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# Vitamins

## What are Vitamins?

Vitamins are substances required by our bodies in tiny amounts to maintain good health and normal body functions. Vitamins themselves do not provide energy but are needed to start or speed up a chemical reaction.

Our bodies are unable to make most vitamins so they must come from foods that we eat. There are 13 essential vitamins divided into two groups: fat-soluble and water-soluble.

Fat-soluble vitamins are A, D, E, and K. Water-soluble vitamins include vitamin C (ascorbic acid) and the eight B vitamins, known as the B-Complex: B1 (thiamin), B2 (riboflavin), B3 (niacin), B5 (panthothenic acid), B6 (pyridoxine), B12 (cobalamin), folic acid (folacin), and biotin. Fat-soluble vitamins can be stored in the liver and fat tissues for as long as 6 months. Water-soluble vitamins remain in the body for a relatively short time and must therefore be supplied in the diet regularly. Taking large amount of fat-soluble vitamins, especially vitamins A and D, can be toxic and can cause liver and kidney damage. Excess amount of water-soluble vitamins are generally excreted in the urine, but can lead to abnormal liver function, increase blood sugar levels, kidney stones, and nerve damage. There is increasing evidence that vitamins may play a role in reducing the risk of some diseases. However, mega doses of vitamins are to be avoided because of their potential health risks.

## Who Needs to Take Vitamins?

We get most of the vitamins that we need when we eat a well balanced diet. Food also contains many other nutrients, which contribute to good health. Therefore, vitamins cannot replace foods nor turn a poor diet into a healthy one.

Vitamin deficiencies are rare, but supplements may be necessary if you fall in one of these groups:

- Elderly
- Pregnant or breast-feeding women
- Strict vegetarians
- Smoker
- Heavy alcohol drinker
- Persons on a strict weight loss diet
- Persons with a digestive tract disease

## How to Choose a Vitamin Supplement

When choosing a vitamin supplement, generic brands and synthetic vitamins are usually less expensive and just as effective as name brands and “natural” ones.

Since nutrients work better together than by itself, it is best to select a multivitamin rather than a single vitamin. Choose a multivitamin with dose level close to but not higher than 100% of the daily value (%DV). Be sure to check the expiration date, and look for the letters USP on the label, which indicates that the supplement meets the U.S. Pharmacopeia standards of purity, quality, and strength.

Always check with your physician or a registered dietitian before starting supplements. When it comes to taking vitamins, more is not better.

The best way to ensure adequate vitamin intake is to eat a balanced diet including a variety of foods. Use the following chart to help you choose the right foods to meet your daily vitamin needs:

Vitamin	Functions	Sources
<b>Fat-soluble</b>		
A	<ul style="list-style-type: none"> <li>Promotes good vision</li> <li>Helps form and maintain healthy skin and mucous membrane</li> </ul>	<ul style="list-style-type: none"> <li>Dark green leafy vegetables</li> <li>Deep yellow-orange fruits</li> <li>Vegetables, egg yolk, milk, and liver</li> </ul>
D	<ul style="list-style-type: none"> <li>Promotes strong bones and teeth</li> <li>Promotes absorption of calcium</li> </ul>	<ul style="list-style-type: none"> <li>Milk</li> <li>Egg yolk</li> </ul>
E	<ul style="list-style-type: none"> <li>Prevents cell damage</li> </ul>	<ul style="list-style-type: none"> <li>Vegetable oils, nuts, and whole grain breads/cereals</li> </ul>
K	<ul style="list-style-type: none"> <li>Promotes normal blood clotting</li> </ul>	<ul style="list-style-type: none"> <li>Meats</li> <li>Cereals</li> <li>Green, leafy vegetables</li> <li>Dairy products</li> </ul>
<b>Water-soluble</b>		
C (Ascorbic Acid)	<ul style="list-style-type: none"> <li>Promotes healthy gums</li> <li>Promotes iron absorption</li> <li>Promotes wound healing</li> </ul>	<ul style="list-style-type: none"> <li>Citrus fruits, kiwi, strawberries, cantaloupe, green peppers, tomatoes, potatoes, broccoli, and cabbage</li> </ul>
B1 (Thiamin)	<ul style="list-style-type: none"> <li>Helps release energy from carbohydrates</li> <li>Promotes healthy heart and nerve function</li> </ul>	<ul style="list-style-type: none"> <li>Whole grains</li> <li>Dried beans</li> <li>Nuts and seeds</li> <li>Pork</li> </ul>

B2 (Riboflavin)	<ul style="list-style-type: none"> <li>• Helps release energy from foods</li> <li>• Maintains healthy skin, vision, and nervous system function</li> </ul>	<ul style="list-style-type: none"> <li>• Dairy products</li> <li>• Meat</li> </ul>
B3 (Niacin)	<ul style="list-style-type: none"> <li>• Helps release energy from foods</li> <li>• Maintains healthy skin, nervous and digestive system function</li> </ul>	<ul style="list-style-type: none"> <li>• Dairy products</li> <li>• Meat, fish, and poultry</li> <li>• Peanuts</li> </ul>
B5 (Pantothenic Acid)	<ul style="list-style-type: none"> <li>• Regulates protein and fat metabolism</li> </ul>	<ul style="list-style-type: none"> <li>• Liver</li> <li>• Dairy products</li> <li>• Fish, chicken, and eggs</li> </ul>
B6 (Pyridoxine)	<ul style="list-style-type: none"> <li>• Promotes normal brain function</li> <li>• Helps form red blood cells</li> <li>• Regulates protein metabolism</li> </ul>	<ul style="list-style-type: none"> <li>• Pork</li> <li>• Potatoes</li> <li>• Banana</li> <li>• Oatmeal and nuts</li> </ul>
B12 (Cobalamin)	<ul style="list-style-type: none"> <li>• Maintains normal nervous system</li> <li>• Helps form red blood cells</li> </ul>	<ul style="list-style-type: none"> <li>• Liver, milk, eggs, fish, cheese, and meats</li> </ul>
Biotin	<ul style="list-style-type: none"> <li>• Maintains health of nerve tissues, skin, hair, and blood cells</li> </ul>	<ul style="list-style-type: none"> <li>• Eggs, mushrooms, peanuts, and oatmeal</li> </ul>
Folic Acid	<ul style="list-style-type: none"> <li>• Promotes red and white blood cell formation</li> </ul>	<ul style="list-style-type: none"> <li>• Green, leafy vegetables</li> <li>• Dried beans</li> <li>• Whole wheat bread</li> </ul>

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