



Scientists calculate that external factors account for approximately 90% of perceived skin aging – including wrinkles, roughness, mottled pigmentation and loss of elasticity. These external factors include, but are not limited to, smoking, UV light, stress, environment and pollution. These external factors are called free radicals

Antioxidants neutralize free radicals, help prevent damage to skin's support structure and help prevent visible signs of aging by stimulating collagen. In order for an antioxidant to do all these things it needs to already be in a form the body recognises in this case, L-Ascorbic acid

Topical antioxidants enter the skin and protect against both UVB and UVA. Kinetic studies show that, once in the skin, topical antioxidants remain for days and cannot be washed, rubbed or perspired off. In order to achieve these benefits, studies at Duke University show that a formulation of vitamin-C must possess the following characteristics:

- It must contain L-ascorbic acid
- It must be at acid pH
- It must contain a high concentration of L-ascorbic acid
- The L-ascorbic acid must be stable

**Many physicians encourage their patients to use topical antioxidants prior to surgical procedures to help prepare skin for surgery, faster recovery, and a better surgical result.**

Vitamin C, L-Ascorbic acid, is the body's most important water-soluble antioxidant. It works in the aqueous parts of tissues, including both intra-cellular and extra-cellular fluids. Vitamin C provides the following key benefits to the skin – it's neutralises oxygen-free radicals, protects against UVB and UVA damage, regenerates Vitamin E and other antioxidants, prevents UVimmunosuppression, reduces inflammation, promotes healing, lightens skin and stimulates collagen growth

Concentration is a key consideration in evaluating a topical Vitamin C product. What concentration is best to augment natural body stores of L-Ascorbic acid? Research shows that concentrations ranging from ten to thirty percent get significant amounts of Vitamin C into the skin, a 20% concentration allowing a maximum amount of L-Ascorbic acid into the skin. The formulation must be at a pH 3.5 or lower to penetrate the Skin

Topical vitamin-C has been shown to stimulate the growth of collagen in human fibroblasts

The continued synthesis of collagen is essential to maintain healthy skin – studies show that collagen decreases with age and that photo-aging accelerates this process