

High Blood Sugar (Hyperglycemia) in Diabetes

What is high blood sugar?

High blood sugar means that the level of sugar in your blood is higher than recommended for you. If you don't keep your blood sugar at a normal, healthy level most of the time, you will increase your risk of heart and blood vessel disease, stroke, kidney problems, and loss of vision.

The medical term for high blood sugar is hyperglycemia. Blood sugar is also called blood glucose.

What is the cause?

Blood sugar that stays high is the main problem of diabetes. Your body breaks down some of the foods you eat into sugar. Normally the hormone insulin moves this sugar into your cells, where your body uses it for energy. In diabetes the insulin is not moving the sugar into the cells, so it builds up in the bloodstream and starts to cause problems.

Sometimes you may have high blood sugar even though you are taking diabetes medicine. This can happen for many reasons but it always means that your diabetes is not in good control. Some reasons why your sugar might go too high are:

- Skipping your diabetes medicine
- Not taking the right amount of diabetes medicine
- Taking certain medicines that increase your blood sugar or make your blood sugar medicines work less well
- Taking in too many calories by eating large portions of food, choosing too many high-calorie foods, or drinking too many high-sugar beverages
- Eating too many carbohydrates, such as foods made mainly with sugar, white flour (in bread, biscuits, pancakes, for example), white potatoes, or white rice
- Not getting enough physical activity (exercise lowers your blood sugar)
- Having increased emotional or physical stress
- Being sick, including colds, flu, an infected tooth, or a urinary tract infection, especially if you have a fever
- If you are using insulin, having a problem with your insulin (for example, it may be the wrong type of insulin or the insulin may not be working because it has not been stored properly)
- If you are using an insulin pump, having a problem with the pump (for example, the pump is turned off or the catheter has come out)

What are the symptoms?

Usually high blood sugar causes no symptoms, especially if it is brief. However, if the blood sugar gets very high--for example, 300 milligrams per deciliter (16.7

millimoles per liter) or higher-- and stays that high for a day or longer, you may have symptoms. Symptoms may include:

- Blurry vision
- Dry mouth
- Feeling very thirsty
- Drinking a lot
- Urinating a lot
- Tiredness

Very high blood sugar—that is, a blood sugar level of 600 mg/dL (33.3 mmol/L) or higher--can cause coma and even death.

How is it diagnosed?

The level of sugar in your blood can be measured with blood tests you can do at home or at your healthcare provider's office.

When you have diabetes, commonly recommended blood sugar levels are:

- Morning fasting blood sugar test: 70 to 130 mg/dL, or 4 to 7.2 mmol/L (A fasting blood sugar test should be done before breakfast, after several hours of no food or drink except water.)
- Blood sugar test 1 to 2 hours after a meal: less than 180 mg/dL (10 mmol/L)
- Hemoglobin A1C blood sugar goals below 7%

How is it treated?

Ask your healthcare provider what you should do if your blood sugar goes too high. Because your sugar is likely to be higher if you are ill, also ask your healthcare provider for a “sick day plan.”

Very high blood sugar above 400 mg/dL (22.2 mmol/L) can be a medical emergency. In many cases it must be treated right away with IV fluids and insulin. You may need to stay at the hospital to get your blood sugar back to normal, to treat the cause of the high blood sugar, and to treat any problems caused by the high blood sugar, like dehydration,

How long will the effects last?

High blood sugar can be serious if it's not treated. If your blood sugar runs too high over time (months or years), it can cause problems with your heart, eyes, kidneys, nerves, and blood vessels. A very high blood sugar can cause life-threatening problems, coma, or death.

If you have type 1 diabetes, untreated high blood sugar can result in a dangerous problem called ketoacidosis, which is a buildup of acids in the blood. This is life-threatening but it is preventable. It usually happens only if you have type 1 diabetes. Ask your provider if you should check your urine for these acids, called ketones, when your blood sugar is high. If there are ketones in your urine, let

your provider know right away. Ketones are a warning sign that your diabetes is out of control. You need treatment right away in the emergency room or hospital.

High blood sugar caused by medicines you are taking usually goes away when you stop taking the medicine. Depending on the medicine, it may take days to weeks for your sugar to go back to your recommended blood sugar levels.

How can I take care of myself?

Follow your healthcare provider's directions carefully to keep your blood sugar normal. This usually means you need to:

- Eat a healthy diet as recommended by your healthcare provider. Ask for a referral to a dietitian if you are not sure how you should be eating.
- Exercise according to your provider's recommendation at least 4 to 5 days a week.
- Take medicine exactly as directed, if any has been prescribed.
- Check your blood sugar as often as your provider recommends and take your blood sugar records to every checkup. This helps your provider adjust your medicines.

Ask your healthcare provider:

- When do I need to call you about a high blood sugar level?
- How should I take care of myself if I'm sick and my blood sugar is going up?

Keep all appointments with your healthcare provider.

Developed by RelayHealth.

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