

# Type 2 diabetes: Lowering your risk

## What you should know and steps you can take now

You might hear many different things about what causes type 2 diabetes. Some terms you might hear include insulin resistance, impaired glucose tolerance, impaired fasting glucose, and pre-diabetes.

It can be hard to keep these terms straight. Here's some information to help you understand these terms and know what you can do to help lower your risk for type 2 diabetes.

### **What is type 2 diabetes?**

Type 2 diabetes happens when a person's body either can't make enough insulin to keep up with the body's needs, or can't use the insulin it makes in the right way.

### **What is insulin?**

Insulin is a hormone made by one of the body's organs called the pancreas. Insulin helps your body turn sugar into energy. It also helps your body store sugar in your muscles, fat, and liver so it can be used later when you need it. Without insulin, your body can't use or store sugar for energy. Instead, the sugar stays in your blood.

### **How does insulin turn sugar into energy?**

After you eat, the sugar in your blood rises. This rise in blood sugar triggers your pancreas to release insulin into the bloodstream. Insulin travels through the blood to your body's cells. It tells the cells to open up and let the blood sugar in. Once the sugar gets inside, the cells convert it into energy or store it to use later.

### **What is insulin resistance?**

Insulin resistance is when cells have trouble using insulin. The cells resist insulin's message to open up. They can't work as fast to let the sugar in. When this happens, the pancreas works harder to make more insulin. The pancreas releases the extra insulin into the blood to keep blood sugar levels normal.

### **What is impaired glucose tolerance?**

Impaired glucose tolerance develops when the pancreas can't make enough insulin to keep blood sugar levels in a normal range.

A person with normal glucose tolerance always has a fasting blood glucose (the blood test done first thing in the morning, before a person eats anything) that's less than 100.

A person has impaired glucose tolerance (also known as impaired fasting glucose) when his or her fasting blood glucose stays higher than normal, between 100 and 125. A person has diabetes when his or her fasting blood glucose is always higher than 125.

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## What is pre-diabetes?

Pre-diabetes is a term that's sometimes used when people have impaired glucose tolerance or impaired fasting glucose. At Kaiser Permanente, we prefer not to use the term pre-diabetes because it doesn't correctly describe a specific condition.

There are many reasons why people develop diabetes. There's no way to say for sure who will develop it and who won't.

## Doesn't having insulin resistance or impaired glucose tolerance mean I'll get diabetes?

Having insulin resistance or impaired glucose tolerance can increase your chances of developing diabetes in the future. But there are things you can do to lower your risk. Learning about insulin resistance and impaired glucose tolerance is the first step you can take to help keep you from getting diabetes, as well as other health problems.

## How are insulin resistance and impaired glucose tolerance treated?

You can help your body's cells respond better to insulin by getting to a healthier weight and getting regular exercise. With less resistance, insulin can move sugar into your cells faster and your pancreas won't have to work so hard to keep up with your body's demands for insulin.

The main goal in treating insulin resistance and impaired glucose tolerance is to help the cells in your body respond to insulin normally again.

## How can I get started?

Get started by being more active and following a healthy food plan. Doing these things can help you get to a healthier weight, reverse insulin resistance and impaired glucose tolerance, and lower your chances of developing diabetes. You can also improve your blood pressure and cholesterol levels, which helps lower your chances for heart disease.

- **Try to get some physical activity every day.** Aim for 30 minutes on most days. Exercise makes your muscle cells more responsive to insulin's messages. The cells open up more quickly to let the sugar in so it can be used for energy.
- **Choose a healthy food plan.** Look for foods that are low in fat and sugar. Eat plenty of fresh vegetables and lean protein. This will help you get to a healthier weight and keep your blood sugar levels from rising too fast.

Your health care team will work with you to design a food and exercise plan that works for you.

## For more information

Visit the Health and Wellness Resources section on the Kaiser Permanente website at [kp.org/wa](http://kp.org/wa) for more information about diabetes and other health topics.