

Vitamin B12

250 mcg

Tablets



Product Summary:

Vitamin B-12 (Cyanocobalamin) is a water soluble vitamin necessary for energy production; for nervous system function as it is needed to produce myelin, the fatty substance that forms a protective sheath around nerves; for the production of acetylcholine, a neurotransmitter that helps with memory and learning; for the synthesis of red blood cells; for producing the genetic materials, DNA and RNA.

Properties/Uses:

The claim as approved by the *Natural Health Products Directorate* (NHPD): Helps to form red blood cells and helps the body metabolize fats, proteins and carbohydrates.



BLOOD





Pharmacology:

Vitamin B-12 is the most complex of the vitamins and is the only naturally occurring organic compound that contains cobalt. Cyanocobalamin is the commercially available and most stable form of vitamin B-12. Vitamin B-12 is a crystalline compound that is soluble in water, alcohol and acetone. It is heat-stable in neutral solutions but destroyed by heat in acid and alkaline solutions. Vitamin B-12 contains phosphorus, nitrogen, and cobalt, the latter giving it a dark red color.

“Vitamin B12 is absorbed via an active transport mechanism in the terminal ileum. This requires the glycoprotein, intrinsic factor, which is produced by the stomach. At normal gastric pH, vitamin B12 is cleaved from proteins in food. It then binds to intrinsic factor and is absorbed by ileal transport. Absorption can be reduced by increased gastric pH such as in atrophic gastritis, use of acid-suppressing drugs, or partial gastrectomy. Reduced absorption also occurs with loss of intrinsic factor in conditions such as pernicious anemia (an autoimmune disorder in which the ability to produce intrinsic factor is lost) and total gastrectomy. Intramuscular administration is often used to avoid these absorption problems. However, there is also a lesser-known transport system for vitamin B12 that does not rely on either intrinsic factor or the terminal ileum. Absorption is more efficient by the intrinsic factor route (about 60%), but 1% of an oral dose of vitamin B12 can be absorbed without intrinsic factor or stomach acid. Large oral doses (300 to 1000 mcg) can be sufficiently absorbed to treat pernicious anemia and malabsorption from food.”¹

“Vitamin B-12 plays a role in the activation of amino acids during protein formation. The coenzyme of vitamin B-12 is a carrier of methyl groups and hydrogen, and is necessary for carbohydrate, protein, and fat metabolism. The coenzyme-dependent synthesis of methionine occurs by first removing a methyl group from methyl folate, a derivative of the biologically active form of folic acid. Then this methyl group is transferred to homocysteine and methionine is formed. Vitamin B12, with other B vitamins, is important in the manufacture of neurotransmitters, chemicals that facilitate communication between nerves. In this role, Vitamin B12 can prevent depression and other mood disorders.”²

Vitamin B-12 works with folic acid to control homocysteine levels. Research shows that high levels of homocysteine may dramatically increase the risk of heart disease and osteoporosis.³





Manufactured product information:

Manufacturer:

WN Pharmaceuticals® Ltd.

Size/UPC:

100's 7 77747 10316 4

NPN:

80004053

Expiry Date:

36 months from date of manufacture

Active Ingredient:

Each tablet contains:

Vitamin B12 (Cyanocobalamin) 250 mcg

Non-Medicinal Ingredients (in descending order):

Microcrystalline cellulose, magnesium stearate.

Appearance:

Round, light pink tablet with red speckles.

Packaging:

175 cc white round bottle with safety seal under a 38 mm white induction sealed cap with vented interior seal and a label applied to the bottle. Lot number and expiry date are printed on label applied to exterior of bottle.

Storage:

Preserve in tight, light-resistant containers, in a cool, dry place.





