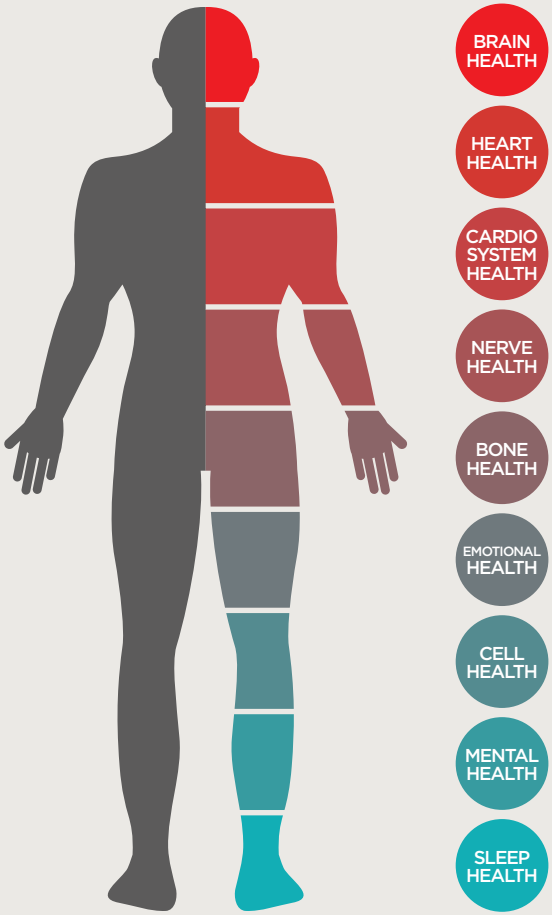
SPECIAL REPORT

B VITAMINS

WHAT YOU REALLY NEED TO KNOW THAT YOUR DOCTOR MAY NOT HAVE TOLD YOU.

B vitamins are more than just for energy, they are essential for healthy aging and support key areas of health, including:



By Scott Conard, M.D., DABFM, FAAFP
Harolyn Gilles, M.D., FAAFP • Alexander Schauss, Ph.D., FACN, CFS

B vitamins are more than just for energy: they are essential to overall wellness and healthy aging. They support key areas of health, including brain health, nerve health, mental health and so much more. Discover what your doctor may not have told you about B vitamins in this exclusive special report.

B12 and your brain

By Scott Conard, M.D., DABFM, FAAFP

Over the years, study after study has shown that B12 plays a crucial role in important brain functions, from memory to concentration to mood. And research continues to underscore the importance of this vitamin in brain health.

Mild B12 deficiency may speed mental decline

Past studies have shown that a severe Vitamin B12 deficiency can speed cognitive (mental) decline, but recent research from Tufts University is even more concerning: scientists found that being even *mildly* deficient may speed mental decline[1]—suggesting that more people may be at risk than previously thought.

Scientists at the Jean Mayer USDA Human Nutrition Research Center on Aging analyzed data on more than 500 men and women enrolled in the long-term Framingham Heart Study. Divided into groups based on their B12 levels, they were administered dementia screening tests over an eight-year period. Researchers found that being in the groups with the lowest levels of B12 was associated with accelerated cognitive decline. However, there was no substantial difference between those with the worst B12 blood levels, and those in

the second-lowest group, indicating that even a milder B12 deficiency can affect the rate of decline.

B12 and memory

Does B12 status affect memory? Medical science has shown that it does, and research out of Australia suggests that taking a B12 supplement may help improve overall cognitive functioning, immediate recall and delayed recall.[2]

The Australian study took place over a two-year period, and looked at over 700 people ages 60 to 74. Every day, study participants took either a supplement with B12 and folic acid, or a sugar pill (no one knew which one they were taking, of course). At the end of two years, the whole group was given mental tests for memory, attention and speed. The results?

Those who took the B12 supplements scored better on the mental tests than those who took the sugar pills. This research, published in the *American Journal of Clinical Nutrition*, is encouraging to all of us who recognize what a difference B12 can make to our health and well-being. In my medical practice, I've seen people's lives turn around—in areas of recall, mood and mental sharpness—just by correcting their B12 deficiencies.

