

KETONE POISONING – KETOACIDOSIS

(a buildup of acids in the bloodstream due to a shortage of insulin)

EARLY SYMPTOMS:

- Excessive urination
- Excessive thirst
- Dry mouth
- High blood sugar

ACUTE SYMPTOMS:

- Excessive hunger
- Lack of energy
- Laboured breathing
- Stomach pains
- Nausea/vomiting
- Signs of dehydration
- Acetone breath
- A depressed level of consciousness, coma



WHEN SHOULD YOU MEASURE YOUR BLOOD KETONE LEVELS?

Measure your blood ketone levels when your blood glucose levels are 14mmol/l or higher, or when you feel unwell without knowing why.

HOW TO RESPOND TO VARIOUS BLOOD GLUCOSE AND KETONE LEVELS*

	Blood glucose is 14mmol/l or lower	Blood glucose is 14mmol/l or higher
Blood ketones 3.0mmol/l or higher	A serious risk of ketoacidosis. Contact a doctor immediately.	A serious risk of ketoacidosis. Contact a doctor immediately.
Blood ketones 1.5-2.9mmol/l	You need fast carbohydrates and possibly more insulin**. Risk of ketoacidosis, contact a doctor.	You need more insulin**. Follow instructions from your diabetes team. Risk of ketoacidosis, contact a doctor.
Blood ketones 0.6-1.4mmol/l	You need fast carbohydrates and possibly more insulin**. Resume monitoring of blood glucose and ketone levels after 1-2 hours.	You need more insulin**. Follow instructions from your diabetes team. Monitor blood glucose and ketone levels after 1-2 hours.
Blood ketones under 0.6mmol/l	No signs of ketoacidosis, explore other causes of your symptoms.	No signs of ketoacidosis. Monitor blood glucose and ketone levels again after 1-2 hours.

*According to ISPAD Clinical Practice Consensus Guidelines 2009. Swedish national guidelines for interpreting blood ketone levels have not yet been established.

**Blood ketone levels may rise in the first hour following an additional insulin injection, but should thereafter drop markedly.

LOW BLOOD SUGAR

Rapid onset (Blood sugar under 3.5-4.0 mmol/l)

SYMPTOMS:

- Sweating, headache, feeling dizzy
- Hunger
- Trembling
- Rapid heartbeat
- Concentration difficulties
- Irritation, aggressiveness
- Drowsiness

TREATMENT:

- **With mild symptoms** take dextrose tablets, or liquid carbohydrates such as sugar-sweetened beverages or juices.
- **With rapid onset** of symptoms or if they persist for more than 10–15 min, repeat/take more carbohydrates.

If your next meal is in more than 30-45 minutes you may need to eat a snack to prevent symptoms coming back.

No liquids if the person is unable to swallow.

- With symptoms such as cramps or loss of consciousness, **contact a doctor/hospital immediately!**

CAUSES:

- Excessive insulin intake
- Lack of food intake, delayed meal
- Physical activity without extra intake of carbohydrates or reduced insulin dose
- Alcohol

HIGH BLOOD SUGAR

Ketoacidosis, slow onset

SYMPTOMS:

- Increased thirst
- Increased quantities of urine
- Tiredness
- Blurred vision
- Loss of appetite
- Nausea
- Vomiting
- Stomach pains
- Breath smells of acetone
- Shortness of breath

TREATMENT:

- Measure blood sugar and blood ketones
- Administer insulin and, if necessary, fast carbohydrates
- Seek medical attention and hospital care

CAUSES:

- Infection, temperature
- Lack of insulin intake
- Incorrect proportions of food and insulin intake
- Faulty supply in the insulin pump
- Treatment with SGLT-2 inhibitors can conceal ketoacidosis

My doctor's/nurse's telephone number