

YOUR EYES

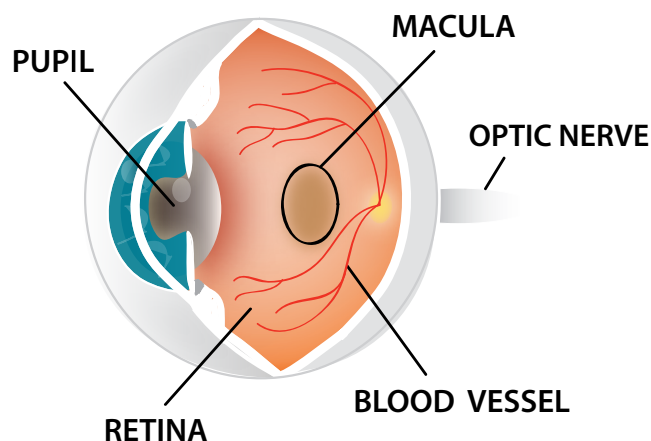
Nutrition and Age-related Macular Degeneration

If you have age-related macular degeneration (AMD), the layers of your retina have changed. These changes usually happen in the area of your retina known as the macula. The macula controls the central vision that you use to read and drive. Age, gender, ethnicity, family history, and cigarette smoking affect your chances of developing AMD. However, the Age-Related Eye Disease Study (AREDS) recently showed that you may be able to prevent advanced AMD by taking control of your nutrition.

What You Need To Know

During AREDS, researchers studied about 3,600 people who had various stages of AMD. The participants took different combinations of nutrient supplements. AREDS researchers found these results when people took large amounts of **antioxidant vitamins and zinc**:

- People with a high risk for developing advanced AMD **decreased** their risk by about 25%.
- Vision loss caused by advanced AMD **decreased** by about 19%.
- Taking large amounts of supplements may help **delay** the start of **advanced AMD**.
- Supplements may not have an effect on the progression of AMD in people without AMD or people with early AMD.



Who Can Benefit

If you are over 55 years old and you have either intermediate AMD in one or both eyes, or advanced AMD in one eye, the AREDS supplements may help your vision. The stages of AMD are based on the number and size of the yellow deposits, called "drusen," that accumulate under your retina. The stages are:

- **Early Dry AMD** – You have several small- or medium-sized drusen with no vision loss.
- **Intermediate Dry AMD** – You have several medium or large drusen with little vision loss.
- **Advanced AMD** – The **dry form** occurs when you have many drusen, or when the layers of your macula become thinner and you lose vision. The **wet form** occurs when abnormal blood vessels begin to grow and leak fluid, and your vision decreases quickly.



Photograph of a healthy macula



A macula with drusen (yellow spots)

Why Supplements Help

Chemical reactions are constantly taking place inside your body. Some reactions produce small, unstable molecules called “reactive oxygen species,” or ROS. These molecules can damage your retina, which is very sensitive. Light, aging, air pollution, and cigarette smoke may increase the formation of ROS in your eyes. Antioxidants can stabilize ROS and block their harmful effects. Therefore, antioxidants such as vitamin C, vitamin E, and beta-carotene may prevent the progression of AMD by stopping the damage caused by ROS.



How To Control Your Health

Visit your retina doctor for yearly checkups, and boost your eye health by making small changes to your diet. Increase your vitamin C by eating fruits and vegetables such as oranges, strawberries, broccoli, and green peppers. For beta-carotene, choose dark green or orange produce such as romaine lettuce, carrots, mangos, and sweet potatoes. Good sources of vitamin E include vegetable oils and nuts. You should also eat fish, especially salmon or mackerel, once or twice a week.

Before you begin using the AREDS formula, tell your doctor if you are taking any other supplements. A daily multivitamin provides nutrients that the AREDS formula lacks. But, you may get too much vitamin E if you take a multivitamin with the AREDS supplements. Also, if you are a smoker, you should not take beta-carotene because it can increase your risk of developing lung cancer.

Where You Can Find Them

You can purchase the AREDS formula without a prescription. Just look for Bausch & Lomb PreserVision® AREDS formula eye vitamins at most drugstores. If you buy the supplements individually, take these amounts daily:

- **Vitamin C** - 500 milligrams (mg)
- **Vitamin E** - 400 International Units (IU)
- **Beta-carotene** - 15 mg (which is about 25,000 IU of vitamin A)
- **Zinc** - 80 mg of zinc oxide
- **Copper** - 2 mg of cupric oxide (to prevent copper deficiency caused by the zinc)

What You Can Expect Next

During the next few years, researchers at the Doheny Eye Institute and throughout the country will keep looking at the effects of the supplements. They will also try to improve the results by making these changes to the vitamin combination in the next study, AREDS II:

- **Omega-3 fatty acids**, found in seafood and nuts, will be added.
- **Lutein and zeaxanthin**, pigments that protect your macula and are found in green leafy vegetables, will also be included.
- **Zinc** will be taken at either 40 mg or 80 mg to determine the lowest amount necessary for effective results.
- **Beta-carotene** will be removed from the combination for some people because of the increased risk of lung cancer for smokers.



www.doheny.org

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