

## What Does The Body Do With The B Vitamin Supplement I Take?

The vitamin B supplement you take is a mixture of nutrients that, although they share the same vitamin letter, are in fact distinctly different chemical entities. The reason that they share the same reference letter of the alphabet is that they are all essential water soluble vitamins (Vitamin C being the only other), they frequently work in synergy with each other and they often come from common sources and have similar properties in the body. They were therefore at one time believed to be just the one chemical entity. They are essential in that they must form part of our diet because our bodies cannot manufacture these substances from others, and although most share common biochemical and health functions, there is no health function that requires all of them, and none of them can be totally replaced by another. The B-Vitamin complex that you take can consist of as many as eight different B vitamins, each of which is essential for a healthy body and at one time it was believed that this mixture was only one single vitamin. That is why they are collectively known as vitamin B and were subsequently allocated numbers: it was only later that the individual components were discovered. These eight are vitamin B-1 (thiamine), vitamin B-2 (riboflavin), vitamin B-3 (niacin), vitamin B-5 (pantothenic acid), vitamin B-6 (pyridoxine), vitamin B-12 (cobalamins), biotin and folic acid (folate). They are found in yeast, liver, tuna, bananas and rice among other sources, and, as with all vitamins, without them life would not be possible. Not all vitamins are found in each of these food sources, and vitamin B-12, for example, is available in nutritional quantities only from animal sources. Knowing what they are is all very well, but what does your body do with the B vitamin supplement that you take? Before considering that, the reason that a regular supply is important is because of their water solubility. This is a useful property for a vitamin to possess, because it means that they can easily be transported by the body fluids to the tissues where they are needed. The downside, however, is that they are consequently also easily flushed from the body, and your body cannot store any of the B vitamins. You therefore must have a regular dietary source that can be augmented through supplementation. This is particularly desirable in alcoholics, those on diets to lose weight and vegans who are advised to take a regular vitamin B-12 supplement. A lack of vitamin B will make you feel tired and lack energy because they play a big part in your body's metabolism of blood glucose into energy. They also help to maintain a healthy immune system, keep your nervous system in tip-top condition and maintain good healthy skin, hair and muscles. The B complex is also very important in maintaining healthy blood and liver, and each and every component of the mixture has a specific part to play, both on individually and by interaction with others in the B complex. Rather than examining what your body does with the supplement as a whole, let's have a look at each component, and what your body does with that. Taking them one at a time, thiamine (B1) helps you to burn carbohydrates to generate energy. It is highly water soluble and must be taken daily. In the form of thiamine pyrophosphate it plays a key part in the metabolism of carbohydrates to energy, and also in the metabolism of certain amino acids. If you rely heavily on a high carbohydrate diet, you will need a good regular supplement of thiamine to be able to convert them to energy. Vitamin B2 (riboflavin) also plays a part in fat and carbohydrate metabolism and the formation of adenosine triphosphate (ATP), the molecule of energy. It plays a significant part in the health of your skin and a deficiency is associated with mouth ulcers, cracked lips, flaky skin and bloodshot watery eyes. It also activates vitamin B6 and folic acid, one of the cases where the B vitamins work together synergistically. Vitamin B3, or niacin, is well known to women as a component of some shampoos, and helps to promote health hair. However, this vitamin also takes part in the process of energy creation within your body, and helps to maintain a good muscle tone within the digestive tract. It is also used as a supplement for the treatment of diseases related to high levels of LDL cholesterol and is useful for the treatment of atherosclerosis. Pantothenic acid is also found as a component of shampoos, so no prizes for guessing one of its functions. Vitamin B-5 plays a significant part in the energy-producing Krebs Cycle, or Citric Acid Cycle, that is used by every cell in your body to generate energy just where it is needed. It is also needed to synthesize acetylcholine, a neurotransmitter needed for good brain function and it helps to reduce stress. Pantothenic acid is also closely involved in the production of cholesterol in your liver: cholesterol is not all bad, and is needed by your body to produce some of the steroid hormones and also vitamin D. Amino acids are the small units that are used to biosynthesize proteins and ultimately the genes and DNA that determine who you are. The major factor involved in processing these amino acids is Vitamin B6 (pyridoxine), one of the lesser known of the vitamin B complex. It synthesizes and breaks up different amino acids to produce a variety of other compounds, such as the hormones serotonin, melatonin and dopamine. Deficiencies in these hormones can be very serious, Parkinson's disease believed to be connected with a dopamine deficiency for example, and other disorders include kidney stones, anemia and many skin complaints. Although deficiency of vitamin B6 is rare, it can occur in alcoholics and those with chronic kidney problems. It is believed that many diets are deficient, however, and a good vitamin B supplement would ensure that this did not occur. Vitamin B-12 is one where deficiency can occur, particularly in alcoholics and vegans. It is available in sufficient quantities only from meat sources, and a supplement is indicated in anyone with a low meat intake in their diet. It is used by your body for the replication of DNA and to allow the normal activity of your body cells. It also helps to control homocysteine levels in conjunction with vitamin B6 and folic acid: homocysteine is a high-risk amino acid associated with atherosclerosis and cardiovascular disease that can lead to Alzheimer's disease, heart attacks and strokes. The seventh, biotin (sometimes referred to as vitamin B7) also takes part in the metabolism of energy, but deficiencies have not been known, and the final known member of the B vitamin complex is folic acid. This is essential for cell growth and the synthesis of RNA and DNA in the body. RNA (Ribonucleic acid) is responsible for the synthesis of proteins in your body, and the well known Deoxy-ribonucleic acid (DNA) holds the genetic information of your body. Folic acid is therefore essential in the growing fetus, and any other cellular system that rapidly regenerates such as blood cells and the various cells of the immune system. Without folic acid your body would be more susceptible to bacterial and viral attack, and less able to protect you from foreign invaders into your body tissues. Although deficiency is not common, folic acid is present in fresh food only and degrades when stored at room temperature and when cooked. A supplement is therefore advisable during pregnancy to help to prevent neural tube defects. It is evident that the Vitamin B complex plays many parts in the chemistry of your body, and that a supplement can be of benefit in assuring that there are no deficiencies.

A good B complex can be found at your local or internet health food store.

### About the Author

More information on [B-complex vitamins](#) is available at VitaNet &reg;, LLC Health Food Store. <http://vitanetonline.com/>

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