

KETONE MONITORING

WHAT ARE KETONES?

The body normally turns most of the carbohydrate food eaten into glucose (sugar). Glucose (sugar) is the body's main source of energy. If there is not enough insulin in the body, then the blood glucose (sugar) level may be high and body cells cannot get the glucose (sugar) for energy. When this happens the body may break down its own fat to use as a source of energy. When fat is broken down, ketones are made and will go into the bloodstream.

Ketones are harmful to the body.

The build-up of ketones in the blood is called ketoacidosis. The body tries to get rid of these ketones by spilling them into the urine.

WHO NEEDS TO MONITOR FOR KETONES?

- People with Type 1 diabetes.

WHEN TO MONITOR FOR KETONES?

- When blood glucose (sugar) is 14 mmol/L or more.
- During periods of illness (colds, flu), infections or injuries, when blood glucose (sugar) level is 14 mmol/L or more.

HOW TO MONITOR FOR KETONES?

There is one urine product (strips) available for use during ketone testing.* Ketostix®

There is a blood glucose meter, the Precision Xtra®, which tests for ketones in the blood .

PLEASE FOLLOW THE PACKAGE INSTRUCTIONS WHEN MONITORING!

RECORD results in a log book with the date and time.

* (Urine ketone testing strips are covered by the Diabetes Control Program.)

WHAT TO DO WITH THE MONITORING RESULTS?

The acceptable range for urine ketones is negative or trace.

If you find ketones (small, moderate or large) in the urine and have high blood glucose (sugar) levels on two or more occasions: contact your doctor for advice.

The acceptable range for blood ketones is less than 0.6 mmol/L.

Between 0.6 and 1.5 mmol/L

Recheck blood glucose and ketones in 2-4 hours.

Between 1.5 and 3.0 mmol/L

May be at risk for developing ketoacidosis.

More than 3.0 mmol/L

Requires *immediate* emergency treatment. Seek medical attention from your doctor or the emergency department of your local hospital.

KETOACIDOSIS...WHAT ARE THE SIGNS?

- **Blood glucose levels (sugar) persistently greater than 14.0 mmol/L**
- **May occur more easily during a period of illness**
- **Ketones in blood or urine most of the time**
- **Weakness, fatigue and weight loss**
- **Excessive urination and thirst**
- **Flushed and dry skin**
- **Dry mouth**
- **Blurred vision**
- **Nausea and vomiting**
- **Abdominal pain**
- **Fast pulse**
- **Rapid deep breathing**
- **A fruity smell to your breath would be noticed; like an over-ripe banana or Juicy Fruit® gum**
- **Drowsiness and unconsciousness**

WHAT SHOULD I DO IF I FEEL LIKE THIS?

**Ketoacidosis is treated with insulin and fluids.
Call your Pediatrician. Hospitalization may be necessary
unless the condition is managed in the early stages.**

Call a Health Professional if:

- **Blood glucose levels (sugars) are consistently greater than 14 mmol/L for more than 1 day.**
- **You find blood ketones between 1.5 and 3.0 mmol/L and have high blood glucose levels on one occasion.**
- **You find urine ketones (moderate or large) and have high blood glucose levels on two or more occasions.**

CAN KETOACIDOSIS BE PREVENTED? **YES!!!**

- **Always take insulin as prescribed by your pediatrician**
- **Follow your meal plan *closely* and make necessary adjustments in your insulin**
- **Get regular activity**
- **Remember, during illness or stress periods, your usual dose of insulin may not be enough. Talk to your pediatrician or Provincial diabetes health care team for more advice**

During Illness:

- **Drink lots of sugar-free fluids, like water, sugar free soft drinks, sugar free Koolaid® or Crystal Light®**
- **Test urine or blood for ketones and test blood glucose at least every 4 hours**