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1-1-1989

Vitamins and Your Good Health

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Recommended Citation
Lauritzen, Georgia C., "Vitamins and Your Good Health" (1989). *Food and Health.* Paper 8.
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Cooperative Extension Service
Utah State University

Nutrition and Food Sciences Fact Sheet

EL 218

VITAMINS & YOUR GOOD HEALTH

WHAT ARE VITAMINS?

Vitamins are organic compounds found in food which are essential for growth and maintenance of life. They are classified into two groups—fat soluble (vitamins A, D, E, K) and water soluble (the B complex vitamins, vitamin C).

WHAT FUNCTIONS DO THEY PERFORM IN THE BODY?

Vitamins function in many metabolic reactions which take place as food is utilized in the body. The fat soluble vitamins act as regulators of specific metabolic activity and the water soluble vitamins function as coenzymes. Coenzymes combine with a protein to form enzymes which promote release and utilization of energy. The energy comes from mainly carbohydrate and fat, then protein and not from the vitamins.

WHAT IS THE SOURCE OF VITAMINS?

Nearly all foods contain a mixture of vitamins. However, specific foods are known to be very good sources of some vitamins. For example, citrus fruits contain large amounts of vitamin C, but they also supply small amounts of other vitamins and minerals as well. There is no perfect food. Milk has been advertised as nature's most perfect food, but milk supplies virtually no iron or vitamin C. The very best source of a balanced supply of all vitamins is a diet which consists of a variety of different foods.

HOW CAN YOU TELL IF YOU GET ENOUGH VITAMINS?

Standards and guides have been established for estimating the amount of vitamins which individuals should get per day. The Recommended Dietary Allowances (RDA's) provide the best scientific information on vitamin requirements. Food guides such as the four food groups indicate the number of servings of foods from groups which will likely supply the vitamins in a day's food intake.

WHO SHOULD TAKE A VITAMIN SUPPLEMENT?

Most individuals eating a reasonable diet cannot benefit from taking a vitamin supplement. In rare cases, a person may not absorb vitamins due to chronic disease or may not be able to consume food in sufficient quantity or type to supply the vitamins so should be supplemented. The need for vitamins increases during pregnancy and lactation so a supplement is advised. The best balance of types and amounts of vitamins is in food.

WHAT IS THE BEST VITAMIN SUPPLEMENT?

Vitamin supplements should not exceed the levels of the RDA's. Some supplements supply many times the RDA. Any supplement which is ten times the recommended level is considered a megadose. There is little difference in the high-cost name brands and the low-cost generics.

IS IT HARMFUL IF YOU GET TOO MANY VITAMINS?

Yes, high levels of the fat soluble vitamins (vitamins A, D, E, K) can be stored in the body. Accumulation of high levels in the body causes toxic effects and is potentially dangerous. Chronic intoxication of vitamin A occurs more frequently in children than in adults. Children may develop loss of appetite, weight loss, irritability and other symptoms. The water soluble vitamins have been thought to be harmless since there is little storage in the body; however, recent studies have shown megadoses of vitamin B_6 and folate (B complex vitamins) cause liver disease and epilepsy.

ARE VITAMINS DESTROYED IN FOOD PREPARATION?

Some vitamin loss occurs the minute food is harvested. Modern methods of harvesting, storage, transportation, processing and preparation minimize these losses. Vitamin losses occur by oxidation, by light, by heat, by exposure to acids and alkali, and by leaching into water. Considerable amounts of various nutrients remain even in food which has gone through processing.

Food preparation methods to prevent vitamin loss are:

Peel thinly or cook in skin
Cut in large pieces
Use a minimum amount of water
Cook with lid on
Serve immediately
Cook until just tender, not mushy
Store in refrigerator or freezer covered tightly

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. R. Paul Larsen, Vice President and Director, Cooperative Extension Service, Utah State University.

(8-21-88)