

COLLAGEN AND SKIN



Collagen supplementation improves skin elasticity, diminishes wrinkles, and increases skin hydration, leading to healthier and more youthful-looking skin

What is collagen?

Collagen is a key structural protein in the body that is particularly abundant in the skin. In fact, collagen accounts for approximately 80% of the dry weight of the second layer of skin. The strand-like collagen molecules produced by skin cells wrap together to form helices. Bundles of helices are linked together in a mesh-like pattern that gives skin its structure.

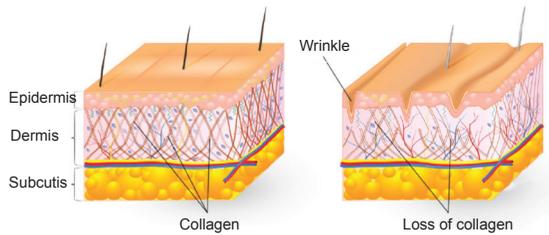


Figure 1 Collagen is a key component of the dermis, or second layer of the skin. Loss of collagen contributes to wrinkle formation.

How are wrinkles formed?

Beginning at about age 30, our bodies begin producing less collagen. Additionally, as we age our bodies naturally produce more of the enzymes that break down collagen. Both of these changes make it difficult for the body to sustain the mesh-like structure of our skin, and this leads to wrinkle formation. Exposure to sunlight and other sources of ultraviolet radiation also accelerate these processes of skin degeneration and wrinkle formation

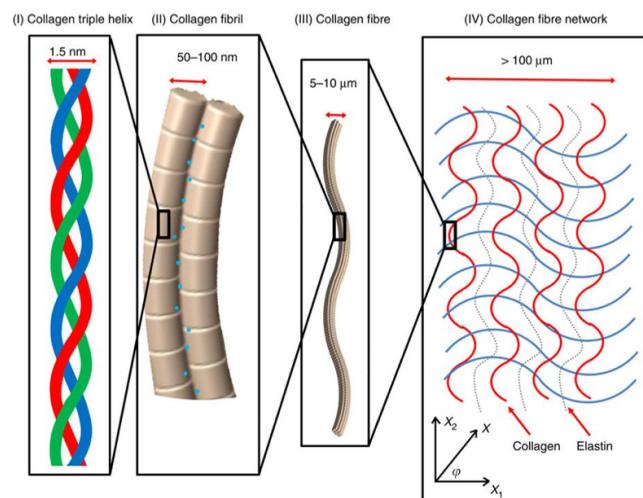


Figure 2 Collagen is characterized by its helical shape. These helices form fibers that link together in a mesh-like structure. Image from Yang W, et al. Nature Communications 2015;6.

How can COLLAGEN•NATIVE•TYPE 2 reduce wrinkle formation?

COLLAGEN•NATIVE•TYPE 2 is produced from bovine cartilage through a gentle extraction process that maintains the integrity of the protein. Once ingested, the collagen is broken down by enzymes in the stomach and pancreas, and the resulting protein fragments, or peptides, are absorbed in the small intestine. Absorbed peptides enter the bloodstream and are transported to other parts of the body, including the skin, where they are thought to both stimulate and serve as building blocks for collagen production. Statistically significant improvements in skin elasticity, wrinkle depth, and skin hydration have been observed in individuals consuming daily collagen supplements compared to those receiving a placebo. Additional evidence suggests that ingesting collagen stimulates the production of collagen as well as other biomolecules that are beneficial for the skin, such as hyaluronic acid, while decreasing the expression of enzymes that break down collagen. Collagen supplementation is therefore an easy way to combat our body's decline in collagen production and help reduce visible signs of aging.

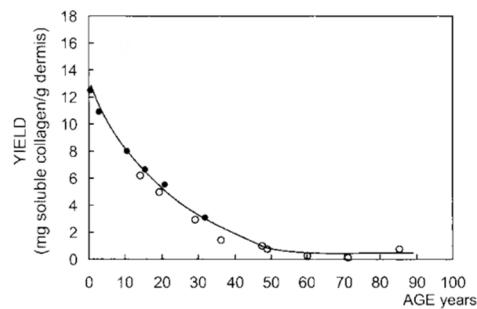


Figure 3 Collagen production in the skin decreases with age. Image from Uitto J. J Drugs Dermatol. 2008;7(2).

Asserin J, et al. The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: Evidence from an ex vivo model and randomized, placebo-controlled clinical trials. *J Cosmet Dermatol.* 2015;14(4):291-301.

Harkness MLR, et al. Digestion of native collagen in the gut. *Gut.* 1978;19:240-243.

Kawaguchi T, et al. Distribution of prolylhydroxyproline and its metabolites after oral administration in rats. *Bio Pharm Bull.* 2012;35(3):422-427.

Koyama Y. Effects of collagen ingestion and their biological significance. *J Nutr Food Sci.* 2016;6(3).

Proksch E, et al. Oral intake of specific bioactive collagen peptides reduces skin wrinkles and increases dermal matrix synthesis. *Skin Pharmacol Physiol.* 2014;27:113-119.

Uitto J. The role of elastin and collagen in cutaneous aging: Intrinsic aging versus photoexposure. *J Drugs Dermatol.* 2008;7(2):s12-s16.

Yazaki M, et al. Oral ingestion of collagen hydrolysate leads to the transportation of highly concentrated Gly-Pro-Hyp and its hydrolyzed form of Pro-Hyp into the bloodstream and skin. *J Agric Food Chem.* 2017;65(11):2315-2322

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent disease.