Chloride Test

A chloride blood test is used to detect abnormal concentrations of chloride. It is often ordered, along with other electrolytes, as part of a regular physical to screen for a variety of conditions.

Chloride is an electrolyte. It is a negatively charged ion that works with other electrolytes, such as potassium, sodium, and bicarbonate, to help regulate the amount of fluid in the body and maintain the acid-base (pH) balance.

Chloride and electrolyte tests may also be ordered to help diagnose the cause of signs and symptoms such as prolonged vomiting, diarrhea, weakness, and difficulty breathing (respiratory distress). If an electrolyte imbalance is detected, a healthcare practitioner will look for and address the disease, condition, or medication causing the imbalance and may order electrolyte testing at regular intervals to monitor the effectiveness of treatment. If an acid-base imbalance is suspected, the healthcare practitioner may also order tests for blood gases to further evaluate the severity and cause of the imbalance.

In persons with too much base, urine chloride measurements can tell the healthcare practitioner whether the cause is loss of salt (in cases of dehydration, vomiting, or use of diuretics, where urine chloride would be very low) or an excess of certain hormones such as cortisol or aldosterone that can affect electrolyte elimination.

The blood chloride test is almost never ordered by itself. It is usually ordered as part of an electrolyte panel, a basic metabolic panel, or a comprehensive metabolic panel, which are ordered frequently as part of a routine physical.

Chloride, as part of an electrolyte or metabolic panel, may be ordered when acidosis or alkalosis is suspected or when someone has an acute condition with symptoms that may include the following:

Prolonged vomiting and/or diarrhea

Weakness, fatigue

Difficulty breathing (respiratory distress)

Electrolytes may be ordered at regular intervals when a person has a disease or condition or is taking a medication that can cause an electrolyte imbalance. Electrolyte panels or basic metabolic panels are commonly used to monitor treatment of certain problems, including high blood pressure (hypertension), heart failure, and liver and kidney disease.

A urine chloride test may be performed along with a blood or urine sodium when evaluating the cause of low or high blood chloride levels. A healthcare practitioner will look at whether the chloride measurement changes mirror those of the sodium. This

helps the healthcare practitioner determine if there is also an acid-base imbalance and helps to guide treatment.

What does the test result mean?

An increased level of blood chloride (called hyperchloremia) usually indicates dehydration, but can also occur with other problems that cause high blood sodium, such as Cushing syndrome or kidney disease. Hyperchloremia also occurs when too much base is lost from the body (producing metabolic acidosis) or when a person hyperventilates (causing respiratory alkalosis).

A decreased level of blood chloride (called hypochloremia) occurs with any disorder that causes low blood sodium. Hypochloremia also occurs with congestive heart failure, prolonged vomiting or gastric suction, Addison disease, emphysema or other chronic lung diseases (causing respiratory acidosis), and with loss of acid from the body (called metabolic alkalosis).

An increased level of urine chloride can indicate dehydration, starvation, Addison disease, or increased salt intake. If both chloride and sodium levels are high in a person on a restricted salt diet, the person is not complying with the diet.

A decreased level of urine chloride can be seen with Cushing syndrome, Conn syndrome, congestive heart failure, malabsorption syndrome, and diarrhea.

Drugs that affect sodium blood levels will also cause changes in chloride. In addition, swallowing large amounts of baking soda or substantially more than the recommended dosage of antacids can also cause low blood chloride.

Questions

1. Are there dietary recommendations for chloride?

Yes. The Food and Nutrition Board at the Institute of Medicine recommends that adolescents and adults ages 14 to 50 years consume 2.3 g/day. The recommendations vary based on age, sex, and other factors. Chloride is readily available in the food supply, in the form of table salt and salt in prepared foods. It is also found in many vegetables and in foods such as salted meats, butter, tomatoes, lettuce, celery, and olives.

2. What treatment is prescribed for abnormal chloride levels?

The same treatment used to treat sodium imbalances (diuretics, fluid replacement) may be used to treat chloride imbalances.