

Superoxide Dismutase: A Supplement for Eye Health?

By Greg Arnold, DC, CSCS, November 20, 2006, abstracted from "SOD2 Protects against Oxidation-Induced Apoptosis in Mouse Retinal Pigment Epithelium: Implications for Age-Related Macular Degeneration" in the September 2005 issue of *Investigative Ophthalmology & Visual Science*

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Age-related Macular Degeneration (AMD) causes vision loss in more than 200,000 people every year¹ and is the leading cause of irreversible visual impairment in the world.² With research showing that AMD is caused in large part by oxidative stress,^(3, 4, 5) it's not surprising that [antioxidant intake has been found to help maintain eye health](#),⁶ even though antioxidants are not cures for AMD.

These antioxidants have been found to include lutein,⁷ found in green leafy vegetables, resveratrol,⁸ found in walnuts, and blueberries. Now a new study⁹ has found that superoxide dismutase (SOD), an antioxidant enzyme found in every cell of our body,¹⁰ may also be an antioxidant that helps maintain eye health.

In the study, researchers took eye cells from three different groups of mice (regular mice, mice bred to lack the SOD enzyme, and mice bred to have an overabundance of SOD). They exposed the cells to hydrogen peroxide for one hour, after which the researchers measured eye cell death as well as cell function for 0, 4, 8, 16, and 24 hours after exposure to the hydrogen peroxide.

The researchers found that cells with an overabundance of the SOD enzyme had no cell death due to oxidative damage until 16 hours after exposure. Even at 24 hours after exposure, cells bred to have no SOD still had cell death levels that were 30% higher than the cells with the overabundance of SOD.

For the researchers, "a decrease of [SOD]...during the aging process may be a significant contributory factor in AMD."

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