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Astashine silver capsules: an excellent choice for eye fatigue relieves

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ABSTRACT

Scientists long ago discovered that a class of naturally-occurring pigments called carotenoids held powerful antioxidant properties that are crucial for eye health. This carotenoid is called astaxanthin. Astaxanthin is produced by the microalgae *Haematococcuspluvialis* when its water supply dries up, forcing it to protect itself from ultraviolet radiation. Astaxanthin is leaps and bounds more powerful than beta-carotene, alpha-tocopherol, lycopene, and lutein—other members of its chemical family. Astaxanthin exhibits very strong free radical scavenging activity, and protects eyes from oxidative damage. Astaxanthin crosses the blood-brain barrier and the blood-retinal barrier which has huge implications for the health of eyes. Dry eye is a common disease of the ocular surface that is associated with corneal surface irregularity and blurred Vision. L-carnitine has demonstrated rapid and consistent improvements in signs and symptoms in patients with dry eye. Several studies shown that Astaxanthin & L-Carnitine Combination in Astashine Silver Capsule is supportive of Eye health.

Keywords: Astashine Silver Capsules, Dry eyes, Eye health, Eye fatigue relieve.

INTRODUCTION

It is similar to beta-carotene but a slight difference in the structure, and causes a radical difference in biological activity. Astaxanthin is by far the most powerful carotenoid antioxidant when it comes to free radical scavenging: it is 65 times more powerful than vitamin C, 54 times more powerful than beta-carotene, and 14 times more powerful than vitamin E. Astaxanthin is far more effective than other carotenoids at "singlet oxygen quenching," which is a particular type of oxidation. The damaging effects of sunlight and various organic materials are caused by this less-stable form of oxygen. Astaxanthin is 550 times more powerful than vitamin E and 11 times more

powerful than beta-carotene at neutralizing this singlet oxygen. Unique aspects of the astaxanthin structure allow it to pass the "blood brain barrier", meaning it can deliver antioxidant activity benefits directly to the brain, eyes and nervous system.

Astaxanthin kills free radicals, staving off age related diseases like macular degeneration, by preventing these unstable molecules from damaging cells. It also boosts the functioning of your immune system by increasing the number and activity of T cells and macrophages, two kinds of protective cells that fight infection. Unlike other antioxidants, astaxanthin is available both within and without the cell wall which allows it to fight free radicals both inside and outside the cell wall.

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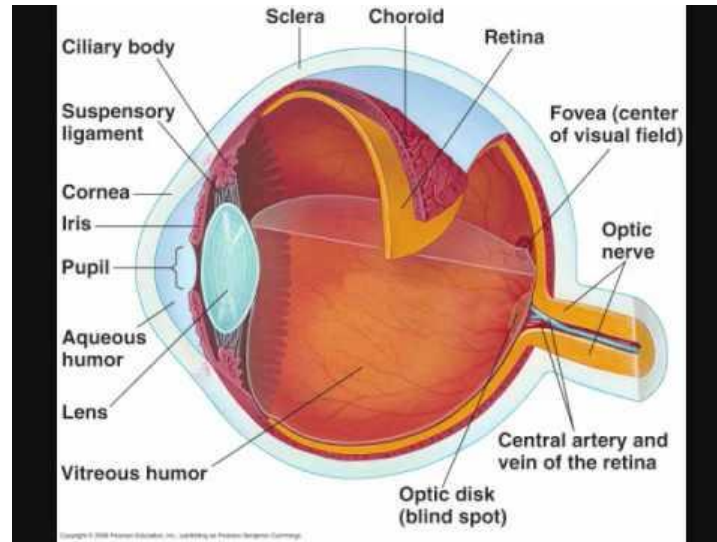


Figure 1: Anatomy & physiology of eye.

