

# ILLNESS and **DIABETES**

## Can my diabetes be affected by an illness or stress?

Maintaining good control of your diabetes is not easy. It requires motivation, discipline, and an understanding of how diabetes affects your body. Sometimes, however, no matter how hard you try, things go wrong. Infection or an illness such as a cold or the flu, for instance, can cause high blood sugars, loss of diabetes control, and if you have type 1 diabetes may result in a condition known as ketoacidosis. If you have type 2 diabetes, ketoacidosis is rare but you may experience very high blood sugars and you should know how to deal with these events.

Ask your doctor for sick day rules before you get sick so you are prepared.

## How an infection affects Diabetes

Infection causes a stress response in the body by increasing the amount of certain hormones such as cortisol and adrenaline. These hormones work against the action of insulin and, as a result, the body's production of glucose increases, which results in high blood sugar levels.

When your blood sugar is high, the white cells in your body are unable to "mop up" bacteria because they cannot move around at their normal speed and do not reach the infection site quickly enough to engulf and kill the bacteria. In a person who does not have diabetes, extra insulin is produced to counter these effects, but this is not possible for someone with diabetes, and so hyperglycemia persists and ketoacidosis can occur.

## What is Ketoacidosis?

Ketoacidosis is a condition in which the body breaks down fat for energy rather than using sugar. When you are ill or stressed your blood sugar levels rise. A person with Type 1 diabetes does not have an insulin supply to deal with this elevation and begins to break down fats for fuel. When fat is burned for fuel, chemicals called ketones are released. Ketones are poisonous to the body. The kidneys usually remove ketones via the urine. However, if the blood sugar levels remain too high for a period of time the kidneys are unable to remove the ketone build up and they begin to accumulate in the body. This can become a life-threatening situation, resulting in a diabetic coma or death.

Ketoacidosis is more common in individuals with Type 1 diabetes because of their inability to produce insulin. Individuals with Type 2 diabetes are less likely to develop ketoacidosis because they do produce some insulin, even though it may not work as well as it should.

High blood sugar levels and ketoacidosis may develop as a result of an illness or omission of insulin.

## What are the symptoms of ketoacidosis?

The signs and symptoms of ketoacidosis are:

- Feeling unwell with a high temperature, sore throat and flu-like symptoms
- Lethargy, weakness
- Abdominal pain
- Vomiting
- Fruity odor to breath
- Rapid breathing
- Presence of moderate to large ketones in the urine
- Increased drowsiness
- Chest pain
- Diarrhea
- Dry cracked lips
- Raised blood glucose levels

## How do you test for ketones?

Frequently, glucometers are programmed to warn patients to "test ketones" when their blood sugar levels register a high result. Some meters also have the ability to test the blood for ketones using a specific ketone-testing strip. Most individuals test their ketones by dipping a ketone test strip into their urine. Urine strips may be purchased from the pharmacy without a prescription. This will allow you to monitor the ketone level in your urine.

## What should you do if you are spilling ketones in your urine?

Hopefully your healthcare provider has provided guidelines you should follow regarding your insulin regimen if you spill ketones. If you do not have guidelines, it is critical that you contact your healthcare provider for instructions regarding your insulin regimen. Prevention of this condition however is important. It can be life-threatening if not treated promptly.

## What do you do if you become ill?

### If you have Type 1 diabetes:

1. Continue to take your insulin. Even if you are not eating, it is essential that you continue to take your insulin. As skipping the dose will result in a further elevation of your blood sugar with the resultant production of ketones.
2. Monitor your blood glucose levels every 2-4 hours.
3. If your blood glucose level is over 250, test your urine for ketones.
4. If your blood glucose levels are high and ketones are present, you will need to increase your insulin. Contact your doctor for advice or follow the guidelines your healthcare provider has given you.
5. If you are unable to eat normally, substitute meals with easily digestible foods or liquids of a similar carbohydrate value. Drink plenty of fluids as you can quickly become dehydrated.
6. If you feel nauseous, take about 15 gm of carbohydrates hourly in the form of
  - popsicles or Jell-O (not sugar-free)
  - juice or soda (not diet)
  - applesauce, fruit juice bar, frozen yogurt
  - toast
 Glucose is absorbed if taken slowly in small amounts.
7. Sickness and diarrhea can cause dehydration. It is very important to prevent this, so replace lost fluids with hourly drinks.
8. If vomiting occurs and is continuous, you must seek medical advice as you can rapidly become dehydrated and very ill.

### If you have Type 2 diabetes:

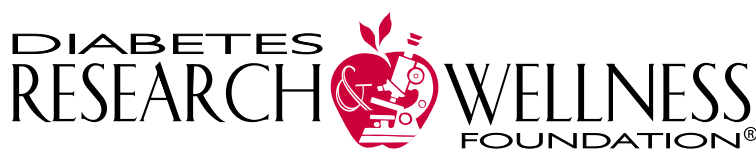
1. Monitor your blood glucose levels every 4 – 6 hours.
2. Continue taking your medication or insulin and, if your blood glucose levels remain high for more than 48 hours, seek medical advice as you may require an increase in your dose or additional treatment.
3. Continue to eat, but substitute normal food with easily digestible nourishing fluids if necessary. Drink plenty of fluids.
4. If you feel nauseous, take carbohydrates in the form of
  - popsicles or Jell-O (not sugar-free)
  - juice or soda (not diet)
  - applesauce, fruit juice bar, frozen yogurt
  - toast
 Glucose is absorbed if taken slowly in small amounts.
5. Sickness and diarrhea can cause dehydration. It is very important to prevent this, so replace lost fluids with hourly drinks.
6. If vomiting occurs and is continuous, you must seek medical advice as you can rapidly become dehydrated and very ill.

## Key Points to Remember

- Continue taking your medication or insulin.
- Always monitor your blood sugar during illness.
- If your sugar levels are high, test for ketones and DO NOT STOP taking your medication or insulin.
- If you have moderate to large ketones after taking additional insulin contact your health care provider.
- If you are unsure what to do, call your healthcare provider.
- If persistent vomiting occurs, call your healthcare provider.
- Request sick day guidelines from your healthcare provider.

### Sick Day Kit Suggestions:

- Blood glucose record sheet to monitor your blood glucose every 2-6 hours
- Ketone record sheet to monitor your ketones every 3-4 hours
- Ketone strips, blood glucose strips, check expiration dates.
- Favorite sugared drinks, ginger ale, Gatorade, canned soup, regular Jell-O
- Thermometer
- Contact information for your doctor
- Sugar free cough drops or cough medicine
- Medications suggested by your health care professional to treat nausea, vomiting, or diarrhea



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***An Organization for People Who Live with Diabetes Every Day.***

The mission of **Diabetes Research & Wellness Foundation** (DRWF) is to help find the cure for diabetes, and until that goal is achieved, to provide the care and self-management skills needed to combat the life-threatening complications of this terrible disease.

Thank you for your confidence in the programs and services that the Diabetes Research & Wellness Foundation® provides to the community.

**Please designate us in the Combined Federal Campaign & United Way. Check box #11629.**