



Vitamin C (1,000mg Timed-Release)

Stock #1635-5 (60 tablets)
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According to the *Journal of the American College of Nutrition*, "Evidence overwhelmingly points to the value of vitamin C in maintaining health and preventing cancer, cardiovascular disease and cataracts."

Vitamin C, also known as ascorbic acid, is a water-soluble substance that must be obtained from dietary sources. Vitamin C helps form red blood cells, aids in the prevention of hemorrhaging, and enhances fine bone and tooth formation. Vitamin C is also necessary for the functioning of other nutrients in the body (i.e. intestinal absorption of iron is significantly increased by sufficient levels of vitamin C). Although vitamin C occurs naturally in most fresh fruit and vegetables, using copper cookware can destroy vitamin C content in foods.

Large quantities of vitamin C are found in the adrenal glands, as adequate amounts are vital for the creation of adrenalin. Adrenal ascorbic acid is quickly used up during periods of stress.

Vitamin C is essential for creating collagen, a protein needed to form connective tissue in bones, ligaments and skin. Vitamin C helps speed the healing of burns and wounds by stimulating the formation of connective tissue in scars. Studies show vitamin C supplementation noticeably increases the rate of healing of corneal burns.

Vitamin C has been clinically proven to substantially decrease the intensity of colds and to help in preventing cancer. However, vitamin C is also used to control asthma, prevent cardiovascular disease, protect against gum disease, and fight the damaging effects of environmental pollution, including cigarette smoke, carbon monoxide, arsenic, benzene, cadmium, copper, iron, lead, mercury, and certain pesticides.

Most sources suggest taking vitamin C in divided doses throughout the day to ensure more consistent levels of blood and tissue saturation, as vitamin C is quickly excreted from the body. Research shows vitamin C absorption rates differ widely with each person. Studies show that while one person may be able to completely absorb 3,000mg in one dose without any urinary loss, another person may only be able to absorb 100mg, excreting anything higher. Proper vitamin C absorption and metabolism is also hampered by high fever, prolonged use of antibiotics or cortisone, high-protein diets, hypoglycemia, ingestion of aspirin or other pain killers, inhalation of DDT or petroleum fumes, smoking, and stress upon the body such as anxiety, burns, fatigue, infection, injury or surgery. Drinking excess amounts of water can reduce levels of vitamin C, as can the use of sulfa drugs (which double or triple normal urinary excretion). Also, conditions that raise serum copper levels such as menstruation, schizophrenia, smoking, the use of birth-control pills, and the last months of pregnancy, necessitate a greater need for vitamin C intake.

The *Nutrition Almanac* recommends that high amounts of vitamin C should be avoided by those with a *history* of forming oxalate stones or cystinuria, unless in the form of sodium ascorbate which has no effect on urine acidity and actually assists in oxalate excretion.

Extreme vitamin C deficiency can cause many symptoms, including anemia, easy bruising, impaired digestion, lowered immunity, nosebleeds, painful or swollen joints, poor lactation, scurvy, slow healing of fractures or wounds, swollen or bleeding gums, and weakened enamel or dentine. Vitamin C is easily destroyed by exposure to heat, light and oxygen, which stimulate oxidative enzymes, thus much of it is destroyed in food processing. Cigarette smokers are especially at risk for vitamin C deficiency, exhibiting lower levels of ascorbic acid in their blood than non-smokers. The addition of nicotine to samples of human blood (with confirmed ascorbic acid levels) reduced the ascorbic acid content by 24-31%. Therefore, many researchers suggest smokers may need to take twice the RDA for vitamin C. Alcoholics also exhibit extremely low serum levels of vitamin C, as much of it is utilized to counteract the toxic effects of alcohol upon the body. Vitamin C deficiency is also especially detrimental for diabetics, causing wounds to heal poorly and cholesterol levels to rise, as well as weakening immune function.

In his book, *How to Live Longer and Feel Better*, Dr. Linus Pauling explains that some diseases, such as rheumatoid arthritis, cause substances to be expelled into the bloodstream which inhibit immune cell mobility. Vitamin C increases the action of white blood cells (leukocytes), which fight infection, thus strengthening immune function. Likewise, the National Research Council reports various studies suggest taking 1 gram or more of vitamin C daily may reduce the frequency and severity of the common cold and other respiratory illnesses. Other studies

show taking 2-6 grams of vitamin C daily alleviates symptoms of the common cold, with taking 500-1,000mg every 1 to 2 hours during a cold to ensure tissue saturation of vitamin C and provide optimal effects. Furthermore, vitamin C supplementation was shown to reduce the length of colds an average of 37%, according to an analysis of 12 clinical studies of vitamin C for treating colds.

