

Ketones – What to do?

The symptoms that first appear are related to high blood sugar, e.g. thirst, fatigue and increased amounts of urine. After this, symptoms indicating ketone production also appear, usually nausea and vomiting.

Nausea and/or vomiting in a person with diabetes is an indication of ketones until the opposite has been proven! The opposite has been proven if a blood test or urine test for ketones is negative.

Always check for ketones:

- In case of infections
- If the blood sugar has been higher than 14 mmol/l for several hours, despite repeated insulin doses
- In case of acute disease, e.g. cold with fever
- In case of acute symptoms such as nausea, vomiting and/or stomach ache

A person who is treated with insulin and feels sick and/or is vomiting but is unable to measure ketones within one hour should immediately go to the emergency department for testing.

Ketones + high blood sugar = Insulin deficiency

Ketones + low blood sugar = Food deficiency (carbohydrates)

Action plan:**Blood ketones below 0.6 mmol/l**

No noticeable insulin deficiency.

1. Test blood sugar every two hours.
2. Give a correctional dose of insulin every two hours if the blood sugar is above 8 mmol/l. If the blood sugar is below 5 mmol/l, give extra carbohydrates.

Blood ketones 0.6-1.5 mmol/l

Indicates severe insulin deficiency.

1. Give extra insulin with an insulin pen or a single-use syringe.
Give 0.1 E/kg (e.g. body weight = 70 kg → give 7 E, body weight = 35 kg → 3.5 E).
2. Drink something sweet, e.g. thinly diluted sweet (not diet/light!) syrup (soft).
3. Continue measuring blood sugar and blood ketones until the blood ketones on two consecutive occasions are below 0.6 mmol/l and the blood sugar is below 10 mmol/l.
4. If you have a pump needle, i-port or Insuflon, set a new one, but not until insulin has been given as described above.

Blood ketones 1.5-3 mmol/l

Severe insulin deficiency. Risk of ketoacidosis (“acid poisoning”).

1. Give extra insulin with an insulin pen or a single-use syringe.
Give 0.1 E/kg (e.g. body weight = 70 kg → give 7 E, body weight = 35 kg → 3.5 E).
2. Drink something sweet, e.g. thinly diluted sweet (not diet/light!) syrup.
3. Continue measuring blood sugar and blood ketones until the blood ketones on two consecutive occasions are below 0.6 mmol/l and the blood sugar is below 10 mmol/l.
4. If you have a pump needle, i-port or Insuflon, set a new one, but not until insulin has been given as described above.
5. Daytime: Contact the Diabetes Unit 031-343 4539
6. Evening or weekend: If the situation has not been resolved within 4 hours, or if it is getting worse, you should go to the emergency department.

Blood ketones above 3 mmol/l

Severe insulin deficiency. The risk of ketoacidosis (“acid poisoning”) is great. The situation can quickly become life-threatening.

1. Give extra insulin with an insulin pen or a single-use syringe.
Give 0.1 E/kg (e.g. body weight = 70 kg → give 7 E, body weight = 35 kg → 3.5 E).
2. Go to the emergency department.