



(918) 619-4803 • 4444 East 41st, Suite SCC-1B • Tulsa, OK 74135

Having diabetes doesn't mean you will get sick more often, but most kids will occasionally get a cold, the flu, or some other type of illness. When you get sick, blood sugars usually go up and it is possible to have ketones in the blood and urine. The best way to prevent a minor illness from becoming a major problem is to have a sick day plan worked out ahead of time.

WHAT IS SICK

Sick means any symptoms of illness. You might have a cold or allergies with sniffles and sneezes or the flu with a fever, nausea, vomiting, diarrhea, and body aches.

DON'T SKIP A SHOT!

Always take your insulin when you are sick, even if you cannot eat your regular meals. If you are on a Multiple Daily Injection Program (Lantus/Levemir at bedtime and Humalog/Novolog/Apidra with meals and snacks), always take the normal Lantus/Levemir amount and take Humalog/Novolog/Apidra to cover carbohydrates and to correct high blood sugar. On sick days, you can correct high blood sugar every two to three hours for the duration of the illness.

CHECK, CHECK, AND CHECK SOME MORE!

Taking care of yourself when you are sick means doing two different kinds of checks—blood sugar and ketone checks.

BLOOD SUGAR CHECKS

If you are not able to eat regular meals and snacks, check your blood sugar every two hours on days you are sick. You may need to set your alarm to check your blood sugar during the nighttime hours. Try to stick to a normal eating pattern. Check your blood sugar before meals and at bedtime.

CHECKING BLOOD OR URINE KETONES

Ketones are formed when your body uses fat to make energy. If ketones build up in your body it can be very dangerous and may require hospitalization or intravenous fluids. Follow these guidelines for checking ketones:

1. Check ketones every two hours on sick days if you have fever or vomiting. Check at least once during the night.
2. If you DO NOT have fever or vomiting, check ketones at least two times each day for a duration of the illness.
3. Check ketones until the illness is over.
4. Urine ketone testing uses urine ketone strips called *KetoStix™* to determine the presence of ketones in the urine. To use *KetoStix™*, collect urine in a cup and dip the test strip into the urine. Read **exactly** at 15 seconds and look for a color change on the strip. The color will indicate the amount of ketones in the urine. Urine ketone test strips usually **expire 6 months after a vial of test strips is opened**. For that reason, we recommend getting individually-wrapped ketone test strips. While they are more expensive, you will save money in the long-run because you will likely throw away less strips due to expiration dates.
5. The *Precision Xtra Blood Glucose Meter™* can also be used to test for blood ketones. Because of the importance of identifying ketones as soon as possible, we recommend that everyone with Type 1 Diabetes consider a *Precision Xtra* for blood ketone testing regardless of which blood glucose meter you use.

6. USE THE FOLLOWING GUIDE WHEN TREATING KETONES.

Ketone Test Result		Action to Take
<i>Ketone Blood Test</i>	<i>Ketone Urine Test</i>	
0.60 or less	Negative	<ul style="list-style-type: none"> • Continue to check blood sugar and ketones every 2 hours. • Drink at least 8oz of water hourly. • Okay to exercise.
0.60 to 0.9	Trace to Small	<ul style="list-style-type: none"> • Continue to check blood sugar and ketones every 2 hours. • Drink at least 8 oz of water hourly.
1.0 to 3.0	Moderate to Large	<ul style="list-style-type: none"> • Call your diabetes care provider immediately and state the call is <u>URGENT</u>. • Take extra short-acting insulin as advised by your diabetes care provider. • Drink at least 8 oz of water hourly • Continue to check blood sugar and ketones every 2 hours.
3.0 and Above	Large	<ul style="list-style-type: none"> • Call your diabetes care provider immediately and state the call is <u>URGENT</u>. • You will probably be told to go to the emergency room, especially in the event of uncontrollable heavy breathing, but call the diabetes care provider first.

7. **Ketones must be checked anytime the blood sugar is greater than 300 mg/dl and anytime you feel sick or nauseated, especially if you have vomited even once. If a person is sick, ketones can be present even when blood sugars are not high.**
8. **Call the diabetes care provider day or night if moderate or large urine ketones are present or if blood ketones are greater than 1.0 mmol/L. Tell the person answering the phone that the call is URGENT!**

I DON'T FEEL LIKE EATING!

When you are sick sometimes you may not feel like eating regular foods. However, it is important to try to stick to your regular meal pattern to prevent ketones. Choose foods that are easy on the stomach and try to eat or drink something with about 12-15 grams of carbohydrates every one to two hours, especially if your blood sugar is less than 150 mg/dl.

Stomach-friendly foods for sick days include...

¾ Cup Ginger Ale	1/3 Cup Regular Gelatin
½ Cup Regular 7-Up	1 Popsicle, Not Sugar-Free
1 Cup Chicken Noodle Soup	3 Peppermints, if over the age of 5
1 Cup Chilled Gatorade	1 Cup Yogurt
½ Cup Ice Cream	1 Slice Toast
¼ Cup Sherbert	6 Saltine Crackers

DRINK LOTS OF FLUIDS!

