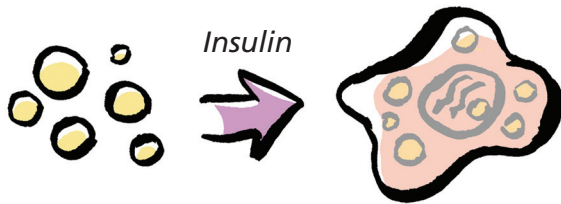


# Type 2 Diabetes and Insulin

## 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.



Blood sugar

Sugar in cells

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.

If you have type 2 diabetes, your body prevents the insulin it does make from working right. Over time your body makes some insulin but not enough.

## How insulin can help with type 2 diabetes

Many people with type 2 diabetes start with meal planning and physical activity as well as medicines to help manage their blood sugar. Over time, when many beta cells stop working, many people with type 2 diabetes find that they need to take insulin. If you have type 2 diabetes, you may have delayed taking insulin. 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.

People with type 2 diabetes often find that starting insulin changes their lives. They may find that they have more flexible eating and activity schedules.

Today, there are many insulin products and insulin devices available. You and your diabetes care team can work together to find the diabetes products that are right for you.

Types of Insulin	When It's Usually Taken	How Soon It Starts Working*	When Its Effect Is Strongest	How Long It Lasts
<b>Analog insulin</b>				
Rapid-acting insulin	Right before a meal	10 to 20 minutes	1 to 3 hours	3 to 5 hours
Long-acting insulin	At supper or bedtime	50 to 120 minutes	Steady over time	Up to 24 hours
Premixed (mixture of rapid-acting and intermediate-acting insulins)	Before breakfast, or before the evening meal, or at both times	10 to 20 minutes	2 to 3 hours	Up to 24 hours <sup>†</sup>
<b>Human insulin</b>				
Short-acting insulin (also called <i>regular insulin</i> )	30 minutes before a meal	30 minutes	2½ to 5 hours	8 hours
Intermediate-acting insulin (NPH)	At breakfast, supper, or bedtime	1 to 2 hours	4 to 8 hours	10 to 20 hours

\*All times shown are approximate. <sup>†</sup>Check label

# Type 2 Diabetes and Insulin

## What are the different types of insulin?

There are many types of insulin. They each work at a different pace to 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)

There are two main types of insulin. Human insulin was developed earlier. Analog insulin is a more recently developed medicine. Your doctor will prescribe the insulin that is best for you.

Each type of insulin helps 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 needs a personal insulin plan. Your doctor will help you make a plan that works for you.

Your plan will help you take insulin the way your body would make it if you did 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.

For instance:

- You need more insulin after you eat (especially about 1 hour after a meal, when blood sugar is highest)
- You need less insulin when you sleep



For more information, call the Novo Nordisk Diabetes Tip Line at 1-800-260-3730, or visit us online at [ChangingDiabetes-us.com](http://ChangingDiabetes-us.com).

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