B-Complex Vitamins

Nutrients to promote nerve health and increase energy production in the cells

Feeling stressed out or low on energy? Chances are you’re not getting enough B vitamins. Life in the 21st century is more hectic and demanding than ever, and most of us don’t eat the way we should. Consequently, it is often important to supplement our diets with essential vitamins, and the Bs are some of the most important vitamins that need to be supplemented.

B vitamins are necessary for nervous system function and the normal growth and metabolism of nutrients and proteins. B vitamins help your body to obtain or generate energy from the food you eat. They also help form red blood cells. You can get B vitamins from proteins such as fish, poultry, meat, eggs and dairy products. Leafy green vegetables, beans and peas also contain B vitamins. Some cereals and breads have B vitamins added to them, although they are generally cheap synthetic vitamins of questionable value.

B vitamins aid in the formation of antibodies and the synthesis of RNA and DNA as well as the growth and division of cells. Individuals with low cardiac output or sluggish metabolism benefit from higher levels of B vitamins. This group of vitamins also reduces blood levels of homocysteine—an amino acid that contributes to cardiovascular disease by damaging the protective outer layer of artery walls.

Let’s take a look at the beneficial properties of the individual B vitamins:

**Vitamin B1 (Thiamine)**

Thiamine is required for carbohydrate metabolism. It combines with adenosine triphosphate (ATP) to form thiamine diphosphate—a coenzyme utilized in turning carbohydrates into energy inside the cell. Thiamine deficiency can occur in alcoholism, cirrhosis of the liver and gastrointestinal diseases. Decreased levels have been reported in individuals with Crohn’s disease, for example. A high carbohydrate diet increases the need for this nutrient, as does hyperthyroidism, increased physical activity and infection. Preliminary data also suggests that thiamine deficiency in diabetics may exacerbate the development of diabetic neuropathy. Adequate intake of thiamine also reduces the risk of cataract formation.

Vitamin B1 is as an ingredient in all of NSP’s Vitamin B Complex and multivitamin supplements.

**Vitamin B2 (Riboflavin)**

Riboflavin is required for tissue respiration. It is converted to coenzymes that act as hydrogen carriers for several enzymes known as flavoproteins. These enzymes are involved in cellular energy production. It has an antioxidant action due to its role in producing glutathione in the cell. Vitamin B2 may be effective for the prevention of cataracts and migraine headaches. A high dietary intake of Vitamin B2 seems to be associated with a reduced risk of age-related lens opacification (cataracts). People who take a combination of riboflavin plus niacin daily seem to be at lower risk of developing cataracts compared to placebo. Taking 400 mg. of Riboflavin per day seems to significantly reduce the frequency of migraine headache attacks. Epidemiological evidence suggests that increasing Vitamin B2 intake may reduce the risk of precancerous cervical lesions, although more testing is needed to substantiate this finding.

Vitamin B2 is an ingredient in all of NSP’s Vitamin B Complex and multivitamin supplements.

**Vitamin B3 (Niacin or Niacinamide)**

Niacin is also used in energy production in the cells. It has particular benefits for the cardiovascular system and has a definite cholesterol-lowering effect. In fact, it is commonly combined with cholesterol-lowering drugs. Niacin may also be helpful for high blood pressure, migraine headaches, dizziness, Alzheimer’s disease, cataracts, cholera, diabetes and osteoarthritis. People have also taken niacin for acne, leprosy, ADHD, memory loss, preventing premenstrual headache, improving digestion, protection against environmental toxins, reducing the effects of aging, improving orgasm. Excessive doses of niacin cause a flushing reaction, which causes redness, burning, tingling and/or itching.

Niacin is available as a single supplement from NSP and is an ingredient in all of NSP’s Vitamin B Complex and multivitamin supplements.

**Vitamin B5 (Pantothenic Acid)**

Pantothenic acid is a precursor of coenzyme A, which is required in the acetylation reactions in gluconeogenesis, in the release of energy from carbs, in the synthesis and degradation of fatty acids, and in the synthesis of sterols, steroid hormones, porphyrins, acetylcholine and other compounds. It is essential for metabolism of carbohydrates, proteins and fats to release energy. It is a helpful supplement for people suffering from adrenal exhaustion.

Vitamin B5 is available as an ingredient in NSP’s Vitamin B Complex supplements, or as Pantothenic Acid capsules (250 mg. each).

