

special circumstances

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Because so many factors affect your blood glucose, you need to be alert and flexible in how you take care of yourself. You won't always do the same things day in and day out—sometimes, you'll need to make adjustments. This section describes a few of the more common challenges you may face, and tells you what you can do to prevent and treat them.

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CALL YOUR HEALTHCARE PROVIDER IF NECESSARY

Call for advice or an appointment in the following circumstances:

- You've been sick or have had a fever for a couple of days and aren't getting better.
- You've been vomiting or having diarrhea for more than 6 hours.
- You have a fever higher than 101.5 or a fever that lasts for more than 24 hours.
- You have a fasting blood glucose level of 240 or higher for more than 24 hours.
- You have moderate to large amounts of ketones in your urine. **Get emergency care** if you can't reach your healthcare provider, or if you have large amounts of ketones in your urine.
- You begin to notice problems like confusion or dehydration (symptoms of dehydration include a decrease in urine output, dry mouth and skin, and dry sunken eyes).
- You aren't sure what to do to take care of yourself.

Sick days

An illness—even a minor illness like a cold—can make it harder for you to control your blood glucose.

Why sick days need special attention

Here are a few reasons you may have trouble controlling your blood glucose while you're sick—and why you need to take special care of yourself:

- When you're sick, your body responds by releasing hormones that help you fight the illness. Unfortunately, some of these same hormones may also cause blood glucose levels to rise. They can also make your diabetes medications less effective.
- When you don't feel well, you tend to lose your appetite. It's harder to follow your meal plan.
- You might become dehydrated when you're sick. You might be drinking less fluid than normal, or you may be vomiting. Dehydration can change how your medications work, and make it harder to follow your exercise routine and meal plan.

Sick-day snacks

When you're sick, you may not have much of an appetite, or feel like you can tolerate your usual foods. Try some of the foods and liquids listed below. Each has about 15 grams of carbohydrates—and might just hit the spot when you're under the weather:

- ½ cup regular Sprite
- ½ cup regular Jello
- ½ cup fruit juice
- ½ cup ice cream
- ¼ cup sherbet
- ½ cup creamed soup
- ½ cup instant breakfast drink



h o w t o

care for yourself when you're sick

Follow the basic guidelines below to make it easier to control your blood glucose when you're ill.

- ✓ **Monitor blood glucose levels.**
When you're ill, you need to monitor blood glucose levels more often—about every 3-4 hours. (If you take insulin, you might need to check your blood glucose more often.) As always, keep a record of your blood glucose levels.

- ✓ **Maintain your meal plan.**
When you're sick, you still need to take in enough carbohydrates to maintain recommended blood glucose levels. So if you can, continue to follow your regular meal plan—even if you're not very hungry, or if you're nauseated, vomiting, or have diarrhea. If you just can't manage to eat normal meals, try taking small sips of high-carbohydrate liquids, or small bites of high-carbohydrate foods, every 15-30 minutes. Of course, you'll want to choose foods that you can tolerate.

- ✓ **Test for ketones if necessary.**
Ketones are chemicals produced when your body breaks down fat—instead of glucose—for energy. They signal dangerously high blood glucose. You can test for ketones in your urine with a simple home test, available at most pharmacies.
 - If you have type 1 diabetes, you need to test for ketones every 4 hours.
 - If you have type 2 diabetes, you only need to test for ketones when your blood glucose is over 250 mg/dL.



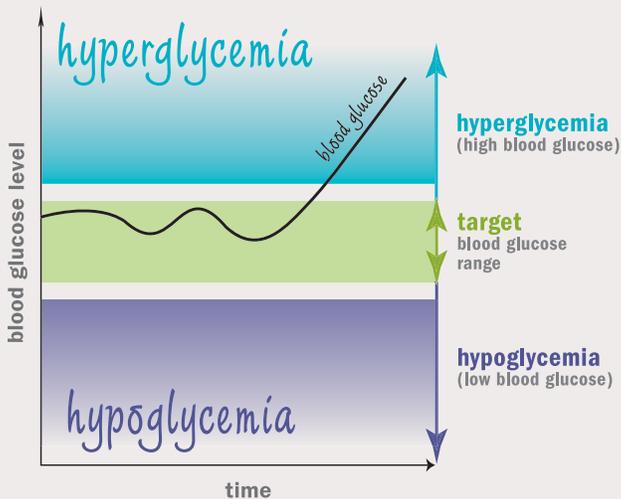
- ✓ **Drink plenty of caffeine-free fluids.**
If you're losing fluid from fever, vomiting, or diarrhea, sip liquids with sugar or carbohydrate (for example, fruit juices, soups, or milk). Otherwise—and depending on your blood glucose levels—you might decide to sip sugar-free drinks like broth, tea, or water.
- ✓ **Continue to take your diabetes medications as prescribed—unless you're told otherwise.** Although there are times when you might need to stop taking your diabetes medications temporarily, usually you SHOULD continue taking them as prescribed. That's because when you're sick, your blood glucose levels are likely to be too high—even when you haven't eaten. Here are some guidelines:
 - Don't stop taking your diabetes medications—or change your medication schedule—without first talking with your healthcare provider.
 - If you take insulin to control blood glucose levels and are unable to eat, you may need to adjust your insulin levels. Your healthcare providers can teach you how to do this safely.

- ✓ **Take non-diabetes medications carefully.** Be aware that the non-diabetes medications you take when you're sick—like antibiotics, cold remedies, or cough syrup—may affect your blood glucose. Here are a few things you can do to make sure you're taking medications safely.

- Your doctor may prescribe medication to treat your illness. Always ask your doctor or pharmacist how a medication may affect your blood glucose.
- Always read the labels of your medications—watching out for sugar and alcohol as ingredients. Sugar may raise your blood glucose levels, while alcohol may lower them. Look for sugar-free and alcohol-free versions of your favorite cough syrup, throat lozenges, and so on. If you're not having any luck, ask your pharmacist to help you find sugar-free or alcohol-free products.
- Watch out for medication side effects. Some over-the-counter medications may cause symptoms that mimic low blood glucose (shakiness, dizziness, sweating, and so on). If you have these symptoms, check your blood glucose right away. This will let you know if your symptoms are the result of low blood glucose—or if they're side effects from your medication.

Hyperglycemia (high blood glucose)

Hyperglycemia can be a dangerous problem. In the short term, it can cause serious symptoms, and may even become life threatening. For example, **ketoacidosis** can occur when your body breaks down fat—instead of glucose—for energy. Ketones, the chemicals produced by this fat burning, build up to toxic levels in your body. And over the long-term, high blood glucose can increase your chance of diabetes complications. That's why you need to know how to recognize when you're hyperglycemic—and take immediate steps to correct it.



Hyperglycemia is the medical term for high blood glucose. Although hyperglycemia is sometimes defined as a blood glucose reading above 180, everyone is different—and people have symptoms of hyperglycemia at different levels. Ask your health-care providers what is too high for you.

What causes hyperglycemia—and how to prevent it

Most often, hyperglycemia happens when you don't follow your self-management plan. Sickness or stress can also cause your glucose to rise too high. And sometimes—in spite of your best efforts—your glucose may rise without any apparent reason.

Your best bet to avoid hyperglycemia is to stay on your self-management plan:

- Monitor your blood glucose regularly to catch hyperglycemia early on
- Take your medications as prescribed
- Follow your meal plan—eating nutritious foods regularly, in the right amount
- Get regular exercise to burn up glucose and help your whole body work better

DIABETIC COMA?

Without glucose, your brain can't function. So when ketoacidosis is severe, you can lapse into a coma, or even die. That's why you need to be alert to the symptoms of hyperglycemia and ketoacidosis—and act right away to correct it.

how to care for yourself when you're hyperglycemic

Follow the basic guidelines below to make it easier to recognize and control your high blood glucose.

✓ Recognize symptoms of hyperglycemia—and ketoacidosis.

Along with checking your blood glucose, watch out for the following symptoms:

Hyperglycemia symptoms

- Extreme thirst
- Dry, itchy skin
- Frequent urination
- Blurry vision
- Extreme hunger
- Fatigue

Because hyperglycemia tends to come on gradually, you may not notice these symptoms right away. A high reading on your glucose meter may be your first sign that blood glucose levels are running too high.

Call your healthcare provider if you have moderate to large amounts of ketones in your urine. **Get emergency care** if you can't reach your healthcare provider, or if you have large amounts of ketones in your urine.

Ketoacidosis symptoms

- Ketones in your urine
- A fruity odor on your breath
- Extreme thirst or hunger
- Nausea/vomiting
- Extreme drowsiness
- Stomach pain
- Body aches

Ketoacidosis may occur when hyperglycemia is severe. People with type 1 diabetes are at the greatest risk of ketoacidosis. That's because people with type 2 diabetes usually have at least some insulin available to take glucose into the cells.



