

Sick Day Management

for people with type 1 diabetes

When you are sick, managing diabetes can be more difficult.

A cold, the flu or a serious illness can make your blood sugars high (hyperglycemia). You might find you need more insulin when you are sick. If you are unable to eat your usual foods, your blood sugar may be too low. (hypoglycemia. It might lead to a lower blood sugar and risk hypoglycemia (less than 4mmol/L). You may require less insulin.

Prepare a plan for sick days in advance. Work with your doctor, or a diabetes educator.

Follow these steps to help you stay out of the hospital:

- **Do not stop taking your insulin.** You may need less or more insulin when you are sick.
- **Test your blood sugars often.** Check them every 2 to 4 hours, even during the night.
- **Test your urine or blood ketones.** If you have Type 1 diabetes and your blood sugars are 14 mmol/L or higher for 2 consecutive readings, check your ketones every 4 hours.
- **Try to eat your usual amounts of carbohydrate.** Carbohydrates may be divided into smaller meals and snacks. Soft foods or liquids may be easier to ingest.
- **Eat or drink 15 grams of carbohydrate every hour or 45-50 grams of carbohydrate every 3 to 4 hours.**
- **Stay hydrated.** Drink extra water or sugar-free, caffeine-free fluids (8-10 cups per day).

Foods for sick days

If you are unable to eat your usual foods and beverages, have one of the following every hour, even if your blood sugar is high. Each of these servings contains about 15 grams of carbohydrate.

- ½ cup (125 mL) of fruit juice
- ½ cup (125 mL) of regular pop (not sugar-free)
- 1 cup (250 mL) of Gatorade®
- ½ cup (125 mL) of regular Jell-O®
- 1 twin popsicle
- 1 cup (250 mL) of milk
- 1 cup (250 mL) of thick chicken noodle soup
- ½ cup (125 mL) of ice cream, custard or pudding
- 7 soda crackers
- 1 slice of bread or toast with margarine/butter/jam
- 3 Arrowroot cookies
- ½ cup of unsweetened apple sauce
- 1 small banana

Medication during sick days

If you are sick and you become dehydrated (e.g. repeated vomiting or diarrhea), some medication you may be taking can affect your kidneys and cause serious problems. If you are dehydrating, you might need to stop taking these medications and seek medical attention as soon as possible.

Medications that might need to be stopped when you're sick are:

- Blood pressure pills
- Water pills
- Metformin
- Diabetes pills
- Pain medication
- Non-steroidal anti-inflammatory drugs

Check with your doctor before taking any over-the-counter medications. Many of these medications can affect your blood sugars.

How to adjust your insulin dose using blood ketone testing

The total daily dose (TDD) formula is used to help determine how much **extra** rapid-acting insulin (ex: Novorapid®, Humalog®, Apidra®, Fiasp®) is needed.

1. To determine your TDD add up the total number of units of insulin (all types of insulin) you usually take each day.
2. Calculate 10%, 15% and 20% of your TDD.
3. Follow the chart to decide how much **extra** rapid-acting insulin you need to take every 3 to 4 hours (day and night), in **addition** to your usual basal insulin doses (long acting).

My total daily dose (TDD) is _____ units.

10% of my TDD = _____ units

15% of my TDD = _____ units

20% of my TDD = _____ units

Blood sugar (mmol/l)	Urine ketone levels (mmol/l)	Action required
< 3.9		<p>No extra insulin</p> <p>Decrease dose of pre-meal insulin</p> <p>Consider eating 15 to 20 g of fast-acting carbohydrates.</p> <p>Contact healthcare team if vomiting occurs</p>
4.0 - 14.0	< 0.6	Take usual insulin dose.
4.0 - 14.0	> 0.6	Take 10% more rapid acting insulin
> 14.0	< 0.6	Take 10% more rapid acting insulin
> 14.0	0.7 - 1.4	Take 15% more rapid acting insulin
> 14.0	1.5 - 3.0	Take 20% more rapid acting insulin and go to the emergency department

How to adjust your insulin dose using urine ketone testing

The total daily dose (TDD) formula is used to help determine how much extra rapid-acting insulin (ex: Novorapid®, Humalog®, Apidra®, Fiasp®) is needed.

1. To determine your TDD add up the total number of units of insulin (all types) you usually take each day.
2. Calculate 10%. 15% and 20% of your TDD
3. Follow the chart to decide how much **extra** rapid-acting insulin you need to take every 3 to 4 hours (day and night), in **addition** to your usual baseline insulin doses.

Blood sugar (mmol/l)	Blood ketone (mmol/l)	Action required
< 3,9		No extra insulin Decrease dose of pre-meal insulin Consider eating 15 to 20 g of fast-acting carbohydrates Contact healthcare team if vomiting occurs
4,0 à 14,0	Negative, trace or small	Take usual insulin dose.
>14,0	Negative, trace or small	Take 10 % more rapid acting insulin
> 20,0	Negative, trace or small	Take 15 % more rapid acting insulin
> 14,0	Moderate or large	Take 20 % more rapid acting insulin and go to the nearest emergency department

Go to the nearest emergency department when:

- Your urine ketones are moderate to large amounts
 - Your blood ketones are 1.5 or greater
 - You are nauseous, have diarrhea and/or vomiting for longer than 24 hours;
 - You have severe abdominal pain;
 - You have a “fruity” smelling breath
 - You have a hard time breathing
 - You are confused or having sensation of being “in a fog”
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