

On Call® Advisor Diabetic Ketoacidosis

Diabetic Ketoacidosis

Diabetic Ketoacidosis is caused due to a lack of insulin in the body. The lack of insulin and corresponding elevation of glucagon lead to an increased release of glucose by the liver (a process that is normally suppressed by insulin) from glycogen via glycogenolysis and gluconeogenesis.

Diabetic Ketoacidosis is also considered a serious complication of diabetes that occurs when your body produces high levels of blood acids called ketones.

A lack of insulin usually due to:

- *Unknown or newly diagnosed cases of type 1 diabetes*
- *Missed or inadequate doses of insulin, or spoiled insulin*
- *Infection*
- *Steroid medications*
- *An extremely stressful medical condition*

■ DKA is common in Type 1 Diabetes as this form of diabetes is associated with an absolute lack of insulin production by the islets of Langerhans in the Pancreas.

In Type 2 Diabetes, insulin production is present but is insufficient to meet the body's requirements due to end-organ insulin resistance.

Symptoms of DKA

DKA usually develops slowly. But when vomiting occurs, this life-threatening condition can develop in a few hours.

Early symptoms include the following:

- *Thirst or a very dry mouth*
- *Frequent urination*
- *High blood glucose levels whenever glucose is greater than 240-300 mg/dL*
- *High levels of ketones*

You can detect ketones with a simple blood test using a test strip, similar to a blood testing strip. Ask your health care provider when and how you should test for ketones.

According to the ADA, blood ketone testing should be performed on sick days every 4 to 6 hours and whenever glucose is greater than 240-300 mg/dL.

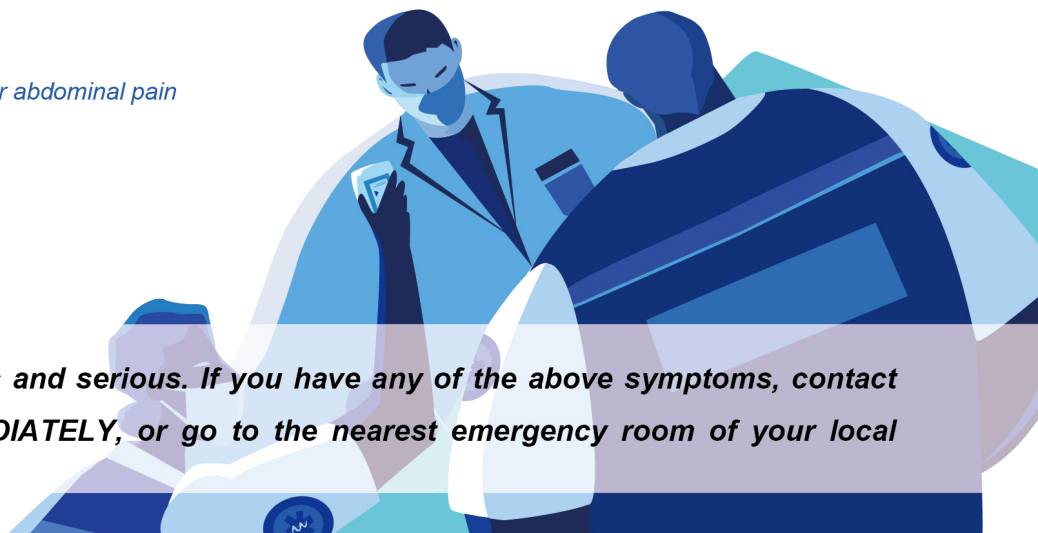
Also, check for ketones when you have any symptoms of DKA.

Then, other symptoms appear:

- *Constantly feeling tired*
- *Dry or flushed skin*
- *Nausea, vomiting for more than 2 hours, or abdominal pain*
- *Difficulty breathing*
- *Fruity odor on breath*
- *A hard time paying attention, or confusion*



Ketoacidosis (DKA) is dangerous and serious. If you have any of the above symptoms, contact your health care provider IMMEDIATELY, or go to the nearest emergency room of your local hospital.



The Meaning of β -ketone Result

β -Hydroxybutyrate Reading

Above 1.5 mmol/L

Readings above 1.5 indicate you may be at risk of developing diabetic ketoacidosis (DKA). Contact your healthcare provider immediately for advice.

β -Hydroxybutyrate Reading

0.6 to 1.5 mmol/L

Reading between 0.6 and 1.5 may indicate the development of a problem that may require medical assistance. Follow your healthcare provider's instructions.

β -Hydroxybutyrate Reading

Below 0.6 mmol/L

Reading below 0.6 are in the normal range.

Consult with your healthcare professional for the blood β -ketone range that is appropriate for you.



The Importance of Ketone Measurements

- *Diabetic Ketoacidosis (DKA) is a life-threatening metabolic complication of diabetes with a mortality rate of 2% to 10%.*
- *DKA is the leading cause of hospitalization, morbidity, and death in children with type 1 diabetes.*
- *The use of a blood test for early detection of increased blood ketone levels can help to prevent DKA.*

Reference:

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