



Patient education: Using insulin (The Basics)

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

What is insulin? — Insulin is a medicine that many people with diabetes use as part of their treatment. Diabetes is a disorder that disrupts the way a person's body uses sugar. This causes sugar to build up in the blood. Insulin can lower a person's blood sugar level. Insulin usually comes in the form of a shot that a person gives to herself or himself.

Are there different types of insulin? — Yes. All types of insulin can control blood sugar levels. But some types of insulin start working faster or last longer than other types. Many people use 2 different types of insulin each day so that their body has insulin all day and night.

How many times a day should I use insulin? — It depends. Your doctor will work with you to make a treatment plan that tells you:

- When to use insulin
- What type of insulin to use
- How much insulin to use

Some people use the same amount of insulin 1 or 2 times a day, at the same time each day. But many people use insulin 3 or more times a day, usually before each meal. Using insulin 3 or more times a day can control a person's blood sugar level better.

How much insulin should I use? — Sometimes, people need to choose their dose of insulin. When choosing how much insulin to use, people need to think about:

- What they plan to eat at the next meal
- How much exercise they plan to do
- What their blood sugar level is

People also usually need to change their insulin dose if they:

- Have surgery, get sick, or get pregnant
- Eat out or travel
- Gain or lose weight

Ask your doctor or nurse how to change your insulin dose during these times.

How do I give myself an insulin shot? — Your doctor or nurse will teach you how to give yourself an insulin shot. You will need either a prefilled insulin pen injector or a needle and syringe to draw up insulin from a small bottle.

The pen injectors are easier to use than the older syringes and insulin bottles. They have prefilled insulin cartridges and a needle. There is a knob at the end of the pen, which you can turn to mark the number of units you need to take.

If you use a bottle and syringe, be sure you are using the correct syringe for your type of insulin. Using the wrong syringe with your insulin can cause a dangerous insulin overdose.

Whether you are using an injector pen or a syringe, the way you give yourself the insulin shot is the same. Here's what you do:

- Choose a part of the body – People can use different parts of the body for an insulin shot ([figure 1](#)).
- Pinch up some skin and quickly insert the needle ([figure 2](#))
- Push the plunger down all the way and count to 5
- Let go of the skin and remove the needle
- Throw out the needle (and syringe, if you are using one) in a container that is made for used needles

You should never use another person's insulin pen – even if the needle is changed – or let another person use yours.

What is an insulin pump? — An insulin pump is a device that slowly releases insulin into the body. The insulin goes through a thin tube from the pump into the body through an opening in the skin. The device keeps working all day and night.

What is inhaled insulin? — [Inhaled insulin](#) is an insulin powder that is breathed into the lungs. The insulin powder comes in a cartridge that can be placed into a small inhaler (like an asthma inhaler). The inhaler is placed in the mouth and when you breathe in, the powdered insulin goes into the lungs.

How do I know if I am using the right amount of insulin? — To know if you are using the right amount of insulin, you can check your blood sugar level at home. Most doctors recommend that people who use insulin check their blood sugar level at least 4 times a day.

Why do I need to check my blood sugar level? — Checking your blood sugar level is important because it can tell you:

- If your blood sugar level gets too low or too high – If you use too much insulin, your blood sugar level can get too low. If you do not use enough insulin, your blood sugar level can get too high. Levels that are too low or too high can lead to serious problems. Talk with your doctor or nurse about what to do if your blood sugar level gets too low or too high.
- What changes to make in your next insulin dose – Knowing your blood sugar level will help you choose your next insulin dose.
- How well your treatment is working – One goal of diabetes treatment is to keep your blood sugar at or near a normal level. This can prevent health problems later in life.

How do I check my blood sugar level at home? — You can use a device called a "blood glucose monitor" to check your blood sugar level. Your doctor or nurse will show you how to use your blood glucose monitor.

Most blood glucose monitors work the same way. You will need to prick your skin to get a drop of blood. Many people prick their fingertips ([picture 1](#)), but you can prick other parts of the body ([picture 2](#)). Then you will put the

drop of blood into the monitor. After a few seconds, the monitor will show your blood sugar level.

Some people use a device that measures the blood sugar all the time. This is called "continuous monitoring." The person wears a special sensor that attaches to the skin with a sticky patch. It measures blood sugar and sends the information to a small box that can attach to clothing or go in a bag. People who have continuous monitoring still need to check their blood sugar by pricking their skin several times a day. This is to make sure the monitoring device is working correctly.

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[Patient education: Should I switch to an insulin pump? \(The Basics\)](#)