CALL YOUR HEALTHCARE PROVIDER IF NECESSARY

Call for advice or an appointment in the following circumstances:

- You can't control your hyperglycemia, in spite of taking action to correct it
- You have 2-3 readings in a row with results of 240 mg/dL or higher
- You have more than 2 unexplained episodes of hyperglycemia in a week
- You have repeated high glucose readings during a particular time of day
- You have moderate to large amounts of ketones in your urine. **Get emergency care** if you can't reach your healthcare provider, or if you have large amounts of ketones in your urine.

✓ Test for ketones if necessary.

Ketones are chemicals produced when your body breaks down fat—instead of glucose—for energy. They signal dangerously high blood glucose. You can test for ketones in your urine with a simple home test, available at most pharmacies.

- If you have type 1 diabetes, you need to test for ketones every 4 hours.
- If you have type 2 diabetes, you only need to test for ketones when your blood glucose is over 250 mg/dL.

✓ If you need to, get back on your self-management plan.

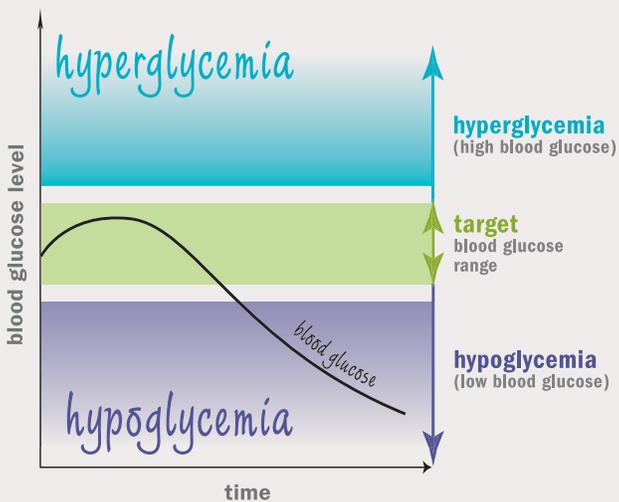
People often develop high blood glucose when they don't take care of themselves. Make sure that you're monitoring your blood glucose, taking medications, following your meal plan, and exercising just as your plan tells you to.

✓ Look for a cause for your rising blood glucose, and make adjustments as necessary.

For example, you might realize that you're coming down with an illness, or that you're feeling particularly stressed. Try to treat or reverse these causes.

Hypoglycemia (low blood glucose)

Hypoglycemia can quickly get you into serious trouble—so you need to know what to watch for, and what to do when you find yourself in this situation.



▲
Hypoglycemia is usually defined as a blood glucose reading below 70—but you might feel symptoms at a different reading. As always, ask your healthcare provider what is too low for you.

What causes hypoglycemia—and how to prevent it

There are a lot of reasons why your blood glucose might drop too low. Here are a few common scenarios:

- Irregular eating patterns—especially with long periods between meals—can cause your blood glucose to drop.
- Medications to control diabetes can also cause hypoglycemia, especially if they’re not taken as prescribed. For example, too much insulin can sometimes cause hypoglycemia—which is why hypoglycemia is sometimes called an “insulin reaction.” Taking your diabetes medication at the wrong time can also make your blood glucose drop too low.
- Being more active than usual can cause hypoglycemia, since muscles that are active use up more glucose than inactive muscles. So even though exercise is a great way to keep your blood glucose levels normal—you need to exercise sensibly to stay safe.

To prevent hypoglycemia, stick to your self-management plan. If you’re having regular episodes of hypoglycemia—and you can’t figure out why—talk to your care team.

Hypoglycemic unawareness

The symptoms of hypoglycemia include shakiness, headache, and sudden moodiness (see the next page for a more complete list of symptoms). But keep in mind that some people with diabetes don't notice any symptoms when their blood glucose levels are low. This is called **hypoglycemic unawareness**. Hypoglycemic unawareness can occur for several reasons:

- If blood glucose is poorly controlled, over time high blood glucose levels can cause damage to the hormonal system that signals low blood glucose.
- People who have experienced frequent episodes of low blood glucose may become accustomed to the feelings that come with hypoglycemia. They may no longer recognize them as warning signs that their blood glucose is falling too low.
- Some medications may mask the symptoms of low blood glucose (for example, sleeping pills, sedatives, or heart medicines called beta blockers).

If you have hypoglycemic unawareness, monitoring blood glucose is even more important. Regular monitoring can alert you to low blood glucose before it becomes a problem.



