

Center for Integrative Medicine

Dietary Supplements: Vitamin C (ascorbic acid)

Vitamin C is an antioxidant that protects cells against free radicals. Vitamin C is important for skin, bones, cartilage, immune function, wound healing, and connective tissue. A severe deficiency is called scurvy; symptoms of scurvy include weakness, anemia, bleeding gums, poor ability to fight infections or heal wounds; rough, dry, scaly skin; and easy bruising or bleeding. The human body does not make or store vitamin C, and deficiency can occur with inadequate intake.

Vitamin C can enhance absorption of iron from supplements and plants.

Needs for Vitamin C may be increased in smokers and those exposed to second hand tobacco smoke; infants fed evaporated cow's milk; burn victims; post-surgical patients; people who eat a very limited diet deficient in fruits and vegetables; people with severe malabsorption; those requiring hemodialysis; and in women who are pregnant or breastfeeding.

Unless you are exercising strenuously in an extreme environment (e.g., soldiers in the Arctic or a marathoner in training), vitamin C supplements are unlikely to help prevent the common cold.

Certain medications can also increase the need for vitamin C. Medications that may increase needs include: aspirin and non-steroidal anti-inflammatory medications (NSAIDS) such as ibuprofen.

Dietary sources of vitamin C include: fruits and vegetables, especially citrus fruits, cantaloupe, kiwi fruit, mango, papaya, pineapple, berries, watermelon, red and green peppers, tomatoes, broccoli, Brussels sprouts, and greens. See the US National Library of Medicine site for more information: <http://www.nlm.nih.gov/medlineplus/ency/article/002404.htm> Also see the NIH Office of Dietary Supplements Fact Sheet on Vitamin C: <http://ods.od.nih.gov/factsheets/VitaminC-QuickFacts/>

US Recommended Daily Allowance (RDA) or Adequate Intake (AI for infants) for vitamin C for

Infants ages 0-6 months: 40 milligrams

Infants 7-12 months: 50 milligrams

Children 1-3 years: 15 milligrams

Children 4-8 years: 25 milligrams

Children ages 9-13 years: 45 milligrams

Males ages 14-18: 75 milligrams

Females ages 14-18 years: 65 milligrams

Adults: 90 milligrams daily for males and 75 milligrams daily for females

Pregnant or breastfeeding women: 110 milligrams daily.

The upper limit for vitamin C has been set at 2 grams per day.

Vitamin C is generally considered safe and relatively nontoxic, but large doses can cause diarrhea and stomach cramps. Patients with hemochromatosis should avoid excessive vitamin C intake.

Note that most commercial sources of vitamin C supplements include corn. People who have corn allergies should be cautious when selecting a vitamin C supplement.

ConsumerLabs.com has tested dozens of vitamin C products. Although they found some large differences in price, all the products met quality standards for a) containing the amount of vitamin C indicated on the label, and b) proper breakdown. The lowest cost product at the time of the 2012 review was from Costco (Kirkland lab) and Sam's Club (Member's Mark), with Swanson's, Twinlab, and Walgreen's only 1 cent different per serving.

www.wakehealth.edu/CIM - See Quick Link to Dietary Supplements