

## Vitamin C and Skin

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Vitamin C is a vitamin. Some animals can make their own vitamin C, but people must get this vitamin from food and other sources. Good sources of vitamin C are fresh fruits and vegetables, especially citrus fruits. Vitamin C can also be made in a laboratory. Using a skin cream containing vitamin C might decrease skin redness following laser resurfacing for scar and wrinkle removal. Water-soluble vitamins dissolve in water. Leftover amounts of the vitamin leave the body through the urine. Although the body keeps a small reserve of these vitamins, they have to be taken regularly to prevent a shortage in the body.

Vitamin C is one of the water-soluble vitamins. The saturated concentration of Vitamin C is 400 mg/day, and this concentration is controlled by excretion through the kidneys, reuse in the living body, and absorption from the gastrointestinal tract. UV radiation leads to skin damage due to free radical oxygen; such events are related to activation protein-1, growth factor-β, and nuclear factor-κB. These factors trigger the collapse of collagen structure in the skin, resulting in wrinkles, solar elastosis, and coarse texture. Vitamin C is needed for the growth and repair of tissues in all parts of your body. It is used to: Form an important protein used to make skin, tendons, ligaments, and blood vessels, Heal wounds and form scar tissue, Repair and maintain cartilage, bones, and teeth, Aid in the absorption of iron.

Vitamin C is one of many antioxidants. Antioxidants are nutrients that block some of the damage caused by free radicals. Free radicals are made when your body breaks down food or when you are exposed to tobacco smoke or radiation. The buildup of free radicals over time is largely responsible for the aging process. Free radicals may play a role in cancer, heart disease, and conditions like arthritis.

Vitamin C inhibits such sun-damage-related factors. Farris reported that VC inhibited the biosynthesis of elastin fiber. UV decreased VC of the skin, but topical VC reduced UVB damage in mouse skin. Vitamin C modified skin structure and ultra structure from photo-damaged skin. Skin disorders due to UV damage may increase due

to the decreasing ozone layer; thus, we should intake VC or AA as protection against UV.

Skin hyper pigmentation is observed with inflammation, injury, and aging. Keratinocytes release many melanin granules by stimulating inflammatory mediators. This melanin deposits in the epidermis, and some drips into the dermis and then into macrophage phagocytes (melanophage).

We are exposed many oxidative stresses: UV, radiation, smoking, oxidative foods, ischemic conditions, physiological stress, physical stress, and others. These stresses increase active oxygen in the tissue, and this oxygen causes impairment of deoxyribonucleic acid (DNA), degeneration of proteins, deactivation of enzymes, and an excess of oxidative lipids. In turn, these alterations result in ischemic diseases or cancer. The epidermis could be exposed to more foreign oxidant stress than the dermis, because the concentration of antioxidant molecules in the epidermis is higher than in the dermis, and the capacity of antioxidants in the epidermis is greater than that of the dermis. VC is an antioxidant molecule [38] and reduces antioxidant stress. Nusgens reported that an increase of VC could offer protection from free radicals.

AA and VC are necessary against infection via the skin, neutrophils /macrophages and the skin barrier. AA could possess immune-cell modulating effects. VC enhances chemotaxis, the phagocytes of neutrophils, and uptake or clearance of macrophages. VC plays important roles in the differentiation and maturation of immature T-cells and natural killer cells. It improved neutrophil chemotaxis, and in combination with VE, enhanced neutrophil functions, including chemotaxis. Johnston proposed that the antihistamine effect of vitamin C was correlated with enhanced chemotaxis.

Vitamin C or Ascorbic Acid is essential for life. There are few adverse effects of Vitamin C or Ascorbic Acid and development of new medicines using Vitamin C or Ascorbic Acid should be pursued.

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