



Nutritional support for natural filtration from high-energy blue light, macular health, and visual acuity

APPLICATIONS / BENEFITS

- Increases Macular Pigment Optical Density (MPOD)
- Helps protect the macula
- Reduces glare sensitivity
- Blocks and filters damaging blue light
- Provides protection for those who spend hours looking at computer screens, tablets and smartphones

OVERVIEW

Patient One Meso-Z Vision supplies a complex of lutein, zeaxanthin and meso-zeaxanthin, naturally occurring plant pigments (carotenoids) that are concentrated in the macula. Research has shown that macular pigment (the yellow pigment at the macula believed to protect against age-related macular degeneration, or AMD) increases upon supplementation with lutein, zeaxanthin and meso-zeaxanthin, and that macular pigment increases are higher when all three are taken together.

Meso-Z Vision also helps protect the eyes from blue light, the most damaging spectrum of visible light. Today's "digital lifestyle" increases high-energy blue light exposure risk, creating a new concern for all age groups. Blue light exposure is often associated with electronics having LED screens including computer monitors, smart phones, tablets, e-readers, and TV. This formula helps absorb blue light, which may reduce damage to the eye, and naturally filters blue light to help reduce the formation of free radicals, providing anti-oxidant support for the retina.

KEY INGREDIENTS

Lutein, Zeaxanthin and Meso-Zeaxanthin

The human body does not naturally make important eye nutrients—lutein, zeaxanthin and meso-zeaxanthin—that it needs. Though lutein and zeaxanthin are found in egg yolks, fruits and vegetables, including spinach and other leafy greens, most Western diets are low in lutein and zeaxanthin, carotenoids found in high quantities in the retina (macula) of the eye.

Unlike the more familiar lutein and zeaxanthin, a third carotenoid—meso-zeaxanthin—has been detected in the retina. This compound is a stereoisomer of zeaxanthin that is not commonly present in the normal human diet or blood, making supplementation the only practical source outside of the body.

Lutein, zeaxanthin and meso-zeaxanthin are yellow pigments that provide color in marigolds and corn. The yellow color is critical for the absorption of blue light, which contains a shorter wavelength in the visual spectrum and as such delivers high energy to photosensitizers in the eye. Meso-Z Vision filters harmful high-energy blue wavelengths of light and helps protect and maintain healthy cells in the eyes.

While many patients are aware of the damaging effects of sunlight and protect their eyes, two-thirds of adults are unaware that electronics emit intense, high-energy blue light. Adults spend an average of 9.5 hours daily and youth ages 8-18 spend 7 hours daily in front of a screen such as smart phones, laptops, e-readers, tablets and television. Over 90% of children use a computer. Further, by 2020, 90% of artificial indoor lighting is expected to use LED and compact fluorescent bulbs—sources of high-energy blue light. Short-term exposure to blue light can cause dry eyes, blurred vision, headaches and visual fatigue, while long-term exposure can lead to progressive loss of visual function.

Lutein, zeaxanthin and meso-zeaxanthin accumulate in the macular region of the retina where they are collectively known as macular pigment and their

amount is measured as macular pigment optical density (MPOD). MPOD has become a useful biomarker for predicting disease and visual function. Meso-Z Vision supports a rapid increase in macular pigment and increased MPOD. Macular pigment acts as a blue light filter and in general, higher MPOD is associated with better visual performance and reduced risk for chronic eye conditions, including AMD and cataracts.

RESEARCH

- The first study to evaluate the effects of a dietary supplement containing predominantly meso-zeaxanthin (MZ) was conducted in a Miami research laboratory. This research confirmed that MZ was effectively absorbed into the serum, and macular pigment density was increased significantly in many subjects in the supplementation group. No such increases were observed in the placebo group.

- A study done in Northern Ireland, where 19 subjects consumed a supplement composed of all three macular carotenoids (including MZ) over a period of 22 days, demonstrated that MZ was absorbed.

- At the Institute of Vision Research, Waterford Institute of Technology, the MZ Ocular Supplementation Trial (MOST), was conducted to evaluate macular pigment response and serum carotenoid response in subjects with and without AMD, following consumption of a supplement containing all three macular carotenoids in which MZ was predominant. This study identified statistically significant increases in serum concentrations of MZ and L from baseline. Significant increases in central macular pigment levels were also observed after just two weeks of supplementation. Furthermore, in patients who had an atypical macular pigment distribution in the eye (i.e. they did not have the high concentration of pigment in the center of the macula), when supplemented with a MZ-dominant supplement for 8 weeks, the more normal pigment profile was re-instated.

- A recent study demonstrated that higher dietary intake of lutein and zeaxanthin and vitamin E was associated with a significantly decreased risk of cataract formation.

REFERENCES

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- The Vision Council reports on digital eye strain, 2012.

- Smick K et al. Blue light hazard: New knowledge, new approaches to maintaining ocular health. Report of a roundtable sponsored by EssilorofAmerica. March 16, 2013, NYC, NY.

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Supplement Facts

Serving Size: 1 Capsule

Servings Per Container: 30

Amount Per Serving

| | |
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| Lutein (from <i>Tagetes erecta</i>) (flowers) | 20 mg* |
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| Zeaxanthin Isomers (RR-zeaxanthin and meso-zeaxanthin) (from <i>Tagetes erecta</i>) (flowers) | 4 mg* |
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* Daily Value not established

Other Ingredients: rice flour, vegetable cellulose (capsule), leucine

Free of: milk, egg, fish, peanuts, crustacean shellfish, soy, tree nuts, wheat, yeast and gluten. Free of ingredients derived from GMOs.

Suggested Use: Take 1 capsule 1-2 times daily as a dietary supplement, preferably with a meal, or as directed by your health practitioner. Store in a cool, dry place.

Caution: If you are pregnant, nursing, or taking any medications, consult health practitioner before use. Discontinue use and consult health practitioner if any adverse reactions occur. **Keep out of reach of children.**

Vegetarian

Gluten Free

Non-GMO

Vegetable Caps

The statements in this document have not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.

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