

Prediabetes Is on the Rise—But It Can Be Reversed

Type 2 diabetes, in which the body doesn't use insulin properly, is on the rise in the United States. There are more than 35 million people with the condition, and many are diagnosed when they are young, even in adolescence. Perhaps more astonishing—and worrying—is that prediabetes, the condition that leads to type 2 diabetes, now affects 98 million people. That's one in three of us.

Prediabetes can be seen as a warning sign—it's the body's way of saying that your insulin levels are rising. You can still prevent or delay type 2 diabetes by losing weight—even a modest amount—with the help of dietary changes, stress reduction, and physical activity. Taking medication can also help.

And reversing the process is key because type 2 diabetes can be a devastating disease. The condition usually begins with insulin resistance, in which the fat, liver, and muscle cells do not use insulin properly. Eventually, the body needs more insulin than it can produce, causing blood glucose to rise. Those elevated levels can lead to serious health issues if they are not managed properly.

You may not even know you have prediabetes or diabetes—you can be symptom-free for years. But once the complications of diabetes start to occur, nearly every aspect of your health can be affected. That's because the excessive sugar in your blood damages blood vessels and nerves throughout your body.

What happens when prediabetes becomes type 2 diabetes?

It's important to note that type 2 diabetes is different from type 1 diabetes, a condition in which the body produces little to no insulin, resulting in high blood glucose levels. In people with type 2 diabetes, the body's cells don't respond properly to insulin, and glucose doesn't move efficiently from the bloodstream into the cells. This is known as insulin resistance. As a result, the level of glucose in the blood rises. The pancreas initially responds by producing more insulin, but it will inevitably not be able to keep up, resulting in high blood glucose levels—a condition called hyperglycemia. This can lead to such serious health issues as blindness, heart attack, stroke, kidney failure, and amputations of the feet, legs, or toes if it is not managed properly.

But prediabetes itself is a serious health issue. "Prediabetes goes hand in hand with metabolic syndrome, the term for a condition that includes hypertension, obesity, and high cholesterol," says Yale Medicine endocrinologist Anika Anam, MD. Each of those conditions raises the risk for serious issues, such as heart disease, stroke, and cancer. In people with prediabetes, some of the long-term damage to the blood vessels, heart, and kidneys may already be starting. The condition has also been linked to what are called "silent" heart attacks, with symptoms so mild people may not realize they occurred.

Are there prediabetes symptoms?

The first step is to know the risk factors, which can help determine whether or not you should be screened for the condition. Without screening, early signs of insulin resistance can be hard to identify—a person can have prediabetes for years without knowing it. Symptoms that are associated with type 2 diabetes, such as increased urination, won't necessarily surface with prediabetes.

Obesity, an underlying cause of insulin resistance, is a major risk factor. A study published in 2020 found that participants who had obesity were about six times more likely to develop type 2 diabetes than those at a healthy weight, regardless of genetic predisposition; people who were overweight had 2.4 times the normal risk.

Other common risk factors for prediabetes include being older than 45, exercising fewer than three times a week, having a parent or sibling with (or a family history of) type 2 diabetes, and giving birth to a baby that weighed more than 9 pounds. Women who have polycystic ovary syndrome (PCOS), a hormonal disorder, are also at higher risk for the condition.

However, risk can be complicated for some people. For instance, some people with obesity don't develop obesity-related diseases, and others develop type 2 diabetes without being overweight. But if you are overweight and struggling to lose weight, if you're not physically active, and if you have other health problems, like high blood pressure and high cholesterol, you are at risk.

Is there a higher risk for prediabetes at certain times in life?

For those who are diagnosed with or concerned they might be at risk for prediabetes, the first thing to do is focus on weight loss and dietary changes. This isn't always easy, and stress can interrupt lifestyle management in different ways, depending on a person's situation and stage in life, whether it's during adolescence, pregnancy, menopause, or even retirement.

"Problems with insulin often start around puberty", says Yale Medicine endocrinologist Ania Jastreboff, MD, PhD, who is director of the Yale Obesity Research Center (Y-Weight). But there are other factors, too. The big thing seen at this age is a lot of anxiety and depression, disordered eating behaviors, sedentary behavior, and excessive interaction with social media

Pregnancy can also lead to struggles with weight for many women. Gestational diabetes, which usually resolves after the baby is born, is another prediabetes trigger. Around menopause, changes in estrogen levels are associated with an increase in fat around the waist, which is considered a risk factor for diabetes.

In general, those who maintain good physical health as they age can avoid prediabetes. But as you get older, you may develop joint pain, which can limit physical activity, so it's important to pay attention to those issues.

Heart disease can impact physical activity, as can the use of multiple medications, including glucocorticoids—steroids that, among other things, increase insulin resistance and glucose production by the liver, resulting in increased blood glucose levels. They can also make people who take them feel hungrier, which leads to increased food intake and further contributes to hyperglycemia. All these things add up

How much weight do you need to lose to reverse prediabetes?

Many people with prediabetes need to take action now—if they don't, they could develop type 2 diabetes within five years, according to the CDC. Weight loss is a key strategy to reverse prediabetes, but it's important to know that not everyone needs to lose a massive amount of weight, doctors say. "Often only minor changes in dietary intake and minimal weight loss, together with more physical activity, will help chase diabetes away," says Sonia Caprio, MD, a Yale Medicine pediatric endocrinologist.

The CDC's national Diabetes Prevention Program (DPP), which includes an ongoing Outcomes Study, has shown that people with prediabetes who lost a modest amount of weight—5 to 7% (10 to 14 pounds for a person weighing 200 pounds, for example)—with the help of a structured lifestyle-change program cut their risk of developing type 2 diabetes by 58%.

Dr. Van Name also recommends starting with simple interventions at home and expanding on them over time, especially when working with children. "With kids, we don't expect a total 180," she says. "A family can help by figuring out what will motivate a child."

The interventions might include pursuing more physical activity as a family or trying different-colored foods on the dinner plate, she adds. "If much of the food on your plate is green, that's great. But if it's all a beige color, it's often a less-healthy meal," Dr. Van Name says. "Managing stress, which can be a roadblock, is also important."