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Lutein, zeaxanthin plus omega-3 shows benefits for AMD sufferers

By Stephen DANIELLS , 27-Mar-2013

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A combination of lutein, zeaxanthin and omega-3 long-chain polyunsaturated fatty acids may boost the pigment in the retina and help people with age-related macular degeneration (AMD), says new data from Germany.

Results of the randomized, double-blind, placebo-controlled and parallel trial indicated that daily doses of lutein, zeaxanthin, EPA and DHA increased the optical density of the macular pigment in people suffering from dry AMD (the majority of people with AMD have the dry form, which is associated with slower, progressive loss of vision).

"Therefore, such supplementation may be beneficial for AMD patients," concluded the authors in *JAMA Ophthalmology*, although they note that no general implications for clinical practice can be given.

The results were welcomed by Heather Richardson, FloraGLO Lutein Product Manager, with Kemin. "Kemin is pleased with the study," she told us. "This randomized, double-blind, placebo-controlled study conducted using a parallel design evaluated the effects of administration of 10 mg FloraGLO lutein (L), 1 mg zeaxanthin (Z), 100 mg DHA plus 30 mg EPA in a commercial available formulation or twice these dosages (20/2/200/60) on Optical Density of 145 patients suffering from dry AMD over a 12 month supplementation period.

"Both dosages increased MPOD values significantly compared to placebo with the higher dose yielding higher macular pigment values, but not significantly higher. The visual acuity performance (number of read characters) has significantly increased in both dosages over one year and was higher for the 20mg when compared to the placebo group. These results are an excellent predecessor for the results of the AREDS2 study which should be available some time later this year."



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subjects with severe psychological stress... [Click here](#)

Higher doses

Dr Jayant Deshpande, CTO from lutein supplier OmniActive Health Technologies, added that the study confirms that higher doses of 10mg lutein have a significant impact on MPOD in dry AMD patients. *"These findings suggest that supplements aimed at the aging population may benefit from increased levels of lutein. While mean concentrations of plasma lutein decreased after cessation of supplementation, MPOD remained constant suggesting the sustainability of supplementation.*

"Supplementation with omega-3 resulted in decreased levels of AA while EPA and DHA levels increased, with even more favorable fatty acid profile changes in the higher dose group," said Dr Deshpande. *"This suggests that higher doses of EPA and DHA may improve retina function by promoting pro-inflammatory signaling pathways. This beneficial outcome could also have a positive impact on the link which has been established between pathogenesis of AMD and atherogenesis.*

"The results of this study further help to uncover and demonstrate the benefits of macular xanthophyll and omega-3 supplementation for those at risk and suffering from AMD. We anticipated results from alternate formulations and macular carotenoid levels such as those used in AREDS-2 will suggest the same, therefore formulators would benefit from continuing to investigate new combinations of macular xanthophylls and omega-3 for their specific target segments."

Carotenoids and AMD

The study adds to an ever growing body of science supporting the vital role of the carotenoids lutein and zeaxanthin for eye health. Both are found in high levels in the macula, a yellow spot of about five millimeters diameter on the retina.

These compounds are the only carotenoids capable of filtering the harmful blue light than can damage cells in the eye, the rods and the cones.

A thin macular pigment can allow the blue light through and destroy the cells. Maintaining high levels of both carotenoids, and therefore the macular pigment, is a valid approach to maintaining eye health and reducing the risk of diseases, like age-related macular degeneration (AMD).

Study details

Led by Christin Arnold from the Friedrich Schiller University Jena, Germany, the researchers recruited 172 patients with dry AMD to participate in their study. The volunteers were randomly assigned to one of three groups: The first group received placebo, the second received one daily dose of lutein (10 mg), zeaxanthin (1 mg), DHA (100 mg) and EPA (30 mg), and the third group received a double dose of the supplement.

After 12 months of supplementation, the results indicated that blood levels of the carotenoids in groups 2 and 3 increased, and this was accompanied by increases in the optical density of the macular pigment of both groups.

These benefits were observed after only one month of supplementation and were sustained for the rest of the trial.

While the double dose supplement was associated with increases in omega-3 levels, there were no additional benefits for optical density of the macular pigment, said the researchers.

"Because the single dose is as effective as the double dose, there seems no need to use the higher dose," they wrote.

The study was supported by Novartis GmbH, Germany, and Carl Zeiss Meditec, Germany.

Source: [JAMA Ophthalmology](#)

Published online ahead of print, doi:10.1001/jamainternmed.2013.2851

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