

When You've Got The Bug

Watch out! The flu season is here and, like all individuals, a person with diabetes may catch the dreaded flu bug. Unhealed for a prolonged period, it may just lead to an infection. Nurse Educator, Praveen Kaur Gosal, Diabetic Society of Singapore, shows you now to manage your diabetes when you are sick.

A person with diabetes may find it harder to handle when he is sick. All that misery may leave you frustrated. As you check your blood sugar levels, you may wonder, "Why are my blood sugar levels so high? My appetite has been poor. What do I do?"

A "sick day" is when a person with diabetes experiences an infection, surgery, major life stress or a trauma. Undergoing a sick day puts your body under pressure as it is trying to fight the disease or the stress. Hormones are released by the body to counteract the stress but these hormones released may raise the blood glucose levels. This may interfere with the effects of insulin to lower your blood sugar levels. So, generally, when you are unwell, it is harder to keep your blood sugar levels under control.

If left unchecked, blood glucose levels may rise or it may even decrease to a dangerous level. If blood sugar levels are continuously high, a person with diabetes may develop:

Diabetic Ketoacidosis (DKA)
– More common in people with Type 1

OR

Hyperosmolar Hyperglycemic Syndrome (HHS)
– More common in people with type 2 diabetes, especially the older ones

These conditions are a serious chemical imbalance caused by high blood sugar and inadequate insulin. They are dangerous and can be life-threatening.

Diabetic Ketoacidosis (DKA)

As explained by the American Diabetes Association, "When your cells do not get the glucose they need for energy, your body begins to burn fat for energy, which produces ketones. Ketones are acids that build up in the blood and appear in the urine when your body doesn't have enough insulin. They are a warning sign that your diabetes is out of control or that you are getting sick. High levels of ketones can poison the body. When levels get too high, you can develop diabetic ketoacidosis, or DKA."

Signs and Symptoms of DKA include:

- High Blood Glucose (Usually over 16.6 mmol/l)
- Excessive levels of ketones in the urine or the blood
- Dry skin and tongue – sign of dehydration
- Nausea and Vomiting
- Abdominal Pain
- Shortness of Breathe, rapid breathing
- Decreased mental awareness or coma
- Fruity breathe smell

Hyperosmolar Hyperglycemic Syndrome (HHS)

In HHS, high blood sugar causes frequent urination as your body tries to get rid of the excess sugar by passing it into your urine. Your urge to urinate may decrease eventually, and your urine becomes very dark. As a result of frequent urination, you may feel thirsty. Even if you are not thirsty, you need to drink liquids. Otherwise, you can get dehydrated. If HHS continues, the severe dehydration will lead to seizures, coma and eventually death. HHS may take days or even weeks to develop. Therefore, it is essential to know the warning signs:

- High blood glucose of more than 33.3 mmol/l
- No or very low ketones in the urine or blood
- Frequent Urination
- Thirst
- Weakness
- Leg Cramps
- Sunken eyeballs and rapid pulse – indication of dehydration
- Decreased mental awareness or coma

Management

1. Knowing what to do during a sick day

Draw out a plan with your doctor, or a diabetes educator in regards to when you should contact your diabetes team in the event of a sick day and how often you should measure your blood sugar and urine ketones, what medicines to take, and how to eat.

2. When to Call Your Diabetes Team

American Diabetes Association advises that you should contact your diabetes team if you experience the following:

- you have been sick or have had a fever for a couple of days and aren't getting better
- you have been vomiting or having diarrhea for more than four to six hours
- you have moderate to large amounts of ketones in your urine
- your glucose levels are higher than 13.3mmol/l despite following your insulin treatment plan as instructed by your diabetes team.
- you take pills for your diabetes and your blood sugar level climbs to more than 13.3mmol/l before meals and stays there for more than 24 hours
- you have symptoms that might signal ketoacidosis or dehydration or some other serious condition (for example, your chest hurts, you are having trouble breathing, your breath smells fruity, or your lips or tongue are dry and cracked)
- you aren't certain what to do to take care of yourself

3. Keep track of yourself during the sick days

Ensure that you document your blood sugar readings on a log book. During a sick day, its best to measure your blood sugar levels four to six hourly. For Type 1s, it is essential to monitor your blood or urine ketones at the same time. Whereas, Type 2s are only required to check their ketones if they present with a blood sugar level of more than 16.6mmol/l.

You must be aware of the type and the dosage of the medicines that you have been taking. Keep track of your duration of illness, accompanying signs and symptoms, and your tolerance to food and water.

4. Continue taking your medicines and/or insulin for your diabetes management

Your blood sugar may elevate during your sick days. Therefore, you will still need to continue medicine for your diabetes even if you are throwing up.

Work with your diabetes team to discuss about your treatment plan for diabetes during your sick day and ensure compliance. For type 1, your team may advise you to increase your dose to reduce your blood sugar levels. For type 2, you may be able to take your pills or start on a temporary insulin therapy.

5. Keep yourself hydrated and eat

To reduce the chances of dehydration, especially when you experience nausea and vomiting, drink lots of non caloric liquids. Keeping yourself well hydrated will also help to get rid of the extra sugar in your blood.

Try to stick to your normal meal plan if possible. If you have problem tolerating your food, try eating easy-on-the-stomach foods like crackers, soups, and applesauce. If these mild foods are too hard to eat, you may have to stick to drinking liquids that contain carbohydrates, e.g., juice, frozen juice bars sherbet, pudding, creamed soups, fruit-flavored yogurt and broth.

6. Avoid Over The Counter Drugs

Certain medications can affect your blood sugar levels. It is best to obtain your medications from your doctor who knows your condition well.

Reference:

American Diabetes Association from: <http://www.diabetes.org/living-with-diabetes/treatment-and-care/who-is-on-your-healthcare-team/when-youre-sick.html>