

The Source of B12 Deficiencies

Vitamin B12 deficiency is a common problem that affects the general population, particularly the elderly. There are two categories of sufferers of vitamin B12 deficiency. The first group consists of asymptomatic vitamin B12 deficiency and the other one is composed of hematologic vitamin B12 deficiency.

Vitamin B12 is a necessary nutrient and a lack, or deficiency, of this vitamin may cause serious impairment of normal bodily functions. Vitamin B12 is primarily found in animal proteins like red meat, poultry, fish, eggs, and dairy. Plants and vegetables do not usually include vitamin B12, unless they have been contaminated by soil microorganisms, so plants and vegetables are not considered to be reliable sources of the vitamin. Ovolacto vegetarians and lacto vegetarians can get adequate cobalamin, or vitamin B12, but strict vegetarians or vegans are at risk of a deficiency.

The body's process of absorbing vitamin B12 from foods is complex. And that complex process is why a defect in the absorption process can become a cause of vitamin B12 deficiency. Regularly, the absorption of vitamin B12 occurs in the stomach where the release gastric acid and pepsin help release cobalamin from animal proteins. Vitamin B12 absorption may also happen in the mouth where it binds preferentially to salivary R protein.

Pancreatic enzymes and an alkaline pH may also react with vitamin B12 and add to its rate of absorption. These two compounds digest the R protein-cobalamin complex but prior to its absorption, vitamin B12 first binds to intrinsic factor (IF) to form an IF-cobalamin complex.

Conditions that Influence Absorption

One cause of vitamin B12 deficiency is certain medical conditions that inhibit vitamin B12 absorption. These conditions include low consumption of vitamin B12 due to a diet low in vitamin B12. The root of this vitamin B12 deficiency is typically veganism, or those strict vegetarians that eat only plants and vegetables that do not contain any cobalamin.

The inability to digest food protein is also a leading cause of vitamin B12 deficiency. This may be caused by a lessened release of gastric acid, which is in turn caused by an underlying health condition.

As mentioned previously, absorption of vitamin B12 by the body is achieved when all the factors # that is, the compounds necessary are present. Vitamin B12 combined with salivary R protein needs to bind with intrinsic factors in the small intestine in order for the vitamin to be appropriately absorbed. If there are no intrinsic factors, then absorption fails and thus, this scarcity of a vital compound can be a cause of vitamin B12 deficiency. Conditions that lead to lack of intrinsic factors may include pernicious anemia and gastrectomy.