

Name of the test

Active Vitamin B12

Alternative name(s) of the test

Holotranscobalamin

What is this test used for?

Vitamin B12, also called cobalamin, is essential for formation of red blood cells and for proper functioning of nervous system. It plays an important role in metabolism of some amino acids, as well as in DNA synthesis. Vitamin B12 deficiency can lead to megaloblastic anemia and neuropathy.

Vitamin B12 is not produced in the body and must be obtained from the diet. It is found in animal products such as red meat, fish, eggs, milk, cheese, poultry. Adults have about 1-2 years worth of B12 stored in the liver.

Vitamin B12 deficiency may be caused by not getting enough B12 from the diet. For example, this may sometimes be seen in vegans or it may be caused by general malnutrition. Inadequate absorption of B12 may also lead to its deficiency.

A small fraction of Vitamin B12 in the body is bound to a protein called transcobalamin. This complex of transcobalamin and B12 is called holotranscobalamin.

Holotranscobalamin is referred to as active vitamin B12, because cells can only take up B12 in the form of holotranscobalamin.

A number of recent studies have suggested that active vitamin B12 test is a better indicator of vitamin B12 status than total vitamin B12 test. Active vitamin B12 test is thought to be a better marker and more suitable especially for early detection of vitamin B12 deficiency.

This test measures the amount of active B12 in the blood.

When is the test ordered?

This test is mainly performed:

- when vitamin B12 deficiency is suspected
- when a patient is diagnosed with megaloblastic anemia
- when a patient has signs of neuropathy
- to monitor the effectiveness of treatment for B12 deficiency

B12 test is often performed with folate test.

How is this test performed?

A blood sample is taken from a vein.

How to prepare for the test

Fasting may be required 6-8 hours prior to the test. Some medicines may affect test results, so it is important to first consult with a doctor.

Interpretation of results

The test results should be interpreted by a doctor.

Generally, low levels of active vitamin B12 indicate that a person may have vitamin B12 deficiency.

If a patient with B12 deficiency is receiving treatment, then normal levels of B12 indicate that the treatment has been effective.