Mechanism of action of Astashinesilver on eye health

Certain carotenoids have been shown to help protect the retina of the eye from oxidative damage. The lens of the eye focuses incoming light onto the photosensitive retina, which then transmits visual signals to the brain. In the central area of the retina lies the macula, which has the highest density of photoreceptors that provides visual acuity. Oxidation, as from sunlight exposure, degrades the retinal membranes and likely leads to damage or destruction of photoreceptor cells.

A recent study indicates that astaxanthin & L-carnitine in Astashine Silver Capsules is able to cross the blood retinal barrier and exert antioxidant effects to stop retinal destruction by staving off

light induced oxidation and protect photoreceptors from degeneration.

Astashine Silver Capsules protect the eyes from

- Light-induced damage
- Photoreceptor cell damage
- Ganglion cell damage
- Neuronal damage

Composition of Astashine Silver Capsules

Astaxanthin - 2mg (Naturally derived from Haematococcuspluvialis algae extract, which is microencapsulated) & L-Carnitine-L-Tartrate 368 mg.

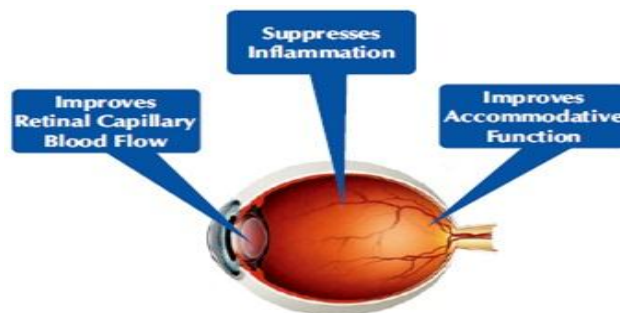


Figure 2: Effects of Astaxanthin on eyes.

The possible role of antioxidants in alleviating oxidation stress and other oxidative damages to the eye has been extensively reviewed [1].

6 mg per day of Astaxanthin supports eye health improvements after 4 weeks!

