VITAMIN B-12

Whole Lifecycle NUTRITION

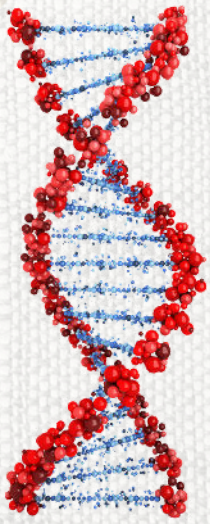
Vitamin B-12, also known as **cobalamin**, is a water-soluble B vitamin that our body needs but **cannot produce on its own**. It is an **essential nutrient** that helps keep our bodies healthy and is important for the proper functioning of our nerves, brain, and the production of red blood cells.

HEALTH BENEFITS

Red Blood Cell Production: Vitamin B-12 is essential for the formation of healthy red blood cells, as it aids in the synthesis of heme, a component of hemoglobin. Hemoglobin is a protein in red blood cells that binds to oxygen and carries it throughout our body. Without sufficient Vitamin B-12, red blood cell production is impaired, leading to a type of anemia called megaloblastic anemia.

Brain Function: Vitamin B-12 is crucial for maintaining a healthy nervous system and proper brain function. It helps produce myelin, a fatty substance that forms a protective sheath around nerve fibers. Myelin ensures the efficient transmission of nerve signals and plays a critical role in cognitive processes, such as learning and memory.

Energy Production: Vitamin B-12 is involved in the conversion of food into energy, which helps us stay active and energized. It works closely with other B vitamins, particularly folic acid and vitamin B6, to metabolize carbohydrates, fats, and proteins.



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DNA Synthesis: Vitamin B-12 plays a role in the synthesis of DNA, the genetic material in our cells. It supports the proper functioning of an enzyme called methionine synthase, which is crucial for DNA replication and repair. This process is necessary for cell division, growth, and repair. A deficiency in Vitamin B-12 can result in abnormal cell division, leading to an increased risk of health issues, such as anemia and impaired immune function.

Important Note for Vegans & Non-Meat Eaters:
Since plant-based foods do not naturally contain Vitamin B-12, vegans are at risk of deficiency. This deficiency can lead to several health issues, including anemia, fatigue, neurological problems, and, in extreme cases, irreversible nerve damage. It is crucial for vegans to take Vitamin B-12 supplements or consume fortified foods to meet their daily requirements and maintain optimal health.

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FOOD SOURCES*

- **Clams** (3 ounces): 84.1 mcg
- **Beef liver** (3 ounces): 70.7 mcg
- **Fortified breakfast cereals** (1 serving): 6.0 mcg
- **Salmon** (3 ounces): 4.8 mcg
- **Tuna** (3 ounces): 2.5 mcg
- **Milk** (1 cup): 1.2 mcg
- **Yogurt** (1 cup): 1.1 mcg
- **Cheese** (1 ounce): 0.9 mcg
- **Eggs** (1 large): 0.6 mcg



**Note:* *The DV values are based on a 2000-calorie diet for healthy adults. DV values may be different for children, pregnant women, or individuals with certain medical conditions.*

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Plant-based sources:

Plant-based milk: Fortified plant-based milk, such as almond, soy, and oat milk ~ 1.0 to 2.0 mcg of Vitamin B-12 per cup

Breakfast cereals: Vegan-friendly breakfast cereals fortified with Vitamin B-12 ~ 1.5 to 6.0 mcg of Vitamin B-12 per serving

Nutritional yeast: Fortified nutritional yeast typically contains 2.0 to 4.0 mcg of Vitamin B-12 per tablespoon



Meat alternatives: Plant-based meat alternatives, such as veggie burgers and sausages, can have varying amounts, typically ranging from 1.0 to 3.0 mcg per serving.

RECOMMENDED DIETARY ALLOWANCE*

The Recommended Dietary Allowance (RDA) for Vitamin B-12 depends on age and life stage.

Check with your healthcare provider before supplementing.

- Infants (0-12 months): 0.4-0.5 mcg
- Children (1-8 years): 0.9-1.2 mcg
- Adolescents (9-18 years): 1.8-2.4 mcg
- Adults (19+ years): 2.4 mcg
- Pregnant women: 2.6 mcg
- Breastfeeding women: 2.8 mcg

***Retrieved from:** https://ods.od.nih.gov/factsheets/VitaminB12-HealthProfessional/*

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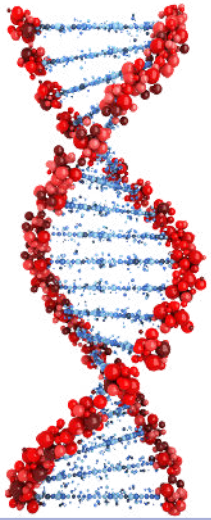

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