

*"My Doctor Says
I Should Learn Sick Day Rules..."*

What Are They?



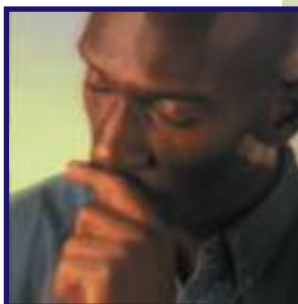
Helping all people
live healthy lives

BD Getting Started™
Sick Days

What's different about being sick because I have diabetes?

When most people are sick with a cold or the flu, they usually rest, drink tea or eat chicken soup. If they do not start to feel better in a couple of days, they will usually call their doctor. When you have diabetes, not feeling well affects your eating patterns and how your blood sugar reacts to your usual dose of insulin or diabetes pills. When you are sick, your body will release hormones that work to help your body fight against your illness, but they will also make your blood sugar levels rise. This means that your diabetes will be more difficult to control when you are sick. That is why it is so important to plan ahead and be prepared in case of illness.

Sickness can include: a cold, flu-like symptoms such as vomiting, diarrhea, sore throat, and infections such as ear, teeth or bladder, or more serious illnesses like pneumonia or a foot infection.



What happens when I am sick?

Illness puts your body in a state of stress. When you don't feel well, your body produces *stress hormones*. These hormones work to help your body fight the infection or injury that is making you sick. They send a signal to your liver to release sugar to help in the fight. This makes your blood sugar rise.

In people without diabetes, when the liver releases sugar to help the body fight against the illness, the pancreas also makes extra insulin. This allows the body to use the sugar for energy and the blood sugar remains within a normal range. However, if you have diabetes, your body cannot make the extra insulin needed and your blood sugar will go up. The stress hormones also work against insulin. Together, the sugar produced from your liver and the stress hormones act to make your blood sugar rise¹. You can see how illness can cause blood sugar levels to go out of control. If not treated quickly, high blood sugar levels caused by illness can lead to more serious problems like Diabetes Ketoacidosis (DKA) or Hyperosmolar Hyperglycemic Non-ketotic Syndrome (HHNK).



¹ Franz, Marion J. Editor, Diabetes Management Therapies, A Core Curriculum for Diabetes Education, Fourth Edition, 2001. p.264

SICK DAY RULES

Special rules have been developed to help you manage your diabetes when you are sick. Following these guidelines will help you manage your diabetes and recover from your illness without complications.

1. Drink Fluids — even if you are able to eat food.

You need to replace the fluids that your body loses due to high blood sugars, fever, vomiting and diarrhea. When you are sick or not feeling well you may drink less than when you are well. You need to drink fluids to prevent dehydration (loss of water). It is recommended that you must drink fluids every hour that you are awake. All fluids should be caffeine-free because caffeine acts like a water pill or diuretic. Drinks that contain caffeine will make the dehydration worse. Here is what to do:

- Place an 8-oz. glass next to your bed or chair.
- Every hour — sip 8 oz. of **sugar-free, caffeine-free drinks**. The best fluids to drink when you are sick are:
 - Water
 - Sugar-free soft drinks
 - Green tea or black tea without milk
- Every third hour — sip 8 oz. of one of the following types of soup (to provide sodium and other minerals that your body needs):
 - Broth
 - Bouillon (clear, thin soup)
 - Canned clear soup



- If your blood sugar is running low, you may need to drink some fluids that have carbohydrates or sugar in them. See “Foods for Sick Day Use” on page 7.

Note: When you are sick, you may sometimes find if you eat less and take your medication, your blood sugar is only a little higher than usual. This is because your body is turning to fat to meet its needs for energy. This can put you at risk for developing DKA. Therefore it is important to take your medication and drink fluids that contain carbohydrates to replace the amount of carbohydrate in the food that you would normally be eating.

2. Check your blood sugar.

Your blood sugar level can rise before you even know you are sick. If you should have a few high blood sugar readings you cannot explain, it could be that you are coming down with a cold or other illness.

- Check your blood sugar every 2 to 4 hours when you are sick — especially if you are vomiting.
- Write the results in your logbook or the Sick Day Record on page 12.
- Report any high blood sugar results by telephone to your doctor or diabetes educator as soon as possible.
- If your blood sugar is high every time you check it, you may need to change your diabetes medication or insulin dose. If you are unsure if more medicine is needed, call your doctor or diabetes educator.



