

Sick Day Management for Adults with Diabetes Who Take Insulin¹

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When people have type 1 or type 2 diabetes and take multiple daily insulin injections, their blood glucose levels can rise drastically due to a cold or another minor illness. This can result in serious health problems. The best way for people with diabetes to prevent a minor illness from becoming a major illness is to have a personalized sick day plan designed with their health care provider before they become ill.

How Illness Affects Diabetes Control

When you are sick, your body is under stress. Your body responds to stress by releasing hormones that help fight disease. Although this is a natural and beneficial response, some hormones interfere with the ability of insulin to control blood glucose. As a result, it becomes more difficult to keep your blood glucose within a healthy range. Without proper management, very high blood glucose levels can lead to dangerous and life-threatening conditions such as ketoacidosis (primarily in type 1 diabetes).

Developing a Sick Day Plan

Ask your health care provider to develop a written diabetes management plan for you to follow when you become sick. It should be based on your current diabetes treatment plan and include the following:

- When to call your health care provider
- How often to check blood glucose and urine ketones*
- A written log of important information
- What medicines to take
- What to eat and drink

*If you do not know how to check your urine for ketones, speak to your health care provider.

Symptoms of Ketoacidosis
Decreased consciousness*
Difficulty breathing*
Dry skin and mouth
Flushed face
Fruity breath odor*
Mental confusion*
Nausea and vomiting*
Stomach pain
Ketoacidosis can lead to severe illness and even death, so it must be treated immediately. Have someone take you to the emergency room or call 911 if you experience the symptoms starred (*) above.

When to Call Your Health Care Provider

Your illness and symptoms will determine whether you need to contact your health care provider. While it is not necessary to call your physician every time you are sick, you

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will need to call if you are experiencing any of the following symptoms:

- You have been sick or have had a fever for a couple of days without improvement.
- You have vomited for more than six hours.
- You have had diarrhea for more than six hours.
- Your blood glucose levels have been higher than 240 mg/dL even after adjusting with additional insulin.
- You have ketones in your urine in the moderate to high range.
- You have symptoms of ketoacidosis.
- You have symptoms of dehydration, such as increased thirst, decreased urination, dark-colored urine, dizziness, and fatigue.
- You are not sure how to take care of yourself.

How Often to Check Blood Glucose and Urine Ketones

You need to check both your blood glucose and urine ketones more frequently when you are sick. Ketones are waste products that tend to build up in your body when you are ill. High levels can lead to serious health problems over time. For adults with type 1 diabetes, it may be necessary to check blood glucose and urine ketones at least every four hours. Adults with type 2 diabetes may only need to check urine ketones if blood glucose is greater than 300 mg/dL. You should check blood glucose every two to four hours while blood glucose is elevated or until your symptoms improve. Your health care provider will suggest the proper plan for you.

People with type 2 diabetes who have poor blood glucose control may develop a condition called diabetic hyperglycemic hyperosmolar syndrome (HHS) when they have an infection, illness, or limited access to water. Effects include very high blood glucose, dehydration, and decreased alertness. Without treatment, HHS can result in nausea, dry mouth or tongue, fever, seizures, and coma. Ketones are usually not elevated in HHS. Nevertheless, this situation is serious and needs immediate medical attention.

Written Log of Important Information

It is important to keep a written log of key points to share with your health care provider. This log may include the following:

- How you feel and your symptoms
- How long you have been sick
- Your blood glucose values
- Your urine ketone values
- What you have been eating and drinking
- Your body weight
- Your temperature
- Name and dosage of all medications (prescription and over-the-counter) you have taken



Figure 1. When you are ill you need a plan to keep your blood glucose as close to a normal range as possible. This can help avoid high blood glucose levels, which can make you feel worse and can be dangerous. Credits: corolanty / iStock / Getty Images Plus