Recent scientific studies indicate that vitamin C can help protect eyes from damage caused by ultraviolet light, including light-induced cataracts. Even sugar and steroid cataracts can be prevented with vitamin C. Dr. Linus Pauling, in *How to Live Longer & Feel Better*, explains the importance of vitamin C for healthy eyes can be deduced from the fact that levels of this nutrient are very high in the aqueous humor of the eyes. In fact, studies dating as far back as 1953 have linked low levels of vitamin C with the formation of cataracts. A study done by the University of Maryland confirmed that vitamin C was definitely effective in treating cataracts. In addition, Dr. Passwater, of the University of Western Ontario, concluded that a daily intake of 300mg of vitamin C, along with 400 IU of vitamin E, was a good preventative against cataracts. Study findings showed a synergistic effect when taking vitamins C and E together, which produced greater cataract prevention. Furthermore, another Canadian study, published in the *American Journal of Nutrition*, showed evidence that taking vitamin C and E supplements could lower the risk of *senile cataracts* by approximately 50-70%. Studies also show vitamin C is helpful in treating glaucoma.

Dr. Pauling also praises the benefits of vitamin C as a protection against viruses and toxic chemicals, including those found in food preservatives. For example, chemicals such as nitrates and nitrites used in curing foods like bacon and ham, actually transform into carcinogens during the digestion process by joining with amino acids to form nitrosamines. Vitamin C prevents carcinogen formation by neutralizing nitrates and nitrites, an obviously important step in lowering one's risk of developing cancer. Studies show that vitamin C also discourages cervical dysplasia, a condition which makes women susceptible to cervical cancer. Research has confirmed that women taking less than 90 mg of vitamin C every day have a 2 1/2 times higher risk of acquiring cervical dysplasia than women taking daily supplements in excess of 90 mg.

A study of individuals with rheumatoid arthritis documented significantly low levels of vitamin C in their leukocytes and plasma. This was believed to be due to the breakdown and excretion of vitamin C as a result of the arthritic inflammation. Sufficient serum levels of vitamin C are needed to keep synovial fluid, the lubricating fluid in joints, thinned which allows easier movement of joints.

Vitamin C encourages the change of cholesterol into bile acids, thus lowering blood fats and reducing high cholesterol. According to the *American Journal of Clinical Nutrition*, even doses as low as 500-1,000 mg daily of vitamin C will noticeably reduce LDL cholesterol. *The National Health and Nutrition Examination Survey* revealed lower coronary death rates among men and women who take vitamin C supplements regularly—25% and 45% lower, respectively. Hospital research has found that people with coronary artery disease taking 1 gram of vitamin C daily are less likely to suffer dangerous blood clots after surgery than individuals not taking vitamin C supplements.

Diseases like diabetes mellitus and hypertension pose an elevated risk of coronary artery disease because such conditions deplete the body of vitamin C. Since ascorbic acid acts as a vasodilator, daily dosages of 2-3 grams can inhibit platelets from sticking together, preventing the buildup of arterial plaque. Scientific research done at Cornell University has shown that taking vitamin C, together with rutin (a bioflavonoid) and vitamin A, reduces the chances of having a stroke by 75%. Washington University conducted a separate study which supported these findings.

Many studies have confirmed the benefits of vitamin C for liver health. Dr. F. R. Klenner reported in the *Journal of Applied Nutrition* that high doses of vitamin C (40-100 grams) given to individuals with viral hepatitis greatly reduced their symptoms in 2-4 days, and cured jaundice in 6 days. A double-blind study conducted on a controlled group of hospitalized patients showed that 2 or more grams of vitamin C given daily prevented any of the participants from acquiring hepatitis B. Additional studies have documented vitamin C's antioxidant effects in preventing liver tissue damage by the free radicals formed during fatty acid metabolism.

The effects of large doses of vitamin C on infertile men has been studied. Half the group received 1,000 mg of vitamin C daily for two months, while the other half was given a placebo. Amazingly, all the wives of the men given vitamin C became pregnant during the experiment, yet none of the wives of the other men were able to conceive.

A research group from the University of California studied over 11,000 people and found that men who took vitamin C supplements alone increased their lifespan 6 years. Women also added a few less years to their lives.

A study published in the *Journal of the American Medical Association* was conducted to determine the influences of vitamin C on the growth of identical twins, ages 6-11 years old. One twin consumed a standard diet, while the other

also received vitamin C supplements that were five times the RDA. After only five months, all but one of the children given vitamin C had outgrown their identical twins by 1/4-1 inch.

According to Dr. Pauling, vitamin C may even help treat some mental disorders. Dr. Julian Whitaker, author of *Medical Memory Boosters and Brain Enhancers*, recommends vitamins C, E, and B-complex, including lecithin and choline, to improve memory and mental functions. Furthermore, studies have shown that increasing vitamin C levels results in increased IQ levels.