



What is Vitamin B12?

Vitamin B12 is a water-soluble vitamin that is naturally present in some foods. It is required for red blood cell formation, neurological function, and DNA synthesis (1).

What are vitamin B12 sources?

Many animal products contain vitamin B12, including fish, meat, poultry, eggs, milk, and milk products, but it is generally not present in plant foods. Fortified food products include breakfast cereals and nutritional yeast. Dietary supplements containing vitamin B12 are also available, usually containing the cyanocobalamin form of vitamin B12, with some supplements also containing other forms of vitamin B12 (2).

How much vitamin B12 do I need?

Vitamin B12 requirements vary depending on age and pregnancy/breastfeeding status. Infants require 0.4 mcg/day (0-6 months) and 0.5 mcg/day (7-12 months). The recommended dietary allowance for children is 0.9 mcg/day (1-3 years), 1.2 mcg/day (4-8 years), and 1.8 mcg/day (9-13 years). Adults require 2.4 mcg/day, except for 2.6 mcg/day during pregnancy and 2.8 mcg/day while breastfeeding (3).

What are the signs of vitamin B12 deficiency?

Serum vitamin B12 levels below approximately 170-250 pg/mL indicate deficiency in adults. Vitamin B12 deficiency is most often caused by malabsorption from food, pernicious anemia (an autoimmune disease that affects gastric mucosa), postsurgical malabsorption, and dietary deficiency (4). However, for many deficient individuals the cause is unknown.

Deficiency is characterized by megaloblastic anemia, which causes weakness, fatigue, difficulty concentrating, irritability, headaches, heart palpitations, and shortness of breath. Other symptoms can include neurological changes (e.g. numbness and tingling in the extremities), balance difficulties, depression, confusion, poor memory, dementia, and mouth sores (3).

Vitamin B12 Information Sheet

Who is at risk of vitamin B12 deficiency?

Older adults have an increased risk of vitamin B12 deficiency often due to atrophic gastritis (which inhibits proper release of vitamin B12), or pernicious anemia (an autoimmune disorder) (2).

Individuals who suffer from gastrointestinal disorders (e.g. celiac disease) or have had gastrointestinal surgeries may have reduced vitamin B12 absorption (4, 5).

Vegetarians and vegans are also at increased risk of deficiency as natural food sources of vitamin B12 are restricted to animal sources (2).

There is also a heightened risk for pregnant and lactating vegetarians and their infants.

Where can I find more info?

Visit www.genetrackdiagnostics.com for full test information, including specimen collection requirements

CONTACT US:

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NOTE:

This brochure is provided for general information purposes only. It is not intended to replace medical advice from a health professional.

References:

- (1) Herbert V. (1996). Vitamin B12. In Present Knowledge in Nutrition (17th ed). Washington, DC: International Life Sciences Institute Press.
- (2) Institute of Medicine. Food and Nutrition Board. (1998). Dietary Reference Intakes: Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline. Washington, DC, USA.
- (3) Vitamin B12: Fact Sheet for Health Professionals. (2020, March 20). NIH.
- (4) Andrès E, et al. (2007). B12 deficiency: a look beyond pernicious anemia. J Fam Pract, 56 (7), 537-542.
- (5) Sumner AE, et al. (1996). Elevated methylmalonic acid and total homocysteine levels show high prevalence of vitamin B12 deficiency after gastric surgery. Ann Intern Med, 124 (5), 469-476.