

High Blood Sugar Emergencies

What you need to know

Diabetes emergencies can be life-threatening. With care and planning, you can avoid them. This handout tells what you can do to prevent a high blood sugar emergency.

What is a high blood sugar emergency?

A high blood sugar emergency can occur if you have high blood sugar that is not treated. This type of emergency can cause you to pass out (*diabetic coma*). This does not happen very often, but it can be very serious.

There are 2 conditions that can cause these emergencies:

- *Diabetic ketoacidosis (DKA)*, pronounced “kee-toe-ass-eh-DOE-sis.” DKA is more common with type 1 diabetes but can also occur with type 2 diabetes.
- Very high blood sugar with dehydration, called *hyperglycemic hyperosmolar syndrome (HHS)*. HHS is more common with type 2 diabetes.

Someone with untreated high blood sugar can go into a coma or even die. That is why it is important that you know how to prevent DKA and HHS and what to do if you have any of the warning signs.

What causes DKA?

Your body’s cells need *glucose* (a type of sugar) for energy. If the cells do not get enough glucose, they can use fat instead. But, using fat for energy produces an acid waste product called *ketones*.

When large amounts of ketones build up in your blood, the chemical balance of your blood is upset. This is called DKA.

What causes HHS?

When glucose builds up in your blood, your body tries to get rid of it by creating more urine. This draws fluid out of your cells and causes extreme dehydration.



Talk with your diabetes care provider if you have any questions about managing high blood sugar.

What are the warning signs of DKA and HHS?

Warning signs of both DKA and HHS include:

- High blood sugar that does not go down with insulin
- Strong thirst or a very dry mouth
- Very dark urine or not urinating for 6 hours
- Trouble concentrating or staying awake

DKA also has these warning signs:

- Fruity-smelling breath
- Nausea, vomiting, stomach cramps, or flu-like symptoms
- Ketones present in urine or blood

Call 911 right away if you have:

- Rapid, deep breathing
- Drowsiness
- Trouble concentrating

When do high blood sugar emergencies occur?

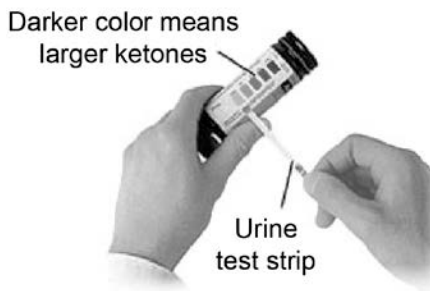
DKA and HHS can occur when:

- There is not enough insulin in your blood. This can happen if you:
 - Miss your insulin shots
 - Are using insulin that has expired or has gotten too hot or too cold
- You are ill with the flu or a cold.
- You have an infection, heart attack, or stroke.
- Your insulin pump is broken or not working properly.

When should I check for ketones?

Always check for ketones when you have any of the signs of DKA listed above, or if you have:

- Type 1 diabetes and your blood sugar reading is above 250 twice in a row
- Type 2 diabetes and your blood sugar reading is above 350 twice in a row
- Diarrhea or vomiting
- A fever higher than 100.4°F (38°C)



Match the color on the test strip to the chart on the package.

How do I check for ketones?

Ask your diabetes provider to show you how to check for ketones at home. Ketone testing is most often done with urine test strips. Follow the directions on the test strip package. Some blood sugar meters may also be used to check for ketones in your blood.

Call your provider **right away** if you have moderate or large urine ketones (more than 1.5 mmol/L blood ketones).

How can I prevent DKA and HHS?

The best way to prevent DKA and HHS is to take your insulin as directed. Always follow your treatment plan that your diabetes care provider gave you.

Here are some tips to help you prevent a high blood sugar emergency:

- Be sure to refill your prescriptions before you run out of your diabetes medicine.
- Do not use insulin that has clumps in it or has not been stored correctly.
- Ask your diabetes care provider for sick-day guidelines. You may need to learn how to safely adjust your doses of short-acting insulin.
- Blood glucose can be harder to manage when you are sick. When you are sick:
 - Check your blood sugar every 4 hours.
 - If your blood sugar is too high, follow your diabetes care provider's instructions for treatment. If you are not sure what to do, call your clinic.
 - Take long-acting insulin even if you are not eating meals.

To Learn More

For more information about diabetes, visit these websites:

- **American Diabetes Association:** www.diabetes.org
- **National Diabetes Information Clearinghouse:** www.diabetes.niddk.nih.gov

Questions?

Your questions are important. Call your doctor or diabetes care provider if you have questions or concerns.
