

Zeaxanthin: The Super Antioxidant



What is Zeaxanthin?

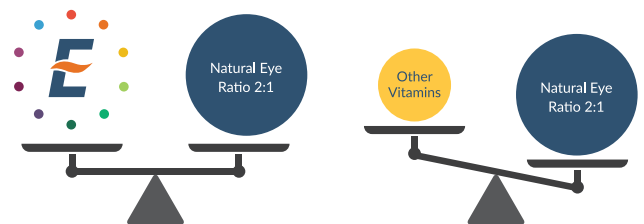
Zeaxanthin is a member of a group of compounds known as carotenoids.* As a group, the carotenoids function like internal sunglasses, shielding underlying light-sensitive tissues from harmful blue light. **Zeaxanthin is the key nutrient responsible for protecting crisp, clear vision needed for reading, seeing faces, and driving at night.** The retina actively seeks zeaxanthin because it's necessary to protect the tissues responsible for central vision. As an antioxidant, zeaxanthin works within the layers of photoreceptors to protect their longevity. In general, Americans don't get enough dietary zeaxanthin from food alone, and many find it easier to take a daily supplement to fulfill this need. To best support their eyes, patients will need to take at least 8 mg of dietary zeaxanthin per day.

Is It Safe?

Zeaxanthin can be found in several commonly eaten foods, including kale, peppers, and broccoli, and has been safely consumed for hundreds of years. After reviewing the clinical evidence, a panel of experts working with the World Health Organization¹ (WHO) established an acceptable daily zeaxanthin intake of up to 2 mg per kilogram of body weight. Based on the weight of an average American, the upper limit is 180 mg per day.** Along with an extensive "New Dietary Ingredient" (NDI) application, there are numerous published clinical studies that support the safety of higher doses of dietary zeaxanthin.^{2,3,4}

Why 8 mg?

Zeaxanthin is used selectively by the retina to protect the delicate tissues responsible for central vision, meaning the eye naturally places importance on this super antioxidant. **The eye's natural ratio of zeaxanthin to lutein is 2:1.** For optimal protection, it's best to prescribe nutraceuticals that mimic this ratio, or at least contain the amounts of zeaxanthin to match those of lutein.



EyePromise Restore provides 12 mg of Zeaxanthin and Lutein

Other vitamins lack the amount of dietary zeaxanthin necessary to mimic the eye's natural ratio.

EyePromise® is the only line of eye health nutraceuticals that offers this amount of dietary zeaxanthin, providing patients premium protection.

References

- ¹ Larson, John, and Manfred Luetzow. "JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES." World Health Organization, June 2004.
- ² Hammond BR, Fletcher LM, Roos F, Wittwer J, Schalch W. A double-blind, placebo-controlled study on the effects of lutein and zeaxanthin on photostress recovery, glare disability, and chromatic contrast. *Invest Ophthalmol Vis Sci.* 2014 Dec 2;55(12):8583-9. doi: 10.1167/iovs.14-15573.
- ³ Bovier ER, Renzi LM, Hammond BR. A double-blind, placebo-controlled study on the effects of lutein and zeaxanthin on neural processing speed and efficiency. *PLoS One.* 2014 Sep 24;9(9):e108178. doi: 10.1371/journal.pone.0108178. eCollection 2014.
- ⁴ Davis RL (2015) Preliminary Results in Macular Pigment Optical Density Associated with and without Zeaxanthin and Lutein Supplementation. *Adv Ophthalmol Vis Syst* 2(6): 00066. DOI: 10.15406/aovs.2015.02.00066

The Clinical Impact of Higher Levels of Dietary Zeaxanthin

In a study⁵ published in 2012, researchers tested 10 mg of dietary zeaxanthin and lutein compared to two other lutein-only study arms among patients with early age-related macular degeneration (AMD). In one year, the study authors found that the group administered both zeaxanthin and lutein had the greatest retinal function improvement when measured with multifocal electroretinography (MfERG).

In the year-long Zeaxanthin and Visual Function Study⁶ (ZVF), participants supplementing with a higher dose (8 mg) of dietary zeaxanthin daily achieved:

- Improved high contrast near visual acuity of 8.5 letters or 1.5 lines
- Clearing of central scotomas
- Improved foveal shape discrimination
- Improved night driving skills

These results demonstrate positive changes in visual function as well as structural improvements.

A 2-year, 521-subject study published by Dr. John Herman⁷ administering 8 mg of zeaxanthin showed the following results:

- 97.8% of participants improved or stabilized their AMD status.
- 88.3% of participants achieved an MPOD increase of at least 30%.
- 67.9% reported improved glare recovery.
- 62% reported contrast improvement.

This study also demonstrates enhancements in structure and function.

Drs. Herman, Richer, and their colleagues have tested higher levels of dietary zeaxanthin with their patients and have seen improvements with both subjective and objective testing. These results are encouraging and demonstrate potential for improving patients' quality of life.



Leo Semes, OD, earned his OD from Pennsylvania College of Optometry (PCO) and completed residency at The Eye Institute of PCO. He is a former Professor of Optometry at UAB, a fellow of the AAO, and a member of the AOA. Dr. Semes is a founding fellow of the Optometric Retina Society. In 2015, he was recognized as one of the 50 "most influential individuals in eye care" by Optometric Management magazine and received the Educator of the Year award from the Alabama Optometric Association. Dr. Semes was recognized with the Dean's Distinguished Service award from the UAB School of Optometry and is an editorial board member for Review of Optometry.

Financial Disclosures: Dr. Semes serves on the EyePromise Scientific Advisory Board and received honoraria and consulting fees from EyePromise.



Become an **EyePromise** partner to start offering high levels of zeaxanthin.

eyepromise.com/zx8mg

⁵ Ma L, Dou HL, Huang YM, et al. Improvement of retinal function in early age-related macular degeneration after lutein and zeaxanthin supplementation: a randomized, double-masked, placebo-controlled trial. *Am J Ophthalmol.* 2012 Oct;154(4):625-634.e1. doi: 10.1016/j.ajo.2012.04.014.

⁶ Richer SP, Stiles W, Graham-Hoffman K, et al. Randomized, double-blind, placebo-controlled study of zeaxanthin and visual function in patients with atrophic age-related macular degeneration: the Zeaxanthin and Visual Function Study (ZVF) FDA IND #78, 973. *Optometry.* 2011 Nov;82(11):667-680.e6. DOI: 10.1016/j.optm.2011.08.008.

⁷ Herman JP, Kleiner-Goudey SJ, Davis RL (2017) Case Report of Dietary Supplements Improving Macular Pigment and Visual Function. *Adv Ophthalmol Vis Syst* 6(1): 00166. DOI: 10.15406/aovs.2017.06.00166

*<http://www.allaboutvision.com/nutrition/lutein.htm>. Accessed January 12, 2018.

**<https://www.google.com/search?client=safari&rls=en&q=what+is+the+average+weight+of+a+50+year+old+american&ie=UTF-8&oe=UTF-8>. Accessed January 12, 2018.