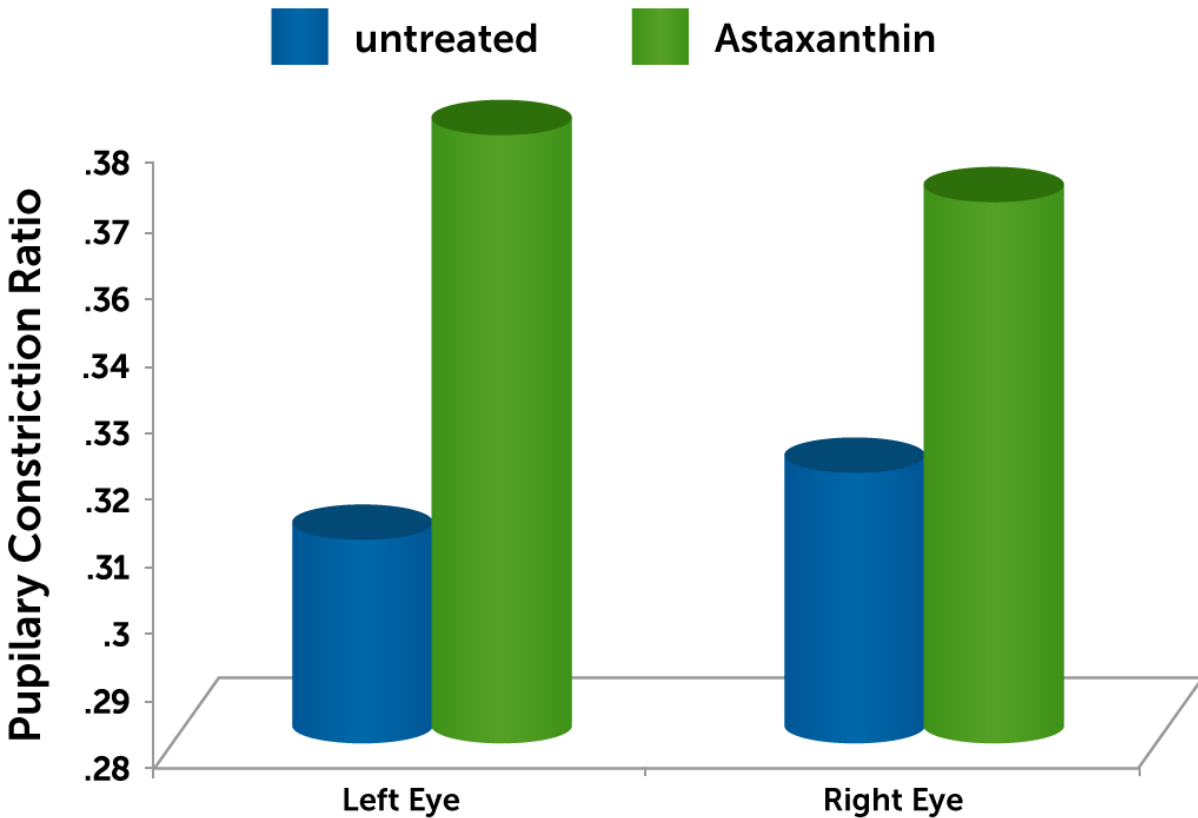


Figure 3: Role of Astaxanthin in oxidation stress.

- A 2011 review of previous and on-going research points to the wide range of benefits of this potent antioxidant with excellent tolerability and safety factors as well. It has been found to lower levels of free radicals in people who are smokers or overweight; blocked oxidative damage to DNA, acted as an anti-inflammatory agent, supported tuberculin immunity, lowered triglycerides, increased blood flow and good HDL (High Density Lipoprotein) cholesterol, supported brain functioning with improved cognition and nerve stem cell growth, improved visual acuity, reproductive health and more.
- As one of nature's most effective antioxidants with the ability to cross the blood-brain barrier, astaxanthin's potential benefits for the health of the eye and the nervous system are very promising.

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- The eye is potentially one of the organs that are the most exposed to oxidation, because it is exposed to air and UV-light as well as being fed by a very large number of small capillaries capable of bringing many of the metabolic oxidative residues through the blood.
- The eye also contains high levels of polyunsaturated fatty acids and pigments that are sensitive to oxidation. Recently, a research group demonstrated increased superoxide and peroxide formation following UV irradiation of a lens protein. Photooxidation of the lens proteins have been associated to the development of cataracts.
- Lutein and zeaxanthin, the carotenoids naturally found in the human retina, are closely related to astaxanthin. There is abundant evidence that certain carotenoids can help protect the retina from oxidative damage.
- Investigations of the antioxidant effectiveness of astaxanthin in the eye are just beginning but are already very promising. A recent study with rats indicates that astaxanthin can be effective at ameliorating retinal injury, and that it is also effective at protecting photoreceptors from degeneration.

Other carotenoids have begun to attain a certain level of fame for having beneficial properties for the eyes. There is no doubt that lutein and zeaxanthin are wonderful products to support and protect the eyes, and there is credible evidence that they can help prevent age related macular degeneration and other degenerative conditions. But due to Natural Astaxanthin's Superior antioxidant and anti-inflammatory properties, indications are that it will prove to be superior to all other nutraceuticals for eye and brain health. Scientists believe that something may cause people's internal antioxidant defense system to malfunction or wear out as we age. Our bodies may lose the ability to produce high levels of the antioxidants that are normally produced internally such as superoxide dismutase, catalase and glutathione peroxidase. Also, our bodies are now subjected to unprecedented levels of oxidation caused by environmental factors such as pollution, containments, processed food and the high levels of stress in modern life. All of these lead to an assault on our vital organs as we age, particularly our brains and eyes. The eye, in particular is now

