

ASK THE EXPERT: Management of children with type 1 diabetes during illness



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Anyone can fall ill, and if that happens to be a child with type 1 diabetes, there are some precautions that need to be taken to avoid acute complications of diabetes. Any kind of sickness as simple as cold, flu, sore throat or as serious as pneumonia or a foot infection can affect diabetes. Any acute illness or infection can alter blood glucose levels in many ways. An infection or illness can lead to high blood sugar levels or appearance of ketones even when the child is eating less. It can also lead to hypoglycaemia or low blood sugar levels. All these changes mean that diabetes is more difficult to control when one is sick. However if these changes in blood glucose levels are detected early and managed properly, we can prevent acute complications and hospitalization.

Reasons for high blood sugar levels- Many illnesses or infections especially those associated with fever can cause high blood glucose levels. Any type of illness, infection, surgery, dental problem or

injury can cause stress to body. To "fight" this stress, body needs more energy and for that it releases hormones (they're called "counter-regulatory hormones"). These hormones lead to release of extra glucose from liver to provide with the energy. These hormones also inhibit the effect of insulin which means a person having any infection may become somewhat insulin resistant. As a result, blood glucose rises. Whenever there are constantly high blood sugar levels, it adds to the infection, delays healing and the vicious cycle continues.

Reasons for low blood glucose levels

Gastrointestinal symptoms like diarrhoea and vomiting associated with any illness may lead to hypoglycaemia due to decreased food intake and poor absorption of food.

Children with type 1 diabetes and acute illness

During any acute illness children/ people with diabetes face 4 main risk factors.

1. High Blood sugar levels or hyperglycaemia
2. Diabetic ketoacidosis
3. Dehydration
4. Low blood sugar levels or hypoglycaemia

Managing blood glucose levels during sickness

- Check sugars more often to 3- 4 hours (and more frequently if glucose level fluctuates) and test urine for ketones 1-2 times per day.
- During visit to any doctor, must tell him/her about diabetes. Recent record of blood sugar levels, medicines, temperature and weight helps the doctor to give appropriate advice.
- Over the counter cold and flu medicines often contain added sugar, so they must be avoided.
- It is essential to drink plenty of fluids if blood sugars are too high to prevent dehydration.
- Even if a person with diabetes do not feel like eating, eating little at frequent intervals is essential to prevent hypoglycaemia (low blood sugars).
- Rest and stay warm. Do not exercise vigorously during sickness as it can lead to diabetic ketoacidosis in people with type 1 diabetes.

Medicine and sick days

- **Never Stop Diabetes Treatment** or skip doses.
- Illness causes a greater than normal demand for insulin due to the release of stress hormones and thus one ought to maintain his/her insulin regimen, or even increase the dose of fast acting insulin.
- It is essential not to increase or decrease the usual dose of medicine without consulting the physician

Food and sick days

- Follow regular meal plan.
- If the person with diabetes is too sick to follow meal plan, eat foods that are easy for body to digest like cooked cereal, plain curd and rice, banana or any other fruit from regular meal plan.

- Small, frequent feedings may be easier to tolerate during an illness and help recover fast.
- If one is eating less food than normal or cannot eat any foods, drink liquids with calories in them. You can try fruit juice like sweet-lime juice, orange juice, pomegranate juice or Milk-shakes like apple, banana, papaya, pineapple (without sugar), custard, tender coconut water, milk, soups or butter-milk depending upon blood glucose levels.

When does one need to go to the hospital?

- Nausea and repeated vomiting
- Severe or unusual abdominal pain
- The child or person with diabetes is confused or his/her general well-being is affected
- Increasing levels of ketones in blood and urine
- Laboured breathing with a distinct fruity odour on the breath
- Continued high blood glucose level despite extra insulin
- Continued blood glucose levels less than 70 mg/dL
- The underlying condition is unclear

Ultimate goal for treatment

The ultimate goal of treatment is that every child with type 1 diabetes lives a normal, healthy and long life. It is very much possible with right treatment and education.

Current Indian Scenario

Adequate management of type 1 diabetes requires intensive insulin treatment, monitoring, life style modification, proper diabetes education and regular follow up. Almost all the burden of treatment falls on the family of the child with type 1 diabetes. Huge financial burden results in suboptimal treatment and thus uncontrolled blood glucose levels.

Changing Diabetes in Children (CDiC) program

Novo Nordisk Education Foundation along with 21 specialized centres across India has tried to address the critical gap in the management of type 1 diabetes through its CDiC program for economically underprivileged children with type 1 diabetes. The 4000 children registered in the program are provided with free doctor consultations, human insulin, glucometer, strips, HbA_{1c} test, other essential diagnostic tests and diabetes education on regular basis. CDiC program aims to support normal and healthy childhood in these children with type 1 diabetes, so that they grow into healthy adults.

If you would like to have more information on type 1 diabetes you can write to us at:

Diabetes Educator

Novo Nordisk Education Foundation
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You probably have hyperglycaemia if you:



are very thirsty all the time



need to urinate a lot



feel dizzy



are very tired all the time



have blurry vision



have a dry mouth