

How to Test for Ketones

The body makes ketones when it starts to break down fat for energy and when the body cannot use carbohydrates because of low insulin levels. In people with diabetes, high levels of ketones in the blood can be dangerous. In this handout, you will learn how to test your child's blood and urine for ketones.

WHAT ARE KETONES?

Ketones are substances the body makes when there is not enough **insulin** (a hormone that helps break down carbohydrates for energy) in the blood.

ARE KETONES DANGEROUS

High levels of ketones can be dangerous or even life-threatening. They can lead to a condition called **ketoacidosis** (when acid builds up in the blood).

WHEN SHOULD I TEST MY CHILD FOR KETONES?

You should test your child's blood for ketones if:

- His blood sugar is consistently high
- He is sick

If you are concerned or have questions, call Pediatric Endocrinology at 617-726-2909.

What is ketoacidosis?

Ketoacidosis is a life-threatening condition in which there is a high number of ketones in the blood. Call the doctor if your child shows any of these signs of ketoacidosis:

Early signs

- Thirst or a very dry mouth
- Frequent urination
- High blood sugar levels
- High levels of ketones

Other signs

- Constantly feeling tired
- Dry or flushed (red) skin
- Nausea, vomiting or stomach pain
- Trouble breathing
- A fruity smell on the breath
- Trouble focusing or feeling confused

HOW DO I TEST FOR KETONES?

There are 2 ways to test for ketones: a blood test and a urine test.

Blood testing for ketones

Testing blood for ketones is similar to checking blood sugar. You will need a special **ketone testing meter** and **ketone test strips** from your child's doctor.

1. Open the ketone testing kit. Wash your hands and your child's hands with soap and water.
2. Insert a needle into the lancet pen.
3. Insert a testing strip into the meter.
4. Use the lancet pen on the side of your child's finger to draw a drop of blood. You need a larger drop of blood than what you use to check his blood sugar.
5. Touch the testing strip to the drop of blood.
6. Wait for the meter to give you the reading.
 - **If the reading is 0.6 mmol/L or less**, this means your child's ketone levels are normal.
 - **If the reading 0.6 – 1.5 mmol/L**, test the blood again in 2 hours. Call the doctor after testing. This means your child's body is starting to make more ketones.
 - **If the reading is 1.5 mmol/L or higher**, call the doctor right away for next steps.

Urine testing for ketones

1. Open the ketone testing kit.
2. Have your child urinate into a clean container, such as a disposable cup or bowl. If you have a daughter who has her period, try to prevent menstrual (period) blood from mixing with the urine.
3. Open the testing strip and dip it into the urine. Shake off the extra urine into the toilet or the container your child urinated in.
4. Wait for the testing strip to change color.
5. Compare the color of the testing strip to the color on the box to see if your child has ketones.
 - **If the color is light**, test the urine again in 2 hours. Follow steps 2-6. Call the doctor after testing. This means your child's body is starting to make more ketones.
 - **If the color is medium or dark**, call your child's doctor right away for next steps.

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For more information please call

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