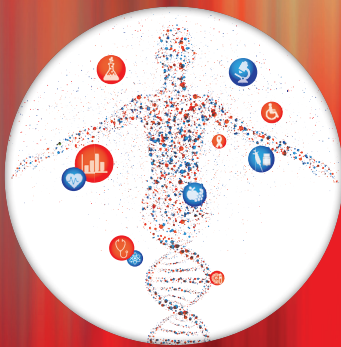


# Insulin

**Insulin helps to take the sugar in your blood to other parts of your body. Diabetes affects how your body makes or uses insulin. Diabetes can make it hard to control how much sugar is in your blood.**

## There is hope.

There are different kinds of insulin that people with diabetes can use every day to help them stay healthy. This booklet gives some basic facts about insulin. Use this booklet to help you talk to your healthcare provider about the kind of insulin that you are taking.



FDA Office of Women's Health  
[www.fda.gov/womensdiabetes](http://www.fda.gov/womensdiabetes)



U.S. FOOD & DRUG  
ADMINISTRATION

## Do not delay. Diabetes is a serious illness.

Diabetes can cause a heart attack, stroke, blindness, kidney disease, nerve damage and other serious health problems. This is why it is so important for you to get treatment for your diabetes. Treatment can help prevent or slow some of these serious health problems.

**Exercise, eat a balanced diet, and take your diabetes medicines. You can do it.**

### INSULIN SAFETY TIPS

- Never drink insulin.
- Do not share insulin needles, pens, or cartridges with anyone else.
- Talk to your healthcare provider **before** you change or stop using your insulin.
- Do not inject your insulin in the exact same spot each time.
- Throw away needles in a hard container like a laundry detergent bottle that can be closed.
- Check the expiration date on the insulin before you use it.
- Plan how to take care of your insulin when you travel and during an emergency.

# Types of Insulin

There are many different types of insulin. The type lets you know how fast the insulin starts working or how long it lasts in your body. Your healthcare provider will help you find the insulin that is best for you.

<b>RAPID-ACTING</b>	This insulin starts working within 15 minutes after you use it. It is mostly gone out of your body after a few hours. It should be taken just before or just after you eat.
<b>SHORT-ACTING</b>	This insulin starts working within 30 minutes to 1 hour after you use it. It is mostly gone out of your body after a few hours. It should be taken 30-45 minutes before you eat.
<b>INTERMEDIATE-ACTING</b>	This insulin starts working within 2-4 hours after you use it. It reaches its highest level in your blood around 6-8 hours after you use it. It is often used in the morning or at bedtime to help control your blood sugar between meals.
<b>LONG-ACTING</b>	This insulin starts working within 2-4 hours after you use it. It can last in the body for up to 24 hours. It is often used in the morning or at bedtime to help control your blood sugar throughout the day.
<b>PRE-MIXED</b>	This is a combination of two different types of insulin. It includes one type that helps to control your blood sugar at meals and one that helps between meals.

## INSULIN TIP



Do not store your insulin in a place that is very hot or very cold.

BRAND NAME	OTHER NAMES	TYPE OF INSULIN (HOW FAST IT WORKS)
Admelog	insulin lispro injection	Rapid-Acting
Afrezza (inhalation powder)	regular human insulin (inhalation powder)	Rapid-Acting
Apidra Apidra Solostar	insulin glulisine	Rapid-Acting
Fiasp Fiasp Flextouch	insulin aspart	Rapid-Acting
Humalog Humalog Pen Humalog Kwikpen	insulin lispro	Rapid-Acting
NovoLog	insulin aspart	Rapid-Acting

Humulin R Humulin R Pen	regular human insulin	Short-Acting
Novolin R	regular human insulin	Short-Acting

Humulin N	NPH human insulin (human insulin isophane suspension)	Intermediate-Acting
Novolin N	NPH human insulin (human insulin isophane suspension)	Intermediate-Acting

