

## Nutrition and Eye Health

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They say an apple a day keeps the doctor away, but it will take a much more complete diet to help keep eyes healthy. More often than not, eye care providers are asked about the diet that helps keep eyes healthy. Here is an attempt to answer.

Of course, it's always important to eat a well-balanced diet for general health reasons and overall good health and nutrition critical for maintaining a set of healthy eyes. Including certain foods more often, however, could actually be more beneficial for eyes.

### ***BEST NUTRIENTS FOR EYE HEALTH***

The nutrients we need to know about are lutein, zeaxanthin, vitamin C, beta-carotene, vitamin E, zinc, and omega 3 fatty acids. Many of these nutrients are antioxidants and may protect eyes by reducing oxidative stress.

#### ***AREDS2 stars: Lutein and Zeaxanthin***

Lutein and zeaxanthin (L/Z) are members of the xanthophylls family of carotenoids. L/Z are yellow pigments found in the lens and retina and concentrated in the macula. They may act as potent antioxidants to filter out damaging blue and ultraviolet light. Some evidence has suggested that consuming 6 mg per day of L/Z may lower the risk of age related macular degeneration (AMD) and slow the progression of cataract. The current average intake of L/Z is around 2 mg per day.

The best sources found in commonly eaten foods include spinach, collard greens, egg yolks, pistachios, corn and corn products. Other sources include green peas, persimmons, brussel sprouts and broccoli.

#### ***More than lutein and zeaxanthin***

*Other nutrients essential for eye health are:*

1 Vitamin C. As an antioxidant, vitamin C blocks

damage from radiation and helps make blood vessels. Vitamin C is found in citrus fruits, berries, tomatoes, melons and potatoes.

1 Beta-carotene. An orange carotenoid, beta-carotene is necessary for healthy eyes. The body converts beta-carotene into vitamin A, which the retina needs to detect light. Good sources of beta-carotene are carrots, carrot juice, sweet potatoes, canned pumpkin and spinach.

1 Vitamin E. As an antioxidant, vitamin E may protect the eyes from free radical damage. Good sources include vegetable oils, nuts, especially almonds, sunflower seeds and wheat germ.

1 Zinc. Zinc is found in the macula and assists vitamin A in making melanin to protect eyes. Oysters, beef, dry beans, lentils, yogurt and whole grains are good sources of zinc. However, high amounts of zinc can cause a copper deficiency.

1 Omega-3 fatty acids. Studies have suggested that the long chain omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), may not only play a role in preventing cardiovascular disease, they may also protect the retina. DHA is found in the brain and in the eyes. Fatty acids may prevent or slow the progression of eye disease by protecting the blood vessels. Good sources of EPA and DHA include salmon and sardines. The American Heart Association recommends eating fatty fish twice a week. Fish oil supplements may be indicated for the fish-averse.

### ***ROLE OF SUPPLEMENTS***

*Latest knowledge from AREDS2*

While the AREDS supplements in the Age-Related

Eye Disease Study (AREDS2) showed promising results for people at risk for advanced AMD, they did not reduce the risk of cataract unless perhaps subjects had low levels of L/Z. The high-dose supplement cocktail reduced the progression of AMD 25% over five years. Overall, the L/Z supplement may be safer than beta-carotene, which may raise the risk of lung cancer in smokers or ex-smokers.

With the new AREDS formulation, adding DHA and EPA and lowering zinc did not have an effect or add benefits. However, diet alone cannot provide as high a level of vitamins and minerals as the supplement. Moreover, in AREDS2 the formulation did not show benefits in subjects with no or early AMD. People often take vitamin/mineral supplements as insurance, but the AREDS2 formulation appears to be unnecessary except in the setting of intermediate or advanced AMD.

The researchers say that removing beta-carotene from the AREDS formula and adding lutein and zeaxanthin will result in a single formula that is safe and effective for all AMD patients. Until now, people who were current or former smokers could only use a formula that excluded beta-carotene, because it had been linked to risk of lung cancer for these patients. About half of AREDS2 participants were former smokers.

#### *Nature's own supplements.*

Mentioned below are some nutrient options that are proved to be helpful to keep healthy eyes.

**1. Leafy Greens:** Leafy greens are full of antioxidants, including lutein and zeaxanthin. According to the American Optometric Association, "many studies have shown that lutein and zeaxanthin reduce the risk of chronic eye diseases, including age-related macular degeneration (AMD) and cataracts." These antioxidants also help to protect and maintain healthy eye cells by filtering out harmful high-energy blue wavelengths of light. Unfortunately, our bodies cannot synthesize the amounts of lutein and zeaxanthin that we need - meaning that eating nutritious foods with these antioxidants is a very important

part of day-to-day eye care.

**2. Berries:** Especially strawberries. These tiny snacks are packed full of vitamin C (86.5 milligrams to per serving), which has been linked to a decrease in cataract formation. Vitamin C is also known to promote healthy capillary growth throughout the body and assists in the absorption of iron - all which is important for healthy eyesight. Vitamin C is also another nutrient that our bodies can't make on their own, meaning that Vitamin C-rich foods are the key to obtaining enough of this vitamin for a healthy body and healthier eyes.

**3. Almonds:** In addition to offering a much-needed boost of energy and tasting quite good, almonds are known for their vitamin E content. According to some studies, vitamin E has been proven to reduce the risk of age-related macular degeneration by up to 25 percent - meaning that a handful of almonds now could be quite beneficial.

**4. Beans:** One of many nutrients that our eyes and bodies overall need to function properly is zinc - and like so many other nutrients, our bodies cannot produce zinc on their own. Beans and other legumes are a good source for this particular nutrient. Adding zinc to the meals can help protect retina against some of the aging effects that can lead to vision loss.

**5. Fatty Fish:** A fish dinner is a great thing to include in any eye-healthy diet. Rich in omega-3, these dinner staples regulate the growth of blood vessels in our eyes. Since some eye conditions are caused by overgrowth or abnormal growth of these blood vessels, this regulation can go a long way in aiding in the prevention of diseases such as age-related macular degeneration and retinopathy.

As we think about ways to improve eye health, we know that vitamins and nutritional supplements are not a cure for eye disease, nor will they give back vision that has been lost. But good nutrition at all ages is vital for entire body, and plays an important role in maintaining healthy eyes.

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