



## Blood Ketones

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**Also known as:** Serum ketone; Plasma ketone; Beta-hydroxybutyrate; Ketone bodies; Beta-hydroxybutyric acid; Acetoacetate; Acetoacetic acid; Acetone

**Formal name:** Blood Ketones

**Related tests:** Urine ketones (see [Urinalysis, chemical exam](#)); [Blood gases](#); [Glucose](#)

*Were you looking for urine ketones? Urine ketone testing is more common than blood ketone testing and may be performed as part of a [urinalysis](#).*

## The Test

**How is it used?**

**When is it ordered?**

**What does the test result mean?**

**Is there anything else I should know?**

### How is it used?

Blood ketones are primarily used to screen for, detect, and monitor diabetic [ketoacidosis](#) (DKA) in people with type 1 and sometimes type 2 [diabetes](#). DKA can occur when a diabetic's blood sugar is significantly increased, with illness, severe infection, [pregnancy](#), and a variety of other conditions.

DKA is associated with [acute hyperglycemia](#), a severe insulin deficiency, and a disruption of the body's [acid-base balance](#). Excess ketones and glucose are dumped into the urine by the kidneys in an effort to flush them from the body. This causes increased urination, thirst, dehydration, and a loss of electrolytes. The affected person may also experience symptoms such as rapid breathing, shortness of breath, a fruit-scent to the breath, nausea, vomiting, fatigue, confusion, and eventually coma.

Ketosis and ketoacidosis may also be seen with starvation, [alcoholism](#), and with high-fat low-carbohydrate diets. It may be induced on purpose in some children with [epilepsy](#) who have frequent seizures and do not respond to available medications or other treatments.

Blood ketones are sometimes used, along with other tests such as [blood gases](#), [glucose](#), and [electrolytes](#) to detect ketoacidosis in non-diabetics if they have [signs](#) and [symptoms](#) of DKA due to, for example, ingestion of excessive amounts of alcohol.

### When is it ordered?

Blood ketone tests may be ordered when a diabetic has symptoms associated with DKA and may also be performed whenever there is the potential for DKA to develop, such as when a diabetic is sick or pregnant. With the availability of home monitoring, blood ketones can be ordered as frequently as the doctor recommends. Some [signs](#) and [symptoms](#) of [ketoacidosis](#) include:

- increased urination, excessive thirst
- dehydration, loss of electrolytes
- rapid breathing, shortness of breath

- a fruit-scent to the breath
- nausea, vomiting
- fatigue
- confusion
- sometimes coma

In non-diabetics, blood ketones are usually ordered when the patient has symptoms associated with ketosis or ketoacidosis.

### What does the test result mean?

If blood ketone concentrations are increased, then the person has some degree of ketosis or **ketoacidosis**. If concentrations are low or normal, then the person either does not have excess ketone production or the ketone body that is elevated is not being detected by the test method used.



[Looking for reference ranges?](#)

### Is there anything else I should know?

Recent studies have shown that serum ketones and beta-hydroxybutyrate testing are both effective in diagnosing diabetic ketoacidosis. Some doctors prefer beta-hydroxybutyrate, but it is not available in all laboratories.

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