

taking



medication

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Diabetes medications come in two broad categories, oral medications (pills) and injectable medications (shots). You may need to take one or both types of medication, as well as medication for other health risks such as high blood pressure and high cholesterol.

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IN OTHER WORDS...

The pills you take to control type 2 diabetes are also called oral hypoglycemic agents (OHAs):

- **Oral** means you can take it by mouth
- **Hypo** means lower
- **Glycemic** means blood glucose

Along with monitoring, meal planning, and regular exercise, diabetes medications can do a lot to keep you healthy.

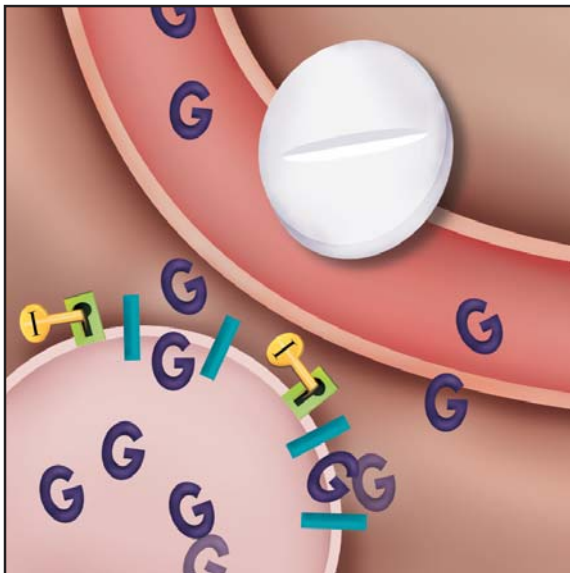
Oral diabetes medications (pills)

People with type 2 diabetes often take oral medications. Oral medications don't include insulin—it can't be taken by mouth.

How do oral medications work?

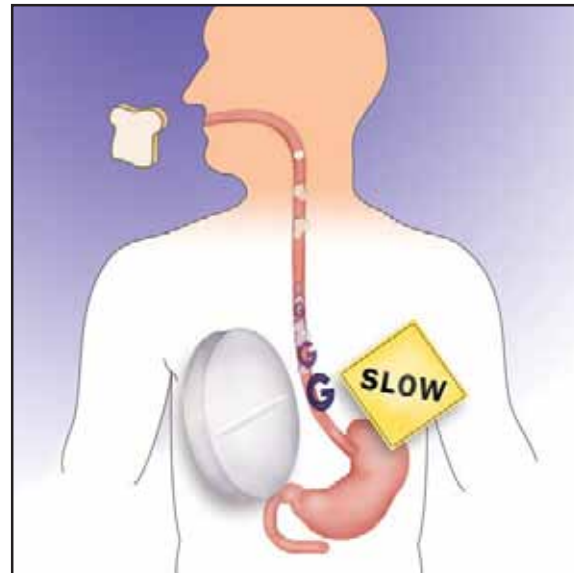
Oral medications won't cure your diabetes. Their purpose is to help lower your blood glucose—and they work in different ways to do this. The illustrations below summarize how different oral medications work.

Oral diabetes medications



▲ **Making cells more receptive to the insulin made by the pancreas.** By reducing your body's insulin resistance, your cells can take in more glucose from the bloodstream.

Examples: **metformin** (includes brand name Glucophage) and **glitazone** medications (includes brand names Actos, Avandia, and a combination of metformin and Avandia called Avandamet).



▲ **Slowing down the digestion and absorption of complex carbohydrates.** Your bloodstream is less likely to get overloaded with glucose after you eat. (Note that this type of medication doesn't affect absorption of simple sugars, like those found in fruit juice.)

Examples: **miglitol** (brand named Glyset) and **acarbose** (includes brand names Precose and Prandase).

How many pills will I have to take?

There are many possible strategies for treating diabetes with medication. For example, you may take only one type of oral medication. Or, you may take two different types of pills—or a single pill that combines the actions of two different drugs. Some people will need to take diabetes pills as well as insulin.

