



BioCoenzymated™

PYRIDOXAL 5'-PHOSPHATE · B6

50 mg

NPN 80076582

RESEARCH INFORMATION

Feature summary

Natural Factors Pyridoxal 5'-phosphate is an innovative one-a-day formula featuring 50 mg of bioactive vitamin B6 alongside Farm Fresh Factors, a bioactive blend of phytonutrients. This biocoenzymated supplement is ideal for anyone looking for the most advanced vitamin B6 available.

Vitamin B6 (pyridoxine) is an essential daily nutrient needed for more than 140 physiological processes, including: the conversion of carbohydrates, fats, and proteins into energy; the production of neurotransmitters that affect cognition and emotional well-being; and the healthy formation of red blood cells and tissue.

Genetic differences in nutrient metabolism make it difficult for some people to assimilate standard pyridoxine, meaning that it may be excreted before the liver can convert it into its active form. Pyridoxal 5'-phosphate (P5P) is an active form of vitamin B6 that is easily used by the body without first requiring conversion by the liver.

This unique biocoenzymated formula features proprietary EnviroSimplex® technology, combining Farm Fresh Factors™ – an organic whole food blend of land and sea vegetables – with the coenzyme form of vitamin B6. The result is a synergistic phytochemical formula that delivers the most metabolically active nutrients to your cells for immediate and direct nutritional support.

How it works

Vitamin B6 is a water-soluble nutrient that has some antioxidant activity and is essential for energy metabolism, tissue growth, and many other physiological processes. Standard pyridoxine requires activation by the liver, which can present problems for people with genetic variations that compromise the absorption and use of B vitamins. Pyridoxal 5'-phosphate (P5P) is the biologically active preformed coenzyme form of vitamin B6 and is well absorbed and directly usable by the body.

In addition to its necessity in over 140 reactions in human metabolism, P5P is essential for the activity of enzymes responsible for the synthesis of dopamine, serotonin, gamma-aminobutyric acid, and other molecules that affect cognitive function and emotional well-being. It is also involved in the metabolism of polyunsaturated fatty acids and phospholipids, which are important for cell membrane function and neurological health.

Vitamin B6 deficiency can adversely affect the nervous system, skin, mucous membranes, and red blood cell production. P5P plays a role in the metabolism of homocysteine, a substance associated with an increased risk of cardiovascular disease and stroke. Decreased vitamin B6 status has been associated with increased levels of C-reactive protein, a marker for inflammation.

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This information is provided for educational purposes only, and is not intended for self-diagnosis or self-treatment of conditions that should be assessed and treated by your health care practitioner. While the information contained in this document has been carefully reviewed and reflects current clinical and scientific knowledge, it is subject to change.

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Research

Research shows that not all forms of vitamin B6 are equally absorbed or used by the body, with around 22 genetic variations thought to affect the conversion of standard pyridoxine into active pyridoxal 5'-phosphate (P5P) (Carter et al., 2015). Some researchers specifically recommend P5P to reduce the likelihood of pyridoxine neurotoxicity, something thought to occur when the liver's capacity to convert pyridoxine to P5P is exceeded (Lewis, 1995; Levine & Saltzman, 2004).

An estimated 18% of Canadian women do not meet minimum dietary intake of B6 required to avoid deficiency, while around 40% of American women aged 21–44 years have blood levels of P5P that suggest deficiency (Health Canada, 2004; Morris et al., 2008). This is important because poor vitamin B6 status has been associated with symptoms of premenstrual syndrome (PMS), lower infant birth weight, and pregnancy complications such as preeclampsia, gestational carbohydrate intolerance, hyperemesis gravidarum (excessive sickness in pregnancy), and neurological disease of infants.

The American College of Obstetrics and Gynecology recommends vitamin B6 as a first-line treatment for pregnancy-induced nausea and vomiting, with research suggesting a dose of 25 mg every eight hours for 72–96 hours (ACOG, 2004; Sahakian et al., 1991). In one study looking at patients with type 2 diabetes and symptoms of diabetic peripheral neuropathy, a combination of methylcobalamin (an active form of B12), L-methylfolate, and pyridoxal 5'-phosphate (an active form of B6) taken daily for six months led to decreases in the frequency and intensity of symptoms in 82% of patients (Jacobs & Cheng, 2011).

