Name of the test
Aldosterone

What is this test used for?
This test is used to measure the level of aldosterone in the blood.
Aldosterone is a hormone, produced by the adrenal glands. It plays an important role in maintaining normal concentrations of sodium and potassium – it stimulates sodium retention and potassium elimination. Aldosterone is also important for blood volume and blood pressure regulation.

Aldosterone production is regulated by renin and these two tests are often ordered together.

When is the test ordered?
Aldosterone test is performed to measure the level of aldosterone in the blood, in order to determine the causes of its excess or insufficient production.

This test may be ordered when:

- the patient has signs of excess aldosterone production – high blood pressure, low level of potassium, weakness of muscles; this test is often performed to diagnose Conn syndrome.
- the patient has signs of insufficient production of aldosterone – low blood pressure, high level of potassium, decreased sodium level.

Aldosterone test is often ordered together with renin test.

How is this test performed?
A blood sample is taken from a vein.

How to prepare for the test
The level of aldosterone fluctuates during the day and it also depends on body position (standing, sitting, lying down). Normal ranges of aldosterone concentration are different for age-groups as well – normal level of aldosterone is different for children and adults.

Many factors can influence aldosterone test results – the food consumed the previous days, the amount of salt in the food, physical and emotional stress, pregnancy (aldosterone is elevated during 3rd trimester), time of taking the blood sample (aldosterone is the highest in the morning) and even the body position when collecting the sample. For this reason, patient may be asked to stand or lie down for some time (ex. 15-30 minutes) prior of taking the blood sample.

Some medications (ex. antihypertensive drugs, diuretics, NSAIDs, beta-adrenoblockers, corticosteroids, etc.) may affect the test results, so it is important to consult the doctor and to find out how to prepare for the test.

Interpretation of results
Test results should be interpreted by a doctor.
Increased aldosterone levels may be due to:

- Primary aldosteronism (Conn syndrome) – aldosterone is increased, but renin is decreased during this condition; excess production of aldosterone is usually caused by a benign tumor in the adrenal glands;
- Secondary aldosteronism – it is more frequent compared to primary aldosteronism. In this case, elevated level of aldosterone is not associated with some pathology of adrenal glands. Often the cause is stenosis of renal arteries. It can also be seen in other condtions – heart failure, liver cirrhosis, kidney diseases, pre-eclampsia, dehydration; secondary aldosteronism is characterized by eleveted levels of both aldosterone and renin.

Aldosterone level is decreased when adrenal glands do not produce sufficient amount of this hormone. This can be due to Addison disease, which is characterized by low aldosterone levels and elevated renin.

Aldosterone level is increased during 3rd trimester of pregnancy.