



Determination of sodium in serum

Sodium is particularly important for nerve and muscle function. Your body keeps sodium in balance through a variety of mechanisms. Sodium gets into your blood through food and drink. It leaves the blood through urine, stool, and sweat. Too much sodium can raise your blood pressure.

The primary source of dietary sodium is sodium chloride, or salt. Excessive sodium can cause hypertension, which in turn can lead to other health problems.

Although sodium is often maligned as a cause of high blood pressure, it also plays several essential roles in the body. Sodium helps control blood pressure and regulates the function of muscles and nerves, which is why sodium concentrations are carefully controlled by the body. However, most people consume far more sodium than their bodies need.

A lack of sodium can cause symptoms such as:

1. nausea
2. vomiting
3. exhaustion
4. dizziness

Blood Pressure Control

Sodium is dissolved in the blood and plays a key role in maintaining blood pressure. Sodium attracts and holds water, so the sodium in the blood helps maintain the liquid portion of the blood. On the other hand, if you consume too much sodium, your body may hold onto extra water, increasing the volume of your blood. Since your blood vessels cannot expand to accommodate this increased



blood volume, your blood pressure will rise. High blood pressure is a risk factor for many diseases, including heart problems and stroke.

Normal results

Normal results for this test are 135 to 145 mEq/L (milliequivalents per liter)

Clinical Significance

Hyponatremia means low levels of sodium in the blood. It's defined as levels that lower than 135 mEq/L.

Symptoms of hyponatremia include:

- ❖ fatigue
- ❖ nausea and vomiting
- ❖ headache
- ❖ loss of appetite
- ❖ confusion or disorientation
- ❖ hallucinations
- ❖ loss of consciousness or coma

Hyponatremia is more often a problem in older adults. It can be caused by:

- ❖ diuretics
- ❖ antidepressants
- ❖ certain pain medications
- ❖ large burns on the skin
- ❖ kidney disease
- ❖ liver disease or cirrhosis



- ❖ severe diarrhea or vomiting
- ❖ heart failure
- ❖ high levels of certain hormones, such as antidiuretic hormone or vasopressin
- ❖ ketones in the blood, known as ketonuria
- ❖ underactive thyroid, or hypothyroidism
- ❖ Addison's disease, which is low hormone production in the adrenal gland

Hypernatremia

Hypernatremia means high levels of sodium in the blood. It's defined as levels that exceed 145 mEq/L.

Symptoms of hypernatremia include:

- ✚ thirst
- ✚ fatigue
- ✚ swelling in hands and feet
- ✚ weakness
- ✚ insomnia
- ✚ rapid heartbeat
- ✚ coma

Hypernatremia is most often a problem in older adults, infants, and people who are bedridden.



Causes of hypernatremia include:

- + not drinking enough water
- + drinking salty water
- + eating too much salt
- + excessive sweating
- + diarrhea
- + low levels of hormones such as vasopressin

Certain medications can also potentially cause hypernatremia. These include:

- + birth control pills
- + corticosteroids
- + laxatives
- + lithium
- + nonsteroidal anti-inflammatory pain medications