

Patient education: Low blood sugar in people with diabetes (The Basics)

[Written by the doctors and editors at UpToDate](#)

What is low blood sugar? — Low blood sugar is a condition that can cause symptoms ranging from sweating and feeling hungry to passing out. Low blood sugar, which is also called "hypoglycemia," happens when the level of sugar in a person's blood gets too low.

Low blood sugar can happen in people with diabetes (sometimes called "diabetes mellitus") who take certain diabetes medicines, including insulin and some types of pills.

When can people with diabetes get low blood sugar? — People with diabetes can get low blood sugar when they:

- Take too much medicine, including insulin or certain diabetes pills
- Do not eat enough food
- Exercise too much without eating a snack or reducing their insulin dose
- Wait too long between meals
- Drink too much alcohol

What are the symptoms of low blood sugar? — The symptoms of low blood sugar can be different from person to person, and can change over time. During the early stages of low blood sugar, a person can:

- Sweat or tremble
- Feel hungry
- Feel worried

People who have early symptoms should check their blood sugar level to see if it is low and needs to be treated. If low blood sugar levels are not treated, severe symptoms can occur. These can include:

- Trouble walking or feeling weak
- Trouble seeing clearly
- Being confused, or acting in a strange way
- Passing out or having a seizure

Some people do not get symptoms during the early stages of low blood sugar. Doctors call this "hypoglycemia unawareness." People with hypoglycemia unawareness are more likely to have severe symptoms, because they might not know that they have low blood sugar until they have

severe symptoms. Hypoglycemia unawareness often occurs in people who:

- Have had type 1 diabetes for more than 5 to 10 years
- Use insulin to keep their blood sugar level under tight control
- Are tired
- Drink a lot of alcohol
- Take certain medicines for high blood pressure or diabetes

How is low blood sugar treated? — Low blood sugar can be treated with:

- Quick sources of sugar – People can treat low blood sugar by eating or drinking quick sources of sugar ([table 1](#)). Foods that have fat, such as chocolate or cheese, do not treat low blood sugar as quickly. You and a family member should carry a quick source of sugar at all times.
- A "glucagon" shot – Glucagon is a hormone that can quickly raise blood sugar levels and stop severe symptoms. It comes in the form of a shot. If your doctor recommends that you carry a glucagon shot with you, he or she will tell you when and how to use it. Family members should also learn how to give a glucagon shot. That way a family member can give it to you if you can't do it yourself ([figure 1](#) and [picture 1](#) and [picture 2](#)).

What should I do after treatment? — After treatment for low blood sugar, most people can get back to their usual routine. But your doctor or nurse might recommend that you check your blood sugar level more often during the next 2 to 3 days.

If your low blood sugar was treated with a glucagon shot, call your doctor or nurse. He or she might change the dose of your diabetes medicine.

How can I prevent low blood sugar? — The best way to prevent low blood sugar is to:

- Check your blood sugar levels often – Your doctor or nurse will tell you how and when to check your blood sugar levels at home. He or she will also tell you what your blood sugar levels should be, and when to treat low blood sugar.
- Learn the symptoms of low blood sugar and be ready to treat it in the early stages. Treating low blood sugar early can prevent severe symptoms.

When should I go to a hospital or call for an ambulance? — A family member or friend should take you to a hospital or **call for an ambulance (in the US and Canada, dial 9-1-1)** if you:

- Are still confused 15 minutes after being treated with a glucagon shot
- Have passed out and there is no glucagon shot nearby
- Still have low blood sugar after treatment

If you have low blood sugar, do not try to drive yourself to the hospital. Driving with low blood sugar can be dangerous.

