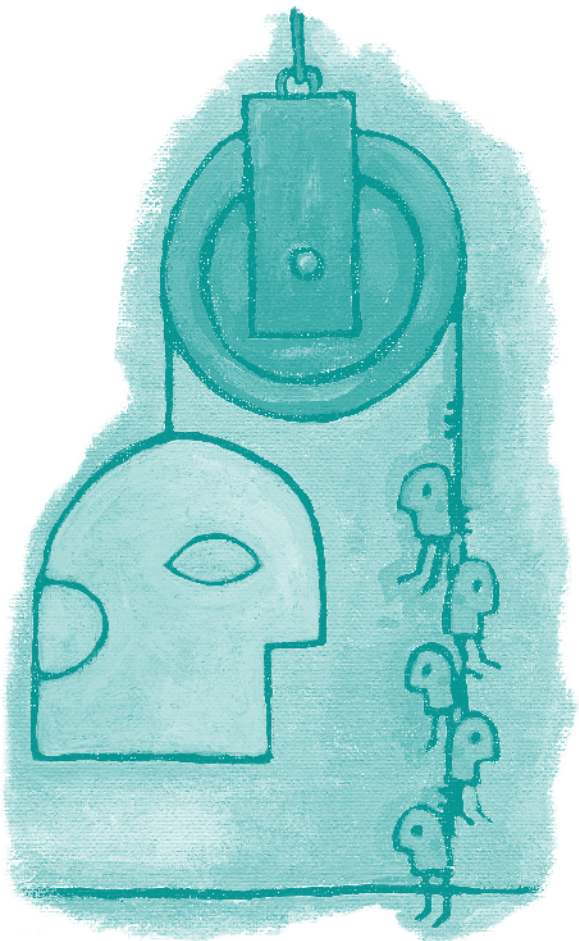


Beware of B6

by Margy Squires

Mention B6 and most people know that this member of the B family is the only one with a warning. B vitamins must be supplied daily from food as they are water soluble and thus not stored. Given the fact that the daily value (DV) for B6 is a mere 2 mg and you'd have to eat a pound of bananas to get that amount, how could you reach a toxic level? Before you decide how much is too much, read what this amazing vitamin can do for you.



B6 expert John Ellis, M.D., author of *Vitamin B6 Therapy*, writes, “my studies, as well as studies conducted by other researchers, have shown that 2 mg is not nearly enough to either prevent or treat coronary heart disease, diabetes, and a number of other disorders ravaging our modern society”. Dr. Ellis’ research spanned 35 years—many of them in the early years of discovering the role vitamins play in human health. He determined that 118 enzymes in the body and 19 out of 20 amino acids—the building blocks of protein—need B6. Ellis, with the help of coenzyme pioneer Dr. Carl Folkers, proved that the signs and symptoms of B6 deficiency directly correlated to low activity of enzymes in human blood.

What does B6 do?

Enzymes are complex proteins and part of every living cell. They are also catalysts, instigating chemical reactions without themselves being used up. Coenzymes, which are what vitamins are, help these enzymes do their job. Your body needs carbohydrates, fat and protein that it gets from food, in order to survive. Enzymes break down the food to isolate these substances for cell energy, repair and growth. In his renowned book, *Prescription for Nutritional Healing*, author James Balch, M.D., writes, “Pyridoxine is involved in more bodily functions than almost any other single nutrient. It affects both physical and mental health.”

One of B6’s critical role is in the metabolism of essential fatty acids and amino acids. It helps synthesize nucleic acid DNA and RNA, the genetic code in cells that program growth and reproduction. B6 helps fluid retention by maintaining potassium and sodium balance. Hydrochloric or stomach acid requires B6, thus it facilitates digestion. B6 is involved in the formation of red blood cells and their iron content, the neurochemicals serotonin and dopamine in the brain and in the health of the nervous system. Low B6 is implicated in anemia, sickle cell, carpal tunnel syndrome, diabetes and diabetic retinopathy, depression, childhood epilepsy and autism, PMS, cardiovascular disease and rheumatism. Without proper protein synthesis to repair tissues, wound healing is impaired. The list goes on and on! According to Ellis, despite its low requirement, he believes more people are deficient in B6 than they realize.

Specifically Speaking

As you can see, the role of B6 as an individual nutrient is critical to health. While we can’t discuss each deficiency disorder in detail, there are certain conditions in which supplemental B6 over and above the 2 mg daily value has been shown to be both preventative and therapeutic: cardiovascular disease, diabetes, women’s health (PMS, pregnancy, menopause) and soft tissue rheumatism.