If you have a fever, are vomiting, or have diarrhea, it is easy to dehydrate. **Drink at least ½ cup of liquid (in small sips) each hour you are awake.** If your blood sugar is running high, drink sugar-free liquids such as water, broth, bouillon, decaffeinated tea, caffeine-free diet soda, or eat sugar-free gelatin. If your blood sugar is under 150

mg/dl, drink liquids that contain carbohydrate such as juice, ginger ale, sports drinks, or regular soft drinks.

HOW TO MANAGE VOMITING...

- Avoid solid foods until vomiting has stopped.
- Take Phenergan Topical Cream every 4-6 hours or 1 Zofran Tablet every 8 hours until vomiting stops.
- Wait 30 minutes after taking Phenergan or Zofran before you eat or drink to allow medication to start working.
- It is best to keep extra Phenergan or Zofran at home so that it is available when needed. Topical Phenergan has a shelf life of 6 months.
- Gradually start liquids in small amounts. Start with a tablespoon every 10-20 minutes. If there is no further vomiting, gradually increase the amount of fluid.
- After a few hours without vomiting, gradually return to a normal diet.

CALL THE DIABETES TEAM...

- Call if you have vomiting that does not get better with anti-nausea medication such as Phenergan or Zofran. Call immediately if you vomit more than 2 times after anti-nausea medication.
- Call if you have moderate or large urine ketones or blood ketones of 1.0 mmol/L or greater.
- Call your primary care doctor if the illness continues for 2 days without improvement.
- Call if you have signs of ketoacidosis, dehydration, or other serious problems. Signs to watch for include: chest/stomach pain; difficulty breathing; increasing drowsiness; sunken eyes; dry cracked lips, mouth, or tongue; or a fruity odor to the breath. All symptoms do not have to be present in a dangerous situation.

ADDITIONAL GUIDELINES

1. Remember that your body will probably need more insulin during illness. You may need to take extra short-acting insulin such as Humalog, Novolog, or Apidra, depending on your blood sugar and ketone levels. **Skipping regularly scheduled doses of insulin is NEVER an option!** If you feel the dose needs to be decreased, call the diabetes care team for advice.
2. Keep a small supply of sick day medications such as acetaminophen or ibuprofen, cough medication without sugar or alcohol, throat lozenges without sugar, and a prescription for anti-nausea medication.

Acetaminophen/Ibuprofen: Advil, Tylenol, Datril

Sugar & Alcohol Free Cough Medication: Robitussin CF, Diabetic Tussin, Phanatussin (liquid cough and cold medicines are preferred—switch the chewable and melt-aways if cannot swallow pills).

Sugar-Free Lozenges: Halls Sugar Free

3. Keep a thermometer at home to check body temperature.
4. **ASPIRIN SHOULD NOT BE GIVEN TO CHILDREN LESS THAN 18 YEARS OF AGE.** (Aspirin can cause a dangerous syndrome called Reye's Syndrome in children under 18.)
5. **When the blood sugar is low and kids are unable to eat, low-dose Glucagon can be used.** Dilute Glucagon or Glucagen as usual.
 - For kids 2 years of age or under, give 2 units of Glucagon or Glucagen.

- For kids aged 2-15 years of age, give 1 unit of Glucagon or Glucagen for each year of age.
- For kids 15 years and older, give 15 units.
- Check blood sugar every 30 minutes. If the blood sugar is not above 60 mg/dl after 30 minutes of taking Glucagon or Glucagen dose, double the dose and give again.
- **Any unused Glucagon or Glucagen can be used for 24 hours after the fluid and powder have been mixed.** Get a new kit immediately once original kit has been mixed.
- Keep the phone numbers of your health care team handy. Know where to call after office hours.

<p>Oklahoma Diabetes Center (918) 619-4803 Or SFH Paging Service After Hours (918) 493-6000</p>
--

- If your call is not returned within in 20 minutes of calling the page system after office hours, call again.

A FEW NOTES ON COLD AND FLU

- The Centers for Disease Control recommends that everyone get a flu shot. Children with chronic illness, such as Diabetes, are highly recommended to have flu shots.
- Low-grade fever (100.4 – 101.5 ° F) is not dangerous and may help kill the virus more quickly. High fever, 102-103 ° F, is dangerous. A prolonged fever means you should get in touch with your primary care doctor. ****Remember, children under the age of 18 should NEVER take aspirin due to the risk of Reye's Syndrome.****
- Skip a cough suppressant for minor coughs, since coughing brings up extra mucus. Instead, try fluids such as water, especially warm water with sugar substitute and lemon. If the

cough is severe, call your primary care doctor, who may advise a prescription cough remedy.

- Decongestants such as pseudoephedrine (Sudafed) and cold medicines with a decongestant help loosen mucus and open nasal passages a little. However, they tend to cause the blood sugar to go up. Saline sprays can make a dry nose feel better.
- Anti-histamines such as Benadryl are for allergies. They don't help a cold or flu. They do nothing to cut down on mucus and are very drying.
- Pepto-Bismol can relieve upset stomach and diarrhea, which are symptoms of a stomach ache and not the flu.
- Avoid products that have multiple purposes and medicines which can lead to accidental overdose.