It is well-documented that as we age, B12 absorption from food becomes more difficult

It is well-documented that as we age, B12 absorption from food becomes more difficult, due to a variety of factors. Because of this, I have long recommended augmenting the diet with a high quality Vitamin B12 supplement. As science continues to show more and more ways that a lack of B12 adversely affects our health, it becomes even more important that we use a supplement that effectively provides our bodies—and our brains—with the Vitamin B12 they so desperately need.

References:

1 Morris, M.S., Selhub, J. & Jacques, P.F. (2012). Vitamin B12 and Folate Status in Relation to Decline in Scores on the Mini-Mental State Examination in the Framingham Heart Study. *Journal of the American Geriatrics Society*, 60, 1457-1464.

2 Walker, J., et al. (2012). Oral folic acid and vitamin B12 supplementation to prevent cognitive decline in community-dwelling older adults with depressive symptoms—the Beyond Ageing Project: a randomized controlled trial. *Am J Clin Nutr*, 95 (1), 194-203.

This could be making you B12 deficient

By Harolyn Gilles, M.D., FAAFP

Vitamin B12 is a critical vitamin for the central nervous system, the peripheral nervous system, the cardiovascular system, the cerebral vascular system and more. Unfortunately, there are many reasons why B12 levels could be low.

I've made up a little mnemonic for myself for a "dirty dozen" causes of B12 deficiency. They all start with the letter "A":

1. **Age**—stomach acid is an important part of B12 absorption and it decreases with age
2. **Antacids**—may block stomach acid, which we need in order to metabolize our B12
3. **Anti-inflammatories** (such as aspirin)
4. **Alcohol**
5. **Anesthesia** (nitrous oxide)
6. **Antibiotics**—many antibiotics interfere with digestion of B12
7. **Anti-diabetic medications** (e.g. metformin)
8. **Atrophic gastritis**—the cells in the stomach lining become atrophic so they're not able to produce as much gastric acid
9. **Autoimmune diseases** such as Celiac disease
10. **Anticonvulsants** (phenytoin, phenobarbital)
11. **Anemia**—a certain kind of anemia can literally dilute or prevent the production of intrinsic factor, a protein necessary for B12 absorption. B12 deficiency can also cause anemia
12. **Avoidance of meat**—vegetarians and vegans are high risk for B12 deficiency because B12 is found in meats, not plant material

Now the "twelve A's" aren't a comprehensive or exhaustive list of the causes of Vitamin B12 deficiency. Other causative factors can include: stress, birth control pills, statin drugs, gastric bypass surgery, ulcers, certain hormone replacement medications, gout medications, pregnancy, breast-feeding, chemotherapy and more.

Special note on stress:
I like to emphasize the importance of stress as a cause of many physical problems in our bodies including the depletion of our vitamins, specifically B12, folic acid and B6.

Stress comes in all forms; we're talking not only physical stress such as infections, surgery, injuries and trauma, but also emotional stress. These include "good" stressors like having a baby and getting married but we also have the negative side of that which is problems with children, a difficult marriage, divorce, and so on.

One of the most unrecognized stressors in our body is lack of sleep. We need sleep in order to regenerate

our cells. It's during REM sleep for instance that our hormones are made and secreted. If we don't have enough sleep—we call it restorative sleep—then we're not going to make the necessary hormones, proteins, etc. We're not going to absorb our vitamins and we can end up with physical maladies simply because we're not getting seven to eight hours of restful, peaceful sleep each night.

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B12: Old vitamin, new discovery

By Alexander Schauss, Ph.D., FACN, CFS

In recent years, there has been a lot of research to figure out just which vitamins and minerals people are missing in their diets, and one of the key vitamins is Vitamin B12. Vitamin B12 is absolutely essential to the human body. For instance, you need Vitamin B12 to make red blood cells in your bone marrow.

Just think about what a red blood cell does for you: It carries oxygen. It carries nutrients and it feeds all the cells and all the tissues in our body. You start decreasing the amount of red blood cells that you produce, and you're going to get anemia (which is basically insufficient red blood cells). Interestingly, anemia is what started the search for this vitamin over 150 years ago.

