

Vitamin C

In the 65 years since its discovery, vitamin C has come to be known as a "wonder worker." It's easy to see why: In addition to its role in collagen formation and other life-sustaining functions, vitamin C serves as a key immune system nutrient and a potent free-radical fighter. This double-duty nutrient has been shown to prevent many illnesses, from everyday ailments such as the common cold to devastating diseases such as cancer.

In the scientific world, the water-soluble vitamin C is known as ascorbic acid (meaning "without scurvy," the disease caused by a vitamin C deficiency). We depend on ascorbic acid for many aspects of our biochemical functioning; yet human beings are among only a handful of animal species that cannot produce their own supply of vitamin C. Like these other animals, including primates and guinea pigs, we have no choice but to obtain this nutrient in our diet. Considering the many benefits vitamin C may provide, that mandate is deceptively simple.

How Does Vitamin C Function in the Body?

Much like the immune system itself, which operates at a cellular level, the hardworking vitamin C reaches every cell of the body. The concentration of vitamin C in both blood serum and tissues is quite high. In fact, this nutrient plays a major role in the manufacture and defense of our connective tissue, the elaborate matrix that holds the body together. It serves as a primary ingredient of collagen, a glue-like substance that binds cells together to form tissues.

Vitamin C helps some of our most important body systems. First and foremost, it helps the immune system to fight off foreign invaders and tumor cells. Vitamin C also supports the cardiovascular system by facilitating fat metabolism and protecting tissues from free radical damage, and it assists the nervous system by converting certain amino acids into neurotransmitters.

What Biochemical Processes Require Vitamin C?

Collagen metabolism. Most of us know collagen as the much-promoted ingredient in our facial moisturizers and hand lotions. But the use of collagen in beauty and skin products only hints at the importance of this protein. The very structure of the body - the skin, bones, teeth, blood vessels, cartilage, tendons and ligaments - depends on collagen. And the integrity of collagen, in turn, depends on vitamin C.

In a report on ascorbic acid in *Vitamin Intake and Health*, S.K. Gaby and V.N. Singh explain that collagen protein requires vitamin C for "hydroxylation," a process that allows the molecule to achieve the best configuration and prevents collagen from becoming weak and susceptible to damage. Beyond that, they say, recent evidence indicates that vitamin C increases the level of pro-collagen messenger RNA. "Collagen subunits are formed within fibroblasts as pro-collagen, which is excreted into extracellular spaces. Vitamin C is required to export the pro-collagen molecules out of the cell. The final...structure of the collagen is formed after pieces of the pro-collagen are enzymatically cleaved," state Gaby and Singh.

Antioxidant functions. As a water-soluble antioxidant, vitamin C is in a unique position to "scavenge" aqueous peroxy radicals before these destructive substances have a chance to damage the lipids. It works along with vitamin E, a fat-soluble antioxidant, and the enzyme glutathione peroxidase to stop free radical chain reactions.

Immune system functions. Vitamin C can enhance the body's resistance to an assortment of diseases, including infectious disorders and many types of cancer. It strengthens and protects the immune system by stimulating the activity of antibodies and immune system cells such as phagocytes and neutrophils.

Other processes. Vitamin C contributes to a variety of other biochemical functions. These include the biosynthesis of the amino acid carnitine and the catecholamines that regulate the nervous system. It also helps the body to absorb iron and to break down histamine, the inflammatory component of many allergic reactions.

USAGE

In mesotherapy Vitamin C is used for the treatment of stretch marks and skin rejuvenation.

PACKAGING

222mg / ml – 10ml vial