

Managing Daily Doses of Insulin

Taking insulin helps keep your blood sugar (glucose) level normal. This can help prevent diabetes from damaging your eyes, nerves, heart, and kidneys.

Your blood sugar levels can change depending on the time of day you test and whether or not you have eaten or exercised.

Your doctor will tell you what levels are right for you.

Normal blood sugar levels¹ For non-pregnant adults with diabetes.

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|---|--------------|
| Before meals | 80-130 mg/dL |
| 1-2 hours after the beginning of a meal | <180 mg/dL |

There are different types of insulin.



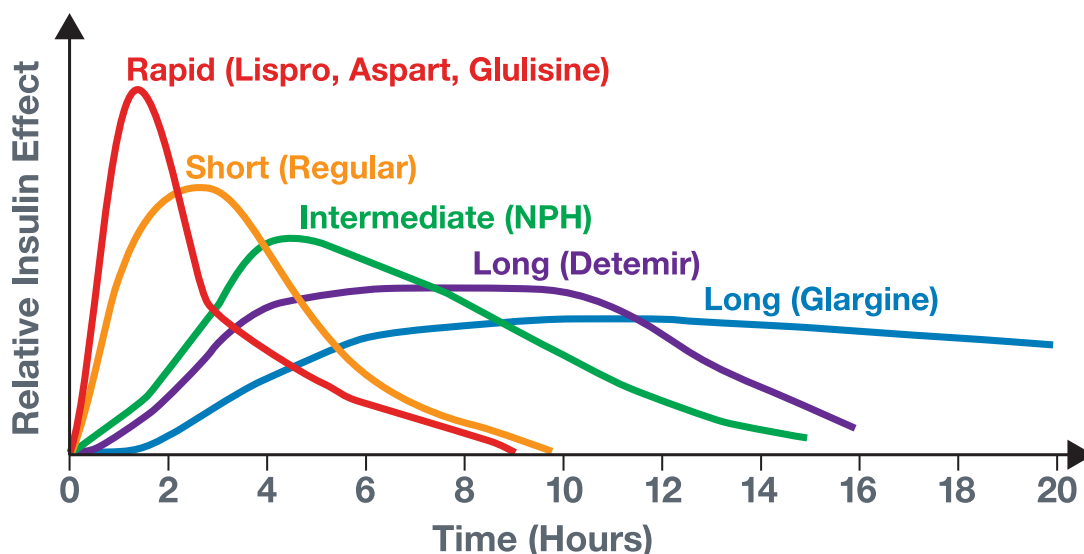
Long-acting or intermediate-acting insulins are taken once a day and work slowly all day.



Regular or short-acting insulins are usually taken at meal times to help get energy from the food that is eaten.

If you take insulin at meal times, check your blood sugar before eating and take the dose recommended by your doctor.

Blood sugar levels go up with food, stress, and sickness. Blood sugar levels go down with diabetes pills, insulin, exercise, and not eating. Check your blood sugar often to make sure it is not too high or too low. Check your blood sugar more often when you are sick.



Call your healthcare provider if you become sick, as your insulin dose may need to be changed.

High blood sugar is called “hyperglycemia” and can be dangerous.

Some signs of very high blood sugar or hyperglycemia may include:²



Thirst



Dry mouth



Peeing a lot



Blurred vision



Headache



Fruity-smelling breath

If your blood sugar is not severely high, you may not experience the signs of hyperglycemia and may be unaware that your blood sugar is high.

Testing for Ketones



If your blood sugar is 240 mg/dL or above, you can use an over-the-counter urine ketones test kit.² Ketones in your urine shows that your body is not using insulin correctly and that your blood sugar may be too high.

Call your healthcare provider right away if your blood sugar stays above 240 mg/dL or if you have ketones in your urine.²

Low blood sugar is called “hypoglycemia” and can also be very dangerous.

Some signs of low blood sugar or hypoglycemia include:³



Fast heartbeat



Hunger



Sweating



Sleepiness



Anxiousness



Shakiness



Confusion



Dizziness



Headache

Your blood sugar can become too low if you:

Take the wrong amount (either too much or too little) of diabetes pills or insulin



Eat too little or skip a meal



Exercise without eating



Drink alcohol on an empty stomach



Some people who have had diabetes for a long time may not have any symptoms of hypoglycemia.

Changes in mood or difficulty thinking clearly may be signs your blood sugar is too low. Check your blood sugar if you think it may be too low.



What To Do When Low

If it is too low (below 70 mg/dL), eat or drink something with sugar in it, such as an orange or orange juice, a banana, or a piece of toast. This will provide at least 15 grams of carbohydrate (sugar). Check your blood sugar after 15 minutes, if it is still **below 70 mg/dL**, eat another serving and continue these steps until your blood sugar is at least 70 mg/dL.^{1,3}



It is a good idea to carry a pre-measured amount of sugar, like a snack, glucose gel, or glucose tablets, in case you need to treat low blood sugar.

Contact your healthcare provider if your blood sugar falls **below 54 mg/dL**,^{1,4} in addition to eating or drinking something with sugar in it.

1. American Diabetes Association. Standards of Medical Care in Diabetes – 2019. Diabetes Care 2019; Vol. 42 (Suppl. 1): S66-S67

2. Mayo Clinic. Hyperglycemia in Diabetes. <http://www.mayoclinic.org/diseases-conditions/hyperglycemia/diagnosis-treatment/drc-20373635>. Updated November 3, 2018.

3. American Diabetes Association. Hypoglycemia. <http://www.diabetes.org/living-with-diabetes/treatment-and-care/blood-glucose-control/hypoglycemia-low-blood.html>. Updated February 11, 2019.

4. Heller, Simon R. Glucose Concentrations of Less Than 3.0 mmol/L (54 mg/dL) Should Be Reported in Clinical Trials: A Joint Position Statement of the American Diabetes Association and the European Association for the Study of Diabetes. Issues Discussed were Developed by the International Hypoglycemia Study Group. Diabetes Care 2017; Vol. 40 (no. 1): 155-156