

Diabetes: Ketoacidosis

What is diabetic ketoacidosis?

Diabetic ketoacidosis is a buildup of acids in the blood. It is a life-threatening complication of diabetes resulting from not having enough insulin. It may happen with type 1 diabetes. (It rarely happens with type 2 diabetes.) It's an emergency that must be treated right away. If ketoacidosis is not treated right away, it can cause coma or death.

What is the cause?

Diabetic ketoacidosis happens when the body does not have enough insulin. Without insulin, sugars in the blood cannot move out of the blood and into the body's cells, so the cells burn fats instead of sugar for energy. The burning of fats makes byproducts called ketones. The ketones build up to poisonous and dangerous levels in the blood. Usually the blood sugar is also very high.

Ketoacidosis can happen if you skip doses of insulin. Or it may happen if there is a change in your life, such as:

- Infection
- Injury
- Heart attack
- Surgery
- Pregnancy
- Other types of physical or emotional stress

If you are using an insulin pump, it may happen if you stop getting insulin because there is a kink in the tube or the tube comes out.

Sometimes you may not know you have diabetes until ketoacidosis occurs. When the pancreas stops making insulin, it happens over a short period of time. In just a few days your blood sugar can get very high and ketones can build up to a high level very fast. It may happen so fast that ketoacidosis symptoms are the first symptoms of diabetes that you have.

What are the symptoms?

Symptoms of ketoacidosis may include:

- Shortness of breath
- Fruity smelling breath
- Very dry mouth
- Nausea and vomiting

Symptoms of high blood sugar may include:

- Blurry vision
- Dry mouth

- Feeling very thirsty and drinking a lot
- Urinating a lot
- Tiredness

Several hours to a couple of days after symptoms start, ketoacidosis may cause coma.

How is it diagnosed?

Your healthcare provider will ask about your symptoms and medical history and examine you. Tests may include:

- Blood tests
- Chest X-ray
- ECG (also called an EKG), which measures and records your heartbeat

How is it treated?

Ketoacidosis needs to be treated right away, usually at a hospital. You will be given insulin and IV fluids. With treatment, you will usually recover in hours to days.

How can I take care of myself and help prevent diabetic ketoacidosis?

To help take care of yourself and prevent ketoacidosis, follow these guidelines:

- Keep your blood sugar level under control, as recommended by your healthcare provider.
- Check your blood sugar level as often as you and your provider have discussed. Give yourself additional insulin for high blood sugar as directed by your provider.
- Never take more insulin than your regular dose unless you have double checked your blood sugar reading and made sure that your sugar level is too high and you need more insulin.
- Watch for the early signs and symptoms of ketoacidosis.
- Ask your healthcare provider when you should check for ketones. Your provider may recommend checking for ketones if:
 - Your blood sugar level is higher than 240 mg/dL (about 13.9 mmol/L).
 - You are ill or under more stress than usual. When you are sick, ketones can be present even if your blood sugar is not high.

Let your provider know right away if there are ketones in your urine or blood.

- Keep extra insulin with you.
- Wear a medical alert bracelet or necklace that says you have diabetes.

Ask your provider:

- How and when you will hear your test results
- How long it will take to recover

- What activities you should avoid and when you can return to your normal activities
- How to take care of yourself at home
- What symptoms or problems you should watch for and what to do if you have them

Make sure you know when you should come back for a checkup.

Developed by RelayHealth.

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