



LIPOSOMAL

METHYL B-12

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Liposomal Methyl B-12 provides 1000 mcg of methylcobalamin per serving. It is widely known that age, genetic variation, and low stomach acid can inhibit B12 absorption. Our advanced delivery technology offers higher absorption to support the repletion of this multi-purpose vitamin.*

EDUCATION

VITAMIN B12: A CRITICAL NUTRIENT FOR WHOLE-BODY HEALTH

Methylcobalamin (methyl B12) is an essential water-soluble nutrient essential for DNA and RNA synthesis, red blood cell production, neurological function, mood and memory, and bone and heart health.¹ Methylation is fundamental to life itself: it is the process by which protein and DNA are synthesized and sustained in the body and is necessary for the synthesis of glutathione.² When methylation is slowed we may have trouble detoxifying, keeping viruses in check, and ensuring our DNA is stable, healthy, and easily repaired.³

Vitamin B12 deficiency occurs in about 5%–7% of youth⁴, and 10-30% of healthy individuals over age 65.⁵ Functional B12 deficiency is also widespread, and vitamin B12 deficiency is considered to be a global issue. Sufficient levels of all B vitamins are essential for optimal physiological and neurological functioning¹¹, but the implications are especially profound when there is insufficient methyl B12. B12 is already present in the metabolism of every cell, as a cofactor in DNA synthesis, as well as fatty acid and amino acid metabolism. Low levels of B12 have been linked to peripheral neuropathy, autism, multiple sclerosis, hypothyroidism, immune dysfunction and mercury toxicity.^{6,7,8,9,10,11,12} Methylcobalamin also helps keep homocysteine levels in check.

METHYLATED VITAMIN B12 REGULATES GENE EXPRESSION

Efficient methylation regulates gene expression and activity, DNA and RNA synthesis and cell differentiation throughout the body.¹⁴ During gene methylation, cells add a methyl group (an alkyl derived from methane, containing one carbon atom bonded to three hydrogen atoms — CH₃TK) to DNA. This methylation turns the gene off and renders it inactive, while removing the methyl group -- a process called demethylation -- turns a gene back on.

Deregulation of methylation machinery – both hypomethylation and hypermethylation – has been well studied.¹⁵ When methylation is slowed (hypomethylation), we can have trouble suppressing viruses¹⁶, processing toxins in the liver¹⁷, controlling inflammation and oxidation¹⁸, and generating sufficient neurotransmitters in the brain, which can lead to depression.¹¹ In contrast, hypermethylation results in higher levels of inflammatory cytokines as well as excess dopamine, norepinephrine, and serotonin, leading to irritability and anxiety.¹⁹



Supplement Facts

Serving Size: 0.33 mL (2 Pumps)
Servings Per Container: 90

	Amount Per Serving	% Daily Value
Vitamin B12 (as methylcobalamin)	1000mcg	41,667%

**Daily Value not established

Other Ingredients: Water, glycerin, ethanol, phosphatidylcholine (from purified sunflower seed lecithin)tocofersolan, natural mixed tocopherols

METHYLATED VITAMIN B12 OPTIMIZES HOMOCYSTEINE METABOLISM

Methylcobalamin plays a critical role in regulating the levels of the amino acid homocysteine in the bloodstream. Methylcobalamin prevents the accumulation of homocysteine by activating the enzyme methionine synthase. This enzyme converts homocysteine to the amino acid methionine, which can be converted into sulfur-containing molecules that modify DNA and help maintain healthy cellular function.²⁰ Vitamin B12 also regulates, together with 5-methyltetrahydrofolate (5-MTHF), the remethylation of homocysteine to methionine and the formation of S-adenosylmethionine (SAME). SAME is important for the methylation of myelin, neurotransmitters, and phospholipids such as phosphatidylcholine.

High homocysteine levels, along with low levels of folate and B12, have been linked to an increased risk of cardiovascular disease, as well as Alzheimer's disease and oxidative stress.^{21,22,23,24}

METHYLATED VITAMIN B12 SUPPORTS HEALTHY NERVE FUNCTION

Methylcobalamin's effect on methionine synthase benefits the nervous system. Methionine synthase supports pathways the body uses to make neurotransmitters. Methionine synthase also helps maintain the myelin sheath of nerves. Methylcobalamin has been shown to promote nerve repair and regeneration.²⁵ It has been shown to improve neuron recovery after traumatic brain injury.²⁶ It has also been shown to alleviate the neuropathic pain associated with diabetic neuropathy as well as pain and paresthesia associated with neck problems. Treatment with methylcobalamin significantly reduced continuous pain, paroxysmal pain, and allodynia in the subacute herpetic neuralgia (SHN) patients.²⁷

VITAMIN B12 PROTECTS COGNITIVE FUNCTION

Improved intake of Vitamin B12 in the elderly may significantly reduce the risk of age-related brain atrophy.²⁸ By lowering homocysteine, it may help defend against cognitive decline and Alzheimer's disease.²⁹

Quicksilver Delivery Systems® improves upon liposomal and emulsification technology with smaller, more stable particles made from the highest grade ingredients available. In addition to exceptional absorption rates, these tiny liposomal and nanoemulsified particles enhance the lymphatic circulation of nutrients and intracellular delivery, after ingestion.*