

Illness Management When a Child with Type 1 Diabetes is Sick

Being sick (such as with an infection or flu) often causes **high blood sugars and ketones**, even if your child isn't eating. This has to be managed closely or your child can develop a dangerous condition called **diabetic ketoacidosis (DKA)**. Sometimes in illness blood sugars can be **low**, and this is typically seen if there is vomiting or diarrhea. Illness can cause **dehydration**. Below is a list of guidelines for how to manage diabetes during illness.

1. **Check blood sugar** every 2 to 4 hours **around the clock** (even when your child is sleeping). If you are using a continuous or flash glucose monitor, blood sugars may not be accurate if your child is dehydrated. Always double check with a finger poke if you are uncertain.
2. If the blood sugar is **greater than 14.0 mmol/L**, check the urine or blood for ketones.
3. Never stop giving insulin when your child is sick.
4. If your child **isn't able to eat** give ½ to 1 cup of clear fluids every hour
 - If the blood sugar is **below** 14.0 mmol/L the fluids should have sugar (e.g. regular pop, popsicles, or apple juice).
 - If the blood sugar is **above** 14.0 mmol/L the fluids should be sugar-free (e.g. water, diet pop, Crystal Light®).
5. If your child **is able to eat**, follow usual meal plan and offer foods that are easy to tolerate. See *What can I offer my child to eat and drink?* on next page.
6. Give sips of fluid to prevent dehydration. Your child should have ½ to 1 cup every hour.
7. Make sure your child rests. If the blood sugar is high with ketones, more activity may cause the blood sugar to go even higher and the body will produce more ketones.
8. Call your family doctor or call Health Link at 811 if you have concerns about your child's illness not related to diabetes.
9. Medication
 - You can use acetaminophen (Tylenol®) or ibuprofen (Motrin®, Advil®) for fever and pain
 - Use sugar free products for coughs and colds (e.g. cough syrups, cough drops).
 - Use prescription medication (antibiotics, steroids) as prescribed by your family doctor.
 - Your child should still get all vaccinations and the flu shot regularly.
10. **Call the diabetes nurse or the endocrinologist on call if:**
 - You can't keep your child's blood sugars above 4 mmol/L.
 - Your child vomits more than 2 times in 4 hours.
 - Your child still has ketones after 2 extra doses of rapid-acting insulin.
 - Blood ketones are greater than 3.0 mmol/L (a sign of DKA).
 - Your child has signs of dehydration: dry mouth or tongue, cracked lips, sunken eyes, dry flushed skin, or not peeing (urinating) enough.
 - Your child has any signs of DKA: high blood glucose with ketones and nausea, stomach pain, vomiting, fast breathing, fruity smelling breath, and drowsiness.

Call (403) 955-7211

- Weekdays 8:00 am - 4:00 pm, ask for the diabetes nurse on call.
- After hours, weekends, or holidays, ask for the endocrinologist on call.

How to adjust insulin:

Remember: NEVER stop giving insulin when your child is sick

Blood sugar below 10.0 mmol/L with vomiting, diarrhea, or not eating

- **Don't** give rapid acting insulin (Humalog®, Novo Rapid®, Fiasp®, Admelog®, Apidra®, Trurapi®)
- Decrease long acting or intermediate acting insulin (Humulin N®, Novolin NPH®, Lantus®, Levemir®, Basaglar®, Tresiba®, Toujeo®) by 20%

Blood sugar above 10 mmol/L and negative ketones

- Give the usual dose of insulin

Blood sugar above 14 mmol/L with ketones

Give extra rapid-acting insulin every 3-4 hours around the clock until blood sugar is below 14 mmol/L or ketones are negative.

- If urine ketones are trace or small (+) or blood ketones are 0.6 to 1.4, use your usual method of correction for the high blood sugar (see your correction scale or correction factor).
- If urine ketones are moderate (++) to large (+++) or blood ketones are 1.5 or greater give **50% MORE** of your usual correction. To do this multiply your usual correction by 1.5. For example, if your usual correction for a blood sugar of 15.4 is 5 units of rapid acting insulin you would give 7.5 units ($5 \times 1.5 = 7.5$). If you don't have a half unit pen, round up to a full unit.

