

Managing your diabetes when you are sick

When you are sick, it can be harder to keep your blood sugar under control. Managing your diabetes will take a little extra time and attention. Your diabetes team will help you learn what to watch for and what to do when you are sick. However, there may be times that you don't feel well enough to manage on your own and you may want to ask your parents for help.

How can illness affect my diabetes?

Changes in blood sugar and ketones

Illness may upset your blood sugar balance. The blood sugar often goes high (hyperglycemia). However, if you have no appetite, are throwing up (vomiting) or have diarrhea, the blood sugar may go low (hypoglycemia).

When you are sick, ketones may start to show in your urine. Ketones in the urine tell you there are ketoacids in the blood. If the amount of ketoacids in your blood gets too high, you will be in diabetic ketoacidosis (DKA). This is a dangerous, life-threatening condition.

You can't be sure how an illness will affect your blood sugars and ketones, so it is important to check them often.

Changes in insulin needs

There must always be enough insulin working to perform these two jobs in your body:

1. controlling blood sugar levels, **and**
2. "shutting off" the production of ketones

Illness can increase the amount of stress hormones such as adrenalin. Stress hormones can prevent insulin from working as well as it normally does. Your usual dose of insulin may no longer be enough to get the jobs done. It may be necessary to take **extra** insulin to control the blood sugar and stop ketones from being made.

Can DKA be prevented?

Yes, you can prevent DKA and keep yourself safe by:

- checking your blood sugar and ketones early and often during an illness
 - giving extra insulin if needed to stop the production of ketones
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How do I manage my diabetes when I am sick?

- 1. Check your blood sugar and ketones (in the urine or blood), at least every 4 hours during the day and night.**

Record the results in your log book.

- 2. Make sure you are taking in enough sugar.**

You must always have enough sugar going in to allow insulin to be given safely. Giving insulin without a source of sugar can make your blood sugar dangerously low.

There are 3 ways to get sugar into your body:

- your normal diet
- liquids that contain sugar - such as fruit juices, Gatorade®, regular pop, popsicles or jello
- intravenous glucose (IV dextrose) given in the hospital

If you vomit more than 2 times in 4 hours or cannot drink fluids that contain sugar, you may need to go to the hospital emergency room for IV dextrose and fluids.

- 3. Take your usual insulin PLUS extra rapid acting insulin if needed.**

If you are taking in enough sugar, you should continue to take your usual dose of insulin. You may need more insulin, because insulin may not work as effectively during an illness.

If you have ketones in your urine (which means there are ketoacids in your blood), you will need extra insulin to stop the production of ketoacids. The extra insulin you take should always be rapid-acting insulin (Humalog, Novorapid or Apidra).

The amount of extra insulin is usually 10% of the total amount of all insulin that you normally take in 24 hours. Use the chart on page 3 to decide how much extra insulin you need.

This amount of extra insulin can be repeated every 3 to 4 hours if needed, depending on your blood sugars and ketones. Do not take more than 10 extra units at any one time.

You must always have insulin. Do not miss any doses. Without insulin, ketones will build up and put you into diabetic ketoacidosis. Remember, if you cannot get enough sugar into your body, you must come to the hospital for IV dextrose so that you can continue to take insulin.

- 4. Try to drink extra water.**

Drinking extra water can help clear ketones and prevent dehydration.

How much extra insulin should I take?

Check your blood sugar and ketones (in urine or blood) at least every 4 hours during the day and night. This will help you know the effect of each illness and what you should do. Use this chart to help you adjust your insulin.

Blood sugar	Ketones	Action
Less than 13 mmol/L	<p>Urine: negative or trace</p> <p>Blood: less than 1.0 mmol/L</p>	<ul style="list-style-type: none"> • Give the usual insulin at the usual time. • If you cannot eat your usual foods, drink liquids that contain sugar.
Greater than 13 mmol/L	<p>Urine: small to large</p> <p>Blood: greater than 0.9 mmol/L</p>	<ul style="list-style-type: none"> • Take your usual insulin at the usual time • Plus take extra rapid acting insulin: 10 to 20% of total daily dose as Humalog, Novorapid or Apidra.*
Less than 10 mmol/L	<p>Urine: small to large</p> <p>Blood: greater than 0.9 mmol/L</p>	<ul style="list-style-type: none"> • Take your usual insulin at the usual time. • Drink liquids that contain sugar until your blood sugar reaches 10 mmol/L. • Then take extra rapid acting insulin: 10% of total daily dose as Humalog, Novorapid or Apidra.*

* This amount of extra rapid acting insulin can be repeated every 3 to 4 hours if needed, depending on your blood sugars and ketones.

Do not give more than 10 extra units at any one time.

When should I see my family doctor?

You may need to see your family doctor to treat the illness.

- If you have a fever longer than 2 days or you have diarrhea longer than 8 hours, you may need treatment from the doctor.
- To treat an infection, the doctor may prescribe antibiotics. Antibiotics are safe for people with diabetes. Even if you feel better quickly, you need to finish all the antibiotics.
- To treat a fever, the doctor may tell you to take acetaminophen (Tylenol®) or ibuprofen (Advil®, Motrin®). Follow the directions on the package.
- Some medications needed to treat an illness contain sugar. Even though this may cause your blood sugar to go higher, it is important that you take the medication as directed by your doctor. This will help you get better as soon as possible.

When do I need to call the Diabetes Team?

If you notice any of the following problems, call your Diabetes Nurse:

- your symptoms get worse
- you are not able to eat or drink
- you vomit 2 times in 4 hours
- ketones are still present after giving extra insulin 2 times in a row
- your blood sugar remains low (hypoglycemia)
- you are dehydrated (dry mouth and skin, cracked lips)

The Diabetes Nurse is available weekdays until 4 pm, at the phone number on your Telephone Contact List. If there is a problem after 4 pm or a weekend, you will need to go to the nearest hospital emergency room.

**If you have any questions or concerns,
please speak to a member of the Diabetes Team.**