People were getting anemia, and suffering a variety of ill effects from it, and no one could figure out what was going on. Well, one day somebody said, there is a nutrient missing here—and it took about 100 years before they finally figured out that this missing nutrient was Vitamin B12. Once people started getting the Vitamin B12 they needed, the anemia started going away. Their health improved and the signs and symptoms associated with Vitamin B12 deficiency went away too.

At one time, not much was known about Vitamin B12 and its role in

human health, but over the years more and more evidence has accumulated showing the importance of this nutrient. What research also uncovered is that as we age, we start making less stomach acid. This decreased acid can inhibit your body's ability to absorb enough of the B12 that it needs.

One man who studied nutrients and their effects on health, Alfred Libby, developed a delivery system for Vitamin B12; this meant that the B12 could bypass the digestive tract, and it also meant that his patients, many of them heroin addicts, would no longer have to get their B12 through injections.

I actually had the opportunity to meet Alfred Libby. A true pioneer, he was an extremely compassionate individual with a great heart. He tried to help his patients by finding out which nutrients they were deficient in; he wanted to see if restoring those nutrients would restore their health. It was this pursuit that led to his delivery system for B12. This innovation helped his patients at the time, and it continues to help people all over the world today.

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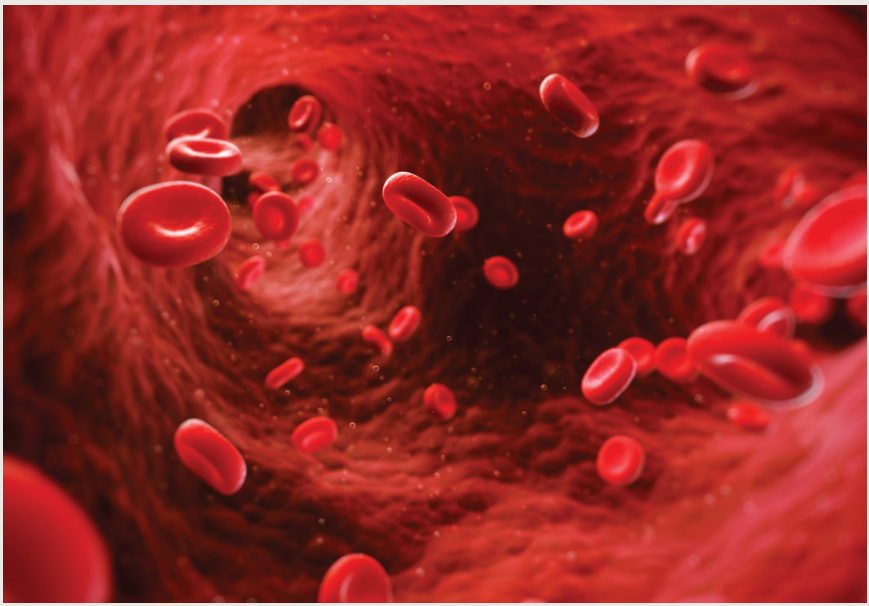


ALFRED LIBBY TIMELINE

1824

Combe describes pernicious anemia and its possible relation to digestive system disorders.

1926

Researchers Minot and Murphy discover that a diet of large amounts of raw liver will restore normal red blood cell level in pernicious anemia sufferers.

1929

Castle theorizes that intrinsic factor in normal gastric secretions is involved in the control of pernicious anemia.

1948

Vitamin B12 is discovered in meats, and isolated by both U.S. and British researchers.

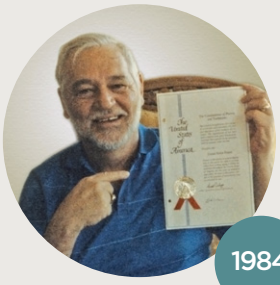
1955

Vitamin B12 is synthesized for the first time.

1979

Alfred Libby theorizes that B12 could be delivered to the bloodstream via a dissolving, under-the-tongue tablet, thus avoiding injections.

ALFRED LIBBY TIMELINE



1980

Alfred Libby creates a slow dissolve B-12 tablet.

