

## [Center for Integrative Medicine](#)

### **Dietary Supplements: Vitamin B12**

Vitamin B12 is essential for healthy function of nerve cells and red blood cells and to make DNA. Symptoms of B12 deficiency include ataxia (unsteady gait), muscle weakness or spasticity, incontinence, low blood pressure, vision problems, dementia, psychoses and mood disturbances (depression). Vitamin B12 is essential to treat megaloblastic anemia due to B12 deficiency. Studies have had mixed results on its effectiveness in treating Alzheimer's disease, heart disease, breast cancer, fatigue, high cholesterol, and sickle cell disease.

Needs for B12 may be increased in patients with pernicious anemia (because they cannot absorb the vitamin from food), pregnancy, hemolytic anemia, hemorrhage, certain kinds of cancer, liver or kidney disease; it is more common in vegetarians due to low dietary intake (B12 is found in fish, meat and dairy products). Absorption requires hydrochloric acid in the stomach to release vitamin B12 from the proteins to which it is bound in food. As hydrochloric acid levels generally fall during aging, Vitamin B12 deficiency becomes more common in the elderly.

Certain medications can also increase the need for vitamin B12: antacids; aminosalicic acid; colchicine; H2 blockers such as cimetidine (Tagamet®), famotidine (Pepcid®), and ranitidine (Zantac®); metformin; phenytoin (Dilantin®), phenobarbital, primidone (Mysoline®); potassium supplements; proton pump inhibitors such as omeprazole (Prilosec®), Inasoprazole (Prevacid®), pantoprazole (Protonix®), and esomeprazole (NExium®); zidovudine (AZT,). Excessive alcohol intake can impede vitamin B12 absorption and lead to deficiency. Nicotine can also reduce B12 levels in the blood. Large doses of folate can mask vitamin B12 deficiency

Dietary sources of Vitamin B12 include: fish, shellfish, meats, dairy products. Some processed foods are fortified with Vitamin B12. See the US National Library of Medicine site for more information:

<http://www.nlm.nih.gov/medlineplus/druginfo/natural/patient-vitaminb12.html>

#### **US Recommended Daily Allowance (RDA) or Adequate Intake (AI for infants) for Vitamin B12 for**

Infants ages 0-6 months: 0.4 micrograms	Infants 7-12 months: 0.5 micrograms
Children 1-3 years: 0.9 micrograms	Children 4-8 years: 1.2 micrograms
Children ages 9-13 years; 1.8 micrograms	Adolescents and adults 14 years and older: 2.4 micrograms daily
Pregnant or breastfeeding women: 2.6 – 2.8 micrograms daily.	
Adults over 50 should take food fortified with B12 or supplements of 25 – 100 micrograms daily	

Vitamin B12 is generally considered safe. Side effects include rash, allergies, diarrhea; other side effects such as peripheral vascular thrombosis are rare.

Most clinicians recommend that most patients who take supplements should take a B-complex or multivitamin rather than single B-vitamin. This is because patients whose diets are deficient in one B-vitamin are likely to be deficient in several B-vitamins and because some B vitamins have complementary effects.

The products listed below are a *selection* of some that have met quality testing standards set by ConsumerLab. For more information, see <http://www.consumerlab.com/results/vitaminb.asp>?

Product Name/Distributor	Capsule/Tablet Strength	Manufacturer/Distributor
<b>B12</b>		
VitaminWorld® Naturally Inspired Sublingual B12	500 micrograms	VitaminWorld, Inc.
<b>B-complex</b>		
GNC B- Complex 50		General Nutrition Corp.
Natrol™ B-100 Complex		Natrol, Inc
Now® B-50 Vitamin B-complex		Now Foods
Puritan's Pride B-50 and B-100 B-complex		Puritan's Pride

**[www.wakehealth.edu/CIM](http://www.wakehealth.edu/CIM) - See Quick Link to Dietary Supplements**