

General Sick Day Management

Have you received a sick day leaflet? - EVERY PERSON WITH DIABETES AND THEIR FAMILY MEMBERS OR CARERS SHOULD GET CLEAR INDIVIDUALISED VERBAL AND WRITTEN ADVICE ('SICK-DAY RULES') FROM THEIR DIABETES TEAM ABOUT MANAGING DIABETES DURING ILLNESS OR EPISODES OF HIGH GLUCOSE LEVELS.

This leaflet does not replace that information

NEVER STOP TAKING YOUR INSULIN

Blood Glucose Levels can be high without food intake? - When the body is fighting illness it can cause the blood glucose levels to rise even if you are eating less than usual.

What are ketones? - Ketones are waste product that shows up in the blood and urine when body fat is being burned for energy. The blood glucose level is often high but the body cannot use the glucose for energy because of lack of insulin. If ketones are produced more quickly than disposed of, they can cause the blood to become acidic. Acidic blood and high glucose levels cause **Diabetic Ketoacidosis (DKA)** a life-threatening short term complication of Type 1 Diabetes.

What about ketones and Type 2 diabetes? – Some ketones may be present but rarely at high enough levels to cause acidosis. However, high blood glucose levels and dehydration can also lead to serious illness.

When to test for ketones – if you have Type 1 diabetes and:

- Blood glucose is more than 15mmol/L (adult) or 11mmol/L (child) for more than 4 hours
- When nauseated, are vomiting, or have abdominal pain
- When ill e.g. a cold or flu
- When tired all the time
- When thirsty or have a very dry mouth
- When skin is flushed
- When there is difficulty breathing or breath smells "fruity"

How to test for Ketones - You can test for ketones in the blood or ketones in the urine. Blood ketones can be tested using blood ketone testing strips which are available on prescription. Ketones in the urine can be checked using special ketone urine strips available on prescription. Illness can strike at any time so it is important to ensure that you always have a supply of blood ketone or urine ketone strips that are in date.

What does the result mean?

Urine ketone level	Blood ketone level	What you should do
+1	Below 0.6mmol/l	This is normal for person with diabetes
+2	0.6mmols/l and 1.5mmols/l	Moderate ketones are present; indicates a need for extra insulin. It is important to call or follow the rules provided by your diabetes team and continue to check your blood glucose and blood ketone levels in 1-2 hours.
+3	More than 1.5mmols/l	Large ketones are present; you are at risk of DKA. Call your diabetes team or seek alternate professionals' advice.
More than 3	More than 3.0 mmol/s	Ketosis is posing an immediate threat to your health, summon emergency assistance immediately.

Ketones may be present when the blood glucose levels are within target levels – usually this is because of insufficient sugar intake i.e. extra insulin not required. This situation of ketones present with normal glucose levels is known as **Starvation Ketones** and is treated with food and fluids.

How to avoid getting ketones:

- During illness check the glucose levels every 2- 4 hours (even during the night) and adjust your insulin/food intake accordingly as per the sick day regime from your diabetes team.
- Eat normally when possible and keep hydrated by sipping on water and sugar free fluids.
- If solid food cannot be taken, have carbohydrates in fluid form e.g. flat soft drink (not diet variety), sip on this to maintain blood glucose levels.
- If there is any suspicion that infection is causing the high blood glucose levels, visit your G.P.
- When using an insulin pump you are receiving a continuous infusion of fast acting insulin, if the pump fails to work however, because you have no background insulin present you are at greater risk of DKA. It is essential that every person using a pump tests blood glucose levels frequently and knows how to manage high blood glucose levels.

Be aware of the warning signs of Diabetic Ketoacidosis and know when to seek emergency care. Be sure to get written and verbal sick day advice as part of the annual check-up. You must have an up to date plan in the event of becoming unwell and to prevent a minor illness becoming a major problem. If in doubt about what to do, seek advice from the diabetes team and know who to contact out of hours.