

# Vitamin B-12

## Cyanocobolamin 500 mcg



### DESCRIPTION

Vitamin B-12 tablets dissolve rapidly, releasing 500 mcg of pure vitamin B12.

### FUNCTIONS

Vitamin B12 is essential for normal energy metabolism of carbohydrates, fat and protein. As a cofactor for methylmalonyl-CoA mutase enzymes, vitamin B12 helps convert odd chain fatty acids and branched chain amino acids into succinyl-CoA, a common citric acid cycle intermediate. Vitamin B12 is also required for nucleic acid (DNA) synthesis, methionine synthesis from cysteine, and normal myelin synthesis in the nervous system. Along with vitamin B6 and folic acid, adequate levels of vitamin B12 are required to maintain normal plasma homocysteine levels. Elevated plasma homocysteine may be an independent risk factor for developing cardiovascular disease.

There are two distinct mechanisms for intestinal vitamin B12 absorption; receptor-mediated absorption and passive diffusion. In the first, vitamin B12 attaches to a salivary "R-binder" protein which transports it into the small intestine, where vitamin B12 is released. The vitamin then binds to "Intrinsic Factor" (IF), a glycoprotein normally produced by the gastric parietal cells. This vitamin B12-IF complex is carried down to the ileum, where it binds to mucosal receptors.

Finally, the complex is absorbed and bound to serum vitamin B12-binding proteins. The second absorption mechanism, passive diffusion, does not require any carriers, such as B-binder or IF. Only about 1% of free vitamin B12 is passively absorbed, but this can be nutritionally significant with higher dietary vitamin B12 intakes.

The elderly, HIV/AIDS patients, and strict vegetarians are often at risk for vitamin B12 deficiency, either due to low dietary intake or impaired absorption. The receptor-mediated absorption pathway is subject to numerous genetic and pathologic defects which can severely impair normal vitamin B12 absorption. These defects include hereditary absence of IF production, gastric atrophy, gastrectomy, and small intestinal disorders affecting the ileum, such as gluten-induced enteropathy, regional enteritis, chronic diarrhea, and intestinal resection. Affected individuals depend almost exclusively on the passive diffusion pathway, which requires high dietary vitamin B12 intakes.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

### INDICATIONS

Vitamin B-12 tablets may be a useful nutritional adjunct for individuals who wish to increase their intake of vitamin B12.

### FORMULA (WW #10150)

#### 1 Tablet Contains:

Vitamin B-12 .....500 mcg  
(as cyanocobalamin)

Other Ingredients: Dicalcium phosphate, modified cellulose, vegetable stearin, cellulose gum, magnesium stearate, and silica.

This product contains NO sugar, salt, dairy, yeast, gluten, wheat, corn, soy, preservatives, artificial colors or flavors.

### SUGGESTED USE

As a dietary supplement, adults take 1 tablet daily with meals, or as directed by a healthcare professional.

### SIDE EFFECTS

No adverse effects have been reported.

### STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

### REFERENCES

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Manufactured For:

**Fireside Pharmacy**  
73847 Hwy III  
Palm Desert, CA 92260  
760.346.1113