

# OCUVIEW



## CLINICAL APPLICATIONS

- Provides Key Antioxidant Support for Eyes
- Supports Macular Health
- Protects Macula Against Light
- Increases Ocular Circulation

## EYE HEALTH

OcuView includes a unique blend of key nutrients, which have been shown to support healthy eye function and maintain the long-term health of the eyes. The specialized formula includes vitamin C and alpha lipoic acid, as well as a highly absorbable form of zinc bisglycinate chelate and carotenoids, lutein and zeaxanthin, well known for their role in supporting the health of the macula. The OcuView formula provides 500 mg vitamin C, 400 IU of vitamin E, 25 mg of zinc bisglycinate chelate, 100 mg alpha lipoic acid, 10 mg lutein and 2 mg zeaxanthin.

### Overview

Maintaining the health of the eyes and vision is a major concern for the United States population over 60. The eye is the organ most vulnerable to oxidative issues due to light, toxins (smoke), oxygen, and abrasion. When UV and blue light pass through the retina to the photoreceptors (rods and cones) and pigmented epithelial (PE) cells, this light energy is converted into a nerve impulse that generates reactive oxygen species (free radicals). Antioxidants are essential to neutralize these free radicals and prevent excessive oxidative damage to delicate eye tissues.

Emerging research highlights the importance of targeted nutritional strategies to protect the macula and enhance visual acuity. In a long-term clinical trial sponsored by the National Eye Institute, a high-dose formulation of antioxidants and zinc was shown to reduce the risk of developing advanced stages of age-related vision challenges and its associated vision loss by 25%.<sup>1,2</sup>

### Vitamin C<sup>†</sup>

Vitamin C, or ascorbic acid, is a powerful antioxidant that research suggests can, in combination with other essential nutrients, support visual acuity and the health of ocular blood vessels. A systematic review and meta-analysis of randomized trials totaling over 23,000 people found that both vitamin C and E supported macular health and visual acuity.<sup>3</sup> In a 2014 study, systemic vitamin C supplementation was shown to promote corneal health in a study of 82 patients, followed for three months.<sup>4</sup> In addition, women using vitamin C for 10 years or more experienced better eye health outcomes over time.<sup>5,6</sup>

### Vitamin E<sup>†</sup>

A potent antioxidant, vitamin E plays a key role in maintaining the health of various parts of the eye. High daily intakes of fruits, vegetables, and vitamins C and E were associated with significantly improved eye health among 600 elderly individuals.<sup>7</sup> In addition, a multicenter, randomized, controlled, clinical trial (which was followed by an epidemiologic follow-up) found vitamin E to significantly support macular health in over 3,500 subjects.<sup>8</sup>

### ALA<sup>†</sup>

Alpha lipoic acid (ALA) is a potent water- and fat-soluble antioxidant shown to prevent sorbitol-induced leakage of important antioxidants from the tissues of the eye. Furthermore, ALA has the unique ability to “recharge” other antioxidants, including vitamins C and E and glutathione. Studies have shown ALA has the potential to reach high concentrations in, and maintain the health of, the ocular lens in animals.<sup>9,10</sup> ALA

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

has also been found to promote healthy blood sugar levels by supporting insulin-induced glucose removal both in the whole body and in skeletal muscle.<sup>11</sup> Oral ALA has also been shown to increase insulin sensitivity by 27%,<sup>12</sup> and when taken over three months, 600 mg/day promotes healthy blood fats by 36% and provides potent systemic antioxidant support.<sup>13</sup>

### Lutein and Zeaxanthin<sup>†</sup>

The two carotenoid pigments best known for their role in eye health, lutein and zeaxanthin have been shown in a variety of epidemiological, clinical and interventional studies to enhance eye function and visual acuity.<sup>14,15</sup> Supplementing lutein and zeaxanthin has been found to maintain the health of the lens protein, lipid, and DNA of the eyes, as well as to support redox status within the cells when under oxidative stress.<sup>16</sup> In addition, a rich intake of carotenoids, like lutein and zeaxanthin, has been found to help maintain eye health.<sup>17</sup> In a year-long intervention, 145 patients were divided into three groups: one group was given a placebo while the other two groups were given capsules containing lutein, zeaxanthin, DHA and EPA each day. Researchers found that the supplements significantly improved antioxidant capacity, macular xanthophyll levels, and the optical density of the macular pigment.<sup>18</sup>

### Zinc<sup>†</sup>

Zinc is an essential component of antioxidant enzymes such as superoxide dismutase, glutathione peroxidase and catalase, which all play roles in maintaining eye health. Animal research on retinas under oxidative stress showed a 60% reduction in catalase glutathione peroxidase activity, as well as a four-fold reduction in zinc concentration compared with controls.<sup>19</sup>

Zinc has also been shown to stimulate the enzymes responsible for digesting rod outer segments and preventing the build-up of lipofuscin, a lipid-containing residue caused by normal "wear and tear" that can impair vision. These enzymes are significantly less active in older individuals.<sup>20,21</sup>

### Directions

2 capsules per day or as recommended by your health care professional.

### Does Not Contain

Gluten, yeast, artificial colors and flavors.

### Cautions

If you are pregnant or nursing, consult your physician before taking this product.

