



How to inject insulin

If you are living with diabetes, you are not alone. About 34 million people in the U.S. are living with the condition, and there are about 1.5 million new diagnoses every year. Fortunately, new treatments, tools and lifestyle changes are helping people manage diabetes and live life to the fullest.

Alongside your medical team, Walgreens is here to support you. We created this pamphlet and others to help you better understand diabetes and give you tips and advice you can use every day. If you have any questions, just ask your Walgreens pharmacist or visit us at [Walgreens.com/Diabetes](https://www.walgreens.com/Diabetes).

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Choosing a syringe or pen

You can administer insulin with a syringe or a device called a pen. They both use needles to inject the insulin, but the syringe is separate from the insulin vial while the pen combines the needle and vial into one. Pens can be either disposable with insulin preloaded in them, or they can be reusable with removable insulin cartridges. When deciding which to use, your healthcare provider can help guide you. It's also important to check with your health insurance to find out what is covered under your plan.

Things to know before you start injections



To give an insulin injection, you need to prepare the dose with the right type and amount of medication.

- The type of insulin should match the type of syringe. Standard insulin, also called U-100, has 100 units in 1 mL. Most insulin syringes are marked for giving you U-100 insulin. Every small notch on a standard 1 mL insulin syringe is 1 unit of insulin.
- More concentrated insulins are available. These include U-500 and U-300. Because U-500 syringes may be difficult to find, your provider may give you instructions for using U-500 insulin with U-100 syringes. **DO NOT** mix or dilute concentrated insulin with any other insulin.
- Many types of insulin cannot be mixed with each other in one syringe, but some types can. Check with your pharmacist if you are unsure.
- **DO NOT** use expired insulin.
- Refer to the insulin packaging or check with your pharmacist or healthcare provider on:



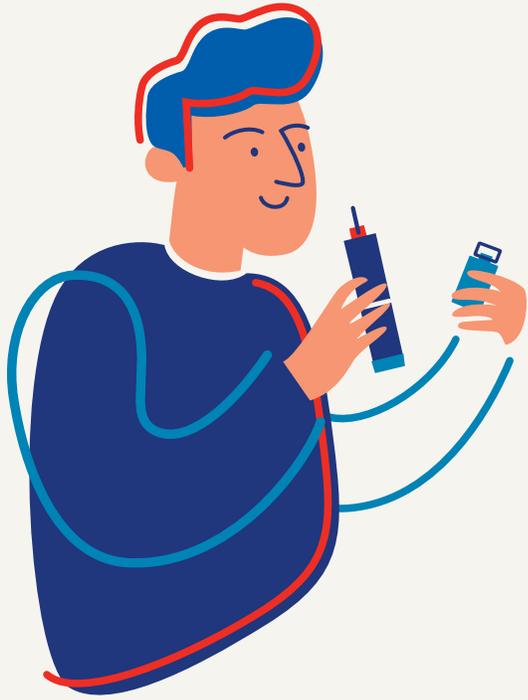
- How and at what temperature to store your insulin (insulin should never be frozen or stored in a car on very warm or cold days)
- What temperature the insulin should be when injected
- If the insulin can be kept at room temperature after opening



Filling a syringe with ONE type of insulin

- 1 Gather your supplies: insulin, syringes, alcohol wipes and a container for used syringes.
- 2 Wash your hands with soap and water and dry them well.
- 3 Check the insulin vial label. Make sure it is the right insulin and that it hasn't expired. The insulin should not have any clumps on the inside of the vial. If it does, throw it out and get another vial without lumps.
- 4 Intermediate-acting insulin (N or NPH) is cloudy and the vial must be rolled between your hands to mix it. DO NOT shake the vial. This can make the insulin clump. Clear insulin does not need to be mixed. If the insulin vial has a plastic cover, take it off. Wipe the top of the vial with an alcohol wipe and let it dry. DO NOT blow on it.
- 5 Know the dose of insulin you are going to use. Take the cap off the needle, being careful not to touch the needle to keep it sterile. Pull back the plunger of the syringe to put as much air in the syringe as the dose of insulin prescribed.
- 6 Put the needle into and through the rubber top of the insulin vial. Push the plunger so the air goes into the vial.
- 7 Keep the needle in the vial and turn the vial upside down.
- 8 With the tip of the needle in the liquid, pull back on the plunger to get the right dose of insulin into the syringe.
- 9 Check the syringe for air bubbles. If there are bubbles, hold both the bottle and syringe in one hand and tap the syringe with your other hand. The bubbles will float to the top of the syringe. Push the plunger to put the bubbles back into the insulin vial, then pull back on the plunger to get the right dose.
- 10 When there are no bubbles, take the syringe out of the vial and put it down carefully so the needle does not touch anything. You are ready to give the injection.





Filling the syringe with TWO types of insulin

- 1 Follow the first four steps in the previous section.
- 2 Never mix two types of insulin in one syringe unless you are told to do this.
- 3 Your provider will tell you how much of each insulin you will need. Add these two numbers together. This is the amount of insulin you should have in the syringe before injecting it.
- 4 Know the dose of each insulin you are going to use. Take the cap off the needle, being careful not to touch the needle to keep it sterile. Pull back the plunger of the syringe to put as much air in the syringe as the dose of the longer-acting insulin.
- 5 Put the needle into the rubber top of that insulin vial. Push the plunger so the air goes into the vial. Remove the needle from the vial. Do not remove any longer-acting insulin from the vial at this time.
- 6 Put the air in the short-acting insulin vial the same way as the previous two steps above.
- 7 Keep the needle in the short-acting vial and turn the vial upside down.

