

Ketoacidosis (DKA)

- Ketones are produced when your body starts burning fat for energy instead of glucose.
- Dangerously high levels of ketones can lead to diabetic coma or death.
- Know the warning signs and check urine for ketones, especially when sick.
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Ketoacidosis (key-toe-ass-i-DOE-sis) is a serious condition that can lead to diabetic coma (passing out for a long time) or even death. When your cells don't get the glucose they need for energy, your body begins to burn fat for energy, which produces ketones. Ketones are acids that build up in the blood and appear in the urine when your body doesn't have enough insulin. They are a warning sign that your diabetes is out of control or that you are getting sick. High levels of ketones can poison the body. When levels get too high, you can develop diabetic ketoacidosis, or DKA.

Ketoacidosis may happen to anyone with diabetes, though it is rare in people with type 2. Some older people with type 2 diabetes may experience a different serious condition called [hyperosmolar nonketotic coma](#) (hi-per-oz-MOE-lar non-key-TOT-ick KO-ma) in which the body tries to get rid of excess sugar by passing it into the urine.

Treatment for ketoacidosis usually takes place in the hospital. But you can help prevent ketoacidosis by learning the warning signs and checking your urine and blood regularly.

What are the warning signs of ketoacidosis?

Ketoacidosis usually develops slowly. But when vomiting occurs, this life-threatening condition can develop in a few hours. Early symptoms include the following:

- Thirst or a very dry mouth
- Frequent urination
- High blood glucose (sugar) levels
- High levels of ketones in the urine

Then, other symptoms appear:

- Constantly feeling tired
- Dry or flushed skin
- Nausea, vomiting, or abdominal pain
(Vomiting can be caused by many illnesses, not just ketoacidosis. If vomiting continues for more than 2 hours, contact your health care provider.)
- A hard time breathing (short, deep breaths)
- Fruity odor on breath
- A hard time paying attention, or confusion

Ketoacidosis is dangerous and serious. If you have any of the above symptoms, contact your health care provider IMMEDIATELY, or go to the nearest emergency room of your local hospital.

How do I check for ketones?

You can detect ketones with a simple urine test using a test strip, similar to a blood testing strip. Ask your health care provider when and how you should test for ketones. Many experts advise to check your urine for ketones when your blood glucose is more than 240 mg/dl.

When you are ill (when you have a cold or the flu, for example), check for ketones every 4 to 6 hours. And check every 4 to 6 hours when your blood glucose is more than 240 mg/dl.

Also, check for ketones when you have any symptoms of ketoacidosis.

What if I find higher-than-normal levels of ketones?

If your health care provider has not told you what levels of ketones are dangerous, then call when you find moderate amounts after more than one test. Often, your health care provider can tell you what to do over the phone.

Call your health care provider at once if you experience the following conditions:

- Your urine tests show high levels of ketones.
- Your urine tests show high levels of ketones and your blood glucose level is high.
- Your urine tests show high levels of ketones and you have vomited more than twice in four hours.

Do **NOT** exercise when your urine tests show ketones and your blood glucose is high. High levels of ketones and high blood glucose levels can mean your diabetes is out of control. Check with your health care provider about how to handle this situation.

What causes ketoacidosis?

Here are three basic reasons for moderate or large amounts of ketones:

- **Not enough insulin**
Maybe you did not inject enough insulin. Or your body could need more insulin than usual because of illness.
- **Not enough food**
When you're sick, you often don't feel like eating, sometimes resulting in high ketone levels. High levels may also occur when you miss a meal.
- **Insulin reaction (low blood glucose)**
If testing shows high ketone levels in the morning, you may have had an insulin reaction while asleep.

Source: <http://www.diabetes.org/living-with-diabetes/complications/ketoacidosis-dka.html>