Dose:

The NHPD Monograph for Vitamin B12 indicates a maximum dosage of 1000mcg for all ages. For malabsorption of vitamin B12 from food or pernicious anemia, cyanocobalamin doses of 300 to 2000 mcg daily have been used. For hyperhomocysteinemia, vitamin B12 in a dose of 500 mcg in combination with 0.5 to 5 mg folic acid and 16.5 mg pyridoxine has been used. To decrease the rate of restenosis after coronary angioplasty, a combination of vitamin B12 400 mcg plus pyridoxine (vitamin B6) 10 mg and folic acid 1 mg taken daily has been used. For reducing increased homocysteine concentrations associated with nitrous oxide general anesthesia, a supplement containing vitamin B12 500 mcg with pyridoxine (vitamin B6) 25 mg and folic acid 2.5 mg taken daily for one week before surgery has been used.³

Directions:

(Adults): 1 – 4 tablets daily or as recommended by a physician.

Caution:

The caution as approved by the *Natural Health Products Directorate* (NHPD): KEEP OUT OF THE REACH OF CHILDREN. STORE AT ROOM TEMPERATURE IN A DARK, DRY PLACE. DO NOT USE IF SEAL UNDER CAP IS BROKEN OR MISSING.

Deficiency Symptoms:

“Administering vitamin B12 orally, intramuscularly, or intranasally is effective for preventing and treating dietary vitamin B12 deficiency. People at risk for vitamin B12 deficiency include strict vegetarians and people with increased vitamin B12 requirements associated with pregnancy, thyrotoxicosis, hemolytic anemia, hemorrhage, malignancy, and hepatic and renal disease. Moderate consumption of animal products may not be sufficient to restore and maintain vitamin B12 levels in adolescents (age 9-15 years) who have eaten a strict vegetarian diet with inadequate intake of vitamin B12 from infancy to 6 years of age. A higher dietary intake of vitamin B12 or supplements are usually needed in order to restore and maintain optimal vitamin B12 levels in these adolescents.”⁴

Blood tests may not show B-12 deficiencies if folic acid levels are high. Since a vegetarian diet is usually high in folic acid but low in B-12, strict vegetarians should make a conscious effort to get enough vitamin B-12 in their diet to prevent permanent nerve and brain damage which can result from prolonged vitamin B-12 deficiency.



People who have problems with vitamin B-12 absorption should consult their nutritionally-oriented health professional to measure their serum B-12 status before supplementing.

Drug Interactions /Contraindications:

Anti-gout medications, anticoagulant drugs and potassium supplements may block vitamin B-12 absorption from the digestive tract. The therapeutic response to vitamin B12 can be impaired by concurrent infections, uremia, and folic acid or iron deficiency

Vitamin B12 is contraindicated in early Leber's disease, which is hereditary optic nerve atrophy. Vitamin B12 can cause severe and a swift optic atrophy.⁵ The correction of megaloblastic anemia with vitamin B12 can result in fatal hypokalemia and gout in susceptible individuals, and it can obscure folate deficiency in megaloblastic anemia; use with caution.⁶

The treatment of vitamin B12 deficiency can unmask the symptoms of polycythemia vera.

Toxicity/Adverse Reactions:

The minimum daily requirement for vitamin B-12 can be exceeded by ten thousand-fold with no signs of toxicity. Excesses are excreted in the urine.⁷



Allergen Content/Ingredient Sensitivity:

NO	YES
Artificial Colors	
Artificial Flavors	
Artificial Sweeteners	
Corn Products	
Egg Products	
Fish	
Gluten	
Hydrolyzed Plant Protein	
Lecithin	
Milk Products	
Peanuts	
Preservatives	
Sesame Products	
Shellfish	
Soy Products	
Starch/Modified Starch	
Sulphites	
Tartrazine	
Tree Nuts	
Wheat Products	
Yeast	

ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTION:

Free of animal products

NOT ACCEPTABLE FOR THE FOLLOWING DIETARY RESTRICTION:

Kosher





References:

1. www.naturaldatabase.com/monograph.
2. Garrison, Robert and Elizabeth Somer, The Nutrition Desk Reference. 3rd edition. 1995. Keats.
3. www.naturaldatabase.com/monograph.
4. www.naturaldatabase.com/monograph.
5. www.naturaldatabase.com/monograph.
6. www.naturaldatabase.com/monograph.
7. Garrison, Robert and Elizabeth Somer, The Nutrition Desk Reference. 3rd edition. 1995. Keats.

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