

# What is Prediabetes & How to Reverse It

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Prediabetes is a serious health condition where an individual's blood sugar levels are consistently higher than normal, but they have not yet developed type 2 diabetes. Since prediabetes doesn't have outward symptoms, people often do not show signs until the condition is in an advanced stage. So it's important to get screened, especially if there's a history of type 2 diabetes in your family.

Identifying prediabetes early can help you reverse the trajectory to getting diabetes. And it only takes a simple blood test with your primary care provider to find out if you're prediabetic.

## About Prediabetes

“With pre-diabetes your body is becoming less efficient at managing glucose [blood sugar]. So you have a bit of a catch-22, because on one hand, glucose is absolutely critical to the body. But if you have too much of it, the body kind of gets gummed down,” said David Lindstrom, MD, a doctor at Western Washington Medical Group’s Everett Family Medicine.

“If you imagine a car with a fuel injector, you want the gasoline to get into the engine where it can be used for propulsion, but if that fuel injector is clogged, it’s not going to be very efficient,” he said.

When glucose remains in the bloodstream instead of entering the cells to provide energy, it’s like having a clogged fuel injector.

According to the CDC, 98 million Americans – more than a third of us – are prediabetic. But 80% of prediabetics don’t know it, because prediabetes doesn’t have any symptoms.

## Getting a Diagnosis

Diabetes develops slowly over many years, so many people who have prediabetes are often completely asymptomatic until it’s too late. Despite the lack of symptoms, there are indicators that a person is at higher risk of getting type 2 diabetes.

“I would say obesity is the number one risk factor,” said Lindstrom. Obesity may not be a direct cause of type 2 diabetes, but the underlying causes of obesity and diabetes are often the same – poor diet and lack of exercise.

“Anybody who comes to me with a family history of diabetes, with obesity, with a sedentary lifestyle, I will encourage them to get a blood test. And in that blood test, we’ll check glucose. I screen basically everybody. Prediabetes is something we’re looking for now.”

Standard blood tests check current blood sugar levels. If the blood sugar level is high, labs will automatically run the more rigorous A1C test to check for prediabetes.

The A1C test measures your average blood sugar level over the past three months. The clinical definition of prediabetes is an average A1C blood sugar level between 5.7% and 6.4%. Type 2 diabetes is diagnosed when the blood sugar level reaches 6.5% or above.

Lindstrom explains how the test works with another metaphor.

“If you think of the bloodstream as a city street with all kinds of people, then you have red blood cells, proteins, glucose molecules and other substances walking around and bumping into each other. When sugar bumps into red blood cells, it gets stuck there, and the higher your blood sugar levels, the more sugar will stick to the cell over its 90-day lifespan. When you analyze those cells, you can extrapolate the average blood sugar level over the last three months.”

## Preventing Prediabetes

Prevention of prediabetes boils down to two things: diet and exercise. Although diet is a complex science, when it comes to diabetes risk, there is a clear culprit.

“Processed food,” said Lindstrom. “Not all sugars are created equal. If somebody drinks a Coke with 45 grams of sugar, or they eat two oranges that have 45 grams of sugar, their blood sugar profile is going to be very different.”

Processed foods contain refined simple sugars like high fructose corn syrup, modified corn starch, and other adulterated corn molecules. Natural, whole foods contain complex sugars and substances like pectin and fiber that slow sugar metabolism, avoiding the spikes in blood sugar and insulin production caused by refined sugars.

“If you have a little campfire, you could keep that campfire going with gasoline. You could keep it going with cedar kindling or you could keep it going with a piece of oak. Simple sugar is like putting gasoline on a fire. Boom! You have this massive sugar spike and insulin response to try to keep your sugar level in balance. If you have whole wheat toast, that’s going to be like cedar kindling. Then if you have a black bean burrito with a whole grain wrap and sour cream for the fat, that’s going to be like the oak where it gives you a nice, slow sugar release over the course of four to six hours.”

## Unhealthy Foods Are Everywhere

Lindstrom acknowledges that avoiding processed food and refined sugars is not easy, in large part because so many unhealthy products are advertised as healthy foods.

“Food has become a for-profit commodity. We now have corporations who are not providing food for our health. They’re providing food for their profit at the expense of our health. Compared to countries where they have stricter laws about what constitutes *food*,

in America, we are being marketed things that have no business being served to people. We're eating products that should be illegal," said Lindstrom.

Despite the loss in food quality, Lindstrom says that people today don't necessarily eat more calories than people a century ago.

"The difference is, we're not plowing fields, we're sitting at our desks. Our exercise level is super low compared to them."

## The Importance of Exercise

Aerobic exercise is critical because it not only burns calories, it also improves your body's ability to manage blood sugar.

"If you think of it like a high school and the students are the sugar molecules and the classrooms are the cells. It only works if the students are in the classrooms. If they're lingering in the hallway, it just leads to trouble. When you exercise on a regular basis, the insulin receptors become more efficient at getting those students into the classroom," said Lindstrom.

Exercise does not have to be complicated or feel like punishment to be effective. If you dread the gym, try walking, ballroom dancing, cycling, or any activity you enjoy.

"Typically, the standard rule of thumb is sweating," says Lindstrom. If you are moving enough to get sweaty, you are getting aerobic exercise.

## Treating Prediabetes

Prediabetes has no symptoms, but you shouldn't ignore it or put off getting screened until you don't feel well. If you leave prediabetes untreated, you will eventually become diabetic.

"By the time we get a diagnosis of [type 2] diabetes, a significant percentage of our insulin production has been impaired because the pancreas has been damaged from living in a hyperglycemic state for too long," said Lindstrom.

If you receive a diagnosis of prediabetes, think of it as an opportunity to make changes to avoid a chronic disease. In most cases, improving diet and exercise can reverse a patient's prediabetes without medication. But it takes motivation, effort, persistence, and

education to make the necessary changes to improve your health.

## Healthy Eating Can Reverse Prediabetes

“There is a huge emphasis in this country of profit over health. Multi-billion-dollar corporations are pumping crappy food into our society, and we are wandering blindly through the grocery store trying not to be seduced by enticing advertisements for convenient foods that are a nutritive wasteland,” said Lindstrom. People no longer know how to shop for and prepare healthy food from natural ingredients.

“My ideal treatment plan would be to get prediabetics in to see a Certified Diabetic Educator and use a continuous blood glucose monitor to provide feedback on how specific foods affect blood sugar levels,” said Lindstrom.

Unfortunately, insurance may not pay for either of these treatments until prediabetes turns into type 2 diabetes.

Lindstrom is hopeful that will change, but in the meantime, prediabetics and people who think they might be at risk of developing diabetes can visit the CDC’s National Diabetes Prevention Program website to learn more about diabetes and lifestyle change programs.

“Prediabetes is reversible. It’s preventable. It’s predominantly lifestyle dependent, and there are tools to monitor it,” said Lindstrom.

Routine bloodwork will keep you informed about the current state of your health, whether or not you have prediabetes, and your overall risk of developing type 2 diabetes down the road. If you haven’t had your blood tested in the last few years, request an appointment with one of our Family Medicine providers today. We’re here to support you.

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