

**Findings:** Five controlled studies and 1 cohort study which are freely available full text and human as subjects were extracted for this review. 5 studies out of 6 favour the outcome of topical vitamin C application.

**Conclusion:** Current evidence most strongly supports benefits of vitamins C in the treatment and/or prevention of photoaging. However, for an ingredient to be beneficial it must be stable in production, storage, and use; be nontoxic to the consumer; and have activity at the target site once applied. Hence, more study is needed to improve skin penetration of these bioactive cosmetics. Lastly, photoaging is still best prevented by avoiding the sun and using sunscreens.

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## ABSTRACT

**Background:** With the upsurge of the cosmeceutical industry, numerous formulations have surfaced with claims of reducing the clinical manifestations of photoaging. Enormous amount of basic science and clinical research has been conducted in attempt to discover new technique in combating detrimental sun damage and to validate the addition of vitamins to skin care products. Free radical produced by ultraviolet light results in photocarcinogenic and photoaging changes in the skin. Although the body possesses defence system to prevent radical damage, this innate system can be overwhelmed and lead to a state of oxidative stress or immunosuppression. It is proven that antioxidant protects the skin from these insults. On the basis of in vitro and in vivo studies, it has been postulated that vitamin C could be used topically for prevention and correction of skin aging. However, only a small amount of work deals with the interest of topical application of vitamin C in chronic skin damage in which oxidative stress and collagen synthesis play a determinant role. Besides that, to be biologically active, vitamin C must remain in a free form and be stable. As a doctor, it is crucial to provide our patients with substantiated counselling regarding the efficacy of commercial assertions.

**Design and objective:** This literature reviews the scientific data and clinical studies supporting the use of topically applied vitamin C for treating photodamaged skin.

TOPICAL ASCORBIC ACID IN PHOTOAGING  
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