

## Patient information

### What are Ketones?

#### Diabetes and Endocrinology Department

Ketones are a type of acid. Ketones are left over when your body burns some of its own fat for fuel. Your body burns fat if it can't get enough glucose to use for energy. When your body burns too much fat too quickly, there may be ketones in your blood. Ketones get removed from your bloodstream into your urine.

#### Why would my body have trouble using glucose?

Glucose is the first fuel your body burns for energy. To help move glucose from your bloodstream into body cells, where glucose is used for fuel, your body needs insulin. If there is too little insulin in the bloodstream to help the glucose get into cells, the body looks for other kinds of fuel to burn.

When the body burns stored fat, ketones begin to build up in the body. Too many ketones in the bloodstream can lead to a serious problem called ketoacidosis. Without proper treatment, this can lead to coma or death.

#### Who should test for ketones?

- People with type 1 diabetes.
- People with type 2 diabetes who take insulin.
- People in whom the type of diabetes is uncertain.
- Ketone testing is also recommended for women with type 1 or type 2 diabetes, who become pregnant or for women with gestational diabetes.
- Ketone testing may also be recommended in other people with diabetes.

**Your healthcare team will tell you when you should test for ketones. Diabetes UK recommends that you test if:**

- Your blood glucose is above 15mmol/L for two tests in a row.
- You are ill (even with a cold), as being ill can cause you to have ketones.
- You are vomiting or have diarrhoea.
- You are under stress or upset.
- You are pregnant.

## What do I do if my ketone test is positive?

### If the urine test shows trace or small amounts of ketones:

1. Drink a glass of water every hour.
2. Test your blood glucose and urinary ketones every three to four hours.
3. If your blood glucose is higher than 15mmol/L and you have ketones **do not** exercise. Also be sure to contact your healthcare team.
4. If your blood glucose and urinary ketones are **not** going down after two tests, call your healthcare team.

### If the urine test shows moderate or high ketones:

1. Call your diabetes team or doctor **immediately**.
2. Continue testing your blood glucose and urinary ketones every two hours until normal.
3. Drink a glass of water every hour.

If you check for blood ketones using an Xceed meter use the following guidelines:

1. Below 0.6 mmol/L – Readings below 0.6 mmol/L are normal.
2. Between 0.6 and 1.5 mmol/L follow the advice for **trace** or **small** amount of ketones above.
3. Above 1.5 mmol/L follow the advice for **moderate** or **high** ketones above.

Ketoacidosis can quickly develop into a very serious problem. Be sure to contact your healthcare professional if tests stay high or if you have any of the early signs of diabetic ketoacidosis (DKA).

### Early signs of DKA include:

- Pain in your stomach.
- Nausea or vomiting.
- Rapid breathing.
- Fruity smelling breath.

If you have any of these symptoms and have ketones in your urine, call your healthcare professional or go to the Emergency Department (A&E) at your local hospital.

### How do I test for ketones in my urine?

Testing your urine for ketones is very easy. You can use a simple dip-and-read urine test strip. The test strip is dipped into a sample of your urine or passed through the urine stream.

If the colour changes, there are ketones in your urine. Ketone Reagent Strips are for urine ketone testing only.

You can get these at your local pharmacy. Bottles of ketone test strips are also available on prescription from your family doctor (GP). Ketone test strips are sensitive to light and moisture, so you must keep them stored in the container with the lid on tight. Always check the expiry date on the bottle and do not use strips that are out of date.

## **Feedback**

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

## **Further information**

### **The Diabetes Centre**

**Tel: 0151 706 2829**

**Text phone Number: 18001 0151 706 2829**

### **NHS111**

**Tel: 111**

### **The North West Diabetes UK**

**First floor**

**The Boultings,**

**Winwick Street,**

**Warrington,**

**WA2 7JQ.**

**Tel: 01925 653 281**

**e-mail [n.west@diabetes.org.uk](mailto:n.west@diabetes.org.uk)**

### **Diabetes UK**

**10 Parkway**

**London**

**NW1 7AA**

**Website [www.diabetes.org.uk](http://www.diabetes.org.uk)**

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