Women’s Health

B6 helps with fluid retention and swelling in the hands and feet, fatigue, irritability and depression in PMS and for those on birth control pills. In pregnancy and lactation, B6 offsets nausea, plus contributes to the baby’s

Continued

Beware of B6

continued

developing nervous system. Cleft lip and autism may be a result of low B₆ levels during pregnancy. The fluctuating hormones in menopause can cause swelling and stiffness in fingers and hands, relieved by B₆.

Cardiovascular Health

Still the number one killer in the U.S., cardiovascular disease has been linked to high homocysteine levels. Homocysteine is a by-product of the metabolism of methionine, an amino acid found in red meat. Too much homocysteine causes damage in the arterial walls, which promotes plaque by impeding the exit of cholesterol. Arteries harden and blockages occur, raising the risk of heart attacks and strokes. Where high levels of homocysteine are found, low levels of B₆ are found also. B₆ does not work alone; B12 and folic acid, two other members of the B family help control homocysteine levels. B₆ also helps regulate potassium and sodium levels for electrolyte balance.

Diabetes

Four minerals that are low in diabetes are chromium, magnesium, zinc and potassium. Chromium and magnesium in particular, which help regulate insulin levels, require B₆. It's a catch 22 scenario as poor insulin control leads to low magnesium and B₆ levels which lead to diabetic retinopathy, nerve damage and ischemic heart disease. Across the board, juvenile diabetes, type 1 and type 2, all need proper B₆ levels.

Immunity

B₆ stimulates the immune system to make antibodies against viruses and increase white blood cells to search and destroy invading pathogens. B₆ has a direct influence on the thymus gland that helps program immune system cells. Cancer (liver and cervical), AIDS, CFIDs and other disorders that require healthy immunity can't fight without B₆. B₆ applied to liver cancer cultures stopped its growth, an untapped potential for B₆.

Inflammation

B₆ is necessary for the action of enzyme that breaks down histamine, a substance that causes inflammation in 1) allergies and in 2) migraines by temporarily dilating and increasing pulsation in blood vessels leading to the brain. Repetitive jobs as in typing and assembly lines also cause inflammation in the wrists, leading to carpal tunnel syndrome. According to Ellis, soft tissue rheumatism of the hands, shoulders, knees and arms responds to B₆ therapy.

Muscle Pain

The largest amount of B₆ is found in muscles. Interestingly, tryptophan which requires B₆ for breakdown, is the initial pathway for serotonin, a neurochemical involved in altering pain signals. People with fibromyalgia are low in serotonin, which may explain why B₆ helps this condition. In addition, magnesium, another fibro helper, requires the cofactor B₆.

Back to Diet

Numerous studies have been done which show that B₆ is not readily available in foods. Part of the reason is the sensitivity of B₆ to light, heat and oxygen; up to 70% of B₆ is destroyed in food processing, refining and cooking. For instance, tested canned veggies lost 57-77%, frozen veggies 37-77%, and whole grains 80% when processed into white flour. Precooked rice tops the list with a 93% loss.

Foods sources of B₆ include whole wheat flour, sunflower seeds, peas, lean chicken and beef, liver, spinach and bananas. Hungry? You'd have to eat a lot to get your 2 mg. Eating 6 slices of whole wheat bread and one pound of broiled lean beef with one cup of milk only adds up to a little more than 1 mg of B₆!

Remember the enzymes? In order to make this food bioavailable, the stomach and small intestines are lined with microscopic cells containing the enzymes that take apart fat, carbs and protein. Further breakdown occurs by enzymes from the pancreas and liver. B₆ is a necessary cofactor for enzyme function. So to get more B₆, you need B₆! If you're on the Atkins diet, B₆ is especially important since protein synthesis depends on B₆.

