

### ***Beta - Carotene***

Major dietary sources of beta carotene include dark green leafy vegetables, deep orange or yellow fruits and vegetables, and fortified cereals. Has characteristics that appear to affect cellular growth and maturation. Beta Carotene is not toxic to the liver in high doses in contrast to Vitamin A. Large doses of will increase the body's demands for Vitamin E. Beta carotene is stored in the liver. May also be helpful in the prevention of colon cancer and melanoma. Necessary for growth & repair of body tissues. Unlike Vitamin A from fish liver oil, Beta Carotene is non-toxic.

#### ***Beneficial Properties:***

- Helps maintain smooth, soft disease-free skin
- Helps protect the mucous membranes of the mouth, nose , throat & lungs
- Reduces susceptibility to infections
- Protects against air pollutants
- Counteracts night-blindness & weak eyesight
- Aids in bone and teeth formation

#### ***Deficiency Indicators:***

- Night blindness
- Abnormal dryness and thickening of the cornea
- Hyperkeratosis (plugging of hair follicles with keratin, forming white clumps)
- Depression of immune reactions

#### ***Excessive Intake and Toxicity Symptoms:***

- Yellow/orange skin color, especially on palms of the hands and soles of the feet
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#### ***RDA***

Adults 800-1000 RE's

#### ***Sources of Beta Carotene***



## **FAT SOLUABLE VITAMINS**



*Vitamin A*



*Beta - Carotene*



*Vitamin D*



*Vitamin E*



*Vitamin K*

*SOURCES OF VITAMIN A*

Foods with higher contents listed first

Food	Amount	Retinol Equivalents
Liver, beef	3 ounces	9124
Cod liver oil	1 tablespoon	4080
Egg yolk	one large	97
Cheese, cheddar	1 ounce	86
Milk, fortified, whole	1 cup	76
Cream, heavy whipping	1 tablespoon	63

*SOURCES OF VITAMIN D*

Foods with higher contents listed first

Food	Amount	Micrograms (mcg)
Herring	3 ounces	35
Cod liver oil	1 tablespoon	34
Mackerel, fillet	3 ounces	8
Salmon, fillet	3 ounces	8
Tuna, Bluefin	3 ounces	4
Milk, fortified, whole	1 cup	2

*Sources of Beta Carotene*

Food	Amount	Retinol Equivalents
Sweet potato	1 medium	2487
Carrot, whole	1 medium	2025
Pumpkin, fresh, boiled	1/2 cup	1325
Cantaloupe, cubed	1 cup	515
Broccoli pieces	1 cup	136
Apricots, whole pitted	1 each	92

### ***Vitamin A***

Major dietary sources of vitamin A include liver, egg yolk, fortified milk, cream and cheese. Vitamin A is composed of compounds called retinoids and carotenoids. Retinoids and carotenoids, such as beta-carotene, are precursors of Vitamin A. Vitamin A is measured in Retinol Equivalents (RE's). Retinol Equivalents measure the vitamin A activity of a food.

#### ***Beneficial Properties:***

- Helps in the formation and maintenance of healthy skin and hair
- Promotes proper bone growth and tooth development
- Needed to maintain good vision
- Fortifies the immune system
- Maintains protective lining of lungs, intestine, urinary tract and other organs

#### ***Deficiency Indicators:***

- Night blindness
- Increased susceptibility to infections
- Rough, dry, scaly skin
- Loss of smell & appetite
- Frequent fatigue
- Lack of tearing
- Defective teeth & gums
- Retarded growth

#### ***Excessive Intake and Toxicity Symptoms:***

- Liver Damage
- Nausea and vomiting
- Alopecia (hair can be easily plucked)
- Headache
- Joint pain
- Dry skin and hair, cracked lips
- Loss of appetite
- Birth defects

#### ***RDA***

Adults 800-1000 RE's

#### **SOURCES OF VITAMIN A**

### ***Vitamin D***

Major dietary sources include fortified milk, liver, fatty saltwater fish, butter and eggs. The body can synthesize Vitamin D when skin is exposed to sunlight or ultraviolet light. Essential for normal growth and development. Required for the formation of healthy bones and teeth.

#### ***Beneficial Properties:***

- Helps with calcium absorption from food
- Helps maintain proper blood levels of calcium and phosphorus.
- Maintains a stable nervous system and normal heart action

#### ***Deficiency Indicators:***

- Tooth decay
- Softening of bones, improper healing of fractures
- Lack of vigor
- Muscular weakness
- Inadequate absorption of calcium
- Retention of phosphorous in the kidneys
- Rickets (softening of bones) in infants and children

#### ***Excessive Intake and Toxicity Symptoms:***

- Calcification (hardening) of soft tissues
- Increased excretion of calcium in urine
- Increased calcium in blood
- Loss of appetite
- Headaches, weakness and fatigue

#### ***RDA***

Adults 5-10 micrograms

### **SOURCES OF VITAMIN D**