3. Never skip your insulin injection or medication when you are sick!

Many people with diabetes forget that their blood sugar levels go up when they are sick. They think, since they are not eating, there is no sugar in their blood and then there is no need to take insulin or other diabetes medicine. Because they are not eating or eating less than usual, they do not take their medication or insulin. In fact, you may need **more** medication or insulin when you are sick because illness makes your blood sugar rise.

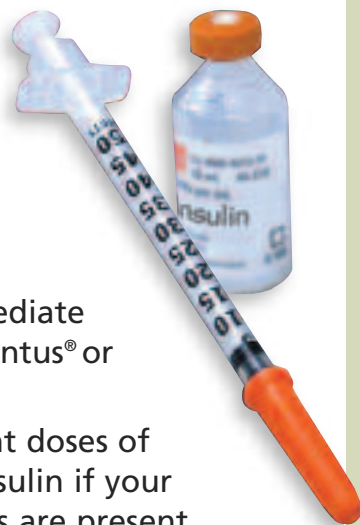
ALWAYS TAKE YOUR DIABETES MEDICINE. If you are unsure if more medicine is needed, you should call your doctor or diabetes educator for advice.

- **If you are taking insulin:**

- The full dose of daily insulin is usually required.
- Take the usual dose of intermediate or long acting insulin (NPH, Lantus® or Levemir®).
- You may need to take frequent doses of short-acting or rapid-acting insulin if your blood sugar is high, or ketones are present.
- If you use an insulin pump, continue the usual basal dose. Contact your doctor if the basal rate does not seem to be keeping your blood sugars in range.

- **If you are taking diabetes pills:**

- You should take your pills as usual.
- If you think you may have vomited your pills, do not take any more pills and report this event to your doctor or diabetes educator.



- Sometimes your doctor may want you to take insulin for a short period of time instead of pills until your blood sugar comes down and you start to feel better.

4. Check your blood or urine for ketones whenever you are sick — or if your blood sugar stays higher than 240 mg/dl.

The presence of ketones in the urine becomes a concern for people with diabetes if they have high blood sugar. If you have diabetes, ketones in your urine means that your body is in trouble — you are burning fat for energy instead of sugar because there is not enough insulin available. If you measure ketones in your blood above 0.6mmol/L or moderate to large ketones in your urine when you are sick, report this to your doctor or diabetes educator right away — especially if you have type 1 diabetes.



- **Blood or urine ketone levels should be tested every 4 hours until readings are negative.**

5. Take your temperature — fever can cause you to become dehydrated. A fever may be a sign of infection.



What do I do if I don't feel like eating?

Sometimes, you just don't feel like eating when you are sick. Even dry toast seems like too much. When you have no appetite or can't face food, try drinking fluids or eating soft foods that contain carbohydrates or sugar instead of solid foods.

- Try to replace the carbohydrate portion of a meal with an equal amount of carbohydrate from semi-solid foods or fluids. (Drinks that contain sugar or carbohydrates rather than sugar-free foods will give you the energy you need to fight fever and infection.)

If you don't know your carbohydrate goal or can only take small amounts of food at a time, choose three or four servings from the list below every three to four hours.²

For Sick Day Use – Foods containing 15 grams of carbohydrate

- ½ cup apple juice
- ½ cup sweetened, caffeine-free soft drink
- 1 Popsicle® stick
- 1 cup sports drink
- ½ cup sweetened ice cream
- ¼ cup sherbet
- ¼ cup sweetened pudding
- ½ cup sweetened gelatin/Jell-O®
- 1 cup artificially sweetened or plain yogurt (not frozen)
- 1 cup milk
- 1 cup soup
- 1 slice of toast
- 5-6 crackers



² American Diabetes Association. Nutrition Recommendations and Interventions for Diabetes. 2008; 31 (suppl 1):S61-S78

What if I can only keep fluids down?

If you can't eat, you will need to alternate fluids that have calories with no-calorie/no-carbohydrate drinks all day, as follows:

- First hour — drink 4-8 oz. of regular soda
- Next hour or two — drink 4-8 oz. of water or seltzer



This will let you gradually add the calories and fluids that your body needs through the day. As soon as your appetite returns, you can slowly introduce your usual foods. If you've been sick to your stomach, start by drinking clear liquids (drinks you can see through, such as broth, tea, Jell-O®, regular soft drinks and Popsicle® sticks. When you can keep these down, move on to full liquids (orange or tomato juice, ice cream and soup) and then to soft foods (oatmeal, toast, plain cooked vegetables, applesauce, rice, noodles and crackers). Remember to eat the same amount of carbohydrate as usual.