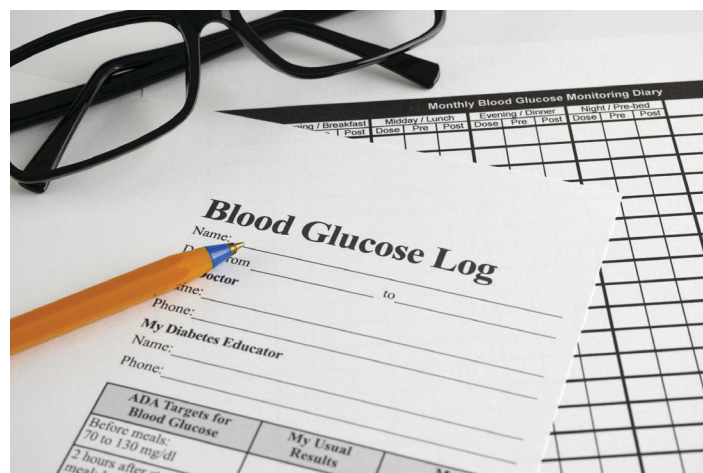


Figure 2. If you are sick and have diabetes, it is a good idea to keep a written log of key information to share with your health care provider. Credits: Ekaterina79 / iStock / Getty Images Plus

What Medicines to Take

When you are sick, you still need to take your diabetes medications because your body makes extra glucose during times of illness. For adults with type 1 diabetes, extra insulin may be necessary to reduce elevated blood glucose levels. For adults with type 2 diabetes, it is important to continue taking your diabetes medicine, whether it is insulin or oral medication. Sometimes people with type 2 diabetes who are not usually on insulin will need to use insulin for a brief time period while they are sick. Your health care provider will recommend the proper plan for your situation.

Before taking any medications to treat an illness, check the labels to see if their ingredients include sugar. Small amounts of sugar found in medicines are usually fine, but you can ask the pharmacist or your health care team if there are sugar-free medications that you can take instead. Many medications that do not contain sugar can affect blood glucose levels. For example, large doses of aspirin can lower blood glucose levels, while some cold products such as decongestants raise them. In the event that you see a different doctor, be sure to state that you have diabetes and share a list all of the medications you are taking.

What to Eat and Drink

While you may not feel like eating or drinking when you are sick, it is helpful to follow your normal meal plan as closely as possible. A meal plan is an important part of your sick day plan and should include easy-to-prepare foods that you are likely to tolerate when you are not feeling well. In addition to food, be sure to drink plenty of water or other non-caloric liquids to stay hydrated and remove excess glucose from your blood. If you have a gastrointestinal illness and are vomiting or having diarrhea, liquids are especially important. Drink a glass of liquid (non-alcoholic and caffeine-free) every hour when you are sick to prevent dehydration.

If you are not able to follow your regular meal plan, move to your sick day meal plan, which should provide the calories you need while avoiding foods that you cannot tolerate. Include the usual “comfort” foods, such as gelatin, crackers, soup, and applesauce, in your sick day meal plan. If you are unable to eat even mild flavored comfort foods, you may need to turn to a liquid diet until you feel better. The American Diabetes Association suggests that fluids you drink when you are sick should provide you with about 50 grams of carbohydrate every three or four hours.

To plan ahead, it is a good idea to have a small supply of ready-to-eat and easy-to-prepare foods and drinks on hand. Each item listed below contains approximately 10–15 grams of carbohydrate.



Figure 3. When you are feeling ill, a double stick popsicle can be a source of water, carbohydrate, and calories that is easy on your stomach.

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Fluids

- 1 cup sports drink
- 1 cup milk
- 1 cup broth (reduced sodium—NOT sodium-free—recommended)
- 1 double-stick popsicle
- ½ cup fruit juice or regular soda
- ½ cup lemonade

Foods

- 6 saltine crackers
- 5 vanilla wafers
- 3 graham crackers
- 1 slice dry toast
- ½ cup cooked cereal (e.g., oatmeal)
- ⅓ cup white rice
- ½ cup regular ice cream
- ½ cup regular frozen yogurt
- ½ cup sugar-free pudding

- ½ cup regular gelatin
- ½ cup custard
- ½ cup mashed potatoes
- ¼ cup sherbet
- ¼ cup regular pudding
- ⅓ cup applesauce

Summary

When people with diabetes get sick, their blood glucose levels often become elevated, which can lead to serious health problems. A sick day plan prepared in advance in consultation with your health care provider will help prevent acute diabetic complications while you are sick.

For additional information about diabetes, contact the American Diabetes Association at 1-800-DIABETES (1-800-342-2383) or visit the website at <http://www.diabetes.org>.

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