

Ketone Testing



Diabetes Done Right™

Ketone testing plays an especially important role in diabetes management for people with type 1. In certain situations people with type 2 who are insulin dependent may need to test for ketones - but this is much less common.

What Are Ketones?

When carbohydrates are digested they are broken down into sugar. Sugar is normally the body's preferred energy source. After eating, blood sugar levels rise. This causes insulin to be released. Insulin then lowers blood sugar by bringing it into the rest of the body.

When there is no sugar available in the blood or when there is no insulin to bring the sugar into the rest of the body, the body is forced to get energy from a backup pathway. This backup pathway breaks down fats and releases ketones. Ketones are transported to the brain, muscles, and other tissues and are used for energy.

Ketones are ok in small amounts. When they build up they become toxic.

Why Test For Ketones?

It can be normal to have some ketones in the body – especially if you are on a diet such as intermittent fasting or a “keto” diet.

Ketones can safely circulate in the blood in small amounts. However, when they are present in large amounts they can lead to diabetic ketoacidosis (DKA) in people who use insulin, especially if they have Type 1. In DKA the blood can become so acidic that it is a life threatening emergency.

For people who are insulin dependent ketone testing is a way to catch DKA early.

When To Test

When it comes to how and when to test for ketones, the best thing to do is to follow the advice of your healthcare provider.

Most experts recommend testing for ketones:

- Every 4-6 hours when you are sick
- Anytime blood sugar is greater than 240 mg/dL
- Anytime you have high blood sugar and symptoms of DKA

The symptoms of DKA include:

- Extreme thirst that doesn't get better with drinking water
- Urinating a lot more than usual
- Nausea, vomiting, or stomach pain
- Weight loss
- Drowsiness, lethargy, confusion, or any change in mental status
- Fast breathing or shortness of breath
- In DKA, a sweet and fruity smelling breath (caused by ketones)

Glucose Guards; Diabetes Done Right™

Log in today to learn more!



Urine Ketone Test

Instructions vary by manufacturer but most will follow the same general steps:

1. Avoid touching the spongy end of the strip while removing it from the packaging.
2. Expose the test end to urine either by:
 - Carefully passing urine over it
 - Or by collecting urine in a sterile container, then dipping it in
3. Set your timer as soon as the test end is exposed to urine
4. After the amount of time specified by the instructions has passed, compare the color of the test area to the color chart provided with the strips
5. Disregard any color changes that happen after time has expired

Urine ketones are usually measured as:

No ketones, Trace ketones, Moderate ketones, Large amounts of ketones

Blood Ketone Test

Testing for blood ketones is similar to testing blood sugar. In fact, some glucometers test for both. To test for ketones follow your meters manufacturer guidelines. Most will follow the same general steps:

- Put a blood ketone strip into the ketone meter
- Wash your hands with soap and water
- Dry your hands
- Stick your finger with the lancing device
- Allow blood onto the ketone test strip
- Check the meter display for the results

Blood ketones are usually measured as:

Under 0.6 mmol/L: Normal

0.6 to 1.5 mmol/L: Slightly high

1.6 to 3.0 mmol/L: Moderately high

Above 3.0 mmol/L: Very high

Interpreting Your Results

If you have been prescribed ketone testing, then follow the direction of your healthcare provider.

Some common guidelines are as follow:

- If you are sick and you have slight or trace ketones then drink some water and retest in 2-3 hours to be sure your ketones aren't going up.
 - Create a **Glucose Guards Sick Day Action Plan** if you haven't already.
- If you are sick and you have moderate to high ketones, call your doctor immediately, you are at risk for DKA.
 - Create a **Glucose Guards Sick Day Action Plan** if you haven't already.
- Do not perform exercise while you have high blood sugar and moderate to high ketones.
 - It means there is not enough insulin in your body. In this setting, exercise can actually increase blood sugar.
 - Create a **Glucose Guards Physical Activity Action Plan** if you haven't already.