

Diabetes Medications: Insulin

What is insulin?

Insulin is a hormone used to treat diabetes. It's given by injection (shot) or with an insulin pump. As with other diabetes medications, it works best when you follow the rest of your treatment plan. This means checking your blood glucose regularly, following your meal plan, and exercising every day.

What does insulin do?

Insulin medication works just like the insulin made in a healthy pancreas: It helps move glucose (sugar) out of your bloodstream and into your body's cells.

There are many types of insulin. Some work right away and don't last very long. Others act more slowly, over a longer period of time. Your doctor will explain which type you use and how to take it properly. You can find a table that lists insulin types and how they work in your body on [page 3](#) of this document.

Why is insulin important for my health?

If you have **type 1 diabetes**, you already know you need insulin every day to live. Without insulin, your body can't get fuel from food.

People with **type 2 diabetes** make less insulin over time, so insulin injections often become necessary later on. Your doctor may also recommend injections if you have gestational diabetes. Adding insulin to your treatment plan helps your body better control blood glucose and lowers the chance that your diabetes will cause serious problems.

What do I need to do next?

Always follow your doctor's specific instructions for taking insulin. In general:

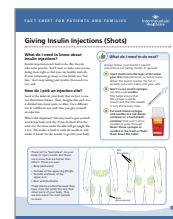
- 1** Don't stop taking insulin, even if you "feel fine" or your symptoms go away. You need it to stay well.
- 2** Don't change your insulin dose, even if you change your meal plan (for example, you overeat or skip a meal). Only change your dose if your doctor tells you to.
- 3** Check your blood glucose more often if you are sick, and keep taking your insulin as prescribed. Illness may change your need for insulin. Only regular blood glucose checks will tell you if you should adjust your dose.
- 4** Call your doctor if you have ongoing vomiting or a fever of 101°F (38°C) for more than 8 hours.

Why can't I just take a pill?

So far, pill forms of insulin haven't worked. Insulin is a form of protein. When taken by mouth, it is digested by stomach acids, just like the protein in foods. This destroys the insulin before it has a chance to work.

Right now, the most common ways to give insulin are by injection with a needle and syringe, or with a disposable insulin pen.

Ask your diabetes provider for a copy of the Intermountain fact sheet ***Giving Insulin Injections (Shots)*** for instructions on how to give insulin with a syringe or insulin pen.



What are the side effects of insulin?

The most common side effect of insulin is **low blood glucose (hypoglycemia)** [hy-poh-gly-SEE-mee-uh]). Hypoglycemia can come on suddenly, making you feel **shaky, sweaty, weak, cranky, hungry, or dizzy**. Be sure that you and your family know these symptoms. They are your signal to take in some fast-acting carbohydrate, such as a half-cup of fruit juice or regular soda, 1 cup of milk, or 3 to 4 glucose tablets. To help avoid this side effect, check your blood glucose often. This will allow you to take action easily if your blood glucose begins to fall too low.

How do I store my insulin?

To make sure your insulin stays safe and effective, follow the storage instructions in the table on **page 4**. In general:

- Don't let your insulin freeze or leave it in a hot car. Store it at **room temperature** [59°F (15°C) to 86°F (30°C)] or in the **refrigerator** [36°F (2°C) to 46°F (8°C)].
- Check the expiration date on the insulin vial, pen, or cartridge before using it. If it's past the date, throw it away, even if there's insulin still in it.
- When you open a new pen, vial, or cartridge, write the date on it so that you know how long to use it. Follow the instructions in the table on **page 4**.
- Don't use your insulin if it has particles floating in it or the color doesn't look normal.

What kind of syringe or pen needle do I need?

To inject your insulin, you may be prescribed disposable syringes or an insulin pen. The needles in both devices are short, thin, and very sharp. This helps them go into your skin more easily.

There are several different brands of insulin syringes and pens. Each one is different and will be prescribed based on the type of insulin you need and your self-care plan. Your doctor or diabetes educator will talk with you about your pen, needles, and syringes. Here are 3 basic steps to remember when giving an injection:



- 1 **LOOK at the lines and numbers on the barrel of the syringe or the dial of the pen.** These show the amount (dose) of insulin for each injection.
- 2 **DON'T re-use your insulin syringes or pen needles.** This helps ensure that the needle is sterile (clean) and very sharp every time.
- 3 **ALWAYS put used syringes or pen needles in a red sharps container or another heavy container** that the needles won't poke through, such as an empty plastic bleach container.



