

Sick Day Management

Information for Young People

Young people with well controlled diabetes are at no greater risk of getting sick with infections or illnesses than someone without diabetes. However, when you do get sick, much greater care and attention is needed to ensure your diabetes does not become unstable.

An illness, even a simple cold or flu, can affect your diabetes control. When you get sick your blood glucose levels (BGL's) rise because stress hormones are released in the body. These hormones also have an 'anti-insulin' effect, so the insulin you are taking doesn't work as well. This is called insulin resistance.

If, during an illness, high blood glucose levels remain untreated, ketones will develop in your bloodstream. The presence of ketones increases the risk of developing diabetic ketoacidosis (DKA).

What is Diabetic Ketoacidosis (DKA)?

Ketoacidosis is a very serious illness that occurs when the blood glucose and blood ketone levels are high. Ketoacidosis always results in a hospital admission and if severe enough, can be life threatening. The good news is that DKA can be prevented if you follow the 'sick day' action plan below:

What to do if you are sick with high BGL's & ketones?

If you are sick with BGL's above 15mmol/L and have ketones in your blood or urine, take the following steps to prevent Diabetic Ketoacidosis (DKA):

- Contact your diabetes doctor or educator
- You will need to take extra insulin. Usually the dose is 10-20% of your total daily dose as rapid (or short) acting insulin eg. Total daily dose = 50 units then give 5 to 10 units of rapid or short acting insulin.
- You may need several extra insulin doses to lower the BGL and clear the ketones.

You are not expected to manage sick day episodes by yourself. Remember! Contact your diabetes doctor or educator for help.

Sick Day Action Plan

Illness	Action
Unwell e.g. Infection, Fever, Flu symptoms	<ul style="list-style-type: none">• Never stop insulin (under any circumstances)• If on an insulin pump see additional information below.• Eat normal or 'emergency' diet• Ensure you drink extra fluids. If the BGL is high drink water or other 'sugar free' drinks.• Test your blood glucose levels regularly (testing may need to be increased to every 2 hours)• Test blood (or urine) for ketones (at least every 2 hours)• If the BGLs are above 15 mmol/L and ketones are in the blood (or urine), contact the diabetes team immediately.• You will need extra rapid (or short) acting insulin. Usually 10-20% of the total daily dose. (See below if on an insulin pump)• Several extra injections (or boluses) of insulin may be needed during the illness.• Keep in touch with your diabetes team while you are unwell.
Vomiting & or Diarrhoea	<ul style="list-style-type: none">• Never stop your insulin (may need less if not eating)• If on an insulin pump see additional information below.• Eat normal or 'emergency' diet.• Ensure you drink extra fluids. If BGL's are low give fluid containing glucose.• Test blood glucose levels more frequently (may need to be increased to hourly if not eating)• Test blood (or urine) for ketones (at least every 2 hours)• If BGLs are normal or low and ketones are present in the blood (or urine), contact the diabetes team. If the ketones persist you may need to be admitted to hospital.• If unable to keep your blood glucose levels above 5 mmol/L, or if vomiting or diarrhoea is excessive, you may need to be admitted to hospital.• Keep in touch with the diabetes team while you are unwell.

What if you are on an insulin pump?

Insulin pumps allow you to make insulin adjustments quickly and easily when you are sick. The key to controlling your diabetes during illness is to do frequent blood glucose testing. In addition to the steps above you will also need to do the following when sick:

If your BGL's are normal or low

You may need to set a temporary basal rate so that you are having less basal insulin than usual e.g. you may set a temporary basal at 50% so that you are only having half of your normal basal insulin.

You may not need any boluses (unless your BGL goes above 15 mmol/L). If you are having trouble keeping your BGL above 4 mmol/L, you may need to stop your pump for a period of time. **Never stop your pump for longer than 2 hours.** Monitor your BGL's every hour and contact your diabetes educator or doctor if you can't keep your BGL above 4mmol/L.

Note: Even if you are not eating you will still need insulin.

If your BGL's are above 15 mmol/L

You will need to take a correction bolus any time your BGL is above 15 mmol/L. If you also have ketones in your blood or urine, you will need to increase your correction bolus. It is not uncommon that several extra correction boluses will be needed during your illness.

To keep your BGL's under 15 mmol/L you may also need to increase your basal rate (basal rates can be increased by as much as 200%). In some circumstances you may need to increase both your correction bolus and basal rate.

Checking for ketones if your BGL's are above 15 mmol/L

It is recommended that you check for **blood** ketones if possible when using an insulin pump. If you don't have a monitor that checks blood ketones then test your urine for the presence of ketones. You must check for ketones whenever your BGL is above 15 mmol/L. If you have ketones then you should contact your diabetes doctor or educator.

What to do if your BGL's are not coming down

If your BGL's are not coming down after increasing your insulin via the insulin pump, you need to check that your pump is working properly and delivering insulin. You need to take the following steps:

- Check that the last bolus was given. Give a correction bolus immediately if last bolus was not given.
- Check that there is insulin in the cartridge.
- Check the tubing for leaks or kinks and the insertion site for leaking or infection.

If there is minimal change in the BGL or the BGL are going higher, then you can either:

- Change the insulin cartridge and re-site the infusion set. **Don't forget to prime the tubing (0.3 units of insulin).** Reconnect and give a correction bolus, **or**
- Take an injection of insulin with a syringe.
- Recheck BGL in 1 hour. If no improvement contact your doctor or diabetes educator for advice.

Note: When you're sick it's hard to do all the things you need to do to ensure your diabetes is O.K. If you are too sick to monitor your diabetes carefully, ask a friend or family member to help. If there is no one to help you, contact your diabetes doctor or educator for advice.

Reference:

Stillman, J., Lang, E., Grieve, C., (2003) *Paediatric and Adolescent Diabetes Education Manual*, For Health Professionals. Queensland Health, Queensland Government Publication. Modules 6 and 7.