

METHYL B COMPLEX



RECOMMENDED USE

- Helps to maintain the body's ability to metabolize nutrients
- Helps to prevent biotin, vitamin B12, vitamin B6, thiamine, riboflavin and pantothenic acid deficiencies

ESSENTIAL VITAMINS

Methyl B Complex contains eight essential B vitamins, along with choline, inositol, and folate as Quatrefolic™ - 100% 5-MTHF, the biologically active form of folic acid for optimal methylation. B vitamins have historically been taken together for their synergistic role in maintaining the body's ability to metabolize nutrients and supporting energy production. Adequate B vitamins are essential for maintaining energy levels. Methyl B Complex offers high-quality nutrients, which help to build a healthy micronutrient reserve.

Overview

A wide and complex variety of B vitamins is essential for the body to convert food into cellular energy. These water-soluble groups of vitamins are first absorbed in the small intestine and then travel to the liver where they are biotransformed into their active coenzyme forms. One of the key roles of B vitamins is to serve as prime coenzymes for the Krebs cycle, the biochemical pathway responsible for maintaining energy production in the form of cellular energy. In addition, B vitamins, particularly folic acid, B6 and B12, are critical for proper methylation, a biochemical process that helps convert the problematic amino acid metabolite homocysteine into the amino acids L-methionine and L-cysteine. Methylation occurs billions of times every second and helps the body to repair DNA on a continual basis. However, when methylation processes in the body slow down, an increase in the breakage of DNA strands can occur. Proper methylation can be inhibited by nutrient deficiencies including folate, B2, B6 and B12.

Deficiency

Deficiency in any of the B vitamins can create a breakdown of metabolic processes that protect health. Deficiencies of folic acid,

B6 and B12 can specifically impair proper methylation, which affects many aspects of health.

Folate

Folate is a water soluble member of the B complex vitamins that is critical for maintaining optimal methylation. Folate is found naturally in foods such as fruits and dark leafy vegetables, but can be easily destroyed by cooking or processing. Additionally, enzyme defects, malabsorption and congenital deficiency of 5-methylenetetrahydrofolate reductase (5-MTHFR), an enzyme required for the conversion of folic acid to its bioactive form 5-methyltetrahydrofolate (5-MTHF), can result in an impaired ability to activate folic acid. In individuals with a genetic defect of this enzyme, supplementation with 5-MTHF has been shown to be beneficial.¹ 5-MTHF is required as a methyl group donor for the production of mood regulating neurotransmitters such as serotonin, the synthesis of melatonin, as well as DNA production and repair.¹ 5-MTHF also donates its methyl group to vitamin B12 (cobalamin), forming methylcobalamin. Methylcobalamin helps convert the amino acid metabolite homocysteine into the amino acid methionine.

Thiamine

While naturally abundant in whole grains, thiamine is lost in many of the over-processed grains commonly consumed today.² Thiamine is an essential co-factor in the production of ATP in the cells' Krebs cycle, and is also needed for the metabolism of fats, proteins and carbohydrates.³

Riboflavin

Riboflavin is a precursor to flavin adenine dinucleotide (FAD) and flavin mononucleotide (FMN), both of which are central to

energy production and intermediary metabolism.⁴ Riboflavin-depleted cells have been found to display signs of greater oxidative stress and disrupted energy generation.⁵

Vitamin B6

Vitamin B6 is involved in over 100 enzymatic reactions in the body and is essential in methylation, for the breakdown of homocysteine.

Vitamin B12

Vitamin B12, found only in organ meats, seafood and egg yolks, often becomes deficient in vegan and vegetarian diets. The vitamin is essential for the metabolism of fats and carbohydrates, the synthesis of proteins, and energy metabolism.⁶

Biotin

Synthesized by the bacteria in the gut in addition to certain foods,⁷ biotin and its cofactors are involved in metabolism of fatty acids, amino acids and utilization of B vitamins.⁶

Pantothenic Acid

Pantothenic acid and its biologically active derivative, CoA, are essential to the synthesis of fatty acids, membrane phospholipids, amino acids, steroid hormones, and energy production. Ninety-five percent of CoA is found in the mitochondria.⁸

Recommended Dose

Adults: Take 1 capsule per day with food.

Medicinal Ingredients (per capsule)

Thiamine (Thiamine hydrochloride USP).....	50 mg
Riboflavin	50 mg
Niacin (Niacinamide USP).....	50 mg
Vitamin B6 (Pyridoxine hydrochloride USP).....	50 mg
Folate (Quatrefolic®	
(6S)-5-Methyltetrahydrofolic acid, glucosamine salt).....	400 mcg
Vitamin B12 (Methylcobalamin)	500 mcg
Biotin	75 mcg
Pantothenic acid (Calcium D-pantothenate USP)	50 mg
Choline (Choline bitartrate)	20 mg
Inositol NF	50 mg

Non-Medicinal Ingredients

Hypromellose, Magnesium stearate, Silicon dioxide.

Store in airtight container, protected from light.

To be sure this product is right for you always read and follow the label.

References

1. 5-methyltetrahydrofolate. *Altern Med Review* 2006; 11(4).
2. Rindi G. Thiamin. In: Ziegler E, Filer LJ, eds. *Present Knowledge in Nutrition: International Life Sciences Institute*; 1996:160-166.
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4. Rivlin R. Riboflavin. In: Ziegler E, Filer LJ, eds. *Present Knowledge in Nutrition.: International Life Sciences Institute.*; 1996:167-173.
5. Lee ES, Corfe BM, Powers HJ. Riboflavin depletion of intestinal cells in vitro leads to impaired energy generation and enhanced oxidative stress. *Eur J Nutr.* 2013 Aug;52(5):1513-21. Epub 2012 Nov 6.
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8. Plesofsky-Vig N. Pantothenic Acid. In: Ziegler E, Filer LJ, eds. *Present Knowledge in Nutrition: International Life Sciences Institute.*; 1996:236-244.