Some oral contraceptives can adversely affect vitamin B6 status. In people taking ethinyl estradiol and levonorgestrel, supplementing with 25 mg of vitamin B6 daily for 6–12 months appears to reduce nausea/lack of appetite, headache, and depression by 43%, 33%, and 40%, respectively, compared with no treatment (Var et al., 2014).

A dosage of 50 mg of vitamin B6, plus 200 mg of magnesium oxide, has been seen to reduce some PMS symptoms including breast pain or tenderness, and mood disturbances such as anxiety (Whelan et al., 2009).

In a large-scale clinical study, a combination of 50 mg of vitamin B6, 1000 mcg of vitamin B12, and 2500 mcg of folic acid taken for an average of 7.3 years was associated with a 34% reduction in the risk of age-related macular degeneration (AMD) and a 41% reduced risk of visually significant AMD in women over 40 with a history of or risk factors for cardiovascular disease (Christen et al., 2009).

Vitamin B6 works with folic acid and vitamin B12 to support normal levels of a molecule called homocysteine which is a risk factor for cardiovascular problems including atherosclerosis, heart attack, and stroke. A 50–200 mg dose of vitamin B6 has been associated with a 32–35% reduction in post-meal homocysteine (van der Griend et al., 2000).

Ingredients

Each vegetarian capsule contains:

Vitamin B6 (Pyridoxal 5'-phosphate)..... 50 mg

Dosage

Recommended adult dose: 1 capsule daily preferably with a meal or as directed by a health care practitioner.

Cautions

Keep out of the reach of children.

References

- ACOG (American College of Obstetrics and Gynecology). (2004). Practice Bulletin #52: Nausea and vomiting of pregnancy. *Obstet Gynecol*, 103, 803-15.
- Carter, T.C., Pangilinan, F., Molloy, A.M., et al. (2015). Common Variants at Putative Regulatory Sites of the Tissue Nonspecific Alkaline Phosphatase Gene Influence Circulating Pyridoxal 5'-Phosphate Concentration in Healthy Adults. *J Nutr*, 145(7), 1386-93.
- Christen, W.G., Glynn, R.J., Chew, E.Y., et al. (2009). Folic acid, pyridoxine, and cyanocobalamin combination treatment and age-related macular degeneration in women. *Arch Intern Med*, 169, 335-41.
- Health Canada. Canadian Community Health Survey 2.2, Nutrition (2004). Nutrient Intakes from Food Provincial, Regional and National Summary Data Tables. Volume 2 Health Canada; Ottawa, ON, Canada: 2009.
- Jacobs, A.M. & Cheng, D. (2011). Management of diabetic small-fiber neuropathy with combination L-methylfolate, methylcobalamin, and pyridoxal 5'-phosphate. *Rev Neurol Dis*, 8(1-2), 39-47.
- Levine, S. & Saltzman, A. (2004). Pyridoxine (vitamin B6) neurotoxicity: enhancement by protein-deficient diet. *J Appl Toxicol*, 24(6), 497-500.
- Lewis, P.J. (1995). Pain in the hand and wrist. Pyridoxine supplements may help patients with carpal tunnel syndrome. *BMJ*, 310, 1534.
- Morris, M.S., Picciano, M.F., Jacques, P.F. & Selhub, J. (2008). Plasma pyridoxal 5'-phosphate in the US population: the National Health and Nutrition Examination Survey, 2003-2004. *Am J Clin Nutr*, 87(5), 1446-54.
- Sahakian, V., Rouse, D., Sipes, S., et al. (1991). Vitamin B6 is effective therapy for nausea and vomiting of pregnancy: a randomized, double-blind, placebo-controlled study. *Obstet Gynecol*, 78, 33-6.
- van der Griend, R., Biesma, D.H., Haas, F.J.L.M., et al. (2000). The effect of different treatment regimens in reducing fasting and postmethionine-load homocysteine concentrations. *J Int Med*, 248, 223-9.
- Var, C., Keller, S., Tung, R., et al. (2014). Supplementation with vitamin B6 reduces side effects in Cambodian women using oral contraception. *Nutrients*, 6(9), 3353-62.
- Whelan, A.M., Jurgens, T.M. & Naylor, H. (2009). Herbs, vitamins and minerals in the treatment of premenstrual syndrome: a systematic review. *Can J Clin Pharmacol*, 16(3), e407-e429.