

## Must Know Health Info

Health Information from the Experts at Johns Hopkins Medicine



# Diabetes Mellitus: Type 1

## What Is It?

Diabetes is a common disorder. It's marked by high blood sugar. Insulin controls how much sugar stays in your blood. The pancreas makes the hormone insulin. People who have type 1 diabetes can no longer make this hormone.

There are two main types of diabetes: type 1 and type 2. Most people with diabetes have type 2. Type 1 diabetes often starts in childhood. But, it can start in adulthood. Type 2 diabetes often starts after age 40. In type 2, the cells of the body do not use insulin well. Obese people are at risk for type 2. Now we will talk about type 1.

## Symptoms

At first, symptoms may include:

- a need to urinate often
- extreme thirst and hunger
- weight loss
- more skin and vaginal infections

In children and teens, symptoms may start all of a sudden. A high fever and confusion may occur. So may extreme fatigue and thirst.

It is key to treat high blood sugar. If you don't, it can lead to a serious problem called ketoacidosis. This is often the first sign of type 1 diabetes in children. It can result in a coma or death.

Insulin is used to treat type 1 diabetes. It can cause *low* blood sugar. Symptoms of low blood sugar may include:

- sweating
- trembling
- dizziness
- hunger
- confusion
- seizures
- loss of consciousness

In the long run, high blood sugar can harm the eyes, nerves and kidneys. Eye disease from diabetes can lead to blindness. Nerve damage can cause numbness, tingling and pain in the legs and arms. Kidney disease from diabetes can lead to kidney failure. This can cause many symptoms due to the buildup of waste products.

People who have diabetes are at risk for hardening of the arteries. This can involve the heart, brain or the arteries supplying the legs. Symptoms can include:

- chest pain, heart attacks or heart failure
- stroke
- leg pain during exercise that stops quickly with rest

Over time, there can be nerve problems and poor blood circulation. This can lead to foot sores and infections. These problems can cause the death and decay of body tissue. A surgeon may have to remove toes, feet, or legs.

## **What Your Doctor Looks For**

Your doctor may test your blood sugar if you have any symptoms of diabetes. Other blood tests include:

- A1C. This tests average blood sugar over the past two to three months.
- Cholesterol and triglycerides. The results can help your doctor assess your heart disease risk.

Adults with diabetes who do not have risk factors for type 2 may have a special test to see if they have type 1.

Tests for problems related to diabetes include:

- an eye exam
- blood and urine tests to check for kidney disease
- a foot exam to check for nerve problems

## **Diagnosis**

Your doctor will do a blood test. He/she will ask you to give a blood sample first thing in the morning before you eat. This is called “fasting blood sugar”. If your result is at least 126 mg/dL you may have diabetes. Your doctor will do a second test to make sure.

## **Expected Duration**

Diabetes lasts for your entire life.

## **Prevention**

Right now there is no way to prevent type 1 diabetes. But, you can help prevent problems from diabetes. You just need to control your blood sugar. You can also help prevent problems by taking these steps:

- Treat high blood pressure.
- Cut high blood levels of cholesterol.
- Lose excess weight.
- Don't smoke.

## **Treatment**

People who have type 1 diabetes need to inject insulin each day. You should eat a diet that's good for the heart. You must eat on a regular schedule to help prevent low blood sugar. Low blood sugar can be a serious side effect of insulin treatment. You must treat it right away. Low blood sugar that lasts too long can harm the brain. You may find that regular insulin injections don't do enough to control blood sugar. So, you may want to use an insulin pump. Pumps send a steady supply of insulin. They also send extra insulin for each meal. The insulin goes through a needle placed in the skin of the belly.

Home testing of blood sugar is key. Patients use a small electronic meter to test a bit of blood. The blood may come from a fingertip. Most people who use insulin

test blood sugar more than once a day. They may test it more often if their eating and exercise habits change. That's when blood sugar is apt to change. It is key for you to know you're your blood sugar should be. This can help you make good choices about diet and exercise. Typical target ranges are:

- 90-120 mg/dL before eating
- 120-180 mg/dL after meals

If your blood sugar levels are on target, good for you! But, that doesn't mean your diabetes has been "cured." It means you are doing a good job taking care of your disease.

Some people who have diabetes also have high LDL cholesterol. They should take medicine to lower it.

## **When to Call Your Doctor**

You are more likely to lose fluids if you have diabetes. So, call your doctor when you throw up frequently. Test your blood sugar and your urine for ketones as often as your doctor says. Call your doctor right away if your blood sugar is very high (more than 500 mg/dL). And do the same if your urine is high in ketones. Ask your family to call the doctor right away if you show signs of ketoacidosis. These include:

- extreme thirst
- nausea and vomiting
- confusion
- fainting

## **Outlook**

The outlook is good for people with diabetes who:

- control their blood sugar
- manage their weight
- lower their risk of heart disease

## **Additional Information**

For more information about diabetes, you can contact:

### **National Diabetes Information Clearinghouse**

1 Information Way  
Bethesda, MD 20892-3560  
<http://diabetes.niddk.nih.gov/>

### **American Diabetes Association**

1701 North Beauregard Street  
Alexandria, VA 22311  
1-800-DIABETES  
<http://www.diabetes.org>

### **Juvenile Diabetes Research Foundation (JDRF)**

26 Broadway  
New York, NY 10004  
Toll-free: 1-800-533-CURE (2873)  
E-mail: [info@jdrf.org](mailto:info@jdrf.org)  
<http://www.jdrf.org>

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