

Vitamin as Antiaging Agents

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Introduction

The inside of a person is what makes them beautiful. The relationship between nutrition and skin condition, or more specifically, the effect of diet on skin ageing, has been a fascinating research topic for scientists as well as a popular topic of interest for humans throughout history, from ancient times to the present. Skin ageing is divided into two different processes that are didactically independent, clinically and physiologically distinct. The first is intrinsic skin ageing, which is a type of chronological ageing that affects skin in the same way that it does all internal organs. The state of one's skin has been said to represent one's overall health and age. Nutrition and its effects on the skin have piqued the interest of scientists and clinicians around the world for ages. Vitamins, carotenoids, tocopherols, flavonoids, and a range of plant extracts have been claimed to have significant anti-oxidant activities and have been widely used in the skin care business as topically applied products or dietary supplements in an attempt to extend the youthful appearance of the skin. This article will give you an overview of the existing research that "links" nutrition to skin ageing.

Extrinsic skin ageing, also known as wrinkled skin, is caused by external factors and environmental influences such as chronic sun exposure and ultraviolet (UV) irradiations, as well as smoking, pollution, sleep deprivation, and poor diet. The best and most effective strategy to combat extrinsic skin ageing is to prevent it. A well-regulated lifestyle (calorie restriction, body care, and physical activity for the body), low stress conditions, and a balanced nutritional diet, including anti-oxidative rich food, are the best protection strategies against the detrimental effects of free radicals.

Carotenoids, tocopherols, and flavonoids, as well as vitamins (A, C, D, and E), necessary omega-3 fatty acids, certain proteins, and lactobacilli, have all been identified as agents capable of enhancing skin health and beauty. This review addresses the reported favourable "anti-aging" effects of enhanced reactive oxygen species (ROS) signalling in order to discover an appropriate equilibrium.

The production of reactive oxygen species (ROS) in the right amounts (for example, following physical activity) has anti-aging and cell-protective properties. ROS are activated by the phosphorylation of forkhead box class O transcription factor

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(FoxO transcription factors) by STE-like 20 protein kinase 1 (MST1) and Jun N-terminus kinase (JNK), which then translocate from the cytoplasm into the nucleus and induce the expression of anti-oxidative enzymes such as superoxide dismutase, catalase, and others.

Finally, the cell's own intrinsic antioxidative enzyme systems, which are expressed and upregulated, do their "job" and protect the cell from accumulating and damaging cellular levels of ROS. Surprisingly, increasing nuclear FoxO levels inhibits cell proliferation and causes apoptosis.

Compounds Beneficial for Skin

Carotenoids

Carotenoids, such as β -carotene, astaxanthin, lycopene, and retinol, are vitamin A derivatives that are very efficient antioxidants and have been shown to have photoprotective characteristics. It has been found that the human skin has a higher concentration of lycopene and β -carotene than lutein and zeaxanthin, presumably reflecting a role for hydrocarbon carotenoids in photoprotection in human skin. Carotene, which is already a prominent carotenoid in skin, can be further increased through dietary supplementation. β -carotene is an endogenous photoprotector whose ability to reduce UV-induced erythema has been proven in a number of investigations. A 12-week oral dosage of β -carotene to healthy volunteers may result in a decrease of UV-induced erythema.

Vitamin C and Vitamin E

For skin advantages, L-ascorbic acid can be taken orally or used topically. Vitamin C is a cofactor for the enzymes lysyl and prolyl hydroxylase, which help to keep collagen's triple helical structure

stable. It also aids in cholesterol production and iron absorption, as well as increasing selenium bioavailability. The decreased collagen synthesis is blamed for the most prevalent cutaneous symptoms associated with vitamin C deficiency. Hair follicle enlargement and keratosis, primarily on the upper arms, as well as curled hairs, or 'corkscrew hairs,' are commonly described. With time, the follicles become hemorrhagic and can resemble

the palpable purpura of leucocytoclastic vasculitis.

Vitamins C and E work in tandem. A chain reaction of lipid peroxidation is triggered in membranes rich in polyunsaturated fatty acids when UV-activated molecules oxidise biological components. This mechanism converts the antioxidant d-tocopherol to the tocopheroxyl radical, which is then converted back to d-tocopherol by ascorbic acid.