**Vitamin B6 (Pyridoxine)**

Vitamin B6 is involved in carbohydrate, lipid (fat) and amino acid metabolism. It is converted to the coenzymes pyridoxl phosphate and pyridoxamine phosphate, which are used in a wide variety of metabolic processes, including the conversion of tryptophan to niacin, synthesis of gamma-aminobutric acid (GABA), metabolism of serotonin, norepinephrine and dopamine and the synthesis of hemoglobin. Vitamin B6 deficiency
in adults mainly affects the peripheral nerves, skin, mucous membranes and hematopoietic system.

B6 is available as a single supplement from NSP and is an ingredient in all of NSP’s Vitamin B Complex and multivitamin supplements.

**Vitamin B7 (Biotin)**

Found in small amounts in numerous foods, biotin is believed to be stored in the mitochondria where it acts as a coenzyme. It may be beneficial in hair loss, brittle nails, diabetes and mild depression.

Biotin is available as an ingredient in all of NSP’s Vitamin B Complex supplements.

**Vitamin B12 (Cobalamine)**

Vitamin B12 acts as a cofactor or essential component in DNA synthesis, which makes it essential to cellular reproduction. It is also required for the production of red blood cells and a deficiency can result in pernicious anemia. B12 also plays a role in myelin synthesis in the nerves, cell reproduction, normal growth and normal erythropoiesis. It is responsible for binding with calcium for calcium uptake and utilization. It is also required in one of the pathways for homocysteine metabolism.

Low vitamin B12 levels are associated with conditions such as hearing loss in elderly women and chronic fatigue syndrome. Research suggests that Vitamin B12 supplementation can alleviate chronic fatigue syndrome by correcting red blood cell abnormalities and improving oxygen delivery to the tissues. Methylcobalamin seems to improve alertness and reduce sleep time in humans with normal sleep patterns due to its positive effect on melatonin production.

Since vitamin B12 is not present in plant foods, vegetarians and vegans must supplement with this vitamin. Deficiency can impair cognitive performance in adolescents who have been fed a strict vegetarian diet from infancy to 6 years of age.

NSP’s Vitamin B12 Complete Liquid provides 1,000 mcg of B12, niacin, B6, B2, and B1. B12 is also an ingredient in all of NSP’s B Complex supplements and multivitamins.

**Folic Acid**

Helps the body make healthy new cells. Everyone needs folic acid, but it is especially critical for pregnant women. When a woman has enough folic acid in her body before and during pregnancy, it can prevent major birth defects in her baby’s brain or spine.

Folic Acid is available as an ingredient in all of NSP’s Vitamin B Complex supplements and multivitamins, but it is also available as a single and is found in Nature’s Prenatal for pregnant women.

**B-Complex Supplements**

B vitamins work best in combination with each other. So, while specific B vitamins might be taken short term for specific therapeutic purposes, it is best to take the B vitamins in a complete formula. Here are three supplements to consider.

**Balanced B-Complex**

NSP’s Balanced Vitamin B Complex contains vitamin B1 (5 mg.), vitamin B2 (6 mg.), niacin (50 mg.), vitamin B6 (9 mg.), folic acid (400 mcg), vitamin B12 (50 mcg), biotin (100 mcg), pantethenic acid (45 mg.), calcium (120 mg.), wheat germ, choline, inositol, PABA, cabbage, wild lettuce, watercress, rice polish and phosphorus. It is a helpful supplement for nervous system disorders, combating stress and enhancing energy. Take one capsule three times daily.

**NSP’s B-Complex**

This blend contains a different ratio of B-vitamins. It contains vitamin B1 (33 mg.), vitamin B2 (33 mg.), niacinamide (33 mg.), vitamin B6 (33 mg.), folic acid (133 mcg), vitamin B12 (33 mcg), biotin (100 mcg), pantethenic acid (33 mg.), choline (33 mg.), acerola, inositol, lemon bioflavonoids, PABA, rose hips, rutin and wheat germ. It can be used for the same purposes as Balanced B-Complex and has the same dosage recommendations.

**Nutri-Calm**

Another B-complex vitamin supplement is Nutri-Calm. It combines B-complex vitamins with vitamin C and schizandra fruit, choline, inositol, bee pollen, lemon bioflavonoids, valerian root extract, passion flower extract and hops flowers extract. This is a great supplement for helping people who are under a great deal of stress. It feeds the nerves and the adrenal glands, helping a person feel relaxed and energized at the same time. Dosage is one tablet three times a day or two tablets twice daily.

**Selected References**

*The Comprehensive Guide to Nature’s Sunshine Products* by Tree of Light Publishing

*PDR for Nutritional Supplements* edited by S.S. Hendler, PhD and D. Rorvik

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