

VITAMIN C

FACTSHEET

Vitamin C is a water-soluble vitamin that is necessary for normal growth and development. It is an antioxidant that helps maintain the connective tissue protein collagen, protects against infection, and helps iron absorption.

Vitamin C (ascorbic acid) is a water-soluble vitamin, which is necessary in the body to form collagen in bones, cartilage, muscle, and blood vessels and aids in the absorption of iron. Dietary sources of vitamin C include fruits and vegetables, particularly citrus fruits such as oranges.

Severe deficiency of vitamin C causes scurvy. Although rare, scurvy includes potentially severe consequences, and can cause sudden death. Patients with scurvy are treated with vitamin C and should be under medical supervision.

Many uses for vitamin C have been proposed, but few have been found to be beneficial in scientific studies. In particular, research in asthma, cancer, and diabetes remains inconclusive, and no benefits have been found in the prevention of cataracts or heart disease.

General Use

Vitamin C is a critical component of both disease prevention and of basic body building processes. The benefits of Vitamin C include:

- **Allergy and asthma relief.**

Vitamin C is present in the lung's airway surfaces, and insufficient vitamin C levels have been associated with bronchial constriction and reduced lung function. Some studies have associated vitamin C supplementation with asthmatic symptom relief, but results have been inconclusive and further studies are needed.

- **Cancer prevention.**

Vitamin C is a known antioxidant and has been associated with reduced risk of stomach, lung, colon, oral, and prostate cancer.

- **Cataract prevention.**

Long-term studies on vitamin C supplementation and cataract development have shown that supplementation significantly reduces the risk of cataracts, particularly among women. One study published in 2002 found that adequate vitamin C intake in women under 60 years of age reduced their risk of developing cataracts by 57%.

- **Collagen production.**

Vitamin C assists the body in the manufacture of collagen, a protein that binds cells together and is the building block of connective tissues throughout the body. Collagen is critical to the formation and ongoing health of the skin, cartilage, ligaments, corneas, and other bodily tissues and structures. Vitamin C is also thought to promote faster healing of wounds and injuries because of its role in collagen production.

- **Diabetes control.**

Vitamin C supplementation may assist diabetics in controlling blood sugar levels and improving metabolism.

- **Gallbladder disease prevention.**

A study of over 13,000 subjects published in the Archives in Internal Medicine found that women who took daily vitamin C supplements were 34% less likely to contract gallbladder disease and gallstones, and that women deficient in ascorbic acid had an increased prevalence of gallbladder disease.

- **Immune system booster.**

Vitamin C increases white blood cell production and is important to immune system balance. Studies have related low vitamin C levels to increased risk for infection. Vitamin C is frequently prescribed for HIV-positive individuals to protect their immune system.

- **Neurotransmitter and hormone building.**

Vitamin C is critical to the conversion of certain substances into neurotransmitters, brain chemicals that facilitate the transmission of nerve impulses across a synapse (the space between neurons, or nerve cells). Such neurotransmitters as serotonin, dopamine, and nor epinephrine are responsible for the proper functioning of the central nervous system, and a deficiency of neurotransmitters can result in psychiatric illness. Vitamin C also helps the body manufacture adrenal hormones.

Food Sources

All fruits and vegetables contain some amount of vitamin C.

green peppers, citrus fruits and juices, strawberries, tomatoes, broccoli, turnip greens and other leafy greens, sweet and white potatoes, and cantaloupe, papaya, mango, watermelon, brussels sprouts, cauliflower, cabbage, winter squash, red peppers, raspberries, blueberries, cranberries, and pineapples.

Recommendations

The best way to get the daily requirement of essential vitamins, including vitamin C, is to eat a balanced diet that contains a variety of foods from the food guide pyramid. Vitamin C should be consumed every day because it is not fat-soluble and, therefore, cannot be stored for later use.

The Food and Nutrition Board at the Institute of Medicine recommends the following amounts of vitamin C:

Infants and Children

- 0 - 6 months: 40 milligrams/day (mg/day)
- 7 - 12 months: 50 mg/day
- 1 - 3 years: 15 mg/day
- 4 - 8 years: 25 mg/day
- 9 - 13 years: 45 mg/day

Adolescents

- Girls 14 - 18 years: 65 mg/day
- Boys 14 - 18 years: 75 mg/day

Adults

- Men age 19 and older: 90 mg/day
- Women age 19 year and older: 75 mg/day

Women who are pregnant or breastfeeding and those who smoke need higher amounts.

References:

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