



NHS Tayside Diabetes Managed Clinical Network Patient Information Leaflet

Management of Illness in Type 1 Diabetes

The Golden Rule: never stop taking your insulin

When you are unwell your body's natural response is to make more sugar. This means that you will usually need to take more insulin, more fluid to drink and do more testing. This will reduce the risk of becoming seriously unwell with Diabetes Ketoacidosis (DKA). For more information look at the patient information leaflet on Diabetes Ketoacidosis available on www.diabetes-healthnet.ac.uk or from your diabetes healthcare team.

Food and drinks

- Drink non sugary fluids, for example, water. Take 100-200mls or approximately one glass every hour as this will help prevent you becoming dehydrated. If you cannot manage a whole glass, take regular sips.
- Continue eating as normally as you can, even if your blood sugars are high.
- If you are unable to eat solid food at mealtimes make sure you take carbohydrate in the form of pure fruit juice, ribena, milk, coca cola or lemonade. These should be full sugar and not diet. Try to drink one glass per hour.

Blood glucose (sugar) and ketone monitoring

- Monitor blood sugars levels 2 - 4 hourly during illness. The results will help guide you with how to adjust your insulin.
- **Always test for ketones during illness.** If you have there are ketones in your blood or urine it is a sign that your body is short of insulin and that you need to increase your insulin dose (see below).
- Check for ketones every 2 - 4 hours. Increasing levels of ketones means an increased risk of DKA.
- Make sure you always keep ketone strips for testing during illness and check that they are 'in date'.

Insulin Management

- **Never stop taking your insulin.** Often you will need more insulin when you are unwell
- If the trend of your blood sugar levels is higher than 7mmol/L increase your 'usual' insulin by 10% each dose. For example if you normally takes 10 units of insulin this will mean increasing the dose by one unit to 11 units.
- **A positive ketones test** means that you need to take an extra injection of rapid acting insulin. For example novorapid or humalog or /or Apidra or Actrapid or humulin S.)
- Calculate the 'extra' dose as 20% (or 1/5th) of your total daily insulin dose. For example if you normally take a total of 30 units of insulin (quick and long acting insulin), 20% means taking an 'extra' dose of 6 units.
- This 'extra' insulin dose can be repeated every 2 - 4 hours if necessary.
- Alternatively, calculate and give a 'correction' insulin dose if this is something you are familiar with.

Additional information for insulin pump users

- Follow the insulin pump guidelines for high blood glucose levels.
- Check blood ketone level. A **positive ketone test means that you need extra insulin.**
- Give extra rapid acting insulin by injection (as above).
- Check your pump, check the infusion site and change the infusion set.
- Increase the basal insulin rate by at least 30%. Sometimes the rate requires an increase of 50%.

Interpretation of ketone results during illness

Blood ketone meter range 0.0mmol/L – 8.0mmol/L

Urine ketone	Blood ketone level	Action
Negative	Less than 0.6 mmol/L	This is within the normal range. During illness test again in 2 - 4 hours to re-assess
Trace	0.7 - 1.5 mmol/L	Give an extra dose of insulin (see above) Test blood glucose and ketones again in 1-2 hours
Moderate	1.6 – 3 mmol/L	Give an extra dose of insulin (see above) Seek advice from diabetes team/GP/NHS 24 Retest blood glucose and ketones in 1-2 hours
Large	More than 3 mmol/L	Contact GP/NHS 24 or Accident & Emergency urgently. Give extra dose of insulin (see above)

Hospital admission is required if any of the following happen:

- If you can't swallow or keep fluids down
- You have persistent vomiting
- Persistent high blood sugar levels
- Persistent positive or increasing levels of ketones
- Abdominal pain, breathlessness

If you need urgent advice, contact your GP surgery during working hours or out of hours NHS 24 08454 24 24 24. **Provide important details about yourself** such as:

- You have Type 1 diabetes
- Symptoms of your illness
- Information about your blood sugar and ketone levels
- You need to be seen by a doctor.

You can contact the Diabetes Specialist Nurses for further advice at the numbers below during working hours (Monday – Friday 9am – 5pm)

Dundee Team Tel: 01382 632293

Perth & Kinross Team Tel: 01738 473476

Angus Team Tel: 01241 447811

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