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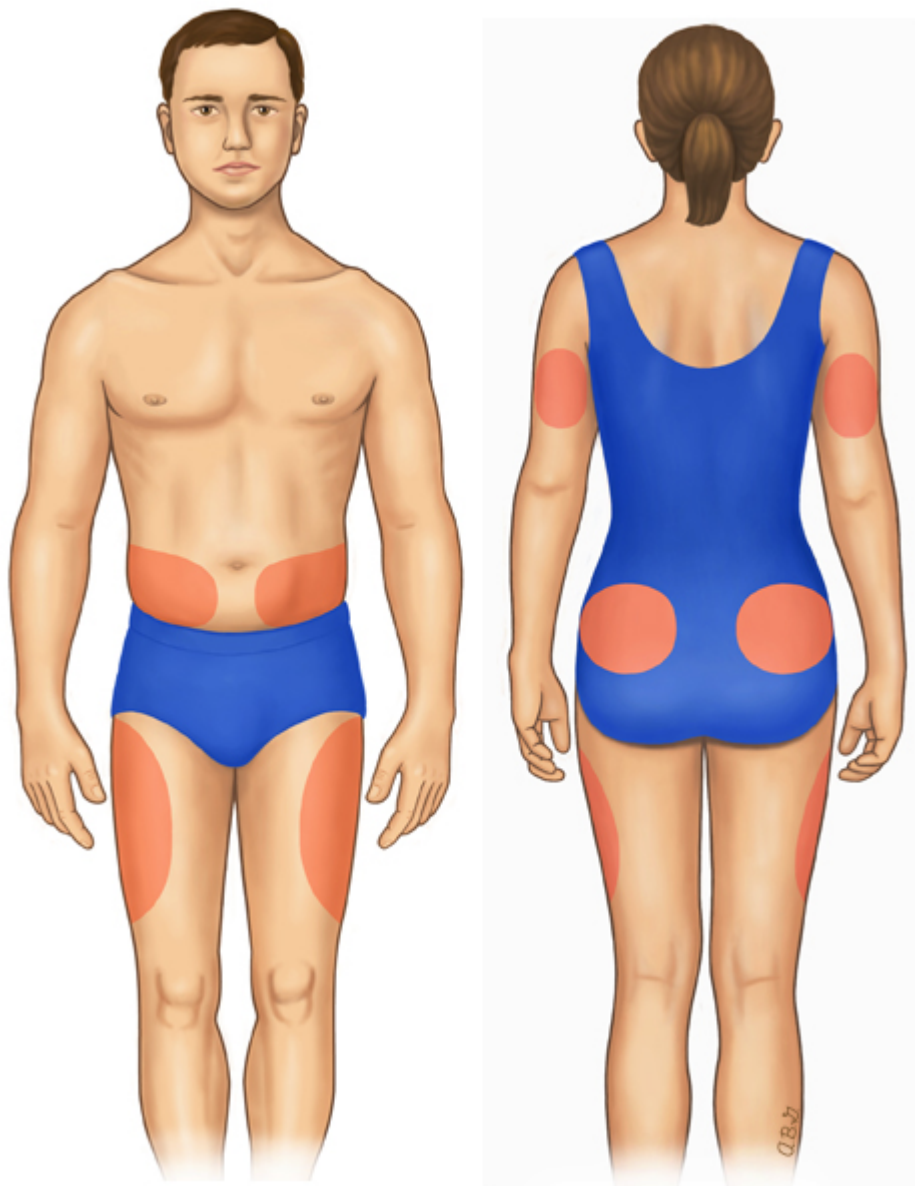
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Topic 15594 Version 11.0

GRAPHICS

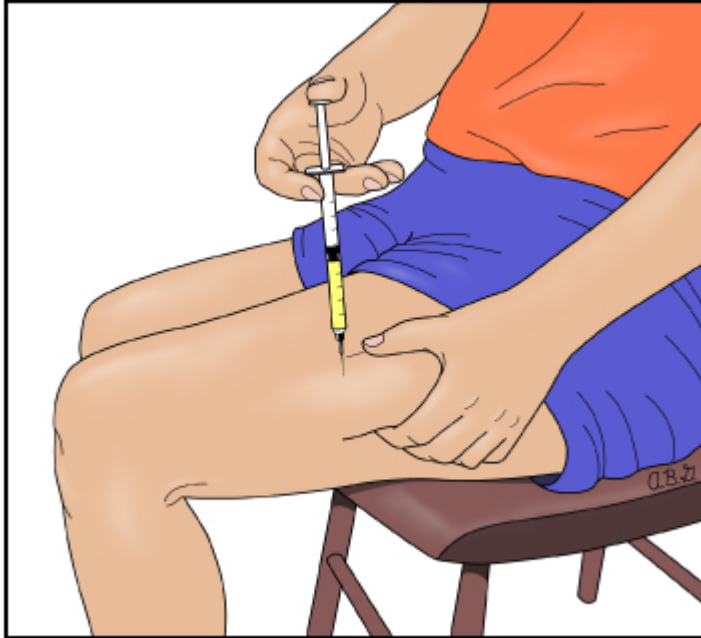
Where to give an insulin shot



The shaded areas can be used for insulin shots. You should change areas so that you do not use the same area each time. Insulin gets into the blood more quickly when injected into the belly, as compared with the arms or legs.

Graphic 74635 Version 4.0

How to give an insulin shot



1. Pinch up some skin and quickly insert the needle at a 90° angle (or whatever angle your doctor or nurse tells you). Keep the skin pinched to avoid having the insulin go into the muscle.
2. Push the plunger down all the way. Hold the syringe and needle in place for 5 seconds.
3. Let go of the pinched skin and remove the needle from the skin. If blood or clear fluid (insulin) is seen where the shot was given, press on the area for 5 to 8 seconds, but do not rub.

Graphic 80789 Version 9.0

Fingertip testing



The sides of the fingers have fewer nerve endings than the middle of the fingertips. It might not hurt as much to use the sides of your fingers to test your blood sugar.

Graphic 57918 Version 3.0

Other places to test your blood sugar



This photo shows how you can test your blood sugar in places other than your fingertips. You might need to gently massage the skin to get a large enough drop of blood. Do not use other places if you think your blood sugar is low.

Graphic 63375 Version 2.0