



Diabetes and your blood sugar



What is blood sugar?

Blood sugar, or glucose, is the main sugar in your blood. It comes from the food you eat. It is your body's main source of energy.

Diabetes is a disease in which your blood sugar levels are too high. If you have diabetes, you need to test your blood sugar often. You need to make sure that it is not too high or too low.

- For most people, the blood sugar level before food should be **between 80 to 130 mg/dl.***
- For up to two hours after beginning a meal, it should be **less than 180 mg/dl.**



High blood sugar

Sometimes your blood sugar may be much higher than normal. This is called *hyperglycemia*. **You may have:**



Hunger



Tiredness



Thirst



Blurry vision



The need to urinate often

You may not always have symptoms with high blood sugar. The best way to know if your blood sugar is too high is to check it often.

What can I do about high blood sugar?

The first step is to make sure you take your medicines correctly. Another way to lower blood sugar is exercise, such as walking. However, if your blood sugar is above 240 mg/dl, ask your doctor what to do.

You should also get help with planning meals and counting carbohydrates. A dietitian or diabetes educator can help with this. Your doctor can refer you to a dietitian or diabetes educator if you don't already have one.

Talk with your healthcare provider about what to do if your blood sugar is high.

*This is a unit of measurement which means milligrams per deciliter (mg/dl).

Low blood sugar

Low blood sugar is when your blood sugar levels are **lower than 70 mg/dl**. This is known as *hypoglycemia*. **You may feel:**



Hunger



Tiredness



Headachy



Sweaty



Irritable



Shaky



What to do when you have low blood sugar

You may not always have symptoms with low blood sugar. If you think your blood sugar is too low, check it right away. **If your blood sugar is low:**

1 Eat or drink food that has 15 to 20 grams of carbohydrates.

For example:



4 glucose tablets



2 tablespoons of raisins



1/2 cup (4 oz) of fruit juice



1 tablespoon of sugar or honey

2 Check your blood sugar again 15 minutes later.

3 If your blood sugar is still low, repeat steps 1 and 2.

4 Once your blood sugar returns to normal, eat a small snack if your next meal is more than an hour or two away.



Sometimes your blood glucose may be extremely low. This is a serious condition, which may lead to unconsciousness. This may cause harm to you or your loved ones, especially if it causes falls or vehicle accidents. Talk to your doctor about your risk for this, and to learn more about treatment options.

Test your understanding



Ask your provider what your blood sugar goals should be:

Before food _____ After food _____

Based on your goals, think about what you would do if you had the following blood sugar readings.

Blood sugar reading	Is this number high, low, or on track?	What can you do next? <i>(Example: go for a walk, eat a snack)</i>
65 mg/dl		
102 mg/dl, before food		
200 mg/dl, after food		

Managing your blood sugar over time

Watching your blood sugar levels every day is important. But it's normal for your blood sugar level to go up and down. This is because lots of things affect your blood sugar.

It is important to know how you are managing your diabetes **over longer periods of time.**

A1c is a blood test that measures your average blood sugar **over the past 2 to 3 months.** In this way, A1c is like a baseball player's batting average: it tells you about the player's success during the entire season, not for only one game.



A1c is the percentage of a certain protein in your red blood cells that is coated with sugar. The higher your blood sugar, the higher your A1c. The goal for most people is less than 7%. Based on your own medical history and treatment plan, your provider may choose a different goal. You can use the chart on the next page to change this A1c percentage to an estimated blood glucose level (eAG), similar to what you would see on your home testing glucometer. **Knowing these numbers can help you better understand how to manage your diabetes.**

A1c conversion chart

This chart can help you convert your A1c percentage to an estimated blood glucose level (eAG). Then you can compare that average to your daily blood sugar readings.

Peel and stick this chart near your glucose meter for quick reference.

A1c conversion chart

A1c (%)	eAG (mg/dl)
6	126
7	154
8	183
9	212
10	240
11	269
12	298

Once you have your A1c result, **write it here** and use the A1c conversion chart to convert your A1c to your eAG level.

My A1c		My eAG (mg/dl)
Date <u>3/21</u>	Number <u>8</u>	183
Date _____	Number _____	
Date _____	Number _____	
Date _____	Number _____	
Date _____	Number _____	

Are you meeting your blood sugar goals?

You may have difficulty reaching your blood sugar goals. There are many reasons why this could be happening. Tell your healthcare providers about your challenges with managing your blood sugar. They can help you with ways to get closer to your goals.

Your test results may show that you are meeting your blood sugar goals. If so, that's great news! Talk to your healthcare provider about how often you need to repeat your A1c testing.









The causes of low and high blood sugar

If you have diabetes, try to keep your blood sugar at the level your healthcare provider suggests. This may help prevent serious issues, like heart disease, stroke, nerve damage, or eye problems.



You might have blood sugar that is too high or too low if you:

 Take too much of your diabetes medicine or miss a dose	 Eat foods with a lot of sugar or carbohydrates
 Are more active than usual	 Are sick or under a lot of stress
 Skip a meal	 Drink alcohol

Tell your healthcare provider:

- Your self-checked blood sugar numbers, before and after meals
- How often you exercise
- What you usually eat and drink, and how much
- What medicines you currently take, and in what doses
- About any recent illnesses
- About any challenges you have had with following your care plan



Sometimes you may not be meeting your blood sugar goals even when you follow your care plan. This might be happening because your condition seems to be advancing in seriousness. You may need different doses of your medicines, or a change in medicines.

Working with your healthcare provider



Using the questions below, develop a plan with your healthcare provider to monitor your blood sugar.



What should I let my caregivers know?

Teach them the signs of high or low blood sugar.

When should I check my blood sugar each day?

What A1c number is a good goal for me?

What should I do if my blood sugar is high?

What should I do if my blood sugar is low?

For more information:

American Diabetes Association

www.diabetes.org

**National Institute of Diabetes and
Digestive and Kidney Diseases**

www.niddk.nih.gov

