

# What I need to know about Diabetes Medicines

## What do diabetes medicines do?

Over time, high levels of blood glucose, also called blood sugar, can cause health problems. These problems include heart disease, heart attacks, strokes, kidney disease, nerve damage, digestive problems, eye disease, and tooth and gum problems. You can help prevent health problems by keeping your blood glucose levels on target.

Everyone with diabetes needs to choose foods wisely and be physically active. If you can't reach your target blood glucose levels with wise food choices and physical activity, you may need diabetes medicines. The kind of medicine you take depends on your type of diabetes, your schedule, and your other health conditions.



You may need diabetes medicines to reach your blood glucose targets.

Diabetes medicines help keep your blood glucose in your target range. The target range is suggested by diabetes experts and your doctor or diabetes educator. See below for more information about target levels for good health.

## What targets are recommended for blood glucose levels?

The National Diabetes Education Program uses blood glucose targets set by the American Diabetes Association (ADA) for most people with diabetes. To learn your daily blood glucose numbers, you'll check your blood glucose levels on your own using a blood glucose meter.

Target blood glucose levels for most people with diabetes	My targets
Before meals	70 to 130 mg/dL*
1 to 2 hours after the start of a meal	Less than 180 mg/dL

\* Milligrams per deciliter.

Also, you should ask your doctor for a blood test called the A1C at least twice a year. The A1C will give you your average blood glucose for the past 3 months.

Target A1C result for people with diabetes	My targets
Less than 7 percent	

Your personal A1C goal might be higher or lower than 7 percent. Keeping your A1C as close to normal as possible—below 6 percent without having frequent low blood glucose—can help prevent long-term diabetes problems. Doctors might recommend other goals for very young children, older people, people with other health problems, or those who often have low blood glucose.

Talk with your doctor or diabetes educator about whether the target blood glucose levels and A1C result listed in the charts above are best for you. Write your own target levels in the charts. Both ways of checking your blood glucose levels are important.

If your blood glucose levels are not on target, you might need a change in how you take care of your diabetes. The results of your A1C test and your daily blood glucose checks can help you and your doctor make decisions about

- what you eat
- when you eat
- how much you eat
- what kind of exercise you do
- how much exercise you do
- the type of diabetes medicines you take
- the amount of diabetes medicines you take

## What happens to blood glucose levels in people with diabetes?

Blood glucose levels go up and down throughout the day and night in people with diabetes. High blood glucose levels over time can result in heart disease and other health problems. Low blood glucose levels can make you feel shaky or pass out. But you can learn how to make sure your blood glucose levels stay on target—not too high and not too low.

## What makes blood glucose levels go too high?

Your blood glucose levels can go too high if

- you eat more than usual
- you're not physically active
- you're not taking enough diabetes medicine
- you're sick or under stress

- you exercise when your blood glucose level is already high

Some diabetes medicines can also lower your blood glucose too much. Ask your doctor whether your diabetes medicines can cause low blood glucose. See [Insert N](#) for information about low blood glucose.



The results of your blood glucose checks can help you make decisions about your diabetes medicines, food choices, and physical activity.

## Medicines for My Diabetes

Ask your doctor what type of diabetes you have and write down your answer.

I have

- type 1 diabetes
- type 2 diabetes
- gestational diabetes
- another type of diabetes: \_\_\_\_\_

## Medicines for Type 1 Diabetes

Type 1 diabetes, once called juvenile diabetes or insulin-dependent diabetes, is usually first found in children, teenagers, or young adults. If you have type 1 diabetes, you must take insulin because your body no longer makes it. You also might need to take other types of diabetes medicines that work with insulin.

## Medicines for Type 2 Diabetes

Type 2 diabetes, once called adult-onset diabetes or noninsulin-dependent diabetes, is the most common form of diabetes. It can start when the body doesn't use insulin as it should, a condition called insulin resistance. If the body can't keep up with the need for insulin, you may need diabetes medicines. Many choices are available. Your doctor might prescribe two or more medicines. The ADA recommends that most people start with metformin, a kind of diabetes pill.

## Medicines for Gestational Diabetes

Gestational diabetes is diabetes that occurs for the first time during pregnancy. The hormones of pregnancy or a shortage of insulin can cause gestational diabetes. Most women with gestational diabetes control it with meal planning and physical activity. But some women need insulin to reach their target blood glucose levels.

## Medicines for Other Types of Diabetes

If you have one of the rare forms of diabetes, such as diabetes caused by other medicines or monogenic diabetes, talk with your doctor about what kind of diabetes medicine would be best for you.

