

Macular Degeneration

1. Significant improvement in visual function was noted in elderly patients who took lutein with and without antioxidants.
2. Risk of developing advanced macular disease and blindness was reduced significantly by taking antioxidants regularly. After 18 months, those taking antioxidants consistently were four times less likely to deteriorate than those who did not, and 2.5 times more likely to improve. (Ed. Note: We believe a more absorbable form of zinc, would provide better results with a lower dose, since high doses of zinc can cause anemia. Substituting lutein for beta carotene would have improved the results, in our opinion.)
3. Consumption of fruits and vegetables is protective against progression of macular degeneration. (Ed. Note: If you do not consume a minimum of FIVE servings of fruits and vegetables daily, we suggest supplements)
4. Consuming 6 mg of the carotenoid lutein (with its co-nutrient zeaxanthin) daily (Ed. Note: equiv. to 4-8 ounces of spinach daily, depending on reference) for five months was shown to significantly increase macular pigment density, which protects from harmful blue wavelength light believed to be most responsible for macular degeneration.
5. High macular pigment density was associated with the retention of youthful visual sensitivity, which suggested that increasing macular pigment may retard age-related declines in visual function.
6. Persons who had the lowest serum levels of lycopene, the most abundant carotenoid in the serum, were twice as likely to have macular degeneration when compared to those with the highest levels. (Ed. Note: Consumption of high levels of lutein and lycopene (a carotenoid found in tomatoes) has also been associated with dramatically lower cancer rates for lung and prostate cancer!)

7. Those consuming lutein rich foods (spinach and collard greens) five days per week were 8 times less likely to develop macular degeneration as those consuming them once per month. *(Ed. Note: Consumption of large amounts of spinach may be associated with kidney stones due to its high levels of oxalic acid, and also is contradicted in those taking blood thinners due to its vitamin K. Standardized lutein supplements may be preferred.*
8. The ARMD population manifested decreased intake of vitamin E, magnesium, zinc, vitamin B6 and folic acid. Patients with advanced ARMD taking antioxidants twice daily maintained vision in their better functioning eyes significantly better than those taking a placebo.
9. Smokers with early macular degeneration who consumed the lowest amounts of carotenoids were nearly 6 times as likely to develop advanced macular degeneration than those consuming the highest amounts. AMD patients were more likely to be smokers and have the lowest blood levels of selenium.
10. In a clinical trial 60% of subjects with ARMD or diabetic macular edema who received 500 mg of vitamin C, 400 IU of vitamin E, 15,000 IU of beta carotene and selenium showed either improvement or no further progression of their disease. *Ed Note: More recent evidence indicates that other carotenoids are more important than beta carotene, and too much beta carotene in the absence of lutein/zeaxanthin may be more harmful than good.*
11. The minerals copper and zinc are required to synthesize superoxide dismutase and other enzymes in the retina which scavenge free radicals, preventing the oxidative damage which plays a role in the development of drusen, an early sign of Age-Related Macular Degeneration.
12. Glutathione and its related enzyme precursor amino acids (N-Acetyl-Cysteine, L-glycine and glutamine, as well as selenium) are

protective against damage to human retinal pigment epithelium cells, and may help prevent retinal damage in AMD.

13. Quercetin protected bovine retinas in vitro from induced lipid peroxidation, especially when combined with vitamin E, suggesting a potential protective effect in age-related macular degeneration.

14. Deficiency of taurine, an amino acid, has been shown to lead to retinal degeneration and supplementing it has been used with some success to prevent, treat and stabilize retinal changes.

15. General measures for prevention and remediation of macular degeneration would include a combination of supplementation with trace elements, antioxidants and other vitamins, and increasing physical fitness, improving nutrition (e.g. avoiding hydrogenated oils), abstaining from smoking, and protection from excessive light exposure.

16. There was an inverse relationship between dietary pro-vitamin A carotenoid and vitamin E consumption and the incidence of large macular drusen, as well as between zinc levels and the incidence of retinal pigment abnormalities.

17. Subnormal zinc and/or vitamin E serum levels may be associated with as much as an 82% increased risk of advanced age-related macular degeneration. Vitamin C and lipoic acid helps to recycle vitamin E in the retinal tissues.

18. A statistically significant improvement in visual acuity was observed after treatment with Ginkgo biloba extract in a double blind, placebo controlled study of macular degeneration patients.

19. Those consuming fish more than once per week were only half as likely to develop macular degeneration than those consuming it less than once per month. Those consuming the highest amount of cholesterol in their diet were 2.7 times more likely to develop advanced macular degeneration.

20. High ORAC (antioxidant capacity) berries, especially bilberry, wild blueberry, strawberry, grape seed extract and Resveratrol have been found to be potent inhibitors of angiogenesis (new blood vessel growth) by reducing VEGF expression as well as reducing oxidative damage to the macular pigment. (Ed. Note: This is the same mechanism of action of the new drugs Lucentis and Avastin, which suggests that they possibly may help reduce the frequency of injections into the eye, but studies need to be done.)

21. Heavy alcohol consumption increases the risk of new blood vessel growth in the retinas of animals and likely is contraindicated in patients with wet macular degeneration and diabetic retinopathy, especially if getting laser or Lucentis/Avastin therapies.