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[Patient education: Type 2 diabetes \(The Basics\)](#)

[Patient education: Using insulin \(The Basics\)](#)

[Patient education: Treatment for type 2 diabetes \(The Basics\)](#)

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[Patient education: Hypoglycemia \(low blood sugar\) in diabetes mellitus \(Beyond the Basics\)](#)

[Patient education: Self-blood glucose monitoring in diabetes mellitus \(Beyond the Basics\)](#)

[Patient education: Diabetes mellitus type 1: Insulin treatment \(Beyond the Basics\)](#)

[Patient education: Diabetes mellitus type 2: Insulin treatment \(Beyond the Basics\)](#)

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GRAPHICS

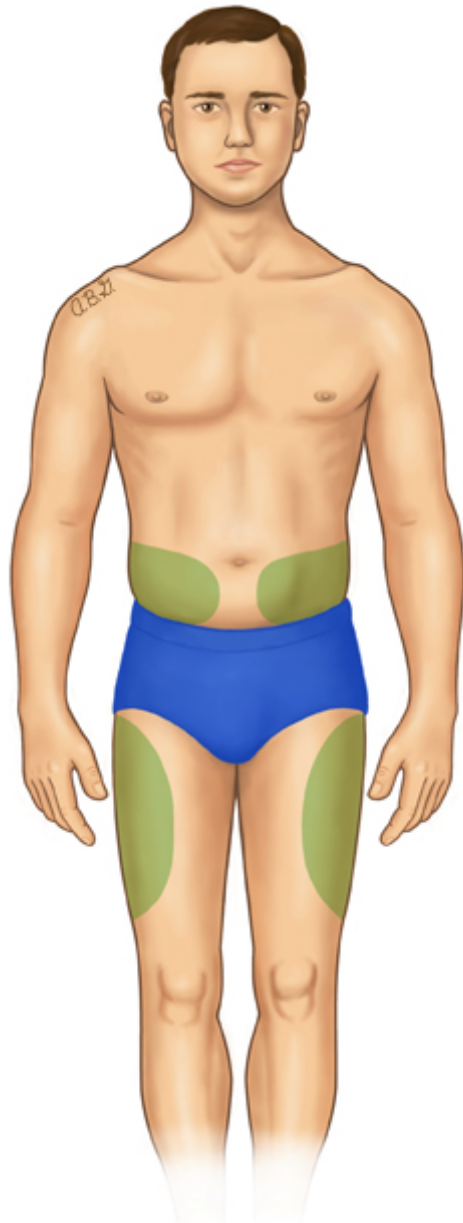
Quick sources of sugar to treat low blood sugar

3 or 4 glucose tablets
½ cup of juice or regular soda (not sugar-free)
2 tablespoons of raisins
4 or 5 saltine crackers
1 tablespoon of sugar
1 tablespoon of honey or corn syrup
6 to 8 hard candies

These sources of sugar act quickly to treat low blood sugar levels. People with diabetes who use insulin or certain other diabetes medicines should carry at least one of these items at all times.

Graphic 71872 Version 3.0

Where to give a glucagon shot



A glucagon shot can be given in the side of the lower belly or upper leg (as shown by the shaded areas).

Graphic 74461 Version 4.0

Glucagon kit



This photograph shows a glucagon shot kit. The kit includes a syringe and needle, a small vial of glucagon powder, and a carrying case. The way to give a glucagon shot is:

1. Stick the needle into the top of the vial, and inject the fluid in the syringe into the vial of powder.
2. Gently swirl the vial to mix the powder and liquid, until the powder dissolves.
3. Draw up the liquid in the vial into the syringe.
4. Stick the needle into the side of the lower belly or upper leg and inject the liquid.

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Graphic 50427 Version 6.0

Glucagon shot



To give a glucagon shot:

1. Hold the syringe at a 90 degree angle to the lower belly or upper leg (as shown in the photograph).
2. Quickly stick the needle in the skin and push the plunger down all the way.
3. Remove the needle from the skin.
4. Press down lightly on the skin where the shot was given.
5. Turn the person onto his or her side in case he or she vomits.

Graphic 61722 Version 5.0

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