Note: It may be confusing to hear that you should eat foods that contain carbohydrates or sugar when you know that being sick raises your blood sugar. However, because you can't always eat a typical meal when you are sick, you sometimes need to eat small amounts of foods with carbohydrates or sugar to get the food your body requires to fight off your infection.

If you are not sure what foods to eat when sick, call your doctor or diabetes educator.

What if I'm too sick to follow all the rules?

Taking care of yourself when you are sick sounds simple: drink fluids, check your blood sugar, check your blood or urine for ketones and take your medication. The problem is that when you are sick, everything is an effort and many people feel too weak to do everything they should. Try asking a neighbor or family member for help and keep these Sick Day Rules handy for their use.

Sick Day Supplies – foods to keep on the shelf

No one feels like running out to the store when they are sick. Be prepared for Sick Days by having a few supplies in the house including:

- 1 box sugar-free gelatin or Jell-O®
- 1 box sweetened gelatin or Jell-O®
- 1 box of instant broth
- 1 bottle of apple juice
- 1 box sweetened pudding
- 1 bottle sports drink
- Urine ketone testing strips (check the expiration date)
- Thermometer



Can I use over-the-counter drugs?

Preparations you can buy in the drug store without a prescription such as cold and cough products may raise your blood sugar. Be sure to ask your doctor or pharmacist if a product is safe for you. Mention your diabetes, as well as any other conditions you may have (high blood pressure etc.) and any other medications (prescription and over-the-counter) that you are currently taking.



Could prescription medicine raise or lower my blood sugar?

Some medications are prescribed because they are the best choice to treat your illness. However, they may make your blood sugar go up or down. The best thing to do is to ask your doctor or diabetes educator.





Phone Alert! Call your health care provider immediately or have someone call for you, if you:

- Have trouble breathing.
- Vomit more than once and are unable to keep food down more than 6 hours (repeated vomiting might require a visit to the emergency room for IV fluids).
- Have diarrhea more than 5 times or for longer than 6 hours.
- Lose 5 pounds or more during the time that you are sick.
- Have temperature over 101 degrees F.
- Have 2 or more blood glucose readings in a row that are greater than 240 mg/dl or lower than 60 mg/dl.
- Have moderate or large ketones in your urine or blood ketones above 0.6 mmol/L.
- Have a “fruity” odor to your breath.
- Have any questions about what you should do.

If you feel sleepy or can’t think clearly — have someone call your doctor or diabetes educator or take you to an emergency room.

SICK DAY RECORD

Fill in when sick and report results when you call your health care provider.

Check List to Use While You are Sick	When to Check	Results
How much do you weigh today?	Every day	_____ pounds
How much liquid did you drink today?	Every evening	_____ 8 oz. glasses
What is your temperature?	Every morning and evening	_____ am _____ pm
What diabetes medicine or insulin did you take? How much?	Every 4 hours or before every meal	Medicine/Time/Dose _____ _____ _____
What other medicine did you take? How much?		Medicine/Time/Dose _____ _____ _____
What is your blood sugar level?	Every 2 to 4 hours	Time/Blood Sugar _____ _____ _____
What are your urine ketones?	Every 4 hours or each time you pass urine	Time/Ketones _____ _____ _____
How are you breathing?	Every 4 to 6 hours	Time/Condition _____ _____ _____
Any Stomach pain, fast breathing, diarrhea, vomiting, fruity odor to breath, temperature over 101° F?	Every day or evening	Time/Symptom _____ _____ _____

Adapted from: Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, Take Charge of Your Diabetes, Third Edition, 2002.

Written by:

Virginia Peragallo-Dittko, RN, BC-ADM, MA, CDE
Mineola, NY

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Ann Fittante, RD, MS, CDE
Seattle, WA

Marjorie Cypress, RN, MSN, NP, CDE
Albuquerque, NM

Andrea Zaldivar, RN, MSN, NP, CDE
New York, NY

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1 Becton Drive
Franklin Lakes, NJ 07417-1883
1.888.BDCARES (232.2737)
www.bd.com/us/diabetes

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