- 8 With the tip of the needle in the liquid, pull back on the plunger to get the right dose of insulin into the syringe.
- 9 Check the syringe for air bubbles. If there are bubbles, follow step 9 in the previous section to remove them.
- 10 When there are no bubbles, take the syringe out of the vial. Look at it again to make sure you have the right dose.
- 11 Put the needle into the rubber top of the longer-acting insulin vial.
- 12 Turn the vial upside down. With the tip of the needle in the liquid, slowly pull back on the plunger to exactly the right dose of long-acting insulin. DO NOT draw extra insulin in the syringe, since you should not push the mixed insulin back into the vial.
- 13 Check the syringe for air bubbles. If there are bubbles, follow step 9 in the previous section to remove them.
- 14 Make sure you have the right total dose of insulin. Put the syringe down carefully so the needle does not touch anything. You are ready to give the injection.





Insulin therapy can make a big difference

Even though the thought of insulin injections can cause some anxiety, once you start, you'll soon become more comfortable. You'll also begin to realize the benefits, such as better blood sugar control, more energy and less frequent urination.

And the better you can control your blood sugar, the greater your chances of avoiding the more serious complications of diabetes, like heart disease, stroke, kidney failure and nerve damage.

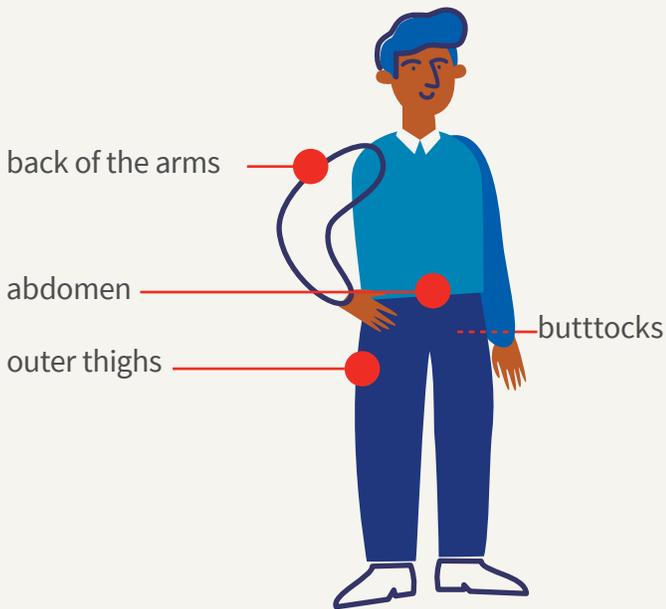
Preparing a pen for injection:

- 1 Gather your supplies: Insulin pen, alcohol wipes, and a container for used pen needles.
- 2 Wash your hands with soap and water and dry them well.
- 3 Remove the pen cap and wipe the stopper with an alcohol wipe. Let it dry.
- 4 Check the pen to make sure that it contains the proper type of insulin, contains enough to cover your full dose and has not expired.
- 5 Intermediate or premixed insulin must be mixed before use. To mix the insulin, turn the pen on its side and roll it between the palms of your hands. Clear (fast-acting, long-acting) insulin generally does not need to be mixed.
- 6 To attach a fresh pen needle to the pen, screw or click the needle securely in place according to the manufacturer's instructions. Remove the cap(s) from the pen needle to expose the needle.
- 7 Before injecting the insulin, the pen must be primed to remove air from the needle. Pointing the needle up in the air, dial one or two units on the pen and press the plunger fully with your thumb. Repeat until a drop appears. If you do not see any drops after repeating, start the process over using a new insulin pen.
- 8 Turn the dial on the pen to your prescribed dose. You are ready to give the injection.



Giving the injection

Insulin is injected into the fat layer below the skin on the abdomen, outer thighs, hips, buttocks or back of the arms. Although insulin injections are usually painless, injecting the same spot repeatedly can cause inflammation or fat tissue breakdown. Keep a chart of places you have used so you do not inject the insulin in the same place all the time.



- Keep your shots 1 inch (2.5 cm) away from scars and 2 inches (5 cm) away from your navel.
- DO NOT put a shot in a spot that is bruised, swollen or tender.
- DO NOT put a shot in a spot that is lumpy, firm or numb.

Resources

- Insulin injection know-how: Learning how to inject insulin. American Association of Diabetes Educators. https://www.diabeteseducator.org/docs/default-source/legacy-docs/_resources/pdf/general/Insulin_Injection_How_To_AADE.pdf. Accessed December 9, 2020.
 - MedlinePlus. Giving an insulin injection. <https://medlineplus.gov/ency/patientinstructions/000660.htm>. Accessed: September 2, 2020.
- The site you choose for the injection should be clean and dry. If your skin is visibly dirty, clean it with soap and water.
 - Pinch a 1- to 2-inch portion of skin and fat between your thumb and first finger and put the needle in at a 45° angle (slanted).
 - If your skin tissues are thicker, you may be able to inject at a 90° angle (straight up and down). Check with your provider before doing this.
 - Push the needle all the way into the skin and let go of the pinched skin. Inject the insulin slowly and steadily until it is all in.
 - Leave the needle of the syringe or pen in place for 5 to 10 seconds after injecting.
 - Pull the needle out at the same angle it went in. If insulin tends to leak from your injection site, press the site for a few seconds after the injection. If this happens often, check with your provider.
 - Place the syringe or pen needle in a safe, hard container. Close the container and keep it safely away from children and animals. Never reuse syringes or pen needles.
 - If you are injecting more than 50 to 90 units of insulin in one injection, your provider may tell you to split the doses either at different times or using different sites for the same injection. This is because bigger volumes of insulin may get weakened without being absorbed.

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