1984

A patent is awarded to Alfred Libby for his under-the-tongue absorption process for B12.

1985

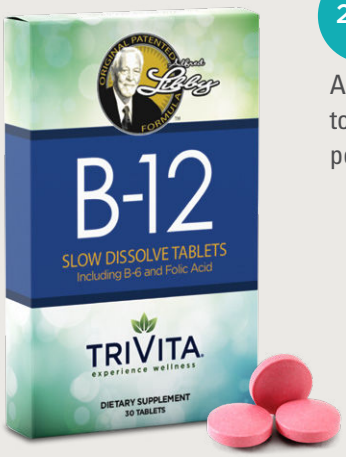
Folic Acid and B6 are added to Alfred Libby's original formula.

1999

Alfred Libby's Slow Dissolve B-12 Tablets begin to be featured on national radio and television programs.

2015

Alfred Libby's B-12 continues to be enjoyed by thousands of people every day.



Heartburn? The B12 link you need to know about

By Scott Conard, M.D., DABFM, FAAFP

We all get heartburn from time to time. But taking medications to alleviate it may affect your B12 levels. Although medical science has known for some time that acid suppressing drugs can block the body's absorption of Vitamin B12, a recent study has re-confirmed this often overlooked link between B12 and acid blockers.

In a Kaiser Permanente study, researchers set out to study the association between Vitamin B12 deficiency and two types of acid suppressing drugs: proton pump inhibitors (PPIs), used to treat acid reflux and peptic ulcer disease; and histamine 2 receptor antagonists (H_2RAs), used to treat peptic ulcer disease and gastroesophageal reflux disease (GERD). Both types of drugs are routinely prescribed and widely available over the counter; annual sales in the U.S. alone are in the billions of dollars.

65% increased risk of deficiency

In the study, 25,956 patients who had been diagnosed with a B12 deficiency were compared to 184,199 patients without a B12 deficiency. Researchers found that those who had been taking PPIs for two years or longer were 65% more likely to have a B12 deficiency.[1] High doses were even more strongly associated with deficiency. Those taking H_2RAs for two or more years were also at increased risk of B12 deficiency, though not to the degree as PPI users.

A Vitamin B12 deficiency can cause problems that range from aggravating to life-changing. The National Institutes of Health lists these problems that can stem from deficiency[2]: tiredness, weakness, constipation, loss of appetite, weight loss, megaloblastic anemia, nerve problems, balance problems, depression, confusion, dementia, poor memory, soreness of the tongue or mouth, and nervous system damage.

References:

1 Lam, J.R., et al. (2013). Proton Pump Inhibitor and Histamine 2 Receptor Antagonist Use and Vitamin B12 Deficiency. *JAMA*, 310(22), 2435-2442. doi:10.1001/jama.2013.280490.

2 Dietary Supplement Fact Sheet: Vitamin B12. Office of Dietary Supplements, National Institutes of Health. Retrieved from http://ods.od.nih.gov/factsheets/VitaminB12-QuickFacts/

B12 and your bones

By Scott Conard, M.D., DABFM, FAAFP

When we think bone health, calcium and Vitamin D come to mind. But a recent study showed an intriguing link between low B12 levels and increased risk of bone fracture in older men.

Researchers from the University of Gothenburg in Sweden studied 1,000 Swedish men with an average age of 75. After six years, those with the lowest levels of B12 at the beginning of the study had a 70% increased risk of fracture, compared to those with higher levels. This was true even after researchers took into account other risk factors for fracture such as bone mineral density, previous fractures and calcium intake.

Will adding Vitamin B12 to the diet help reduce the risk of fracture? Medical science does not have the answer to that question; however, B12 has so many well-established health benefits that it's always wise to keep your B12 levels in a healthy range. A B12 deficiency is nothing to trifle with; it can adversely affect your health—in some cases permanently.

Note: If you are concerned about your bone health, please consult with your healthcare provider.

Reference:
Lewerin C., et al (2014). Low holotranscobalamin and cobalamins predict incident fractures in elderly men: the MrOS Sweden. *Osteoporos Int*, 25(1), 131-40. doi: 10.1007/s00198-013-2527-y.

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