



Eye Health

• • • Your 'at a glance' guide to staying healthy for life By Quest Vitamins • • •

As the population of the Western world ages eye disease is becoming more prevalent. Age-related macular degeneration (AMD) is the leading cause of blindness in the developed world. Deterioration of the eyes however is not an inevitable consequence of aging; oxidative stress, smoking, obesity and nutrient poor diets are modifiable factors that all contribute to the development of eye dysfunction. Since the publication of the findings of a large study known as the Age-Related Eye Disease Study (AREDS), a great deal of interest has been generated in the potential role of nutritional supplements in the maintenance of eye health.

Key Nutrients For Eye Health:

- ✓ Vitamin A
- ✓ Zinc
- ✓ Lutein
- ✓ Zeaxanthin
- ✓ Bilberry

The AREDS

In this large study participants received a supplement containing the following nutrients:

- Vitamin C 500mg
- Vitamin E 400IU
- Beta-carotene 15mg
- Zinc 80mg
- Copper 2mg

The treatment was found to reduce the risk of progression to advanced macular degeneration by 25% in high risk patients (defined as patients with intermediate AMD or advanced AMD in one eye only). Since the study, further research has reported a 35% reduced risk of AMD among at risk patients with an above average dietary intake of the nutrients used in the AREDS supplement.

Nutrients and cataracts

Cataracts are the result of clouding of the lens of the eye. Evidence suggests that long-term use of vitamin supplements may help delay cataract development.

The Role Of Antioxidants

Antioxidants are nature's antidote to substances termed reactive oxygen species, commonly called free radicals; free radicals are considered dangerous because they are highly reactive.

Free radicals generate chemical reactions in the body which can damage cells; this process causes aging.

The retina of the eye is particularly vulnerable due to its high oxygen consumption, the level of unsaturated fatty acids found within it, and

the amount of light it is exposed to.

The key antioxidant vitamins are vitamin C, which is water soluble, and vitamin E, which is fat soluble.

Key Nutrients

Vitamin A -

Cone cells and rod cells located in the retina at the back of the eye, regulate day and night vision respectively. The light sensitive compound in the eye consists of the protein opsin, found in cone and rod cells, bound to retinal, a

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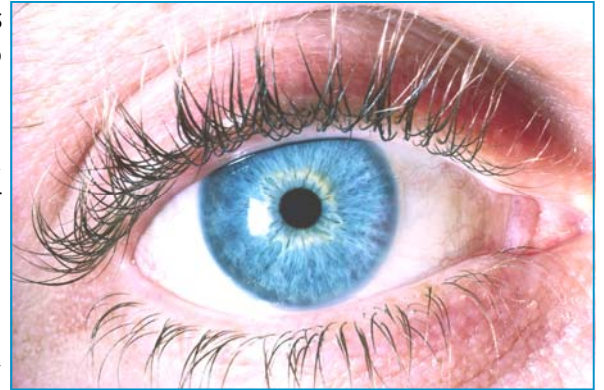
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form of retinol (active vitamin A). Light initiates a series of reactions culminating in signals being transmitted to the brain, which interprets the visual information.

The rod cells are more sensitive to vitamin A deficiency, thus the association of vitamin A deficiency with night blindness.

Zinc

Zinc is highly concentrated in the retina of the eye, where it has a number of functions.



Firstly it is thought to interact with the protein taurine in the light receptors of the eye. Additionally, zinc is required for the functioning of retinal dehydrogenase, the enzyme which converts retinol to retinal, the form of vitamin A used in the eye. Finally zinc is part of the body's powerful antioxidant enzyme superoxide dismutase, helping to protect the eye from free radicals (highly reactive compounds) generated by light exposure.

Lutein and zeaxanthin

The macular region of the retina contains the carotenoid pigments lutein and zeaxanthin; these pigments have the crucial function of absorbing blue light, in this way protecting the light receptive cell layer from light damage.

Consuming foods rich in lutein (such as spinach, romaine lettuce, peas, egg yolks and corn) will increase the amount of the pigment in the eye.

Herbal Support

Bilberry

Bilberry, similar to blueberries, has long been used for the treatment of eye conditions; its active constituents are flavonoid anthocyanosides, potent antioxidants. During World War II British air pilots reported improvements in their night vision following the consumption of bilberries.

Key supplements, combined with a balanced diet rich in fresh produce, can help ensure that you can enjoy seeing the world throughout life.