<b>Supplement Facts</b> <sup>V1</sup>		
Serving Size 2 Capsules		
Servings Per Container 30		
<b>2 capsules contain</b>	<b>Amount Per Serving</b>	<b>% Daily Value</b>
Vitamin C (as Ascorbic Acid USP)	500 mg	833%
Vitamin E (as d-Alpha Tocopherol Succinate USP)	400 IU	1,333%
Zinc (as TRAACS® Zinc Bisglycinate Chelate)	25 mg	167%
Alpha Lipoic Acid	100 mg	*
Lutein	10 mg	*
Zeaxanthin	2 mg	*
* Daily Value not established		

ID# 372060 60 Capsules

### References

1. Age-Related Eye Disease Study Research Group. A randomized, placebo-controlled, clinical trial of high-dose supplementation with vitamins C and E, beta carotene, and zinc for age-related macular degeneration and vision loss: AREDS report no. 8. Arch Ophthalmol. 2001 Oct;119(10):1417-36.
2. Chew EY, Lindblad AS, Clemons T, Age-Related Eye Disease Study Research Group. Summary results and recommendations from the age-related eye disease study. Arch Ophthalmol. 2009 Dec;127(12):1678-9.
3. Evans J. Antioxidant supplements to prevent or slow down the progression of AMD: a systematic review and meta-analysis. Eye (Lond). 2008 Jun;22(6):751-60. Epub 2008 Apr 18.
4. Cho YW, Yoo WS, Kim SJ, Chung IY, Seo SW, Yoo JM. Efficacy of systemic vitamin C supplementation in reducing corneal opacity resulting from infectious keratitis. Medicine (Baltimore). 2014 Nov;93(23):e125.
5. Taylor A. Cataract and macular degeneration: relationship to long-term ascorbate intake. Clinical Chemistry, 39: 1305, 1993.

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

6. Jacques PF, Taylor A, Hankinson SE, et al. Long-term vitamin C supplement use and prevalence of early age-related lens opacities, *Am J Clinical Nut* 66, 911-16, 1997.
7. Pastor-Valero M. Fruit and vegetable intake and vitamins C and E are associated with a reduced prevalence of cataract in a Spanish Mediterranean population. *BMC Ophthalmol*. 2013 Oct 9;13:52.
8. Chew EY, Clemons TE, Agrón E, Sperduto RD, Sangiovanni JP, Kurinij N, Davis MD. Age-Related Eye Disease Study Research Group. Long-term effects of vitamins C and E,  $\beta$ -carotene, and zinc on age-related macular degeneration: AREDS report No. 35. *Ophthalmology*. 2013 Aug;120(8):1604-11.e4. Epub 2013 Apr 10.
9. Maitra I, Serbinova E, Tritschler HJ, Packer L. Stereospecific effects of R-lipoic acid on buthione sulfoximine-induced cataract formation in newborn rats. *Biochem Biophys Res Commun* 1996; 221(2):422-9.
10. Li Y, Liu YZ, Shi JM, Jia SB. Alpha lipoic acid protects lens from H<sub>2</sub>O<sub>2</sub>-induced cataract by inhibiting apoptosis of lens epithelial cells and inducing activation of anti-oxidative enzymes. *Asian Pac J Trop Med*. 2013 Jul;6(7):548-51.
11. Lee,WJ, Song,KH, Koh,EH, Won,JC, Kim,HS, Park,HS, Kim, MS, Kim,SW, Lee,KU, Park,JY. Alpha-lipoic acid increases insulin sensitivity by activating AMPK in skeletal muscle. *Biochem Biophys Res Commun* 332:885-891, 2005.
12. Osler,ME, Zierath,JR: Minireview Adenosine 5'-monophosphate-activated protein kinase regulation of fatty acid oxidation in skeletal muscle. *Endocrinology* 149:935-941, 2008.
13. Ruderman, NB, Saha, AK, Kraegen, EW. Minireview: Malonyl CoA, AMP-activated protein kinase, and adiposity. *Endocrinology* 144:5166-5171, 2003.
14. Abdel-Aal el-SM, Akhtar H, Zaheer K, Ali R. Dietary sources of lutein and zeaxanthin carotenoids and their role in eye health. *Nutrients*. 2013 Apr 9;5(4):1169-85.
15. Koushan K, Rusovici R, Li W, Ferguson LR, Chalam KV. The role of lutein in eye-related disease. *Nutrients*. 2013 May 22;5(5):1823-39.
16. Gao S, Qin T, Liu Z, Caceres MA, Ronchi CF, Chen CY, Yeum KJ, Taylor A, Blumberg JB, Liu Y, Shang F. Lutein and zeaxanthin supplementation reduces H<sub>2</sub>O<sub>2</sub>-induced oxidative damage in human lens epithelial cells. *Mol Vis*. 2011;17:3180-90. Epub 2011 Dec 7.
17. Seddon JM, Ajani UA, Sperduto RD, et al. Dietary carotenoids, vitamin A, C and E and advanced age-related macular degeneration. *Eye Disease Case-Control Study Group*. *JAMA* 1994; 272(18):1413-20.
18. Arnold C, Winter L, Fröhlich K, Jentsch S, Dawczynski J, Jahreis G, Böhm V. Macular xanthophylls and  $\omega$ -3 longchain polyunsaturated fatty acids in age-related macular degeneration: a randomized trial. *JAMA Ophthalmol*. 2013 May;131(5):564-72.
19. Nicolas MG, Fujiki K, Murayama K, et al. Studies on the mechanism of early onset macular degeneration in cynomolgus monkeys. II. Suppression of metallothionein synthesis in the retina in oxidative stress. *Exp Eye Res* 1996; 62(4):399-408.
20. Cingle KA, Kalski RS, Bruner WE, et al. Age-related changes of glycosidases in human retinal pigment epithelium. *Curr Eye Res* 1996; 15(4):433-8.
21. Wyszynski RE, Bruner WE, Cano DB, et al. A donor-agedependent change in the activity of alpha-mannosidase in human cultured RPE cells. *Invest Ophthalmol Vis Sci* 1989; 30(11):2341-7.