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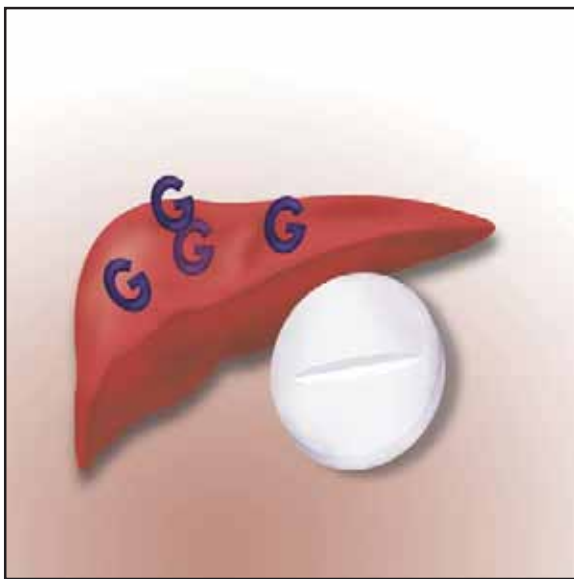
“If you have to start taking insulin, it means you’re failing at self-management.”

TRUTH

Ever heard the saying, “the only constant is change”? If you’re like most people with diabetes, your diabetes WILL change over time. And the change may have nothing to do with how well you’re following your self-management plan. It may just be part of the disease process.

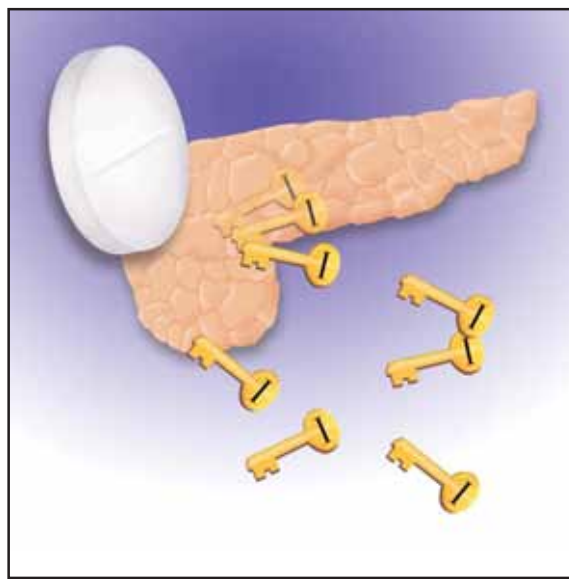
If your condition does change, what worked for you before may not work as well right now. So don’t beat yourself up about it. Talk to your healthcare provider. An adjustment to your plan—a different medication dose, an adjustment to your meal plan, and yes, perhaps even a new medication like insulin—can get you back on track.

help lower blood glucose by...



▲ **Decreasing the amount of glucose released by the liver.** This helps make sure that you don’t have more glucose in your bloodstream than your body can handle at one time.

Examples: **metformin** (includes brand name Glucophage) and **glitazone** medications (includes brand names Actos, Avandia, and a combination of metformin and Avandia called Avandamet).



▲ **Increasing the amount of insulin made by the pancreas.** More insulin helps move glucose out of your bloodstream, and into your cells.

Examples: **sulfonylureas** (includes brand names DiaBeta, Glynase, Micronase, Glucotrol, and Amaryl) and **meglitinides** (Prandin and Starlix).

Insulin and other injectable diabetes medications

Everyone with type 1 diabetes needs to take insulin to keep blood glucose in good control. So do many people with type 2.

How does insulin work?

In general, insulin medication works just like the insulin made in a normal pancreas: it helps move glucose out of the bloodstream and into your cells. There are several different types of insulin medication. Some types are quick acting, and some work a little slower. Some will last a long time in your system, and others only a short time. Your doctor will prescribe a type of insulin based on your condition, and will help you understand how it works.

How is insulin taken?

If you need to take insulin, you'll take it in one of the following ways:

- **Injection.** Most people take insulin in daily injection shots. In this case, you'll inject the insulin yourself, into the fatty part of your stomach, thigh, arm, or hip. You'll need to take a shot two or more times a day, depending on your condition, lifestyle, body type, and other factors.
- **Insulin pump.** An insulin pump delivers insulin directly into your body through a thin tube (catheter) inserted under your skin. You "wear" the pump all the time—carrying it in your pocket, on your waistband—wherever it's most comfortable for you. It's programmed like a computer to deliver a little insulin throughout the day. Then, at mealtimes (or when your blood glucose is high), you can set it to deliver extra insulin.
- **Inhalers.** Inhaled insulin is a fairly new option for adults with diabetes. It requires a special inhaler that turns powdered insulin medication into a "cloud" that you breathe in through a mouthpiece. Inhaled insulin isn't right for every person with diabetes, but it may be a useful alternative to injected short-acting insulin for some people.



