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Cancer Center

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What is B12?

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Vitamin B12 is found in many foods. For those who may not get enough, a healthcare provider can identify and appropriately treat deficiencies.

Vitamin B12 is involved in the synthesis of phospholipids, neurotransmitters, DNA, and the metabolism of fatty acids and amino acids. It is found in meat, fish, dairy products, and fortified cereals.

A number of studies have evaluated B12, [folic acid](#), and [B6](#) as part of homocysteine-lowering therapy. This is because elevated homocysteine levels can be a marker for various conditions including heart disease, depression, cognitive disorders, and risk of fracture. However, findings are mixed on whether long-term supplementation with this combination improves fracture risk or medical conditions even when it lowers homocysteine levels. Data on whether this supplement combination can lower cancer risk are also mixed.

Since vitamin B12 is found in many foods, deficiency is more common in the elderly, strict vegetarians, or those who take oral contraceptives or medications for gastric disorders or insulin resistance. Also, high folic acid intake may mask a B12 deficiency, so it's important for patients to discuss any supplement use with their physicians.

What are the potential uses and benefits?

- B12 deficiency
Diagnosed deficiencies can be effectively treated with B12 therapy if dietary changes alone are not enough.
- Pernicious anemia
The injectable form of B12 is used as a prescription drug to treat pernicious anemia.
- Cardiovascular disease
When combined with folate and B6, vitamin B12 can reduce homocysteine levels, which may offer benefit for cardiovascular

disorders, although results from studies are mixed.

- Cancer prevention

Studies are mixed on whether vitamin B12 in combination with folate and B6 can reduce cancer risk, and it may increase risk of lung or colorectal cancers. Additional studies are needed to determine how vitamin B12 levels may affect cancer risk.

- Fatigue

In those without a vitamin B12 deficiency, there is little indication in the medical literature that B12 supplementation can improve fatigue symptoms.

What are the side effects?

- Acute skin irritation: Reported with high doses of B6 and B12 for 2 weeks.

What else do I need to know?

Do Not Take if:

- You are undergoing a coronary stenting procedure: Vitamin B12 may increase the risk of narrowing blood vessels after coronary stenting.

Special Point:

- Several classes of medications can decrease the body's ability to absorb vitamin B12. These include: drugs to treat gastric disorders/reduce stomach acid, some diabetes medications, and oral contraceptives.
- Taking large amounts of folic acid may mask B12 deficiency symptoms.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

Vitamin B12 - Last updated on February 2, 2022

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