

## **Are There Any Side Effects from the Nutrients?**

The AREDS participants reported few side effects from the treatments. About 7.5 percent of participants assigned to the zinc treatments — compared with five percent who did not have zinc in their assigned treatment — had urinary tract problems that required hospitalization. Participants in the two groups that took zinc also reported anemia at a slightly higher rate; however, testing of all patients for this disorder showed no difference among treatment groups. Yellowing of the skin, a well-known side effect of large doses of beta-carotene, was reported slightly more often by participants taking antioxidants. In two large clinical trials sponsored by the National Cancer Institute, beta-carotene was shown to significantly increase the risk of lung cancer among smokers.

## **Where Can I Obtain More Information?**

For more information, contact your eye care professional or the National Eye Institute at 301-496-5248 or visit the NEI website at [www.nei.nih.gov](http://www.nei.nih.gov).



National  
Eye  
Institute

---

NATIONAL INSTITUTES OF HEALTH

## **The Effect of Antioxidant Vitamins & Zinc on Age-related Macular Degeneration and Cataract**

## **Results of the Age-Related Eye Disease Study**

High levels of antioxidants and zinc significantly reduce the risk of advanced age-related macular degeneration (AMD) by about 25 percent. These same nutrients also reduce the risk of vision loss caused by advanced AMD by about 19 percent. They have no significant effect on the development or progression of cataract.

These results are from the Age-Related Eye Disease Study (AREDS), a major clinical trial sponsored by the National Eye Institute, one of the Federal government's National Institutes of Health. The nutrients are not a cure for AMD, nor will they restore vision already lost from the disease. However, they may play a key role in helping people at high risk for developing advanced AMD keep their vision.

### **Who Should Take the Nutrients?**

People who are at high risk for developing advanced AMD should consider taking the formulation used in the study. Your eye care professional can tell you if you have AMD and if you are at risk for developing the advanced form of the disease. The doctor should give you a dilated eye exam in which drops are placed in your eyes. This allows for a careful examination of the inside of the eye to look for signs of AMD.

If you are already taking daily multivitamins and your doctor suggests you take the formulation used in the AREDS, review all the supplements with your doctor.

### **What is the Dosage of the Nutrients Used in the Study?**

The specific daily amounts of antioxidants and minerals used by the study researchers were 500 milligrams of vitamin C; 400 international units of vitamin E; 15 milligrams of beta-carotene; 80 milligrams of zinc as zinc oxide; and two milligrams of copper as cupric oxide. Copper was added to the AREDS formulations containing zinc to prevent copper deficiency, which may be associated with high levels of zinc supplementation.

### **Where Can I Obtain the Formulation Used in the Study?**

Bausch and Lomb, an eye care company, was a collaborator in the AREDS and provided the study nutrients. The company markets the formulation used in the AREDS; other companies may provide similar formulations. Antioxidant vitamins and zinc can also be purchased separately; however, consumers should discuss the use of these high levels of nutrients with their doctors, and be certain to include copper whenever taking high levels of zinc.