

I can tell you about ketones

What are ketones?

The body prefers to get its energy from sugar, but sometimes it can't. If there is not enough insulin, sugar cannot get into the body's cells. When the body cannot use sugar for energy, it uses body fat for energy. When body fat is used for energy, it releases an acid called a **ketone**. Ketones can build up in the blood and the urine, and cause damage to the body. This is called **diabetic ketoacidosis**, or **DKA** for short.

You can test the urine for ketones. Ketones that are moderate or large (the darker colors) are urgent. Ketones that are not treated can cause a hospital admission, coma, or death. Call the diabetes team or on-call endocrinologist right away.

Ketones that are trace or small (tan or light pink) can usually be treated at home and are not considered an emergency. Call the diabetes team if you are not sure how to fix trace or small ketones.

To get rid of ketones:

- Regular insulin injections will help prevent more ketones from forming.
- Water or sugar-free, caffeine-free fluids will help flush out the ketones.

Ketones may happen

- When insulin injections are missed. Missed injections are the most common reason ketones occur after the child is diagnosed with diabetes. This can be avoided if an adult is involved in care.
- With undiagnosed diabetes, before insulin is started
- When not enough insulin is taken
- When the person is ill
- When the person has emotional stress
- If the insulin has gone bad

What are symptoms of ketones?

When ketones build to dangerous levels, they can cause symptoms including:

- Upset stomach
- Throwing up
- Very tired or hard to move
- Trouble breathing
- Breath that smells fruity

When should I test for ketones?

In the hospital, your diabetes team will test for ketones anytime the blood sugar is over 300mg/dL. When you go home, test ketones:

- If the blood sugar is over 300mg/dL twice in a row (for example, 315mg/dL before breakfast and 330mg/dL before lunch).
- If there are any symptoms of ketones.

When the child is sick or stressed, test once each day, no matter what the blood sugar level is.

How to check for ketones in the urine

1. Check the expiration date on the side of the bottle. Do not use expired strips.
2. Once a bottle has been opened, it is only good for 90 days. When you open a bottle, write the date on it.
3. Wet the pad at the end of the strip with urine.
 - For those in diaper, place cotton ball in the diaper to collect the urine.
 - With young children, collect the urine in a cup.
 - Older children can place the strip in the stream of urine.
4. Wait the right time. The bottle will say how long to wait.
5. Compare the color on the pad to the chart on the side of the bottle.
6. Write the ketone level on your log sheet.

Ask your nurse to show you the picture of the ketone color chart.

Now that you've read this:

- Tell your nurse or doctor what ketones are.
(Check when done.)
- Tell your nurse or doctor what you can do to avoid ketones.
(Check when done.)
- Tell your nurse or doctor when you need to test for ketones.
(Check when done.)
- Show your nurse or doctor how you test for ketones.
(Check when done.)
- Tell your nurse or doctor what you would do if there are ketones.
(Check when done.)
- Show your nurse or doctor what and where you write ketones on the diabetes log.
(Check when done.)

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