Page the diabetes nurse or endocrinologist on call if:

- You don't have a method of correcting high blood sugar or you are not sure how to give 50% more
- Your child still has ketones after 2 extra doses of rapid-acting insulin

What Can I Offer My Child to Eat and Drink?

Foods that have about 15 g carbohydrate		
<ul style="list-style-type: none"> • 1 slice of dry toast • 8 soda crackers • 3 graham wafers • ½ cup (125 mL) ice cream or sherbet 	<ul style="list-style-type: none"> • ⅓ cup (75 mL) pudding • ¾ cup (180 mL) cooked cereal • 1 cup (250 mL) soup 	<ul style="list-style-type: none"> • ½ cup (125 mL) regular flavoured yogurt • ½ cup (125 mL) unsweetened applesauce
Fluids that have about 15 g of carbohydrate		
<ul style="list-style-type: none"> • ¾ cup (180 mL) regular ginger ale • ½ cup (125 mL) regular Jell-O® • ½ popsicle • ½ cup (125 mL) regular Kool-Aid® or fruit punch 	<ul style="list-style-type: none"> • 1 cup (250 mL) Gatorade® or Powerade® • ½ cup (125 mL) fruit juice • 1 cup (250 mL) white milk • ½ cup (125 mL) flavoured milk 	
Fluids that have no carbohydrate		
<ul style="list-style-type: none"> • Water • Diet ginger ale • Diet popsicles 	<ul style="list-style-type: none"> • Sugar-free Jell-O® • Crystal Light®, Dasani®, Mio® • Clear broth 	
Diarrhea		
<ul style="list-style-type: none"> • If your child has diarrhea, use Pedialyte® or Lytren®. • Use juice, sports drinks, broth/consommé, or diet popsicles with caution, as they can make diarrhea worse. 		

Quick Review

BG less than 4.0 mmol/L	BG 4.0-10.0 mmol/L	BG 10.1-14.0 mmol/L	BG higher than 14.0 mmol/L		
			Check for urine or blood ketones		
	Vomiting, diarrhea, NOT eating	Vomiting, diarrhea, NOT eating	Ketones Urine: negative Blood: less than 0.6	Ketones Urine: positive Blood: 0.6-1.4	Ketones Urine: Positive Blood: more than <1.5
<ul style="list-style-type: none"> Decrease insulin Push sugar fluids CALL	<ul style="list-style-type: none"> Decrease insulin Push sugar fluids Call if: <ul style="list-style-type: none"> Dehydrated Vomits more than 2 times in 4 hours Lots of diarrhea 	<ul style="list-style-type: none"> Usual insulin Push sugar fluids Call if: <ul style="list-style-type: none"> Dehydrated Vomits more than 2 times in 4 hours Lots of diarrhea 	Eating or not eating, without vomiting: <ul style="list-style-type: none"> Usual insulin Push sugar-free fluids Call if: <ul style="list-style-type: none"> Dehydrated Vomits more than 2 times in 4 hours Lots of diarrhea 	Eating or not eating, without vomiting: <ul style="list-style-type: none"> Give extra insulin Push sugar-free fluids Call if: <ul style="list-style-type: none"> Dehydrated Vomits more than 2 times in 4 hours Lots of diarrhea Still has ketones after 2 extra doses of insulin 	Eating or not eating, without vomiting: <ul style="list-style-type: none"> Give extra insulin Push sugar-free fluids CALL Your child may have DKA
	No vomiting or diarrhea, and eating	No vomiting or diarrhea, and eating			
	<ul style="list-style-type: none"> Usual insulin Push sugar-free fluids 	<ul style="list-style-type: none"> Usual insulin Push sugar free fluids 			
Call (403) 955-7211: <ul style="list-style-type: none"> Weekdays 8 am to 4 pm: Ask for the diabetes nurse on call After hours, weekends, or holidays: Ask for the endocrinologist on call 					