Drugs & B6 Levels

Drugs affect levels by either depleting or blocking B₆. Some drugs that interfere include antibacterials (including

Continued

Signs of B6 Deficiency

Anemia • Cracks, sores on lips, mouth • Depression
Edema (Fluid Retention) • Elevated Blood Lipids
Fatigue • GI Distress • Hair Loss • Hyperirritability
Impaired Memory • Mouth & Tongue Inflammation
Pins & Needles in Hands & Feet • Seizures • Slow
Wound Healing

Condition Specific - Suggested Daily Dosages*

CONDITION	DOSE
Anxiety, Depression.....	100 - 500 mg
Asthma50 - 300 mg
Carpal Tunnel Syndrome50 - 500 mg
Emotional or Physical Stress.....	100 - 500 mg
Fluid Retention	100 - 300 mg
Kidney Stones (oxalate)	100 - 300 mg
Optimum Health25 - 300 mg
Oral Contraceptive Use.....	.50 - 300 mg
PMS, Menopause50 - 300 mg
Soft Tissue Pain	100 - 500 mg

* Based on review of Resources

Beware of B₆

continued

penicillamine), anticonvulsants (phenobarbital, dilantin), antihypertensives (hydralazine), anti-inflammatories (aspirin), steroids (prednisone), Premarin and tobacco. Other factors that affect B₆ levels are air pollution, alcohol, dieting, stress and cardiac failure.

How Much?

Chances are if you are deficient in B₆, you're deficient in other B vitamins as well as magnesium, chromium, potassium and other minerals. Your best bet, then, is to take a high potency multiple that will incorporate all your nutrients so you won't have to play a vitamin mineral balancing act. To give you an idea of what amounts are used to treat some of the conditions listed above, check the dosage box.

“Given the safety of B₆ and the recommendations of doctors and experts, the danger to your health does not lie in overdosing on B₆. Rather, beware that you get enough B₆ to maintain levels for optimum health, to prevent progressive disease and to treat current disease processes such as carpal tunnel, cardiovascular disease, diabetes and nerve pain syndromes.”

Final Bewares!

The toxicity levels for B₆ range from 2,000 mg to 10,000 mg, dosages that are not required for optimum health. In addition, neurological problems at “toxic” doses reversed on discontinuing or lowering the dose, attesting to the safety of B₆. As with the DV for other vitamins, the 2 mg recommended by the Food and Nutrition Board of the National Research Council was established in 1989 for healthy individuals. More than 150,000 studies attesting to the role of supplements in preventing and reversing disease have been published in the past 35 years, with one-third published after 1990. Despite the studies, it has only been in the past several years that the Council has been reviewing and making changes based on current lifestyle and disease statistics.

Given the safety of B₆ and the recommendations of doctors and experts, the danger to your health does not lie in overdosing on B₆. Rather, beware that you get enough B₆ to maintain levels for optimum health, to prevent progressive disease and to treat current disease processes such as carpal tunnel, cardiovascular disease, diabetes and nerve pain syndromes.

The question of how much B₆ to take then must

rest with the educated consumer. It's a common question we receive since Fibro-Care™ contains 100 mg of B₆ in four tablets. Even the Multi-Gold™ contains 50 mg, a listing of 2500% of the daily value. Is it toxic? You decide, based on the evidence. Or you could wait for the Council to change the DV but it might take a while!

Precautions: Never try to self diagnose. Neurologic symptoms can be an indication of more serious disorders, such as multiple sclerosis or Lou Gehrig's disease. Those taking drugs for Parkinson's (Levodopa, etc) should not take B₆ without checking with your doctor. Pregnant or lactating women should also consult their physicians.

Resources

1. Aufiero, E et al. Pyridoxine hydrochloride treatment of carpal tunnel syndrome, a review. *Nutr Rev* 2004 Mar; 62(3):96-104.
2. Balch, James & Patricia. *Prescription for Nutritional Healing*, 3rd Edit., Avery Publishing, 2000.
3. Berkson, Burt, MD PhD. *All about B Vitamins*. Avery FAQ Series, Avery Publishing, 1998.
4. Ellis, John M. MD, Pamplin, Jean. *Vitamin B6 Therapy*. Avery Publishing, 1999.
5. Lieberman, Shari PhD, Bruning, Nancy. *The Real Vitamin & Mineral Book*, Avery Publishing, 1997.
6. Robinson K et al. Hyperhomocysteinemia and low pyridoxal phosphate common and independent reversible risk factors of coronary artery disease. *Circulation* 92(15) Nov 95, 2825-2830.

©2004-2011 TyH Publications (M. Squires)

Disclaimer: For informational purposes only. Not intended to diagnose, cure or treat any disorders, or replace professional medical counsel.

Health POINTS

Published in *Health Points*. This article is protected by copyright and may not be reproduced without written permission. For information on a subscription, please call TyH Publications, 1-800-801-1406 or write TyH Publications, 12005 N. Saguaro Blvd., Ste. 102, Fountain Hills, AZ 85268. E-mail editor@e-tyh.com. For information on TyH products, visit our website at www.e-tyh.com.