BE PREPARED!

Although you hope to avoid hypoglycemia, you still need to be prepared in case it does happen to you. Always do the following:

- Make sure that the people around you regularly—for example, your coworkers, family, teachers, and friends—know the signs of hypoglycemia, and how they can help you if you aren't able to help yourself.
- Always carry a carbohydrate snack, and your emergency glucagon kit (if you have one).
- Carry a card in your wallet explaining that you have diabetes and what someone can do to help you if you show signs of hypoglycemia.
- Wear diabetes ID.

WHO NEEDS GLUCAGON?

If you're using insulin, ask your healthcare providers about **glucagon**. Glucagon is a medication that can quickly raise your blood glucose.

Your healthcare providers can tell you whether you need this prescription medication, and how to use it.

how to care for yourself when you're hypoglycemic

Hypoglycemia usually comes on quickly. So if you suspect you're hypoglycemic, check your blood glucose. If that's not possible, go ahead and treat yourself as if your blood glucose is low.



CALL YOUR HEALTHCARE PROVIDER IF NECESSARY.

Call for advice or an appointment in the following circumstances:

- You can't control your hypoglycemia, in spite of taking action to correct it.
- You have 2-3 readings in a row with results of 70 mg/dL or less.
- You have more than 2 unexplained episodes of hypoglycemia in a week.
- You have repeated low glucose readings during a particular time of day.
- **Get emergency care if you feel you are about to pass out.**

Remember, due to **hypoglycemic unawareness**, some people with diabetes don't notice any symptoms when their blood glucose levels are low. Check your blood glucose regularly. If you can't check your blood, but suspect hypoglycemia, treat yourself anyway.



Recognize symptoms of hypoglycemia. Along with checking your blood glucose, watch out for the following symptoms of low blood glucose:

- Shakiness or dizziness
- Sweating
- Hunger
- Headache
- Pale skin color
- Sudden moodiness or behavior changes: nervousness, irritability, or crying for no apparent reason
- Clumsy or jerky movements
- Difficulty paying attention, or confusion
- Tingling sensations around the mouth
- Fainting or seizure



Tell someone around you that you have low blood glucose, if you can.

You might need someone to help you, and they might not know what's going on with you unless you tell them. *(The box on the next page tells them how they can help you.)*



Eat or drink 15 grams of fast-acting, low-fat carbohydrate. Give this treatment about 15 minutes to work. (See "Quick Energy Sources" on the facing page for some examples.) Avoid the temptation to continue eating until your symptoms go away. Overeating may have a rebound effect—actually causing your blood glucose to go too high.



Check your blood glucose 15 minutes after you eat. If it's still below 70, eat another 15 grams of carbohydrate. Repeat this until your blood glucose is over 70 or until your symptoms go away.



Once your blood glucose is back to normal, get back on your management plan, and look for causes. Do you need to do a better job of following your meal plan, or taking your medications as prescribed? If you can't identify a cause of your hypoglycemia, contact your healthcare provider. You might need a change in your plan.



Quick energy sources

The following items are **quick energy sources** that contain about **15 grams of carbohydrate**:

- ½ cup orange, apple, or grapefruit juice
- ⅓ cup grape, prune, or cranberry juice
- 1 tbsp brown sugar, honey, or corn syrup
- 2 tbsp raisins
- 6 crackers
- 3-5 pieces hard candy
- 1 cup skim milk
- 1 piece bread
- 1 fruit roll-up
- 3-4 glucose tablets, or 1 tube glucose gel
- ½ cup regular soft drink (not diet)
- 11 jellybeans
- 8 Lifesavers candies (not sugar-free)

NOTE: Candy bars, cookies, and other higher-fat options are poor sources of quick energy—the fat slows down digestion of carbohydrates. High-fiber foods (such as many fresh fruits) also slow digestion. So whenever possible, stick to quick energy sources such as those listed above.

family or friend?

What you can do to help someone else when they're hypoglycemic

A person with moderate hypoglycemia may be weak or confused—they might even seem drunk or in a stupor. And as their hypoglycemia becomes worse, they may pass out or have a seizure.

Here's how to help someone who's experiencing low blood glucose:

- ✓ **Try to get them to eat or drink carbohydrates for quick energy** if they're still awake.
- ✓ **Call 911** if the person is passed out or having a seizure—or if you can't get them to take carbohydrates. Also give a **glucagon injection**, if you have a glucagon kit.

