

What You Need to Know About Vitamin C



Of the many skin-care antioxidants out there, vitamin C is definitely one of the most popular and trendy ingredients. But does it live up to the hype?

First, let's understand what Vitamin C is

Vitamin C, otherwise known as ascorbic acid and L-ascorbic acid (LAA), is a water-soluble vitamin which functions in the aqueous compartments of the cells. It is found in many different foods like vegetables and fruits and it is the most abundant antioxidant in human skin. Vitamin C has a 5-hydrocarbon ring similar to that of glucose. With an attached hydrogen ion, LAA becomes a weak sugar acid, similar to other alpha hydroxy acids used in many skincare products.

Given that humans are unable to synthesize Vitamin C endogenously, it is very important to get enough through the diet. This antioxidant is required for several important body functions, such as in our immune system and tissue repair following an injury.

The word "Ascorbus" means "no scurvy". Traditionally, Vitamin C-rich foods like lemons were carried by sailors on long journeys to avoid scurvy, a disease of bleeding gums.

Aside from protecting you from things like scurvy and lowering your risk of other chronic diseases, Vitamin C also plays a key role in the health of your skin.

Why do we need to apply Vitamin C to the skin?

Although Vitamin C is a normal skin constituent that is found in both the dermis and epidermis, bioavailability of Vitamin C in the skin can be inadequate when it is administered orally. Also, as we age, the amount of Vitamin C in our skin is decreased. Therefore, the use of topical ascorbic acid is favored in the practice of dermatology.

Vitamin C is available in a number of different forms. Among all of the forms, L-ascorbic acid is the most biologically active, as it is the molecule that the body uses. For a topical Vitamin C to work, it must first penetrate skin and then remain stable and be available to have a biological effect.

Because it is an inherently hydrophilic and unstable molecule, derivatives of ascorbic acid that are more stable with improved penetration ability have been developed for use in cosmetic formulations. For these derivatives to function, they must first be absorbed into skin (overcoming the hydrophobic character of the stratum corneum) and then converted to L-ascorbic acid.

Which are the key benefits of Vitamin C to Skin?

1. It has Antioxidant power

Reactive oxygen species (ROS) are an important factor involved in human aging. Human skin is exposed to ROS generated from both extrinsic sources such as ultraviolet (UV) light from the sun, and intrinsic sources such as endogenous oxidative metabolism. ROS damages the collagen by fragmenting it. Oxidative stress also triggers matrix metalloproteinase (MMP) production, leading to collagen breakdown. Skin is in critical need of antioxidants like Vitamin C to neutralize the ROS and interrupt this cycle of damage.

2. Participates in Collagen protection and production

Vitamin C is essential for the production of collagen. Vitamin C serves as a co-factor for the enzymes that are responsible for stabilizing the collagen, promoting more stable and new collagen for skin.

Vitamin C also increases the proliferation rate of fibroblasts which are collagen makers.

3. Helps with Hyperpigmentation reduction and Brightening improvement.

Chronic UV exposure and environmental stresses can stimulate an excess of melanin production, which is often the cause of hyperpigmentation. Vitamin C inhibits melanin

production in the skin, which helps to lighten hyperpigmentation and brown spots, even out skin tone, and enhance skin radiance.

So yes, Vitamin C is indeed a multitasking skincare ingredient that everybody should absolutely include in their daily routine!