When should I call my doctor or diabetes educator?

Call your doctor or diabetes educator if you:






- Are ill and having trouble controlling your blood glucose.
- Have frequent blood glucose readings below 70 mg/dL.
- Have questions about how to take your insulin.
- Are considering stopping insulin or changing some other part of your treatment plan. (Never change your treatment without talking to your diabetes care team first.)

Diabetes educator: _____

Doctor: _____

Types of insulin

Ask your doctor or diabetes educator to circle the type(s) of insulin you use.

Insulin type	Name	Onset	Peak	Duration	Dosing time
	generic (brand)	How soon it starts to work	When its effect is strongest	How long it works	When it is usually taken
Rapid-acting	aspart (NovoLog)	10 to 20 minutes	1 to 2 hours	3 to 5 hours	3 times a day 
	glulisine (Apidra) lispro (Humalog, Admelog)				
Ultra rapid-acting	aspart (Fiasp)	5 to 10 minutes	1 to 1½ hours	3 to 5 hours	
Short-acting (regular)	Novolin R Humulin R	30 to 60 minutes	2 to 4 hours	4 to 8 hours	3 times a day 
Intermediate-acting	NPH (Novolin N) NPH (Humulin N)	1 to 3 hours	4 to 10 hours	10 to 18 hours	2 times a day 
Long-acting (peakless)	glargine (Lantus, Toujeo, Basaglar)	2 to 3 hours	peakless	24+ hours	1 time a day 
	detemir (Levemir)	1 hour	peakless	18 to 24 hours	
	degludec (Tresiba)	1 hour	peakless	42+ hours	
Insulin mixes	70/30 (NovoLog Mix, Humulin, Novolin), 75/25 (Humalog Mix), 50/50 (Humalog Mix)				2 times a day

My insulin regimen

Insulin type and name _____

when to take _____

dose _____

Insulin type and name _____

when to take _____

dose _____

Insulin type and name _____

when to take _____

dose _____

Insulin type and name _____

when to take _____

dose _____

Insulin storage instructions

Insulin type	Name		Storage instructions	
			Unopened	Opened
Rapid-acting	aspart (NovoLog) glulisine (Apidra) lispro (Humalog)		Store vials, pens, or cartridges in refrigerator.	Store vials, pens, or cartridges at room temperature for 28 days. Protect from light.
	lispro (Ademelog)		Store pens and vials at room temperature for 28 days or in refrigerator until the expiration date.	Store vials at room temperature or in the refrigerator for 28 days.
				Store pens at room temperature for 28 days.
Short-acting (regular)	Novolin R		Store vials in refrigerator.	Store vials at room temperature for 42 days. Protect from light.
	Humulin R		Store vials in refrigerator.	Store vials at room temperature for 28 days. Protect from light.
Ultra rapid-acting	aspart (Fiasp)		Store pens and vials at room temperature for 28 days or in refrigerator until the expiration date.	Store pens and vials at room temperature or in the refrigerator for 28 days.
Intermediate-acting	NPH (Novolin N)		Store vials, pens, or cartridges in refrigerator. Protect from light.	Store vials at room temperature for 31 days. Store pens and cartridges at room temp for 14 days.
	NPH (Humulin N)			Store vials at room temperature for 42 days.
	Humulin R U-500			Store vials at room temperature for 40 days. Store pens at room temp for 28 days.
Long-acting (peakless)	glargine	Lantus	Store vials, pens, or cartridges in refrigerator. Protect from light.	Store vials, pens, or cartridges at room temperature for 28 days.
		Toujeo		Store pens at room temperature for 42 days.
		Basaglar	Store pens at room temperature for 28 days or in the refrigerator until the expiration date.	Store pens at room temperature for 28 days.
	detemir (Levemir)		Store vials, pens, or cartridges in refrigerator. Protect from light.	Store vials or pens at room temperature for 42 days.
	degludec (Tresiba)		Store pens in refrigerator until the expiration date.	Store pens in refrigerator or at room temperature for 8 weeks. Protect from heat and light.
Insulin mixes	70/30 (NovoLog Mix, Humulin, Novolin)		Follow the instructions that came in the package. If you have questions, be sure to ask your pharmacist.	
	75/25 (Humalog Mix)			
	50/50 (Humalog Mix)			