

Macular Degeneration Treatment Options

The National Eye Institute's Age-Related Eye Disease Study (**AREDS**) showed that the use of a specific antioxidant vitamin formulation was effective in slowing the progression of dry macular degeneration. Since then, a follow-up study (**AREDS 2**) is currently in progress. The (**AREDS 2**) study made some changes to the original formulation studied in (**AREDS**) and the results are very promising. Based on your exam findings, I recommend that you consider taking an ocular vitamin supplement as outlined by the (**AREDS**) and more recently the (**AREDS 2**) study. **PreserVision AREDS** and **PreserVision AREDS 2** by Bausch and Lomb are the vitamin formulations used in the studies and should be used as a reference when purchasing an antioxidant vitamin supplement. (*Alternative suppliers have the same formulations available*). Since the original (**AREDS**) study, the use of Lutein instead of Vitamin A (beta carotene) in the preparation has been found to be effective and is a good substitute for smokers and persons exposed to UV light. Specific information regarding the studies and the results can be viewed at <http://www.nei.nih.gov>.

Age-Related Eye Disease Study--Results

Frequently-Asked Questions

Q. Who should take the vitamin supplement like those used in the Age-Related Eye Disease Studies?

People who should consider taking the combination of antioxidants plus zinc include those who are at high risk for developing advanced AMD. These people are defined as having either:

1. Intermediate AMD in one or both eyes. Intermediate AMD is defined as the presence of either many medium-sized drusen or one or more large drusen.
2. Advanced AMD in one eye, but not the other eye. Advanced AMD is defined as either a breakdown of light-sensitive cells and supporting tissue in the central retinal area (advanced dry form), or the development of abnormal and fragile blood vessels under the retina (wet form) that can leak fluid or bleed. Either of these forms of advanced AMD can cause vision loss.

Q. How do I know if I have AMD and the stage it is in?

Your eye care professional can tell you if you have AMD -- and its level of development -- through an eye exam in which drops are placed in the eyes to dilate the pupils. This allows for a careful examination of the inside of the eye.

Q. I am already taking daily vitamins. Should I stop taking these vitamins if I am advised to take the vitamin supplement used in the Age-Related Eye Disease Studies?

People with intermediate AMD in one or both eyes, or those with advanced AMD in one eye only, and who are advised to take a formulation like those used in the **AREDS**, should review the supplements they are taking with their primary care doctors and/or eye care professionals. In addition to their study medication, most of the participants in the **AREDS** took a multivitamin that contained the approximate recommended dietary allowance of most vitamins and minerals.

Q. How do people obtain the formulation in the dosages used by the **AREDS and **AREDS 2** researchers?**

Bausch & Lomb, an eye care company, was a collaborator in the **AREDS** and **AREDS 2** studies and provided the study formulation. The company will market the formulation used in the **AREDS** and **AREDS 2** studies; other companies provide similar formulations. Antioxidant vitamins and zinc can also be purchased separately; however, consumers should discuss the use of these high levels of vitamins and minerals with their doctors, and be certain to include copper whenever taking high levels of zinc.

Q. Are there reasons older people, in particular, should be cautious in supplementing their diets with the nutrients and doses used in the **AREDS and **AREDS 2**?**

Yes. There are reasons to be cautious in using high-dose vitamins and minerals, particularly among older people. Many older Americans take prescription medications, and a considerable number use over-the-counter drugs, dietary supplements, and herbal medicines. High-dose nutrients can interfere with medications and interact with other nutrients to decrease the nutrients' absorption into the body. This can ultimately affect a person's nutritional and health status. For example, the zinc concentration in the **AREDS** formulation is at a very high dose and could cause copper deficiency anemia. To prevent this, copper was added to the **AREDS** formulation. People who are being treated for chronic diseases such as cancer, heart disease, and diabetes should not take high dose nutrients without talking with their doctors. Generally, self-medication with high doses of vitamins and minerals -- such as those in the **AREDS** formulation -- is not recommended. Individuals who are considering taking the **AREDS** formulation should discuss this with their primary care doctors and/or eye care professionals. They can help you determine which formulation and dosages are best for you.

Q. If I have been diagnosed with early AMD, should I take the nutrients to help prevent disease progression to the intermediate stage?

There is no apparent need for those diagnosed with early AMD to take the nutrients studied in the AREDS. This is because the study did not demonstrate that the nutrients provided a benefit to those with early AMD. Many people with early AMD progressed to intermediate AMD during the study, and the AREDS formulation did not seem to slow this progression. However, if you have early AMD, a dilated eye examination every year can help determine whether the disease is progressing. As a general rule, regular use of an AREDS or AREDS 2 vitamin supplement can be beneficial for overall eye health

Q. How long will I have to take the nutrients?

Generally, use of the vitamin supplement will continue indefinitely.

Q. What are the side effects from the AREDS formulation?

The AREDS participants reported few side effects from the treatments. About 7.5 percent of participants assigned to the zinc treatments -- regardless of whether they were the "antioxidants plus zinc" or "zinc alone" treatment -- experienced genitourinary problems that required hospitalization. Some of these problems included urinary tract infections, kidney stones, incontinence, and enlarged prostate. This compares with five percent of participants who did not have zinc in their assigned treatment that experienced the same genitourinary problems. 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.

Below is a summary of the original AREDS formula, modified AREDS with Lutein and the new AREDS 2 formulation

PreserVision (AREDS) SoftGels

Vitamin A (beta carotene) **	28,640 IU
Vitamin C	452 mg
Vitamin E	400 IU
Zinc	69.6 mg
Copper	1.6 mg
Lutein **	-----

PreserVision Lutein SoftGels

Vitamin A (beta carotene) **	-----
Vitamin C	452 mg
Vitamin E	400 IU
Zinc	69.6 mg
Copper	1.6 mg
Lutein **	10 mg

PreserVision (AREDS 2) SoftGels

Original AREDS formula as above	LESS Vitamin A (beta carotene)
	<u>PLUS</u>
Omega-3 fatty acids	1000 mg
Lutein	10 mg
Zeaxanthin	2 mg

** Should you choose an alternative brand, please use the above formulations as a reference as you make your selection. Remember, Lutein is the recommended substitute for smokers and those exposed to high levels of ultraviolet (UV) light. The Lutein version may be used as an alternative by most individuals.

Example: Macutrition By Advanced Vision Research

Additionally, prescription Tozal is available for macular degeneration and dry eye syndrome. Ask your doctor about Tozal. Tozal contains the formula of AREDS 2 plus Vitamin D3, and Taurine AND Natural Beta Carotene (as opposed to synthetic beta carotene in AREDS formula) so it is safe for smokers.