

Prime Living
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Vitamin B-12 Deficiency in Seniors

You feel some tingling in your hands, like needles and pins. You have some memory problems or occasionally get confused about what you were supposed to do today. Your doctor has told you that you are anemic. You've been feeling sad and depressed for no apparent reason. Your balance seems to be off and you have fallen twice in the past month.

Do one of these scenarios or something like them sound familiar to you or to someone you know? If so, has your doctor considered Vitamin B-12 deficiency as the cause?

Vitamin B-12 deficiency is surprisingly common in seniors. Studies suggest that in persons over age 75, as many as 12 to 16% may be deficient in B-12, with deficiency rates even higher in poor inner-city populations. Other studies have shown that many physicians are unaware that B-12 deficiency is this common in seniors.

What is Vitamin B-12? Where do we normally get it? How do we become deficient? And what kind of problems or symptoms can B-12 deficiency cause?

Vitamin B-12, also known as "cobalamine," is an ancient nutrient. Fossil evidence suggests that it has been a necessary part of life going back to the most primitive vertebrates. It is the only chemical in our bodies that contains the element cobalt. B-12 is a key factor in the production of DNA and other necessary biochemicals. Almost every cell in our bodies needs adequate amounts of B-12. It is essential for the production of healthy blood and for normal brain and nerve function.

We humans can only get the B-12 we need from our diets. Foods naturally rich in B-12 include eggs, milk and dairy products, and all animal products, including beef, chicken, pork, and fish. B-12 does not naturally occur in any grain, fruit, or vegetable. Our bodies must digest and absorb the B-12 in our diets and we have evolved a complex multi-stepped process to do this. The process is dependent on the normal function of our salivary glands, our stomach, our small intestines, and our pancreas. A number of very specific proteins that our bodies produce must be present at particular points along the absorption process.

The typical American diet, being rich in animal products, contains ample amounts of Vitamin B-12. It is very rare to encounter a person who is deficient in B-12 because of dietary causes. Our bodies are efficient at absorbing the excess B-12 in our diets and storing it in our livers. Healthy well nourished adults have several years of B-12 tucked away in storage form. So, if you suddenly stopped absorbing any further B-12, you would not begin to show deficiency symptoms for several years.

The best known cause of B-12 deficiency is pernicious anemia. In seniors, pernicious anemia causes approximately one-third of B-12 deficiency cases. Pernicious anemia is an inherited condition that causes a loss of Intrinsic Factor, a protein normally produced by our stomachs which is one of the necessary proteins in the B-12 absorption process.

It is important to note that the B-12 present in our food is tightly bound to food proteins. This bond must be broken before the B-12 can be absorbed, and this step requires the presence of an adequate amount of stomach acid. Recent studies suggest that another third in seniors become B-12 deficient because of an age-related loss of stomach acid. However, for the same reason, people of any age who regularly take medications that turn off stomach acid will not absorb any of the B-12 in their diets. In time, they too will develop symptoms of B-12 deficiency. The surprisingly high prevalence of B-12 deficiency we see today is in part due to the widespread use of these acid-lowering medications. Another commonly used medication that can cause B-12 deficiency is metformin (Glucophage). This medication is very effective in the treatment of type II diabetes but it blocks the absorption of B-12 in the small intestine.

The signs and symptoms of B-12 deficiency almost always show up as problems in the blood, the peripheral nerves, or the brain. Any of the causes of B-12 deficiency can produce symptoms in any of these areas. Some people have only blood problems, some have only nerve or brain problems. For example, pernicious anemia (inadequate Intrinsic Factor in the stomach) can present with nerve problems and without anemia. It is critical that physicians and the public understand that many of the common problems experienced by seniors may be caused by a deficiency of B-12. These “geriatric syndromes” include memory problems, poor concentration, depression, falls, balance problems, poor appetite, mouth sores, generalized weakness, fatigue, anemia, low platelet counts, dysesthesias (tingling or funny sensations in the hands or feet), and others.

When a certain vitamin deficiency is so common and when it can cause so many common problems, it would make sense to consider it often. B-12 deficiency is not difficult to diagnose. Your doctor can order a serum Vitamin B-12 level--a simple, inexpensive, and widely available blood test. If the serum B-12 is normal, you do not have a deficiency. The problem, however, is that “normal” for seniors is a topic of debate among experts. Most labs define normal as a level over 260 pg/ml. But more recent studies suggest that for seniors, the serum B-12 level should be above 400 pg/ml. If there is any doubt, your doctor can order the much more sensitive and specific serum methylmalonic acid, or MMA. The MMA level will be *elevated* in B-12 deficiency. This test is more expensive and takes several days to perform. It is not needed in most cases but it can be very helpful in questionable or borderline cases.

Treating B-12 deficiency is easy to do and it's very inexpensive. Except in cases caused by medications, treatment is usually necessary for life. Replacement B-12 may be given by oral tablets or by injection. Both methods have been shown to be safe and effective. The key is to be absolutely sure that the deficient person continues to receive their treatment to prevent return of symptoms.