Why can't I just take an insulin pill?

So far, pill forms of insulin haven't worked well. Since insulin is a protein, stomach acids tend to digest the insulin protein in pills just as they do the proteins in food. This destroys the insulin before it has a chance to work.

Researchers continue to search for insulin therapies that DON'T require injections. Researchers have seen recent success with inhaled insulin, and they continue to explore possibilities such as insulin skin patches and mouth sprays. Most experts are optimistic that the coming years will bring more and more options for delivering insulin.



What are other injectable medications for diabetes?

Two new diabetes medications, exenatide (brand named Byetta) and pramlintide acetate (brand named Symlin), are also taken by injection. These medications are not insulin—they work with insulin or oral diabetes medications to help control your blood glucose. They are usually taken with meals.

WHAT YOU NEED TO KNOW ABOUT TAKING INSULIN OR ANOTHER INJECTABLE MEDICATION

Here's what your care team can teach you about taking insulin or another injectable medication:

- What type you're taking, and how it works
- How often to take it, and when to adjust your dose up or down
- How to give yourself an injection
- How to handle and store the medication

Medications for other health risks

People with diabetes usually need medication for things besides high blood glucose, such as high blood pressure and high cholesterol. Here are a few of the more common medications prescribed for people with diabetes:



TO CONTROL YOUR BLOOD PRESSURE...

Most people with diabetes need more than one medication to control blood pressure.

TO CONTROL YOUR CHOLESTEROL...







Good blood glucose control can help control your cholesterol, too—especially your triglyceride levels. Statin medications can help lower your LDL cholesterol.

<p>ACE inhibitors (angiotensin converting enzyme inhibitors)</p>	<p>ACE inhibitors are used to treat high blood pressure and heart failure. They block the enzymes that can cause your blood vessels to tighten. This relaxes your blood vessels, lowering your blood pressure and increasing the amount of blood your heart can pump.</p>
<p>ARBs (angiotensin II receptor antagonists)</p>	<p>ARBs are used to treat high blood pressure and heart failure. They're often prescribed when a patient can't tolerate ACE inhibitors.</p>
<p>aspirin</p>	<p>Aspirin can increase the time it takes for your blood to clot. This reduces the risk of strokes and heart attacks that can occur when blood clots get stuck in small blood vessels.</p>
<p>beta blockers</p>	<p>Beta blockers are used to treat high blood pressure, angina (chest pain), and irregular heart rhythms. They work by blocking the chemicals that make your heart pump faster and more forcefully. This lowers your blood pressure and slows your heartbeat.</p>
<p>diuretics ("water pills")</p>	<p>Diuretics help lower blood pressure by ridding your body of excess fluid. This lessens the volume of blood inside your blood vessels and takes the pressure off artery walls.</p>
<p>statins</p>	<p>Statins help lower your LDL cholesterol ("bad cholesterol"). They block the substance your liver needs to make this kind of cholesterol.</p>

h o w t o

manage your medications

You'll get the most benefit from your diabetes medications if you follow a few basic rules:

-  **Follow ALL parts of your plan.** Medication works best when combined with monitoring, meal planning, and exercise.
-  **Always take medications just as your doctor tells you to.** Don't stop taking medication because you feel fine—and don't mix them with other medications unless your doctor says it's okay. This includes herbs, cold remedies, vitamins, and so on.
-  **Pay attention to how your medications affect you—and communicate with your doctor.** Your blood glucose readings and any symptoms and side effects are good clues as to how your medications are working for you.
-  **Stick to a regular routine for taking medications.** Set an alarm clock to remind yourself when to take medications. Or, take your medications at the same time you do other regular activities like brushing your teeth, watching the evening news, and so on.
-  **Get organized.** For oral medications, use a pillbox for different times of the day, or different days of the week. You can line up your insulin doses on the counter in the same way. Having a system can help you see at a glance whether you've taken each dose.
-  **Order more medications when you're down to a 2-week supply.** Pharmacies sometimes have a delay in filling orders—and it's important to avoid running out of your prescription.

