

Hypoglycemia

 [mayoclinic.org/diseases-conditions/hypoglycemia/symptoms-causes/syc-20373685](https://www.mayoclinic.org/diseases-conditions/hypoglycemia/symptoms-causes/syc-20373685)

Overview

Hypoglycemia is a condition in which your blood sugar (glucose) level is lower than the standard range. Glucose is your body's main energy source.

Hypoglycemia is often related to diabetes treatment. But other drugs and a variety of conditions — many rare — can cause low blood sugar in people who don't have diabetes.

Hypoglycemia needs immediate treatment. For many people, a fasting blood sugar of 70 milligrams per deciliter (mg/dL), or 3.9 millimoles per liter (mmol/L), or below should serve as an alert for hypoglycemia. But your numbers might be different. Ask your health care provider.

Treatment involves quickly getting your blood sugar back to within the standard range either with a high-sugar food or drink or with medication. Long-term treatment requires identifying and treating the cause of hypoglycemia.

Symptoms

If blood sugar levels become too low, hypoglycemia signs and symptoms can include:

- Looking pale
- Shakiness
- Sweating
- Headache
- Hunger or nausea
- An irregular or fast heartbeat
- Fatigue
- Irritability or anxiety
- Difficulty concentrating
- Dizziness or lightheadedness
- Tingling or numbness of the lips, tongue or cheek

As hypoglycemia worsens, signs and symptoms can include:

- Confusion, unusual behavior or both, such as the inability to complete routine tasks
- Loss of coordination
- Slurred speech
- Blurry vision or tunnel vision

- Nightmares, if asleep

Severe hypoglycemia may cause:

- Unresponsiveness (loss of consciousness)
- Seizures

When to see a doctor

Seek medical help immediately if:

- You have what might be hypoglycemia symptoms and you don't have diabetes
- You have diabetes and hypoglycemia isn't responding to treatment, such as drinking juice or regular (not diet) soft drinks, eating candy, or taking glucose tablets

Seek emergency help for someone with diabetes or a history of hypoglycemia who has symptoms of severe hypoglycemia or loses consciousness.

Causes

Hypoglycemia occurs when your blood sugar (glucose) level falls too low for bodily functions to continue. There are several reasons why this can happen. The most common reason for low blood sugar is a side effect of medications used to treat diabetes.

Blood sugar regulation

When you eat, your body breaks down foods into glucose. Glucose, the main energy source for your body, enters the cells with the help of insulin — a hormone produced by your pancreas. Insulin allows the glucose to enter the cells and provide the fuel your cells need. Extra glucose is stored in your liver and muscles in the form of glycogen.

When you haven't eaten for several hours and your blood sugar level drops, you will stop producing insulin. Another hormone from your pancreas called glucagon signals your liver to break down the stored glycogen and release glucose into your bloodstream. This keeps your blood sugar within a standard range until you eat again.

Your body also has the ability to make glucose. This process occurs mainly in your liver, but also in your kidneys. With prolonged fasting, the body can break down fat stores and use products of fat breakdown as an alternative fuel.

Possible causes, with diabetes

If you have diabetes, you might not make insulin (type 1 diabetes) or you might be less responsive to it (type 2 diabetes). As a result, glucose builds up in the bloodstream and can reach dangerously high levels. To correct this problem, you might take insulin or other

medications to lower blood sugar levels.

But too much insulin or other diabetes medications may cause your blood sugar level to drop too much, causing hypoglycemia. Hypoglycemia can also occur if you eat less than usual after taking your regular dose of diabetes medication, or if you exercise more than you typically do.

Hypoglycemia after meals

Hypoglycemia usually occurs when you haven't eaten, but not always. Sometimes hypoglycemia symptoms occur after certain meals, but exactly why this happens is uncertain.

This type of hypoglycemia, called reactive hypoglycemia or postprandial hypoglycemia, can occur in people who have had surgeries that interfere with the usual function of the stomach. The surgery most commonly associated with this is stomach bypass surgery, but it can also occur in people who have had other surgeries.

Complications

Untreated hypoglycemia can lead to:

- Seizure
- Coma
- Death

Hypoglycemia can also cause:

- Falls
- Injuries
- Motor vehicle accidents
- Greater risk of dementia in older adults

Hypoglycemia unawareness

Over time, repeated episodes of hypoglycemia can lead to hypoglycemia unawareness. The body and brain no longer produce signs and symptoms that warn of a low blood sugar, such as shakiness or irregular heartbeats (palpitations). When this happens, the risk of severe, life-threatening hypoglycemia increases.

If you have diabetes, recurring episodes of hypoglycemia and hypoglycemia unawareness, your health care provider might modify your treatment, raise your blood sugar level goals and recommend blood glucose awareness training.

Undertreated diabetes

If you have diabetes, episodes of low blood sugar are uncomfortable and can be frightening. Fear of hypoglycemia can cause you to take less insulin to ensure that your blood sugar level doesn't go too low. This can lead to uncontrolled diabetes. Talk to your health care provider about your fear, and don't change your diabetes medication dose without discussing changes with your health care provider.

Prevention

If you have diabetes

Follow the diabetes management plan you and your health care provider have developed. If you're taking new medications, changing your eating or medication schedules, or adding new exercise, talk to your health care provider about how these changes might affect your diabetes management and your risk of low blood sugar.

Learn the signs and symptoms you experience with low blood sugar. This can help you identify and treat hypoglycemia before it gets too low. Frequently checking your blood sugar level lets you know when your blood sugar is getting low.

Be sure to always have a fast-acting carbohydrate with you, such as juice, hard candy or glucose tablets so that you can treat a falling blood sugar level before it dips dangerously low.

[By Mayo Clinic Staff](#)

Nov. 18, 2023