Vitamin B12

WHAT IS IT?

Vitamin B12 is a water-soluble vitamin. It is found in natural form in many foods, such as fish, meats, eggs, dairy products, shiitake mushrooms, and dried seaweed, and can also be found in fortified foods or as a dietary supplement. Additionally, it can be prescribed by your health care provider as a special supplement or as an injection.

Vitamin B12 is required for healthy red blood cell formation, nerves and neurologic function and DNA synthesis.

Vitamin B12 status in humans is often checked using serum or plasma vitamin B12 levels. However, evidence suggests that these levels might not accurately reflect the concentration of the vitamin in your body overall.

Vitamin B12 deficiency is characterized by anemia in which the red blood cells get big, called megaloblastic anemia, and with symptoms such as fatigue, and weakness. Vitamin B12 deficiency can also cause memory and mood changes, as well as numbness and tingling in the hands and feet and difficulty maintaining balance and soreness of the mouth or tongue. Permanent nerve damage can occur if vitamin B12 deficiency is not treated

CONCERNS?

Those at greatest risk of B12 deficiency are vegans, individuals
over 60 years of age, individuals with stomach and small intestine disorders, and those using certain medications, such as metformin (a medication used to treat diabetes) and proton-pump inhibitors (medications used to treat heartburn and other gastrointestinal conditions).

Celiac disease, Crohn's disease, pernicious anemia, bariatric surgery, and atrophic gastritis reduce the absorption of vitamin B12 from food, making it difficult to maintain healthy body stores.

High doses of folic acid (folate) can mask the effects of vitamin B12 deficiency by correcting the anemia without correcting the neurological damage that also occurs. Thus folic acid intake from fortified food and supplements should not exceed 1,000 mcg daily in healthy individuals.

WHAT IS IT USED FOR?

Vitamin B12 is primarily used to treat B12 deficiency. It is still not entirely clear whether vitamin B12 is beneficial for cognition, cardiovascular disease, mouth ulcers, neuropathy, and multiple sclerosis.

- ❑ Pregnancy and Lactation
  Vitamin B12 is able to cross the placenta and is found in breast milk. Vitamin B12 deficiency may be a risk factor for neural tube defects and preterm delivery. Infants who are exclusively breastfed by women with (or at risk for), B12 deficiency may have very limited reserves of vitamin B12, and may develop symptoms of deficiency within months of birth. The American Dietetic Association recommends that vegans and lacto-ovo vegetarians take B12 supplements during pregnancy and lactation to ensure sufficient vitamin B12 for the mother and fetus/infant

HOW DO I TAKE IT?

Forms

Vitamin B12 exists in several forms, collectively referred to as "cobalamins," which includes cyanocobalamin and methylcobalamin. Cyanocobalamin, the form found in most dietary supplements, is readily converted to the two active forms in the body. Both oral and intramuscular injections of vitamin B12 can be used to correct deficiency. Methylcobalamin is the form of B12 that is better absorbed by many individuals, including those with kidney disease. Supplements of methylcobalamin can be found in a sublingual or oral form.

Sources

Natural food sources of B12 are mostly limited to animal foods. Fortified breakfast cereals, shiitake mushrooms, nori seaweed and yeast extracts or spreads are among the few non-animal sources of vitamin B12 and thus can be a dietary source of B12 for strict vegetarians and vegans.

Dose?

The Institute of Medicine (IOM) has set the Recommended Dietary Allowance or RDA for B12 at 2.4 mcg for teens and adults, 2.6 for pregnant, and 2.8 for lactating women, though optimal dose may be closer to 4.0–7.0 mcg per day to prevent subclinical deficiency. The IOM did not establish an upper limit, or maximum dose, for vitamin B12 because of its low potential for toxicity. Of note, however, taking vitamin B12 supplements might be associated with diarrhea and pruritus, and very high doses may make acne and dermatitis worse. While Vitamin B12 is safe, discontinue its use if you experience any side effects.

Recommended daily intake of vitamin B12 for children varies by age. Vitamin B12 supplements should not be given without prior discussion with your child's health care provider.

Make sure to ask your health care provider exactly how and when you should take this product.

My Health Care Provider's Notes: