

Anion Gap (Blood)



Does this test have other names?

Serum anion gap

What is this test?

This test looks at electrically charged particles in your blood. This helps your healthcare provider diagnose acid-base problems. The test results are done using the results of an electrolyte panel, another blood test.

Your blood contains sodium, chloride, and bicarbonate. All of these are charged particles. The value for the anion gap tells your healthcare provider something about which other charged particles must be in your blood to make it neutral.

This test gives clues about different types of acidosis, when your blood is too acidic. It also tells your provider about alkalosis, when your blood is not acidic enough. Acidosis and alkalosis can be life-threatening. It's important to find the causes and treat them as soon as possible.

Metabolic acidosis may be caused when:

- Your body makes too much acid. For example, lactic acidosis may happen if you exercise too much. It can also be caused by various types of shock. People with diabetes may get ketoacidosis. This means their body makes acids called ketones. And acidosis can also be caused by certain poisons, such as methanol (wood alcohol), too much aspirin, or antifreeze.
- You lose too much bicarbonate. This can happen if you have diarrhea. It can also happen with a condition called proximal renal tubular acidosis. In this condition, the kidneys do not take in enough bicarbonate and it is lost in urine.
- Your body doesn't get rid of enough acid in your urine because of problems with your kidneys such as renal failure.

Why do I need this test?

You might need this test if you have symptoms of metabolic acidosis. Signs and symptoms include:

- Fatigue
- Shortness of breath
- Nausea and vomiting
- Rapid heart rate
- Low blood pressure

What other tests might I have along with this test?

Your healthcare provider may also order other blood tests because many conditions can affect the acid-base chemistry of your blood. Possible tests include:

- pH levels in blood or urine
- Dissolved gases in the blood such as carbon dioxide

- Lactate and glucose and ketones
- Creatinine
- Blood urea nitrogen, or BUN

If you may have swallowed a poison, such as wood alcohol, salicylate (in aspirin), or ethylene glycol (in antifreeze), your provider may test your blood for it.

If your provider thinks you have ketoacidosis, you might need a urine dipstick test for ketone compounds. Ketoacidosis is a health emergency.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Results are given in milliequivalents per liter (mEq/L). Normal results are 4 to 12 mEq/L, although the normal level may vary from by lab.

If your results are higher, it may mean that you have metabolic acidosis.

Hypoalbuminemia means you have less albumin protein than normal. If you have this condition, your expected normal result must be lower.

How is this test done?

The test requires a blood sample, which is drawn through a needle from a vein in your arm.

Does this test pose any risks?

Taking a blood sample with a needle carries risks that include bleeding, infection, bruising, or feeling dizzy. When the needle pricks your arm, you may feel a slight stinging sensation or pain. Afterward, the site may be slightly sore.

What might affect my test results?

Being dehydrated or retaining water in your body can affect your results. Antibiotics such as penicillin can also affect your results.

How do I get ready for this test?

You don't need to prepare for this test. But be sure your healthcare provider knows about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illegal drugs you may use.

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