as much as diabetes does. It's possible to prevent the progression of prediabetes to diabetes with [diet and exercise](#).

Sugar and Your Body

Why are high blood sugar levels bad for you? Glucose is precious fuel for all the cells in your body when it's present at normal levels. But it can behave like a slow-acting poison.

- High sugar levels slowly erode the ability of cells in your [pancreas](#) to make [insulin](#). The organ overcompensates and [insulin](#) levels remain too high. Over time, the [pancreas](#) is permanently damaged.
- High levels of [blood](#) sugar can cause changes that lead to a hardening of the blood vessels, what doctors call [atherosclerosis](#).

Almost any part of your body can be harmed by too much sugar. Damaged blood vessels cause complications such as:

- [Kidney disease](#) or [kidney failure](#), requiring [dialysis](#)
- Strokes
- [Heart attacks](#)
- [Vision loss](#) or blindness
- Weakened immune system, with a greater risk of infections
- [Erectile dysfunction](#)
- [Nerve damage](#), called neuropathy, that causes tingling, pain, or less sensation in your feet, legs, and hands
- Poor circulation to the legs and feet
- Slow wound healing and the potential for [amputation](#) in rare cases

Keep your blood sugar levels close to normal to prevent many of these complications. The American Diabetes Association's goals for blood sugar control in people with diabetes are levels of 70 mg/dL to 130 mg/dL before meals, and less than 180 mg/dL after meals.

WebMD Medical Reference

SOURCES:

National Diabetes Information Clearinghouse: "Your Guide to Diabetes: Type 1 and Type 2."

American Diabetes Association: "Checking Your Blood Glucose;" "Type 2 Diabetes Complications;" and "National Diabetes Fact Sheet 2011."

visited on 8/24/2015

Robertson, R. *Diabetes*, 2003.
 Brownlee, M. *Diabetes*, 1994.
 Wautier, J. *Proceedings of the National Academy of Sciences of the USA*, 1994.
 Christiansen, J. "What Is Normal Glucose?" presentation at the European Association for the Study of Diabetes Annual Meeting, September 13, 2006.
 Fuller, J. *Lancet*, 1980.
 Riddle, M. *Diabetes Care*, 1990.
 Rao, S. *American Family Physician*, 2004.
 MedlinePlus: "Hypoglycemia."
 Cryer, P. *American Journal of Physiology*, 1993.

Reviewed by [Michael Dansinger, MD](#) on September 03, 2014
 © 2014 WebMD, LLC. All rights reserved.

My Notes:

ADVERTISEMENT

Further Reading:

- [Slideshow: Control Your Blood Sugars](#)
- [Slideshow: Blood Sugar Control, Insulin, and Diabetes](#)
- [Why should people with diabetes test their blood sugar levels?](#)
- [Controlling Diabetes](#)
- [Managing Diabetes Through Stress Reduction](#)
- [Too High or Low Blood Sugar](#)
- [Glucose Tolerance Testing](#)

[See All Blood Sugar \(Glucose\) Topics](#)

Top Picks

- [Prediabetes: 3 Changes to Make](#)
- [Best and Worst Meals for Diabetes](#)
- [20 Reasons for Blood Sugar Swings](#)
- [Bariatric Surgery and Type 2 Diabetes](#)
- [10 Muscle Moves to Tame Diabetes](#)
- [Helping a Loved One With Diabetes](#)