

Preventing vitamin B12 deficiency among vegetarians, vegans and the elderly

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Older people, vegetarians and vegans should take special care to get enough vitamin B12 through changes in their diets, a review of scientific studies on the vitamin has concluded. In the article, published in ACS' Journal of Agricultural and Food Chemistry, the authors say that many of the best-known sources of vitamin B12 actually contain a form of the vitamin that humans can't use.

Fumio Watanabe and colleagues explain that the usual dietary sources of [vitamin B12](#) are animal-based foods, such as milk, eggs, meat and fish, although a few plant-based foods also contain high amounts. The only living things that can make vitamin B12 are certain bacteria, and they are in the digestive tracts of animals. The bacteria also can live on or near some types of plants, providing them with the nutrient. Vegetarians and vegans, who avoid animal products, have a high risk of developing a vitamin B12 deficiency. Older people who have certain [gastrointestinal disorders](#) also are at risk because their bodies can't absorb the usual type of B12 that's in food. Low levels of vitamin B12 have been linked to health problems, including elevated [blood levels](#) of [homocysteine](#), which may increase the chances of developing heart disease, stroke and other diseases.

The scientists reviewed almost 100 scientific studies on the topic. They found that some highly touted sources of vitamin B12, such as blue-green algae called Spirulina that are sold as a dietary supplement, and some shellfish, instead contain high levels of a "pseudo" or "false" form of the vitamin that the human body can't use. In addition, cooking and

storing foods can destroy "true" vitamin B12. Based on their review, they note that vegans could add some fermented foods, two types of edible algae, two types of mushrooms and B12-enriched vegetables to their diets to get enough of the nutrient. For the elderly, the scientists say that they should consume B12-fortified foods, as well as fish or shellfish extracts and canned clam broth, which all contain free B12 that their bodies can use.

More information: pubs.acs.org/doi/abs/10.1021/jf401545z

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