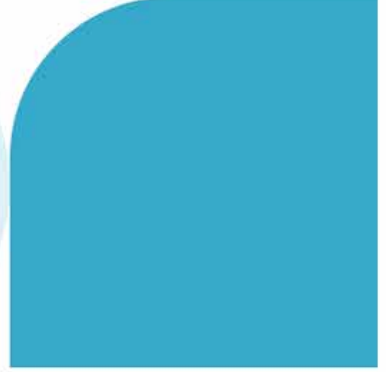
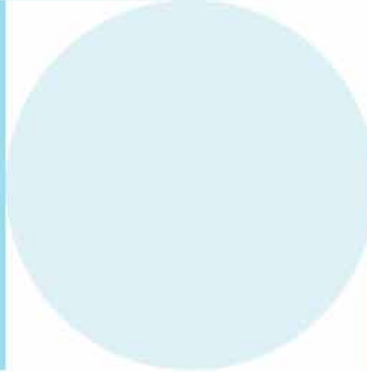
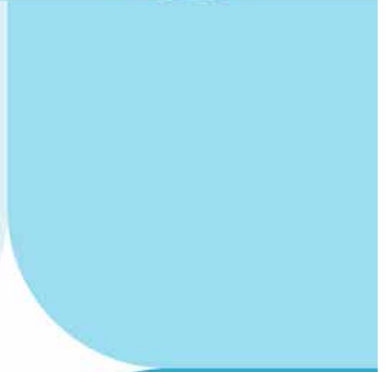
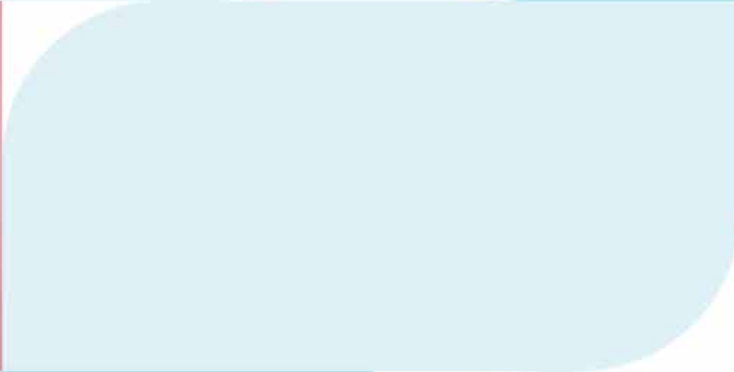




Test report



At-home test



# Vitamin B12 Test


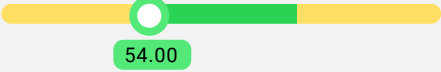
Lab test

Blood

Name: **Sample Report**    Date of test: **10/20/2022**    Analysis-ID: **DUMMY-69**

## Your test results

Our lab has tested the concentration of holotranscobalamin (active B12). You can find your results below:

Substance	Your value	Reference value	Scale
Vitamin B12	 54.00 pmol/L	48-174 pmol/L	

*\*The reference values apply to adults*

## Vitamin B12

B12 is an essential vitamin and belongs to the water-soluble vitamins family. The body cannot produce itself and it must be taken in through the diet.

One of the most important functions of B12 is the manufacture of DNA. If the body cannot manufacture DNA, the cells do not divide and the body is unable to replace broken and poorly functioning cells with new ones. B12 is also needed for the myelination of the nerves, as well as for the breakdown of homocysteine, which is formed naturally during protein turnover.

Although B12 belongs to the water-soluble vitamins, it is actually neither soluble in water nor a fat-soluble substance. The absorption of B12 in the body requires a special mechanism known as intrinsic factor (IF). The intrinsic factor is produced by cells in the stomach and binds to B12 in the blood. Intrinsic factor attaches to B12, and the whole package is then taken up through the intestinal wall to be transported via the blood to the liver, where B12 is either stored or transported into parts of the body that need it.

The liver acts as a depot for B12 and can last for many years. Unlike other B vitamins, the body does not need a regular supply of B12 if the depot is full, thanks to the liver's storage capacity. At the same time, it is important to remember that certain vulnerable groups are at high risk of B12 deficiency: vegans, vegetarians, and people who have undergone gastric bypass surgery are also high-risk groups for being affected by a lack of B12. The reason is that these groups may have reduced production of intrinsic factor. Without intrinsic factor, the body cannot absorb B12 in the gut.

Because vitamin B12 is water-soluble, it does not become toxic in high doses. A surplus is excreted via the kidneys. However, the kidneys should not be overloaded unnecessarily.

Causes of B12 deficiency can be gluten intolerance, poor nutrient absorption, gastric bypass surgery, medication dietary intake, and intestinal diseases such as Crohn's disease and long-term use of certain medicines for heartburn. Stomach ulcers and diabetes can, in some cases, also lead to a lack of B12.

## What should I eat if I have a B12 deficiency?

Below you will find a table of foods that are rich in vitamin B12.

Food	µg/ 100 gr	% of RDI
Beef liver (fried)	112,37	4494%
Chicken liver (fried)	33,19	1327%
Liver pate (spreadable fat approx. 24%)	18,6	4494%
Oysters	18	720%
Flounder roe (salted)	18	720%
Buckeye fillet (double hot smoked)	15	600%
Caviar	15	600%
Reindeer (dried)	13,8	552%

Food	µg/ 100 gr	% of RDI
Crab (canned)	13,5	540%
Fish (hot smoked)	11,53	461%

## Vitamin B12 as a supplement

Vitamin B12 as a supplement is often given together with folic acid. Taking high amounts of folic acid can on the other hand mask a possible B12 deficiency and even decrease B12 levels, so recommended is to check the levels continuously.

You can support the body with digestive enzymes to improve nutrient absorption, as well as a supplement of all B-vitamins (vitamin B-complex).

The most common forms of vitamin B12 are cyanocobalamin and hydroxycobalamin. They need to be converted in the liver to the active forms methylcobalamin and adenosylcobalamin. Methylcobalamin is the form of vitamin B12 which is active in the central and peripheral nervous system.

Uptake can be between 10-80% depending on the availability of intrinsic factor, the levels of stomach acid and access to other vitamins and minerals. In case of severe B12 deficiency, you need to consult a doctor to the extent that B12 injections are needed.

## Toxicity

There is no upper limit for vitamin B12, as no toxic effects have been identified even when administered intramuscularly at 200-3.000 times the recommended amount. For this reason, no reliable upper limit for the vitamin B12 has been established.

## Recommended daily intake

Below you will find a table with values for the recommended daily intake of vitamin B12 for different ages.

Gender/Group/Age	Recommended daily intake
Infants 6-11 months	0,5 µg
Infants 12-23 months	0,6 µg
Children 2-5 years	0,8 µg
Children 6-9 years	1,3 µg
Children 10-13 years	2,0 µg
Adults	2,0 µg
Pregnant	2,0 µg
Breastfeeding	2,6 µg

This test does not replace medical consultation. Always seek medical attention if you experience severe symptoms.

