

Astaxanthin



Astaxanthin is a natural carotenoid that naturally occurs in *Haematococcus pluvialis* (microalgae). It is one of the most effective **natural antioxidants**, and it also has **anti-inflammatory and anti-aging properties**. The advantage of Astaxanthin over other antioxidants is its ability to penetrate the entire lipid bilayer of the cell membrane, thus providing superior protection from the inside out. This is a vital aspect of the anti-aging power of natural Astaxanthin, as it provides protection to the different layers of the skin; from the visible surface to the delicate deep layers where new skin is formed (1,2,4).

Additionally, Astaxanthin **inhibits the activity of the 5-alpha-reductase** enzyme. Thanks to this activity, it is also used to treat **androgenic alopecia**, produced by the synthesis of DHT by this enzyme.

In a preliminary clinical trial, an oral Astaxanthin supplement and a scalp lotion containing Astaxanthin were given to a group of patients. Compared to the control group, a 9.4% increase in terminal hair count was observed at 4 weeks after starting the administration, and a 22.5% increase in terminal hair count after 12 weeks.

In a study carried out by Tominaga et al., the effect of Astaxanthin on wrinkles and skin elasticity was investigated. 28 women (20-55 years) received a dietary supplement and a topical product containing astaxanthin for 8 weeks. The results indicated a **significant reduction in the depth of the subject's fine and line-shaped wrinkles** (Fig 1). It is also **effective against UV-induced oxidative stress** in human dermal fibroblasts. This substance has proven to be more effective than beta-carotene and canthaxanthin as a photoprotector (1).

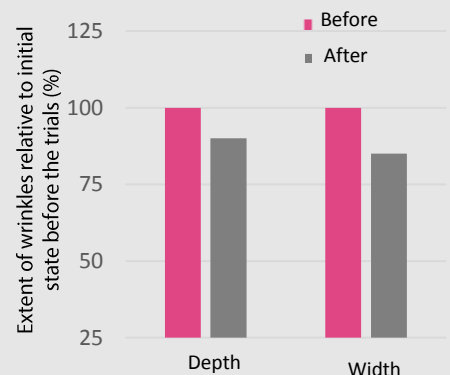


Fig.1

Natural Astaxanthin has been shown to help significantly decrease the expression of pro-inflammatory markers and mediators, thus providing protection for chronic inflammatory processes.(Fig.2) (2).

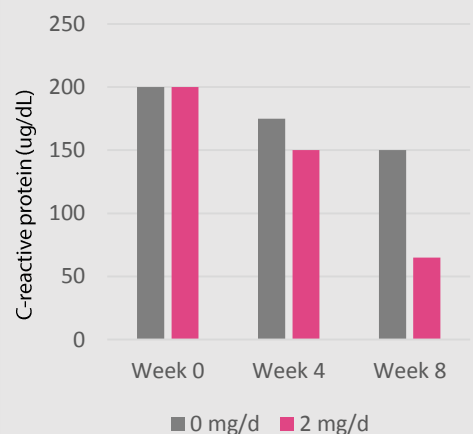


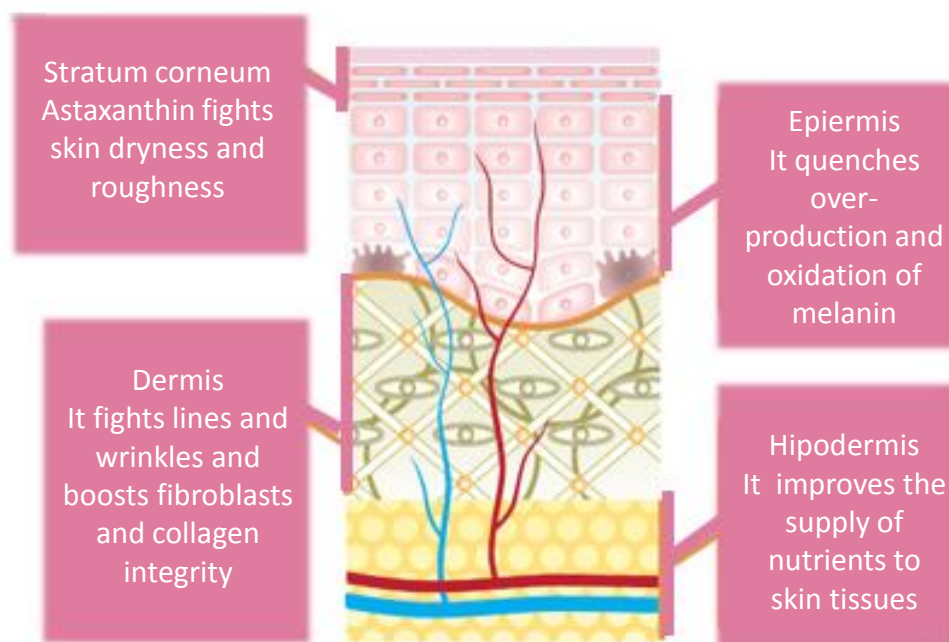
Fig.2

Benefits of natural astaxanthin for skin health

- Improves elasticity by strengthening the collagen layer
- Reduces the size of wrinkles and improves the micro texture of the skin
- Revitalizes photoaged skin by eliminating free radicals in all layers of the skin (3).

How to use it

- Oral supplementation (orientative): 8 -12 mg / day
- Topic application: 1-5%



1. Tominaga K et al., *Cosmetic benefits of astaxanthin on human subjects*. *Acta Biochim Pol.* 2012;59(1):43-7.
2. Saganuma K et al., *Anti-aging and functional improvement effects for the skin by functional food intake: clinical effects on skin by oral ingestion of preparations containing Astaxanthin and Vitamins C and E*. *Jichi Medical University Journal.* 2012;35:25-33.
3. Satoh A et al., *Effects of the intake of astaxanthin on the reduction of skin darkening induced by UV irradiation in adult women*. *Oyo Yakuri Pharmacometrics.* 2011;80(1/2):7-11.
4. Tominaga K et al., *Cosmetic effects of astaxanthin for all layers of skin*. *Food Style* 21. 2009;13(10):25-9.
5. Seon-Jin L. et al. 2003. *Astaxanthin Inhibits Nitric Oxide Production and Inflammatory Gene Expression by Suppressing IκB Kinase-dependent NF-κB Activation*. *Mol. Cells*, Vol. 16, No. 1, pp. 97-105.

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