BRAND NAME	OTHER NAMES	TYPE OF INSULIN (HOW FAST IT WORKS)
Basaglar KwikPen	insulin glargine	Long-Acting
Lantus Lantus Solostar	insulin glargine	Long-Acting
Levemir	insulin detemir	Long-Acting
Toujeo Toujeo Max	insulin glargine	Long-Acting
Tresiba FlexTouch	insulin degludec	Long-Acting

Humalog Mix 75/25 Humalog Mix 75/25 KwikPen	75% insulin lispro protamine suspension 25% insulin lispro injection	Intermediate- and Rapid-Acting
Humalog 70/30	70% human insulin isophane suspension 30% human insulin injection	Intermediate- and Rapid-Acting
Humalog Mix 50/50 Humalog Mix 50/50 KwikPen	50% insulin lispro protamine suspension 50% insulin lispro injection	Intermediate- and Rapid-Acting
Novolog Mix 70/30 Novolog Mix 70/30 FlexPen	70% insulin aspart protamine suspension 30% insulin aspart injection	Intermediate- and Rapid-Acting

Ryzodeg 70/30 FlexTouch	70% insulin degludec 30% insulin aspart	Long- and Rapid-Acting
----------------------------	--	---------------------------

Humulin 70/30 Humulin 70/30 KwikPen	70% NPH human insulin 30% regular human insulin injection	Intermediate- and Short-Acting
Novolin 70/30	70% NPH human insulin 30% regular human insulin injection	Intermediate- and Short-Acting

# My Insulin

MEDICINE NAME	HOW MUCH DO I TAKE?	WHEN DO I TAKE IT?	IMPORTANT FACTS

Write down the facts about your insulin the next time you talk to your doctor, nurse, or diabetes educator.

- How will my insulin affect my blood sugar?
- Will it affect my other medicines?
- What are the side effects?
- What do I do if I start having side effects?
- When should I check my blood sugar?
- What are the signs that my blood sugar might be too low or too high?
- Should I carry glucose tabs with me and how should I use them?
- What should I do if I am pregnant, planning to get pregnant, or breastfeeding?
- What else should I know about my diabetes medicines?

---

---

---

This booklet should not be used in place of talking to your doctor or reading the label on your medicine. The drug and risk information in this booklet may change. Check the FDA website for the latest facts on each medicine:

[www.accessdata.fda.gov/scripts/cder/drugsatfda/](http://www.accessdata.fda.gov/scripts/cder/drugsatfda/)

# What You Can Do About Side Effects



Insulin affects each person differently. Insulin can sometimes cause side effects. The side effects will depend on your body and the type of insulin you are taking. Follow these tips to help you learn how to handle side effects.

- **Get the facts.** Ask your healthcare provider for the side effects, warnings, and other facts for the insulin you are taking. This booklet does not give all facts for each kind of insulin.
- **Speak up.** Tell someone about any problems you may be having with your insulin. Your doctor may change your insulin or give you tips to help you deal with the side effects.

- **Check the FDA website.** You can find up-to-date safety information about your insulin at: [www.fda.gov](http://www.fda.gov)

- **Report serious problems with your insulin or device.** You or your healthcare provider can tell FDA about any serious problems with your medicines.

Report Online at: [www.fda.gov/medwatch](http://www.fda.gov/medwatch)  
Call **1-800-FDA-1088** to request a form.



## INSULIN TIP

Talk to your healthcare provider **before** you change or stop taking your insulin.

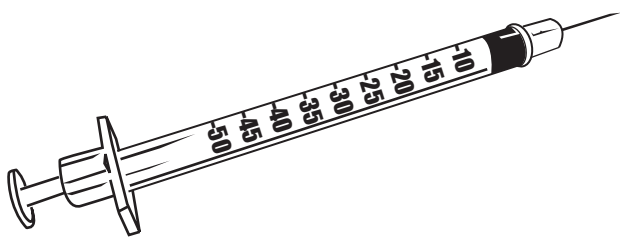


# Insulin Devices

There are many ways to take your insulin. Some people use a needle and syringe to inject their insulin. Others use an insulin pen, jet injector, inhaler, or pump. Read the information in this section about the different kinds of insulin devices. Then, talk to your healthcare provider about the kind that is best for you.

