

**A combination of nutrients improves age-related macular degeneration.** [1]

## **GreenMedInfo Summary**

### **Abstract Title:**

Carotenoids and antioxidants in age-related maculopathy italian study: multifocal electroretinogram modifications after 1 year.

### **Abstract Source:**

### **Abstract Author(s):**

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### **Abstract:**

**OBJECTIVE:** To evaluate the influence of short-term carotenoid and antioxidant supplementation on retinal function in nonadvanced age-related macular degeneration (AMD).

**DESIGN:** Randomized controlled trial.

**PARTICIPANTS:** Twenty-seven patients with nonadvanced AMD and visual acuity  $\geq 0.2$  logarithm of the minimum angle of resolution were

enrolled and randomly divided into 2 age-similar groups: 15 patients had oral supplementation of vitamin C (180 mg), vitamin E (30 mg), zinc (22.5 mg), copper (1 mg), lutein (10 mg), zeaxanthin (1 mg), and astaxanthin (4 mg) (AZYR SIFI, Catania, Italy) daily for 12 months (treated AMD [T-AMD] group; mean age, 69.4+/-4.31 years; 15 eyes); 12 patients had no dietary supplementation during the same period (nontreated AMD [NT-AMD] group; mean age, 69.7+/-6.23 years; 12 eyes). At baseline, they were compared with 15 age-similar healthy controls.

**METHODS:** Multifocal electroretinograms in response to 61 M-stimuli presented to the central 20 degrees of the visual field were assessed in pretreatment (baseline) conditions and, in nonadvanced AMD patients, after 6 and 12 months.

**MAIN OUTCOME MEASURES:** Multifocal electroretinogram response amplitude densities (RAD, nanovolt/deg(2)) of the N1-P1 component of first-order binary kernels measured from 5 retinal eccentricity areas between the fovea and midperiphery: 0 degrees to 2.5 degrees (R1), 2.5 degrees to 5 degrees (R2), 5 degrees to 10 degrees (R3), 10 degrees to 15 degrees (R4), and 15 degrees to 20 degrees (R5).

**RESULTS:** At baseline, we observed highly significant reductions of N1-P1 RADs of R1 and R2 in T-AMD and NT-AMD patients when compared

with healthy controls (1-way analysis of variance  $P < 0.01$ ). N1-P1 RADs of R3-R5 observed in T-AMD and NT-AMD were not significantly different ( $P > 0.05$ ) from controls. No significant differences ( $P > 0.05$ ) were observed in N1-P1 RADs of R1-R5 between T-AMD and NT-AMD at baseline. After 6 and 12 months of treatment, T-AMD eyes showed highly significant increases in N1-P1 RADs of R1 and R2 ( $P < 0.01$ ), whereas no significant ( $P > 0.05$ ) change was observed in N1-P1 RADs of R3-R5. No significant ( $P > 0.05$ ) changes were found in N1-P1 RADs of R1-R5 in NT-AMD eyes.

**CONCLUSIONS:** In nonadvanced AMD eyes, a selective dysfunction in the central retina (0 degrees -5 degrees ) can be improved by the supplementation with carotenoids and antioxidants. No functional changes are present in the more peripheral (5 degrees -20 degrees ) retinal areas.

**Article Published Date :** Feb 01, 2008

**Study Type :** Human Study

### **Additional Links**

**Substances :** [Astaxanthin : CK\(448\) :](#)

[AC\(165\) \[2\],](#) [Carotenoids : CK\(1796\) :](#)

[AC\(356\) \[3\],](#) [Vitamin C : CK\(2484\) :](#)

[AC\(569\) \[4\],](#) [Vitamin E : CK\(1881\) :](#)

[AC\(335\) \[5\],](#) [Zinc : CK\(1031\) :](#) [AC\(154\) \[6\]](#)

**Diseases :** [Macular Degeneration : CK\(207\) :](#)

[AC\(34\) \[7\]](#)

# Pharmacological Actions : Antioxidants : CK(8430) : AC(3132) [8]

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