

## Mushrooms and B-12 David Christopher, M.H.

Our health is dependent on the red blood cells in our bodies transporting essential nutrients to each of our trillions of cells. Without these nutrients our cells cannot function correctly. The red blood cells that transport these nutrients cannot be made without vitamin B-12. It is also a co-factor for the production of DNA. In fact, the initial diagnosis of B-12 deficiency is made from observance of DNA irregularity (macrocytosis). Proper functioning of the brain and nervous system are dependent on the oxygen carried by the red blood cells, which again are dependent on vitamin B-12.



Medical and nutritionist sources say that if you are a vegan, without supplementation, you will develop a vitamin B-12 deficiency. This statement is possible, under certain conditions. If fermented foods and mushrooms are not included in the vegan diet, a deficiency could occur. Animals, humans, and plants can't manufacture this important nutrient. Plants cannot even store this essential vitamin. However, we as humans can store a two years supply of it. Vitamin B-12 is only produced by microorganisms like bacteria, yeast and fungi. Mushrooms are a fungi and do contain this important vitamin. One cup of mushrooms only supplies 3% of the daily need of B-12. Alternatively, animal products generally supply 100% of one's needs per serving. Other sources for obtaining this nutrient are fermented foods such as miso, tempeh and possibly sauerkraut and kimchi. A good quality nutritional yeast is an excellent source of vitamin B-12 (check the label for vitamin content) and it can supply the daily need of B-12 in one rounded teaspoon.

The majority of individuals who eat the standard American diet obtain their vitamin B-12 from eating meat. Animals cannot make vitamin B-12. Lions, tigers, bears and animals that are raised for human consumption do not eat fermented foods and mushrooms. So where is the B-12 coming from? Microorganisms residing in our intestines manufacture this essential vitamin. The microorganism *Propionibacterium shermanii* consumes our mucosa and excretes vitamin B-12, which is immediately absorbed. This happens in the last segment of our small intestine known as the terminal ileum. Therefore, it is possible to survive without vitamin B-12 in our diets, as do all herbivore animals, if we maintain a healthy flora in our intestines.

Obtaining B-12 from our food supply is much more complicated. Protein rich foods high in B-12 require the protein to be separated from the vitamin by hydrochloric acid. Afterwards, the B-12

needs to unite with a substance called intrinsic factor, which is manufactured and excreted in the stomach, for uptake into our bodies.

Supplementation by manufactured B-12 doesn't need intrinsic factor and can be absorbed in the mouth, if not attached to a protein.

Certain drugs like oral contraceptives decrease levels of B-12. Anti-biotic use entirely wipes out the microorganism that manufactures vitamin B-12. Foreign proteins (as contained in vaccines) in the bloodstream create an auto immune disease (pernicious anemia) that destroys the body's cells that manufacture intrinsic factor, which is needed to uptake B-12 from food.

It is possible to be a vegan and not be vitamin B-12 deficient, if you stay away from anti-biotic therapy and drugs that interfere with normal body functioning. Improve your odds of good health by eating fermented foods, nutritional yeast and those delicious mushrooms.