## Insulin Needles and Syringes

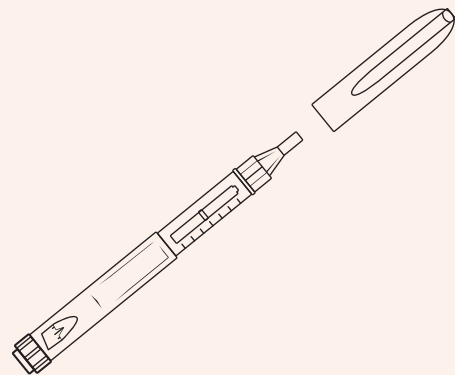
Needles and syringes are used to inject insulin under the skin. Insulin needles come in several different sizes. Most needles have a special coating to help them go through the skin with as little pain as possible.



- Do not share your needles or syringes with others.
- Ask your healthcare provider which kind of needle is right for you.

## Insulin Pens

Insulin pens are devices that look like regular pens with a fine short needle on the tip. The pens have enough insulin in them for several injections. Some pens have a case filled with insulin that you change when it is empty. Other pens are thrown away when the case is empty.

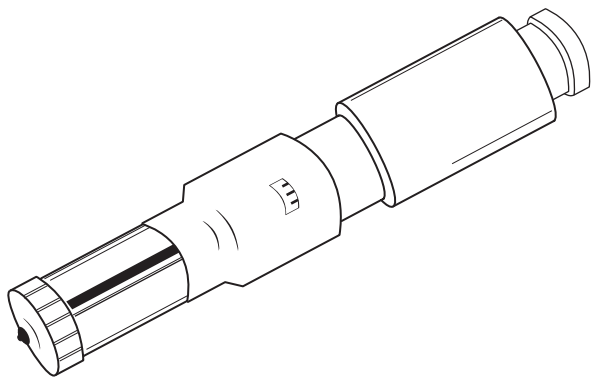


- Put a new needle on the tip of the pen each time you give yourself an injection.
- Make sure that you use the type of insulin and needle for your kind of pen.
- Do not share your insulin pen or cartridge with others.

# Insulin Devices

## Insulin Jet Injectors

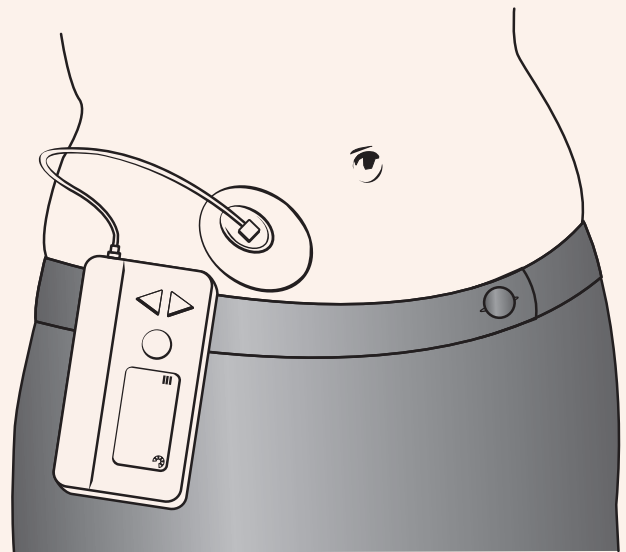
Insulin jet injectors use strong air pressure to spray insulin through the skin.



- Insulin jet injectors do not use needles.
- Ask your healthcare team to show you how to safely use your jet injector.

## Insulin Pumps

Insulin pumps are worn on the outside of your body. The pump is connected to your body by a flexible tube that has a tip that sticks under your skin. A cartridge of insulin is put in the pump. The insulin flows through the tube into your body.



