

**Patient  
Information**

# Testing for ketones in Type 1 Diabetes

## Introduction

You have been given this leaflet because you have Type 1 Diabetes. If you are ill you will need to test yourself for ketones. This leaflet gives you information about ketones and tells you when and how to test for them.

## What are ketones?

Ketones are created when there is a severe lack of insulin, meaning that the body cannot use glucose for energy and starts to break down other body tissues for energy. Ketones are the by-product of this process. Ketones are poisonous chemicals which build up and, if left unchecked, will cause the body to become acidic.

## Why is it important to test for ketones?

Ketones are acids which build up if you become unwell or have an infection. This may result in a condition called 'diabetes ketoacidosis'. Higher insulin doses and drinking plenty of fluids will be needed to bring down the level of ketones. Vomiting may limit your intake of carbohydrate, so you must contact a health care professional if you are vomiting. Checking for ketones when you are ill will alert you to what could be a dangerous situation.

## Testing blood for ketones

You can test your blood for ketones by using a blood ketone meter. Your nurse will give you a meter if it is needed.

If you have Type 1 Diabetes it is important to test for ketones if your blood glucose levels are over 13.9mmol/L and not dropping over the following 2 hours or when you are ill (regardless of your blood glucose level).

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Department

**Diabetes**

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## When should you check for ketones?

You need to check your blood for ketones when you:

- are unwell
- have high blood glucose levels
- are vomiting or have diarrhoea

You will need to test you blood ketones every 1 to 2 hours if your blood glucose is above 13.9mmol/L.

If you have ketones, you are likely to have high blood glucose levels, but sometimes they can be within the target range of 4-10mmol/L.

### Do not ignore the presence of ketones.

You should also have a copy of our leaflet 'Sick day rules'. This gives you important information about managing your diabetes during illness. If you do not have a copy of this leaflet please ask a member of the team.

## What do the blood ketone results mean?

< 0.6 mmol/L	Acceptable level
0.6 – 1.5 mmol/L	Drink more fluids and take a higher insulin dose depending on blood glucose level and/or have an insulin correction dose to reduce the blood glucose and ketone levels. It is important that the <b>sick day rules</b> are followed and that you re-check blood ketone levels again in 1 to 2 hours.
> 1.5 mmol/L	This shows a risk of diabetes ketoacidosis. Patients must seek medical help <b>straightaway</b> .

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## Testing for Ketones in pregnancy

The limit for testing for ketones in pregnancy is lower than outside of pregnancy. If you have unexplained hyperglycaemia and your blood glucose is more than 10mmol/L, please test for ketones. Once you have done this look at the table above and follow the appropriate steps.

If you have ketones, you are likely to have high blood glucose levels, but sometimes they can be within the target range. This target will have been given to you by your antenatal diabetes team.

## Contact information

### Diabetes Nurses

Cheltenham General Hospital  
Tel: 0300 422 4266

Gloucestershire Royal Hospital  
Tel: 0300 422 8613

These are answer machines. Please leave your name, date of birth and contact number when prompted. Your call will be returned as soon as possible.

Alternately you can email the diabetes nurses:

Email: [ghn-tr.diabetesnurses@nhs.net](mailto:ghn-tr.diabetesnurses@nhs.net)

## Further information

### Diabetes UK

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

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