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Obtaining vitamin B6 through diet may help to reduce the risk of certain cancers, but using B6 supplements does not prevent cancer or reduce chemotherapy side effects.

Vitamin B6 is necessary for many physiological processes in the human body. These include reactions of cellular respiration, the release of glucose stores, and amino acid metabolism. Getting B6 through diet along with other nutrients is associated with cancer-preventive effects, but it cannot reduce side effects from chemotherapy. Even though lab studies show that B6 can have protective effects, high levels can also be toxic and cause nerve damage. In addition, a large analysis of postmenopausal women found that combined high intakes of B6 and [B12](#), were associated with an unexpected increased risk of hip fracture.

B6 is readily available in food and deficiencies are uncommon. If a deficiency is suspected, it is important to see a healthcare practitioner to ensure correct diagnosis and supplement dosage.

## What are the potential uses and benefits?

- To prevent cancer  
Various studies show that nutrients including B6 obtained through diet have cancer-preventive effects, but this does not mean these same effects occur with supplements. In addition, long-term use of B6 supplements may increase the risk of lung cancer in male smokers.
- To treat chemotherapy skin reactions  
Several randomized trials show that vitamin B6 therapy is ineffective in preventing hand and foot syndrome, a skin condition caused by certain chemotherapies.
- To treat nerve pain  
A randomized trial did not find that high-dose B6 was more effective than placebo. In addition, there have been case reports

of nerve damage caused by taking high doses of B6 in supplemental form.

- To treat diabetes

In a study using supplements including B6, the risk of developing type 2 diabetes was not reduced.

- To manage heart disease and its risk factors

High intakes of B6 obtained from foods are associated with lower levels of homocysteine, a risk factor for heart disease. B6 intake from food is also associated with reduced risk of death from stroke, heart disease, and heart failure. B6 may reduce high blood pressure in animals, but few studies about this have been done in humans.

- To treat alcoholism

Alcoholism can lead to deficiency in vitamin B6 and many other nutrients, so supplementation may help improve nutritional status. However, proper diagnosis and treatment are needed.

## What are the side effects?

- Severe nerve problems and failure of muscular coordination with chronic intake of high doses

## What else do I need to know?

### Patient Warnings:

- Unexplained symptoms of nerve pain, lack of muscle control, or poor physical coordination may be a sign of excess B6 intake.

### Do Not Take if:

- You are receiving altretamine chemotherapy: B6 supplements may diminish its therapeutic effect.
- You take levodopa for Parkinson's disease: B6 supplements may reduce its effects.
- You are pregnant or of childbearing potential: Large quantities of vitamin B6 in supplement form should be avoided.

### Special Point:

- If a B6 deficiency is suspected, it is important to have a healthcare professional identify the cause and prescribe a safe dose of B6 supplementation if necessary.
- Some drugs may increase the need for B6. These include isoniazide, penicillamine, and oral contraceptives. Your healthcare professional should determine if this is the case and supplementation is needed.

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](http://www.mskcc.org/pe) to search our virtual library.

Vitamin B6 - Last updated on October 5, 2023

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