



ASTAXANTHIN PLUS

4 mg

NPN 800336995

RESEARCH INFORMATION

Feature summary

Natural Factors Astaxanthin Plus combines astaxanthin with lutein and zeaxanthin as a source of antioxidants to protect cells against oxidative damage and for the maintenance of eye health. Astaxanthin is one of nature's most effective antioxidants, known as the "king of carotenoids." It is significantly more potent, in terms of quenching free radicals, than other members of the carotenoid family.

Astaxanthin Plus contains 100% natural astaxanthin sourced from the microalgae *Haematococcus pluvialis*, a more biologically active alternative to synthetic astaxanthin. It also includes the fat-soluble pigments lutein and zeaxanthin derived from the marigold flower and delivered in a base of organic flaxseed oil and safflower oil.

Although the body is equipped with its own natural antioxidant defences, cells can become overwhelmed by overexposure to everyday environmental factors such as UV light and pollution that increase oxidative stress. The body also produces reactive oxygen species (ROS) as a result of normal metabolic processes. Adding an antioxidant supplement such as Astaxanthin Plus to your daily routine provides extra assistance to your body's natural antioxidant defence mechanisms and supports overall good health. This formula provides up to 20 mg of astaxanthin daily, delivered in five easy-to-take softgels per day.

How it works

Oxidative damage can be seen as a form of "biological rust" that impairs the function of our cells and tissues, just as rust weakens a bridge or impairs an engine. Astaxanthin, lutein, and zeaxanthin are carotenoids and pigments with powerful antioxidant properties that play vital roles in protecting the body's cells from free radicals and oxidative-stress-induced damage. These carotenoids function by scavenging free radicals and donating electrons to neutralize ROS, mitigating oxidative stress and preserving crucial cellular processes (Sztretye et al., 2019; Bernstein et al., 2016).

Astaxanthin is unique in that it is both lipophilic (fat-soluble) and able to function in water. Its chemical structure allows it to protect the entire cell from oxidative damage, including the blood and aqueous fluids within and around cells, and the exterior lipid-based cell membranes (Sztretye et al., 2019).

As an antioxidant, astaxanthin protects the eyes and various bodily systems from inflammatory conditions by modulating ROS-driven inflammatory pathways (Kohandel et al., 2022). By reducing the degradation of nitric oxide, astaxanthin encourages healthy blood circulation within eye capillaries (Yoshida et al., 2023).

Lutein and zeaxanthin are two of the three major carotenoid pigments found within the macula and retina of the eye. As antioxidants, they help protect retinal tissues from the oxidative stress of the sun's damaging UV rays and help filter out the damaging blue light waves emitted by electronic screens (Bernstein et al., 2016).

Research

An antioxidant-rich diet is an important part of supporting the body's internal antioxidant defence systems to combat oxidative stress. Astaxanthin is considered one of nature's most effective antioxidants. This xanthophyll carotenoid is found abundantly in marine organisms (Sztretye et al., 2019). Several studies have demonstrated the protective antioxidant capacity of astaxanthin (Ma et al., 2022; Kohandel et al., 2022). In a systematic review and meta-analysis of 12 randomized, controlled trials, participants who supplemented with astaxanthin for at least one week had significantly improved key biomarkers of oxidative stress and inflammation, highlighting reductions in blood malondialdehyde (MDA), isoprostane (ISP), and interleukin-6 concentrations. They also had improvements in superoxide dismutase (SOD) activity (Ma et al., 2022).

A study of overweight adults found that a 20 mg dose of astaxanthin taken daily for three weeks stimulated participants' antioxidant defence systems, quantified as a 194% and 125% increase in SOD and total antioxidant capacity (TAC), respectively. Astaxanthin was also shown to reduce dangerous lipid peroxidation, measured as 35.2% and 64.7% reductions in participant MDA and ISP levels, respectively (Choi et al., 2011).

Studies demonstrate that astaxanthin's antioxidant activity supports eye health. A randomized, placebo-controlled study of healthy adults found that a 9 mg dose of natural astaxanthin per day for six weeks reduced the visual stress of working at computer screens. Most notably, participants aged 40 and older improved their corrected visual acuity of the dominant eye, suggesting astaxanthin's potential for protecting against eye damage from electronic screens (Sekikawa et al., 2023).