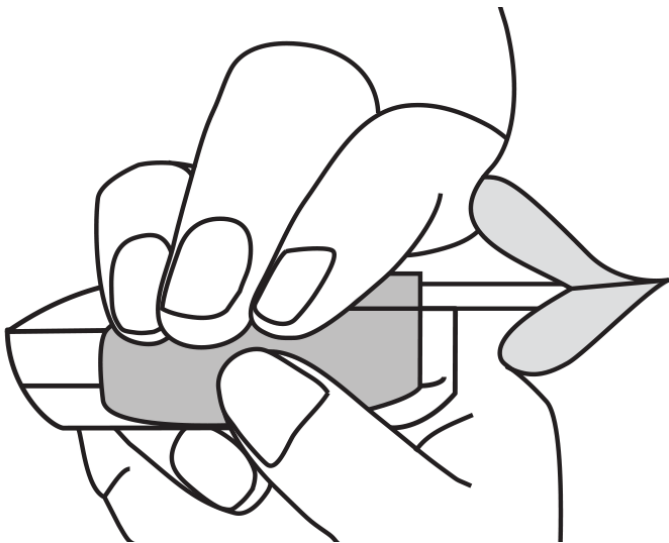
- The pump controls how much insulin goes into your body.
- The pump can give you insulin 24 hours a day.



# Insulin Devices

## Insulin Inhalers

Insulin inhalers are used to take a form of insulin that is breathed-in through your lungs (inhaled). A cartridge of insulin is put in the inhaler. After you put in the cartridge, keep the inhaler level so the drug powder does not come out.



- Do not turn the inhaler upside down.
- Do not point the mouthpiece down.
- Do not shake or drop the inhaler.



### INSULIN TIP

There are tools called **injection aids** that can make it easier for you to inject your insulin. There are tools to help people that have problems seeing and people with physical disabilities.

**Ask your healthcare provider about tools to help you inject your insulin.**

# Tips on Insulin Devices

Each insulin device is different. This page lists some basic tips about insulin devices. Talk to your healthcare team to learn everything you should know about your insulin device.

## General Tips

- Never share insulin needles (syringes) or devices.
- Ask your doctor or nurse to show you how to inject your insulin.
- Always wash your hands before you inject your insulin.
- Do not inject your insulin in the exact same spot on your body each time.
  - The skin may get thick or thin if you use the same spot.
  - Inject in the same general area of your body.
- Do not use your insulin if it looks cloudy or looks like something is floating in it. Take it back to the pharmacy for a new one.
- Do not use insulin needles (syringes), pens, and injectors after the expiration date printed on the label or on the box.

## How to Throw Away Used Devices



- Follow the directions on when to throw away the needles, pens, or injectors.
- You should throw away your used needles in a hard container like an empty laundry detergent bottle or a metal coffee can.
  - Make sure the needles cannot poke through the container.
  - Put a label on the container to warn people that it is dangerous.
  - Keep the container where children cannot get to it.
  - Always put a lid or top on the container.

# Sign Up For A Pregnancy Registry



Pregnancy Exposure Registries are research studies that collect information from women who take prescription medicines or vaccines during pregnancy.

Pregnancy registries can help women and their doctors learn more about how diabetes medicines affect women during pregnancy.

The FDA does not run pregnancy studies, but it keeps a list of registries.

**Check to see if there is a registry for your insulin or other medicines at:**

**[www.fda.gov/pregnancyregistries](http://www.fda.gov/pregnancyregistries)**

This booklet should not be used in place of talking to your doctor or reading the label on your medicine. This booklet does not list all of the benefits or risks of taking these medicines. The drug and risk information in this booklet may change.

Check the FDA website for the latest facts on each medicine:

**[www.accessdata.fda.gov/scripts/cder/drugsatfda/](http://www.accessdata.fda.gov/scripts/cder/drugsatfda/)**

# You Can Control Your Diabetes



## **Make a plan.**

Work with your healthcare team to plan how you will manage your diabetes.



## **Use medicines wisely.**

Ask your healthcare provider when and how to safely use your diabetes medicines or insulin.



## **Check your blood sugar.**

Use your glucose meter to test your blood glucose (sugar) level during the day.



## **Be active and get**

**exercise.** Dance, take a walk, or join an exercise class. Check with your healthcare provider about safe ways to be more active.



## **Watch what you eat.**

Work with your healthcare team to make a meal plan just for you.



## **Watch your overall mental and physical health.**

Work with your healthcare team to keep your feet, eyes, heart, and teeth healthy.

