

Caring for your child when he or she is sick

When your child is sick, he or she will need a little extra care and attention. Your child's diabetes team will help you learn what to watch for and what to do when your child is sick. Keep this handout at home to help you remember this information.

How can illness affect my child's diabetes?

Changes in blood sugar and ketones

Illness may upset your child's blood sugar balance. The blood sugar often goes high (hyperglycemia). However, if your child has no appetite, vomiting or diarrhea, the blood sugar may go low (hypoglycemia).

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

You can't be sure how an illness will affect your child's 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 child's 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 child's usual dose of insulin may no longer be enough to get the jobs done. It may be necessary to give your child **extra** insulin to control the blood sugar and stop ketones from being made.

Can DKA be prevented?

Yes, you can prevent DKA and keep your child safe by:

- checking your child's 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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What can I do to help my child?

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

Record the results in your child's log book.

- 2. Make sure your child is taking in enough sugar.**

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

There are 3 ways to get sugar into your child:

- his or her 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 your child vomits more than 2 times in 4 hours or refuses to drink fluids that contain sugar, your child may need to go to the nearest hospital emergency room for IV dextrose and fluids.

- 3. Give your child's usual insulin PLUS extra rapid acting insulin if needed.**

If your child is taking in enough sugar, your child should continue to take his or her usual dose of insulin. Your child may need more insulin, because insulin may not work as effectively during an illness.

If your child has ketones in the urine (which means there are ketoacids in the blood), he or she will need extra insulin to stop the production of ketoacids. The extra insulin is always given in the form of rapid-acting insulin (Humalog or Novorapid or Apidra).

The amount of extra insulin is usually 10% of the total amount of all insulin that your child normally receives in 24 hours. Use the chart on page 3 to decide how much extra insulin your child needs. Small children tend to be sensitive, so if a range is recommended (ie: 10 to 20%) start by giving the lower amount (10%).

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

- 4. Encourage your child to drink extra water.**

If your child is able to drink, encourage him or her to drink extra water. This will help clear ketones and prevent dehydration.

How much extra insulin should I give my child?

Check your child's 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 child's 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 your child is not tolerating usual foods, encourage him or her to 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"> • Give the usual insulin at the usual time • Plus give 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"> • Give the usual insulin at the usual time. • Give liquids that contain sugar until the blood sugar reaches 10 mmol/L. • Then give 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 child's sugars and ketones.

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

When should my child see the family doctor or pediatrician?

Your child may need to see your family doctor or pediatrician to treat the illness.

- If a fever lasts longer than 2 days or your child has diarrhea longer than 8 hours, he or she may need treatment from the doctor.
- To treat an infection, the doctor may prescribe antibiotics. Antibiotics are safe for children with diabetes. Even if your child feels better quickly, he or she needs to finish all the antibiotics.
- To treat a fever, the doctor may tell you to give your child 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 child's blood sugar to go higher, it is important that your child takes the medication as directed by the doctor. This will help your child 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 child's symptoms get worse
- your child is not able to eat or drink
- your child vomits 2 times in 4 hours
- ketones are still present after giving extra insulin 2 times in a row
- your child's blood sugar remains low (hypoglycemia)
- your child is 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, take your child to the nearest hospital emergency room.

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