



**the Diabetes  
Education  
Program**

# Adding mealtime insulin

Learn how medicines  
work together to help  
control your blood sugar



Cornerstones4Care



## Adding mealtime insulin

Even if you have been doing everything you can to manage your diabetes, your doctor may recommend that you add a mealtime insulin.

### Why do I need to add another insulin?

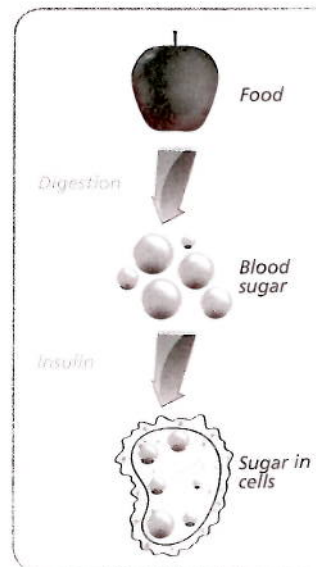
Needing to add mealtime insulin to your diabetes care plan does not mean that you've done anything wrong in managing your diabetes. It just means that your diabetes has changed over time, making it harder to control blood sugar spikes when you eat.

The goal of adding another insulin to your diabetes care plan is to keep blood sugar levels (both your self-check levels and your A1C) as close to your target range as possible.

### How does insulin work?

When you eat, some of your food is broken down into sugar (also called glucose). Sugar travels in your blood to all your body's cells. Insulin is needed to help sugar move from your blood into your cells, where it is needed for energy. By moving sugar into your cells, insulin lowers your blood sugar.

Over time, the long-acting insulin you start on may not be enough to help control your blood sugar. That's why you may need to add a mealtime insulin. Read on to find out more about these different kinds of insulin.



## How these types of insulin work

Types of insulin	How soon it starts working*	When its effect is strongest*	How long it lasts*
<b>Analog insulin</b>			
Fast-acting insulin	15 minutes	30 to 90 minutes	3 to 5 hours
Long-acting insulin	1 hour	Steady over time	Up to 24 hours
<b>Human insulin</b>			
Short-acting insulin	30 to 60 minutes	2 to 4 hours	5 to 8 hours
Intermediate-acting insulin (NPH)	1 to 3 hours	8 hours	Up to 16 hours

\*All times shown are approximate. Check label.

Human insulin was developed earlier. Analog insulin is a more recently developed medicine.

Your doctor will prescribe the mealtime insulin that is best for you.

## Starting mealtime insulin: when to test and how to adjust your dose

You and your doctor will determine the right insulin starting dose and make adjustments to your dose as needed. In the beginning, you may need to adjust your dose slightly from time to time, depending on your blood sugar results. Use the chart to the right to work with your doctor and diabetes care team to find out how many units to start with and how to adjust your dose. Together, your doctor and you will decide on the insulin plan that is right for you.



Be patient and stick with it!

### Your Mealtime Insulin Plan

Ask your doctor to fill in the blanks below.

Start with \_\_\_\_\_ units of mealtime insulin before \_\_\_\_\_.

#### Blood sugar level

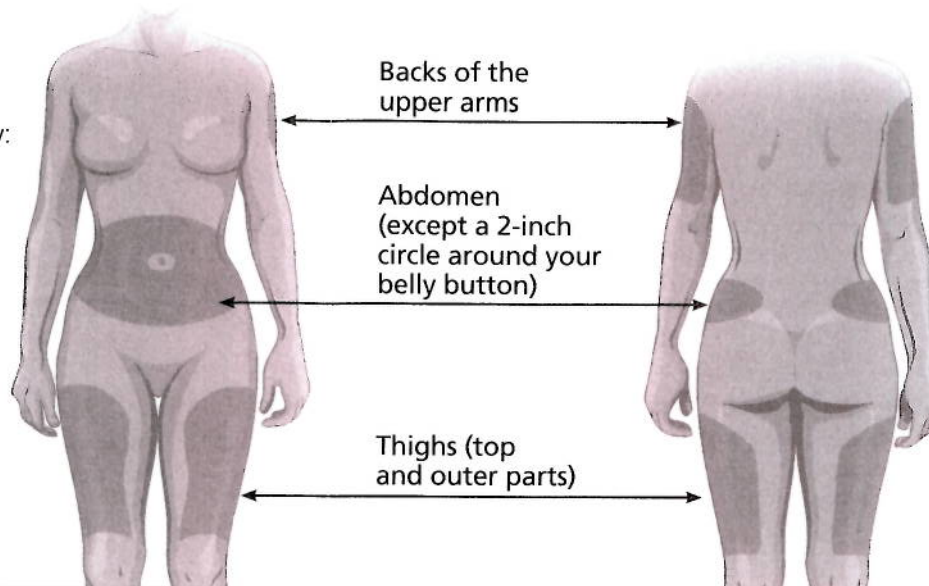
#### Adjust your mealtime insulin dose like this:

