Type 2 diabetes and insulin

What is insulin?

Insulin is a hormone that helps sugar move from your blood into your cells. Insulin is made by the beta cells in your pancreas.

Your cells need sugar for energy. Sugar from food makes your blood sugar level go up. Insulin lowers your blood sugar level by helping sugar move from your blood into your cells. The image below on the right side of this page shows a simple version of how this happens.

If you have type 2 diabetes, your body prevents insulin it does make from working appropriately. This is called insulin resistance. Or your body may not make enough insulin, or both.

How insulin can help with type 2 diabetes

Many people with type 2 diabetes follow meal and physical activity plans to help manage their blood sugar. But following a meal plan and staying active often are not enough to keep blood sugar in control. Medicine is often necessary.

In type 2 diabetes, many people find that as their beta cells in the pancreas stop working over time, they may need to take insulin. If you have been told that you could benefit from insulin but have delayed starting it, you are not alone. Many people worry about injecting themselves. They wonder if insulin has side effects. They wonder if taking insulin will interfere with their lives. You can discuss these and any other concerns with your health care professional.

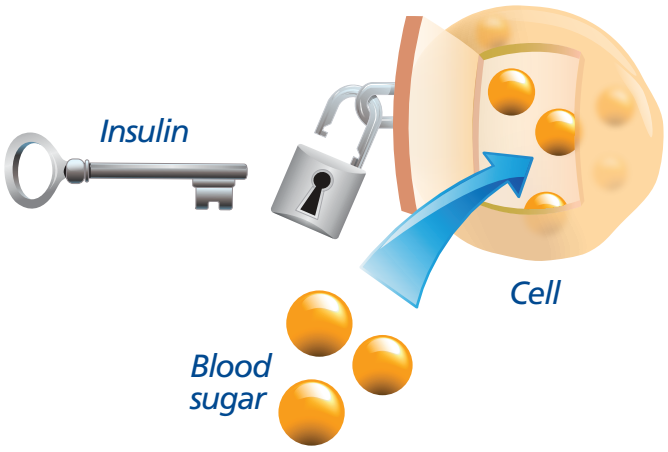
Today, there are many insulin products and insulin devices available to treat all the stages of type 2 diabetes. You and your health care professional can work together to find the diabetes products that are right for you.

Does insulin have any side effects?

Although insulin is a hormone that the body makes, injecting it may cause some side effects. Here are a few to be aware of:

- **Low blood sugar.** You may get low blood sugar if you take too much insulin, don't eat enough for the insulin dose you've taken, or are more active than usual. Talk with your health care team about what to do about low blood sugar. When your blood sugar gets too low, you may feel:
  - Weak or tired
  - Hungry
  - Dizzy or shaky
  - Nervous or upset
  - Sweaty
  - Confused
  - Sleepy
  - Like your mood is changing
  - Headache
- **Weight gain.** Some patients may gain weight.
- **Redness, swelling, or itching at the place where you inject.** If this reaction happens, let your health care professional know. Changing to a different kind of insulin may solve the problem.

Some people may not have any signs of low blood sugar before they have a problem. This is another reason that regular blood sugar checks are important.



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What are the different types of insulin?

There are many types of insulin medicines. They each work at a different pace to closely mimic the way the body normally releases insulin. They each have a different:

- Onset of action (when they start to work)
- Time of peak action (when their effect on blood sugar is strongest)
- Duration of action (how long they work)

Some types of insulin are long-acting and don't depend on the food you eat; therefore, they are taken at the same time every day. Others are taken at mealtimes to avoid spikes in blood sugar that occur when you eat. The chart below shows the different types of insulin. Your doctor will prescribe the type of insulin that is best for you.

Each type of insulin may help to keep diabetes under control. But no one type is right for everyone. Each person's insulin need is different. And each person's insulin need may change over time.

Making your insulin plan

Everyone who takes insulin should have a personal insulin plan. Your diabetes care team can help you make a plan that works for you.

Your plan will help you take insulin to closely mimic the way the body produces insulin, when you do not have diabetes.

Your plan will tell you:

- What type of insulin to take
- How much insulin to take
- When to take it

Your plan will be based on:

- When and how much you eat
- Your current blood sugar level
- Your level of physical activity
- Your lifestyle

Your body's need for insulin goes up and down all day. Your need for insulin depends on what you are doing and how much sugar is in your blood. Your insulin plan will take these changes into account.

Insulin type	Onset (how long it takes to start working)	Peak (when it's working the hardest)	Duration at steady state (how long it lasts)
Taken around meals to avoid blood sugar spikes			
Fast-acting analog insulin	15 minutes	30 to 90 minutes	3 to 5 hours
Short-acting human insulin	30 to 60 minutes	2 to 4 hours	5 to 8 hours
Taken to keep blood sugar steady throughout the day and night			
Intermediate-acting human insulin	1 to 3 hours	8 hours	12 to 16 hours
Long-acting analog insulin	1 hour	No clear peak	20 to 26 hours

For more information, visit Cornerstones4Care.com

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