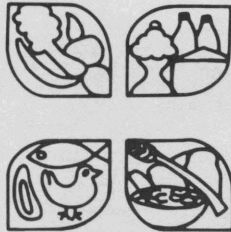


FACT SHEET

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VITAMIN A

Marilyn A. Haggard*

The value of Vitamin A has been known for centuries. Hippocrates knew that eating liver was treatment for night blindness. Vitamin A, since its discovery in 1931, has been found to be necessary for good vision, maintenance of health of mucus membranes and growth.

What is commonly known as Vitamin A is actually found in two forms. The term Vitamin A is applied to the form found only in animal sources and is called preformed Vitamin A. Pro-vitamin A, or carotene, is found in both plant and animal sources. Carotene is not absorbed as well as preformed Vitamin A; therefore, more is needed to meet the daily requirement. Carotenes are bright yellow pigments which give color to fruits and vegetables, such as carrots (from which carotene was first discovered), apricots, squash, peaches and sweet potatoes. Green vegetables also contain carotenes, but the yellow pigment is covered or masked by the dark green chlorophyll pigment.

Vitamin A is fat-soluble. This means that it dissolves in fat, but not in water. Therefore, it is not destroyed readily by high heat, nor by cooking in water.

FUNCTIONS OF VITAMIN A IN THE BODY

The functions of Vitamin A are not fully understood. Several functions in the body have been established.

Vitamin A and Vision

Vitamin A is united with protein in the retina of the eyes to form the pigment visual purple. Visual purple is bleached in strong light with some Vitamin A lost in the process. Visual purple is quickly regenerated and the eyes adjust quickly to subdued light

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whenever sufficient reserves of Vitamin A are present. Low stores of Vitamin A cause visual purple to regenerate slowly; thus, the eyes adjust poorly to light. This results in night blindness. This type of night blindness is successfully treated by increasing the intake of Vitamin A through diet or in a concentrated form.

Vitamin A and Health of Body Tissues

Vitamin A is necessary for the maintenance of mucus membrane linings of the skin and the linings of body passages and cavities. Membranes are moist and pliable when sufficient amounts of Vitamin A are available from the diet or from stored resources in the liver. Vitamin A helps to provide a protective covering for the organs and to resist bacterial invasion in the organs. A deficiency of Vitamin A causes the membranes to become thin, dry, porous and flaky. Thus, bacteria have ready access to unprotected membranes and certain infections result. Dermatitis, a skin disease, produces dry, rough and itching skin. Hair follicles become infected on the surface of the skin, often appearing on the back of the upper arm.

Vitamin A and Growth

Vitamin A is necessary to maintain optimum growth. An inadequate intake of Vitamin A stunts the growth of bones and can eventually lead to the development of nervous lesions.

Need for Vitamin A

The suggested recommended daily requirement for Vitamin A is 5,000 International Units (IU) for men and 4,000 IU for women. The allowances for children of various stages are adjusted to meet their needs according to age and weight (Table 1). Higher amounts are needed during pregnancy (5,000 IU) and lactation (6,000 IU).

Table 1. Recommended Dietary Allowances of Vitamin A

| | Age | International Units |
|---------------|--------------------|---------------------|
| Infants | up to 6 months | 1,400 |
| | 6 months to 1 year | 2,000 |
| Children | 1 to 3 years | 2,000 |
| | 4 to 6 years | 2,500 |
| | 7 to 10 years | 3,300 |
| Adult males | over 11 years | 5,000 |
| Adult females | over 11 years | 4,000 |
| | Pregnant | 5,000 |
| | Lactating | 6,000 |

GETTING ENOUGH VITAMIN A

Animal sources of Vitamin A are more readily utilized by the body and should therefore be included in the diet. The most important sources are liver, dairy products, including milk, cheeses, ice cream and margarine. Good animal sources of Vitamin A are listed in Table 2.

Table 2. Animal Sources of Vitamin A

| | Serving Size | IU Vitamin A |
|------------------------------|--------------|--------------|
| Liver, beef | 3 ounces | 45,390 |
| Baked custard | 1 cup | 930 |
| Ice cream | 1 cup | 590 |
| Egg | 1 | 590 |
| Cottage cheese | 1 cup | 420 |
| Cocoa, homemade | 1 cup | 400 |
| Cheddar cheese | 1 ounce | 370 |
| Milk, whole fluid (3.5% fat) | 1 cup | 350 |

Green and yellow vegetables and yellow fruits are the best sources of Vitamin A. These foods provide an inexpensive source of Vitamin A and should be consumed at least every other day. Listed in Table 3 are good vegetable and fruit sources.

Eating a variety of foods from the fruit and vegetable, bread and cereal, meat and milk groups daily can help to insure an adequate intake of Vitamin A.

Table 3. Vegetable and Fruit Sources of Vitamin A

| | Serving Size | IU Vitamin A |
|---------------------------|----------------|--------------|
| Vegetables | | |
| Carrot, grated, raw | 1 cup | 12,100 |
| Dandelion greens, cooked | ½ cup | 10,530 |
| Collards, cooked | 1 cup | 10,260 |
| Endive, raw | 2 ounces | 8,140 |
| Pumpkin, canned, cooked | ½ cup | 7,295 |
| Spinach, cooked | ½ cup | 7,290 |
| Carrot, raw | 1 | 5,500 |
| Sweet potatoes, baked | 1 potato | 4,455 |
| Squash, winter, baked | ½ cup | 4,305 |
| Turnip greens, cooked | ½ cup | 4,135 |
| Kale, cooked | ½ cup | 4,070 |
| Mustard greens, cooked | ½ cup | 4,060 |
| Cabbage, cooked | 1 cup | 2,635 |
| Broccoli, cooked | ½ cup | 1,940 |
| Lettuce, raw | 2 leaves | 950 |
| Tomato, raw | 1 | 820 |
| Brussell sprouts, cooked | 7-8 sprouts | 810 |
| Asparagus, cooked | 4 spears | 540 |
| Peas, green, cooked | ½ cup | 430 |
| Squash, summer, diced | ½ cup | 410 |
| Parsley, raw | 1 tablespoon | 340 |
| Green beans, snap, cooked | ½ cup | 340 |
| Corn, cooked, on cob | 1 ear | 310 |
| Fruits | | |
| Cantaloupe, raw | ½ medium melon | 6,540 |
| Apricots, raw | 3 | 2,890 |
| Watermelon, raw | 1 wedge | 2,510 |
| Peach, raw | 1 medium | 1,320 |
| Prunes, raw | ½ cup | 930 |
| Cherries, canned, red | ½ cup | 830 |
| Grapefruit, raw | ½ grapefruit | 540 |
| Orange, raw | 1 | 170 |

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