



ASCORBIC ACID (VITAMIN C) SECOND STAGE

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ASCORBIC ACID (VITAMIN C)

The active form of vitamin C is ascorbic acid. Its main function is as a reducing agent. Vitamin C is a coenzyme in hydroxylation reactions (e.g., hydroxylation of prolyl and lysyl residues in collagen

and hydroxylation of dopamine to norepinephrine in epinephrine synthesis), where its role is to keep the iron (Fe) of hydroxylases in the reduced, ferrous (Fe^{+2}) form.



Thus, vitamin C is required for the maintenance of normal connective tissue as well as for wound healing. Vitamin C

also facilitates the absorption of dietary nonheme iron from the intestine by reduction of the ferric form (Fe^{+3}) to the ferrous form (Fe^{+2})





Deficiency

Ascorbic acid deficiency results in scurvy, a disease characterized by sore and spongy gums, loose teeth, fragile blood vessels, hemorrhage, swollen joints, bone changes

and fatigue Many of the deficiency symptoms can be explained by the decreased hydroxylation of collagen, resulting in defective connective tissue. A microcytic anemia caused by decreased absorption of iron may also be seen.



Chronic disease prevention

Vitamin C is one of a group of nutrients that includes vitamin E (see p. 442) and \beta-carotene, which are known as antioxidants. (Note: Vitamin C regenerates the functional, reduced form of vitamin E.)

Even though there is a belief that Vitamin C or Vitamin E supplementation may reduce the incidence of some chronic diseases, there is no evidence to support these claims.



**THANK YOU
FOR YOUR
ATTENTION**