Dietary carotenoids play important roles in protecting against the oxidation of fats and proteins within the eye and related vision loss. A dose-response study calculated a 3% reduction in the risk of nuclear cataracts (middle of the lens) for every 300 mcg of lutein and zeaxanthin consumed daily (Ma et al., 2014). Lutein and zeaxanthin complement the antioxidant activity of astaxanthin in the eyes by increasing the macular pigment optical density (MPOD) needed to protect the retina from damaging blue light waves emitted by electronic screens.

A placebo-controlled, parallel-group clinical trial tested the effects of a combined supplement containing 6 mg of astaxanthin, 10 mg of lutein, and 2 mg of zeaxanthin on people who worked at computers. After eight weeks, workers who took the carotenoid supplement demonstrated significantly increased MPOD and improved oculomotor function, measured as improved eye-hand coordination after computer screen use (Yoshida et al., 2023).

Oxidative stress plays a major role in skin cell damage and aging. As an antioxidant, astaxanthin may protect against premature aging of the skin. A systematic review and meta-analysis of nine studies found that supplementing with astaxanthin significantly restored participants' skin moisture content and improved skin elasticity compared to a placebo (Zhou et al., 2021). In one study done over 16 weeks, both 6 mg and 12 mg doses of astaxanthin inhibited age-related skin deterioration from environmental factors. Women taking astaxanthin showed no changes in skin condition throughout the study, whereas skin wrinkle depth and moisture content worsened in women taking a placebo (Tominaga et al., 2017).

Ingredients

Each softgel contains:

Astaxanthin (*Haematococcus pluvialis*) (whole)..... 4 mg
Lutein (*Tagetes erecta*) (marigold flower)..... 1 mg
Zeaxanthin (*Tagetes erecta*) (marigold flower) 170 mcg

Dosage

Recommended adult dose: 5 softgels daily or as directed by a health care practitioner. Consult a health care practitioner for use beyond 8 weeks.

Cautions

Consult a health care practitioner prior to use if you are pregnant or breastfeeding, or if you are taking any medication or other dietary supplements. Stomach/abdominal pain has been known to occur, in which case discontinue use. Keep out of the reach of children.

References

- Bernstein, P.S., Li, B., Vachali, P.P., et al. (2016). Lutein, zeaxanthin, and meso-zeaxanthin: The basic and clinical science underlying carotenoid-based nutritional interventions against ocular disease. *Prog Retin Eye Res*, 50, 34-66.
- Choi, H.D., Kim, J.H., Chang, M.J., et al. (2011). Effects of astaxanthin on oxidative stress in overweight and obese adults. *Phyto Res*, 25(12), 1813-8.
- Kohandel, Z., Farkhondeh, T., Aschner, M., et al. (2022). Anti-inflammatory action of astaxanthin and its use in the treatment of various diseases. *Biomed Pharmacother*, 145, 112179.
- Ma, L., Hao, Z.X., Liu, R.R., et al. (2014). A dose-response meta-analysis of dietary lutein and zeaxanthin intake in relation to risk of age-related cataract. *Graefes Arch Clin Exp Ophthalmol*, 252(1), 63-70.
- Ma, B., Lu, J., Kang, T., et al. (2022). Astaxanthin supplementation mildly reduced oxidative stress and inflammation biomarkers: A systematic review and meta-analysis of randomized controlled trials. *Nutr Res*, 99, 40-50.
- Sekikawa, T., Kizawa, Y., Li, Y., et al. (2023). Effects of diet containing astaxanthin on visual function in healthy individuals: A randomized, double-blind, placebo-controlled, parallel study. *J Clin Biochem Nutr*, 72(1), 74-81.
- Sztretye, M., Dienes, B., Gönczi, M., et al. (2019). Astaxanthin: A potential mitochondrial-targeted antioxidant treatment in diseases and with aging. *Oxid Med Cell Longev*, 2019, 3849692.
- Tominaga, K., Hongo, N., Fujishita, M., et al. (2017). Protective effects of astaxanthin on skin deterioration. *J Clin Biochem Nutr*, 61(1), 33-9.
- Yoshida, K., Sakai, O., Honda, T., et al. (2023). Effects of astaxanthin, lutein, and zeaxanthin on eye-hand coordination and smooth-pursuit eye movement after visual display terminal operation in healthy subjects: A randomized, double-blind placebo-controlled intergroup trial. *Nutrients*, 15(6), 1459.
- Zhou, X., Cao, Q., Orfila, C., et al. (2021). Systematic review and meta-analysis on the effects of astaxanthin on human skin aging. *Nutrients*, 13(9), 2917