_____ or less (example: 70 mg/dL or less)	Subtract _____ unit(s)
Between ____ and ____ (example: between 71 and 130 mg/dL)	Do not adjust your dose
_____ or more (example: 131 mg/dL or more)	Add _____ unit(s)

## Injecting insulin

Insulin injections are given in the layer of fat just under the skin in these areas of the body:

Insulin should be injected in the same area of the body for consistency. But to avoid lumps or buildup of scar tissue, injections should not be given in the exact same spot each day. Ask your diabetes care team where to inject if you are not sure.



## What to expect as you get started

Here are a few things to keep in mind as you start mealtime insulin:

- Follow your diabetes care team's instructions for taking insulin. If you have any questions or concerns, contact your team at any time. Ask them whether it's best to do that by email or by phone
- With support from your diabetes care team, you may soon find that insulin helps you better control your diabetes

## Checking your blood sugar

As you start mealtime insulin, it's important to check your blood sugar as often as your diabetes care team tells you to. You can keep track of your blood sugar levels in a blood sugar diary. Visit [Cornerstones4Care.com](http://Cornerstones4Care.com) to download a diary or to use an interactive diary. Or, if you prefer, ask your doctor for a *Cornerstones4Care® Blood Sugar Diary* booklet to help you keep track.

## Possible side effects of insulin

Low blood sugar is a possible side effect of insulin. Ask your diabetes care team what low blood sugar is for you. For most people, it is less than 70 mg/dL.

If your blood sugar is low, or if you think your blood sugar is low but you cannot check it at that time, follow the rule of 15: Eat or drink something with 15 grams of carbohydrate right away. Wait 15 minutes and then check your blood sugar again. If it is still low, eat or drink something with 15 grams of carbohydrate again.

Once your blood sugar returns to normal, eat a meal or snack. This can help keep low blood sugar from coming back. Ask your doctor for the *Cornerstones4Care®* fact sheet "Low Blood Sugar."

## What's the difference between long-acting insulin and mealtime insulin?

There are different types of insulin you can take. Long-acting insulin (also called basal insulin) and mealtime insulin (also called fast-acting or bolus insulin) are two types of insulin we'll discuss.

### Long-acting insulin

In people without diabetes, the pancreas releases a small, steady amount of insulin throughout the day and night. The long-acting insulin you take acts in the same way, to provide steady insulin levels throughout the day and night. It is often taken before bed or first thing in the morning.

### Mealtime insulin

For some people, long-acting insulin is enough. But as the body continues to make less of its own insulin, some people may need to add a mealtime insulin.

In people without diabetes, in addition to the steadily released insulin, the pancreas also releases an extra burst of insulin during meals. This is called a bolus of insulin. Mealtime insulin, which is usually taken just before a meal, acts like this burst of insulin to cover blood sugar spikes that happen when you eat. Mealtime insulin works together with your long-acting insulin to help control these blood sugar spikes.

Your diabetes care team may start by adding mealtime insulin to one meal each day. Over time, they may recommend adding mealtime insulin to additional meals.

The first chart on the next page shows how the types of insulin work in the body.

## Your insulin plan

The type and amount of insulin you take is based on your blood sugar level, the food you eat, and your physical activity level.

Write your insulin plan in the blanks below. Ask your diabetes care team if you have any questions at all about what to take and when.

Time	Name/type of insulin	Dose
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To learn more, visit  
[Cornerstones4Care.com](http://Cornerstones4Care.com).



**the Diabetes Education Program**



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