## Types of Diabetes Medicines

Diabetes medicines come in several forms.

### Insulin

If your body no longer makes enough insulin, you'll need to take it. Insulin is used for all types of diabetes. Your doctor can help you decide which way of taking insulin is best for you.

- **Taking injections.** You'll give yourself shots using a needle and syringe. The syringe is a hollow tube with a plunger. You will put your dose of insulin into the tube. Some people use an insulin pen, which looks like a pen but has a needle for its point.
- **Using an insulin pump.** An insulin pump is a small machine about the size of a cell phone, worn outside of your body on a belt or in a pocket or pouch. The pump connects to a small plastic tube and a very small needle. The needle is inserted under the skin and stays in for several days. Insulin is pumped from the machine through the tube into your body.
- **Using an insulin jet injector.** The jet injector, which looks like a large pen, sends a fine spray of insulin through the skin with high-pressure air instead of a needle.



If your body no longer makes enough insulin, you'll need to take it.

## What does insulin do?

Insulin helps keep blood glucose levels on target by moving glucose from the blood into your body's cells. Your cells then use glucose for energy. In people who don't have diabetes, the body makes the right amount of insulin on its own. But when you have diabetes, you and your doctor must decide how much insulin you need throughout the day and night.

## What are the possible side effects of insulin?

Possible side effects include

- low blood glucose (for more information, see [Insert N](#))
- weight gain

## How and when should I take my insulin?

Your plan for taking insulin will depend on your daily routine and your type of insulin. Some people with diabetes who use insulin need to take it two, three, or four times a day to reach their blood glucose targets. Others can take a single shot. Your doctor or diabetes educator will help you learn how and when to give yourself insulin.

## Types of Insulin

Each type of insulin works at a different speed. For example, rapid-acting insulin starts to work right after you take it. Long-acting insulin works for many hours. Most people need two or more types of insulin to reach their blood glucose targets.

Look at the list of types of insulin on [Insert C](#). Check off the names of the kinds of insulin you take. Then print and write the names of your insulins under **My Insulins** in the chart on [Insert A](#).

## Diabetes Pills

Along with meal planning and physical activity, diabetes pills help people with type 2 diabetes or gestational diabetes keep their blood glucose levels on target. Several kinds of pills are available. Each works in a different way. Many people take two or three kinds of pills. Some people take combination pills. Combination pills contain two kinds of diabetes medicine in one tablet. Some people take pills and insulin.



Diabetes pills help people with type 2 diabetes or gestational diabetes keep their blood glucose levels on target.

Your doctor may ask you to try one kind of pill. If it doesn't help you reach your blood glucose targets, your doctor may ask you to

- take more of the same pill
- add another kind of pill
- change to another type of pill
- start taking insulin
- start taking another injected medicine

If your doctor suggests that you take insulin or another injected medicine, it doesn't mean your diabetes is getting worse. Instead, it means you need insulin or another type of medicine to reach your blood glucose targets. Everyone is different. What works best for you depends on your usual daily routine, eating habits, and activities, and your other health conditions.

For information about the different kinds of pills and what they do, see the inserts. You'll see the brand name and the generic name—the scientific name—for each medicine. Find your diabetes pills and check off the names. Then print and write the names of your diabetes pills under **My Pills and Injected Medicines** in the chart on [Insert A](#).

### **Injections Other Than Insulin**

In addition to insulin, two other types of injected medicines are now available. Both work with insulin—either the body's own or injected—to help keep your blood glucose from going too high after you eat. Neither is a substitute for insulin.

See the inserts for more information about these injected medicines. Check off the kinds you take. Then print and write the names of your injected medicines under **My Pills and Injected Medicines** in the chart on [Insert A](#).

### **What do I need to know about side effects of medicines?**

A side effect is an unwanted problem caused by a medicine. For example, some diabetes medicines can cause nausea or an upset stomach when you first start taking them. Before you start a new medicine, ask your doctor about possible side effects and how you can avoid them. If the side effects of your medicine bother you, tell your doctor.

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### **For More Information**

To find diabetes educators—nurses, dietitians, and other health professionals—near you, call the American Association of Diabetes Educators toll-free at 1-800-TEAMUP4 (832-6874). Or go to [www.diabeteseducator.org](http://www.diabeteseducator.org) and see the “Find a Diabetes Educator” section.

For additional information about diabetes, contact

#### **American Diabetes Association**

National Service Center  
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Alexandria, VA 22311-1742  
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### **National Diabetes Education Program**

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### **National Diabetes Information Clearinghouse**

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Internet: [www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov)

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