

B Complex Vitamins: Powerful Healing Nutrients

Julie Kreloff, M.S., R.D.

B vitamins are a family of water-soluble nutrients that were discovered together at the beginning of the 20th century, initially thought simply to be “vitamin B.” As nutrition advanced, however, we learned that they are in fact a family of compounds, each with a distinct role to play in promoting health. The modern refined diet, high in sugar, alcohol, and devitalized foods, leads to lower levels of B vitamins. Many medications also lower B vitamin levels. While B vitamins have been for the most part researched individually, they also have therapeutic power when taken together. For example, a B complex supplement can relieve nocturnal leg cramps in the elderly.¹

Thiamin or Vitamin B1

Vitamin B1 is needed for energy production, heart function, and the health of the brain and nervous system. B1 also helps remove lead from the body. Fifty milligrams of B1 was given to sixty women for two months, and increased levels of B1 made these women feel more clearheaded, composed and energetic.² Fifty milligrams of B1 per day improved mental wellness in epileptics.³ Twenty-five milligrams of thiamin with 50 mg of B6 leads to significantly reduced symptoms in patients with diabetic neuropathy.⁴

Riboflavin (B2): Antioxidant and Migraine Preventer

B2, also known as riboflavin, is another B vitamin that helps the body turn food into energy. B2 is also a powerful antioxidant. Four hundred milligrams of riboflavin per day may help prevent migraine headaches.⁵ Patients with low thyroid function may have an increased need for vitamin B2, particularly in the activated form known as riboflavin-5-phosphate. Taking riboflavin imparts a yellow color to the urine which is harmless.

Niacin: Lowering Lipids

Niacin is one of the forms of vitamin B3. Higher doses of niacin are effective in lowering triglyceride, LDL cholesterol, and lipoprotein(a) levels and in elevating HDL cholesterol levels. Niacin has been found to extend lifespan through its role in helping ward off heart and artery disease.⁶ Doses of regular niacin of more than 50 milligrams can initially lead to a harmless but annoying flushing reaction that turns skin red. Inositol hexanicotinate, also known as no-flush niacin, usually does not cause flushing reactions. Inositol hexanicotinate may also offer symptomatic relief to those with Raynaud's disease⁷ and circulation disorders such as intermittent claudication.⁸ Taking niacin alone can raise homocysteine levels.⁹ Therefore, one should always take the homocysteine lowering nutrients B6, folic acid and B12 along with niacin to prevent homocysteine elevation during niacin therapy.

Niacinamide: Antioxidant Aiding Glucose Control and Osteoarthritis

Niacinamide, the other form of vitamin B3, may help those with osteoarthritis. One recent study of 72 osteoarthritis patients showed that niacinamide can improve joint flexibility, reduce inflammation, and allow for reduction in standard anti-inflammatory medications.¹⁰ Niacinamide may also improve glucose control in type II diabetics.¹¹ Some also find that they feel more relaxed when taking niacinamide.

Vitamin B6: For Brain Wellness and Female Health

Women have a special need for B6. B6 plays a valuable role in the liver by converting a type of cancer promoting estrogen into less harmful anti-cancer metabolites. B6 also supports female hormonal balance in general, and is very useful in the management of PMS, as well as the nausea and vomiting that may accompany pregnancy. Oral contraceptives often increase the need for vitamin B6. The depression some experience on oral contraceptives can be helped with 40 mg per day of B6.¹²

A five month study with 76 asthmatics showed that 200 mg per day of B6 led to a reduction in the need for bronchodilators and asthmatic medications.¹³ B6 has also been found to help those with carpal tunnel syndrome, epilepsy, and MSG sensitivity. B6 also has been found to act as a diuretic. B6 is available in the activated form known as pyridoxyl-5-phosphate that may work more effectively in some patients than regular B6.

Folic Acid: For the Heart and Mind

Folic acid helps prevent heart and artery disease and may reduce risk to Alzheimer's disease through its role in lowering levels of the artery-clogging substance known as homocysteine. Folic acid also helps prevent birth defects. Depression is often the first sign that folic acid levels are low. Folic acid may have particular application in the prevention and treatment of post-partum depression. Increased intake of folic acid may help protect against colorectal cancer and cervical dysplasia.¹⁴

Vitamin B12: A Must Supplement for Strict Vegetarians

Vitamin B12 has been found useful as a treatment for asthma, depression, and for promoting mental wellness. Vegetarians are particularly susceptible to low B12 levels, as B12 is the only B vitamin found exclusively in animal products. Pregnant vegans in particular need to supplement months prior to pregnancy, for pregnancy increases B12 requirements. Mothers undersupplied with B12 can have babies with neurological problems. Older adults are often low in vitamin B12.

Vitamin B12 is also available in activated forms such as methylcobalamin. Sixty milligrams of methylcobalamin was given every day for 6 months to 6 patients with chronic progressive MS. This led to improvement in abnormalities in both the visual and brainstem nerve function.¹⁵ Methylcobalamin may also be useful in the treatment of diabetic neuropathy, Bell's Palsy,¹⁶ and sleep-wake disorders.

