

A Push for Adding B12, Though the Jury Is Out

By [JANE E. BRODY](#)

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It has long been known that [vitamins](#) must be obtained from sources outside the body — food and drink, and for [vitamin D](#), exposure to sunlight — and that failing to get enough of a vitamin can result in well-defined and sometimes deadly diseases.

But in recent decades, epidemiological studies have linked several nutrients, especially vitamins C and E, [beta carotene](#) and [folic acid](#), to chronic ills including heart disease and [cancer](#). That led people to take large doses in hopes of warding off dire consequences.

But when scientifically designed clinical trials were conducted, most early promises proved false. Now another vitamin, B12, is being discussed as a factor in several ailments that commonly afflict older people, including heart disease and [stroke](#), [Alzheimer's disease](#) and [dementia](#), frailty, [depression](#), [osteoporosis](#) and even some cancers.

As with the other vitamins, the evidence for the role that low levels of B12 may play in these problems comes almost entirely from epidemiological studies — those that follow a population of people, in this case measuring their B12 levels to see whether there are correlations with health. For example, a continuing study of 2,576 adults in Framingham, Mass., linked low blood levels of B12 to bone loss in men and women; a study of 703 women in their 70s living at home in Baltimore linked markers of [B12 deficiency](#) to frailty; and a study published this year, of 107 community-dwelling people over 60 who were followed for five years, linked low levels of B12 to shrinkage of the brain.

This latest finding has attracted much attention, given the problem of Alzheimer's and the fact that B12 protects the nervous system. Without B12, permanent neurological damage can occur.

In many of the studies, symptoms were seen in people with B12 levels just slightly below normal. In some cases, symptoms were seen in people with B12 levels considerably above the levels that cause the best-known disease of B12 deficiency, anemia. The findings have prompted some experts to question whether blood levels of B12 now considered normal are really optimal.

A Complex Nutrient

The studies suggest considerable benefits from the increasing of B12 levels, especially in adults over 50. But these types of studies cannot prove cause and effect. Until placebo-controlled clinical trials are conducted, it is not known whether artificially increasing levels of B12 among people at the low end is safe and beneficial.

Still, a growing number of experts, who cite well-established explanations for drops in B12 levels, especially in older people, are urging everyone over 50 to increase their B12 intake through supplements or fortified foods. These experts believe it cannot hurt and may help to keep people hale and hearty.

Dr. Donald Jacobsen, a biochemist at the Cleveland Clinic who has studied B12 for 40 years and is a consultant for a company developing a new B12 supplement, explained that this vitamin is needed by every cell in the body.

Since it is water-soluble and only a small fraction of the amount consumed is absorbed by the body, taking large doses of it appears to be safe, Dr. Jacobsen said in an interview.

The only dietary sources are animal products and bacteria: meat, fish, poultry, eggs and milk and nutritional yeast.

Vegans, who consume no animal foods, must take a B12 supplement or eat plant foods fortified with the vitamin. But there are other health factors that lead to a need for supplementation.

The body has a complicated means of acquiring naturally occurring B12. In animal foods the vitamin enters the body attached to protein; to be absorbed, it must first be separated from protein by stomach acid. The vitamin then combines with a substance in the gut called intrinsic factor, which enables it to pass through the small intestine into the bloodstream.

People with low levels of stomach acid or who lack intrinsic factor are at risk of developing a B12 deficiency. Among them are many millions of older people who develop atrophic [gastritis](#), a loss of acid-producing stomach cells, and those who chronically take acid-lowering drugs like Prilosec, Prevacid and [Zantac](#) to control reflux. Because the body has a temporary storage system for B12 in the liver, a deficiency may not show up for several years after acid levels fall.

Others who are at serious risk of a B12 deficiency are those who lose major parts of their stomachs or parts of their small intestine, through, for example, surgery for weight loss or [ulcers](#). They must take daily B12 supplements to stay healthy.

But more often it is the elderly — as many as 30 percent over age 65 — who are found to have B12 levels that are less than ideal.

“It’s a huge problem,” Dr. J. David Spence, a neurologist and stroke specialist at the Robarts Research Institute in London, Ontario, said in an interview.

“Close to 80 percent of older adults with a B12 deficiency don’t know it,” he said. “Neither do their doctors. Doctors tend to think ‘normal’ means adequate.”

Dr. Spence said that the low end of normal for B12 — commonly 160 to 250 picomoles per liter of blood serum — was hardly optimal.

That level, he said, could result in a host of chronic ailments, including cardiovascular disorders and damage to the nervous system, which becomes permanent if not caught and treated early. Dr. Spence, among others, considers 350 picomoles to be adequate.

Although it was proved long ago that people who lack enough intrinsic factor to absorb B12 can benefit from oral doses of the nutrient, most physicians were taught, and many still think, that it has to be given by injection as often as weekly to prevent life-threatening [pernicious anemia](#).

Dr. Godfrey Oakley, a research epidemiologist at [Emory University](#) in Atlanta, said pernicious anemia could be cured with oral doses — 1,000 micrograms of B12 a day. For most people 50 and older who still have intrinsic factor but perhaps not enough stomach acid to benefit fully from B12 in animal foods, a daily intake of five or six micrograms of synthetic B12 from a supplement or fortified foods, like breakfast cereals with added B12, can correct the deficit, he said in an interview.

Divergent Views

Dr. Oakley is a staunch advocate of adding B12 to flour, as is now done with another B vitamin, folate. “If B12 were required in flour, the problem of low stomach acid would essentially disappear,” he said. “These people are not particularly sick but may be at increased risk of developing dementia, osteoporosis and cardiovascular disease.”

But another longtime researcher in the field, Dr. Ralph Carmel, a hematologist and director of research at New York-Methodist Hospital in Brooklyn, cautions against such recommendations. “The associations found in the studies are potentially important, but no one has yet shown that if you give B12 it will make a difference down the road,” he said. “We need clinical trials.”

Furthermore, he maintains that the small amount of B12 in most supplements will not correct a mild deficiency. “You don’t change anything,” Dr. Carmel said, “until you give 1,000 micrograms a day.”