Biotin: Strengthening Nails and Balancing Blood Sugar

Biotin can help strengthen nails in humans by 25% in those with weak or brittle nails.¹⁷ A high intake of biotin can improve blood sugar control in animal models of type II diabetes. By helping keep blood sugar and insulin lower, biotin may support weight loss.¹⁸ Biotin may also help patients with diabetic neuropathy.¹⁹

Pantothenic Acid: For Stress and Wound Healing

Pantothenic acid, previously known as vitamin B5, is a member of the B complex family that helps immune function, energy generation, and the body's production of stress hormones. Pantothenic acid may help those with rheumatoid arthritis, though more research is needed.

References

1. Chan, P., et al., Randomized, double-blind, placebo-controlled study of the safety and efficacy of vitamin B complex in the treatment of nocturnal leg cramps in elderly patients with hypertension. *J Clin Pharmacol*, 1998. 38(12): p. 1151-4.
2. Benton, D., R. Griffiths, and J. Haller, Thiamine supplementation mood and cognitive functioning. *Psychopharmacology (Berl)*, 1997. 129(1): p. 66-71.
3. Botez, M.I., et al., Thiamine and folate treatment of chronic epileptic patients: a controlled study with the Wechsler IQ scale. *Epilepsy Res*, 1993. 16(2): p. 157-63.
4. Abbas, Z.G. and A.B. Swai, Evaluation of the efficacy of thiamine and pyridoxine in the treatment of symptomatic diabetic peripheral neuropathy. *East Afr Med J*, 1997. 74(12): p. 803-8.
5. Schoenen, J., M. Lenaerts, and E. Bastings, High-dose riboflavin as a prophylactic treatment of migraine: results of an open pilot study. *Cephalalgia*, 1994. 14(5): p. 328-9.
6. Guyton, J.R., Effect of niacin on atherosclerotic cardiovascular disease. *Am J Cardiol*, 1998. 82(12A): p. 18U-23U; discussion 39U-41U.
7. Sunderland, G.T., et al., A double blind randomised placebo controlled trial of hexopal in primary Raynaud's disease. *Clin Rheumatol*, 1988. 7(1): p. 46-9.
8. O'Hara, J., A double-blind placebo-controlled study of Hexopal in the treatment of intermittent claudication. *J Int Med Res*, 1985. 13(6): p. 322-7.
9. Garg, R., et al., Niacin treatment increases plasma homocyst(e)line levels. *Am Heart J*, 1999. 138(6 Pt 1): p. 1082-7.
10. Jonas, W.B., C.P. Rapozo, and W.F. Blair, The effect of niacinamide on osteoarthritis: a pilot study. *Inflamm Res*, 1996. 45(7): p. 330-4.
11. Polo, V., A. Saibene, and A.E. Pontiroli, Nicotinamide improves insulin secretion and metabolic control in lean type 2 diabetic patients with secondary failure to sulphonylureas. *Acta Diabetol*, 1998. 35(1): p. 61-4.
12. Bermond, P., Therapy of side effects of oral contraceptive agents with vitamin B6. *Acta Vitaminol Enzymol*, 1982. 4(1-2): p. 45-54.
13. Collipp, P.J., et al., Pyridoxine treatment of childhood bronchial asthma. *Ann Allergy*, 1975. 35(2): p. 93-7.
14. Butterworth, C.E., Jr., et al., Folate deficiency and cervical dysplasia. *Jama*, 1992. 267(4): p. 528-33.
15. Kira, J., S. Tobimatsu, and I. Goto, Vitamin B12 metabolism and massive-dose methyl vitamin B12 therapy in Japanese patients with multiple sclerosis. *Intern Med*, 1994. 33(2): p. 82-6.
16. Jalaludin, M.A., Methylcobalamin treatment of Bell's palsy. *Methods Find Exp Clin Pharmacol*, 1995. 17(8): p. 539-44.
17. Hochman, L.G., R.K. Scher, and M.S. Meyerson, Brittle nails: response to daily biotin supplementation. *Cutis*, 1993. 51(4): p. 303-5.
18. McCarty, M.F., High-dose biotin, an inducer of glucokinase expression, may synergize with chromium picolinate to enable a definitive nutritional therapy for type II diabetes. *Med Hypotheses*, 1999. 52(5): p. 401-6.
19. Koutsikos, D., B. Agroyannis, and H. Tzanatos-Exarchou, Biotin for diabetic peripheral neuropathy. *Biomed Pharmacother*, 1990. 44(10): p. 511-4.

B Vitamin Contraindications

Niacin and Niacinamide: Avoid both of these forms of vitamin B3 in high doses if you have jaundice, heart conditions including angina and rheumatic heart disease, ulcers, gastritis, renal failure, or gout. Niacin, not niacinamide, may raise blood sugar slightly in diabetics. If you are taking 500 mg or more of niacin or niacinamide per day for over a month, have your liver enzyme levels monitored by your physician.

Vitamin B6: Do not take B6 in amounts over 500 mg without medical supervision, as such high doses may cause neurological side effects. B6 should also not be used with the drug levodopa, as it can inactivate it. Lactating women should not take more than 50 mg of B6 per day, because doses above 200 mg per day suppress lactation.

Folic Acid: Avoid folic acid supplements when taking the drug methotrexate for cancer.

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