subjected to much higher levels of oxidation than our ancestors' experienced. The depletion of the ozone layer is causing more intense sunlight than ever before, which directly affects the eyes and skin. Excessive exposure to sunlight and to the highly oxygenated environment cause free radicals to be generated in the eye. A condition called "ischemia" which is a type of blockage that deprives the eye nutrition and oxygen is a common cause of increased oxidation in the eye. Another cause of increased oxidation in the eye happens when the ischemic blockages are removed. The reoxygenation of the tissue after blockage is called "reperfusion," and the end result is another attack on the eye's normal oxidative balance. Even normal enzymatic processes cause increased generation of free radicals and singlet oxygen such as hydrogen peroxide, superoxide and hydroxyl in the eyes. Free radicals and singlet oxygen oxidize the polyunsaturated fatty acids in the retina which leads to functional impairment of the retinal cell membranes, causing temporary and permanent damage to the retinal cells. Once the retina is damaged, it cannot be replaced. Antioxidants that can reach the inner eye by crossing the blood-brain and blood-retinal barriers are essential because they protect the eye from these damaging conditions. The carotenoids, lutein and zeaxanthin are normally found in the eyes.

Dr. Mark Tso of the University of Illinois extensively worked on Astaxanthin's benefits on the eyes. Dr. Tso was the first person who proved that Astaxanthin could cross the blood-brain and blood-retinal barriers. He took laboratory rats and tested their eyes for Astaxanthin. He fed the rats Astaxanthin and proved that Astaxanthin could cross first the blood-brain barrier and get into the brain, and then once in the brain it could reach the retina and the macula by crossing through the blood-retinal barrier. Through an extensive series of tests, Dr. Tso went on to prove that Astaxanthin has many protective properties once it reaches the eyes.

In a double blind study performed in Japan, after four weeks of supplementation with 5 mg of Astaxanthin per day (extracted from Haematococcus algae meal) the authors reported a 46% reduction in the number of eye strain subjects. They also found higher accommodation amplitude (the adjustment in the lens of the eye that allows it

to focus) in subjects who used visual display terminals. The mechanism of action is most likely due to Astaxanthin's potent antioxidant properties [3].

Additional research in the area of eye fatigue has been carried out. In fact, there are now nine different positive human clinical studies that have been published in this area. Two different dosage levels were tested for eye fatigue by a group led by Dr. Nakamura in 2004. They found positive effects at 4 mg per day, but found a better result at 12 mg per day [4].

Another group of Japanese researchers found similar results in another human clinical study. This double blind study was done to evaluate Astaxanthin's effect on eye fatigue and visual accommodation. Forty subjects were divided into placebo and treatment groups, with the treatment group receiving 6 mg of Astaxanthin for four weeks. The results were that three separate visual parameters were found to have statistically significant benefits from Astaxanthin supplementation. This research established an optimum daily dose for eye fatigue at 6 mg per day [5].

Additional studies showing that 6 mg per day of Natural Astaxanthin supplementation for four weeks can reduce eye soreness, dryness, tiredness and blurred vision [2].

Astaxanthin may work in a preventative role for eye fatigue as compared to a curative one that has already been established. The other studies all centered on the use of Astaxanthin to cure eye fatigue. A clinical study was done on subjects whose eyes were healthy, with no signs of fatigue or strain. Both the treatment and the placebo groups were subjected to heavy visual stimuli to induce eye fatigue, and it was found that the treatment group recovered more quickly. This clearly indicates that Natural Astaxanthin may serve to prevent eye fatigue from occurring in healthy people [10].

It is very important to have sufficient blood flow to the eyes and the retina. A human clinical study examined the ability of Astaxanthin to improve retinal capillary blood flow. Eighteen subjects were given 6 mg per day of Natural Astaxanthin and another eighteen people were given a placebo. After four weeks, it was found that

the treatment group had improved retinal capillary blood flow as compared to the placebo group [14]. The mechanisms of action thought to enable Astaxanthin to reduce or prevent eye fatigue are diverse. Of course, Astaxanthin's role as an antioxidant and anti-inflammatory must play a part. A study conducted at the Hokkaido University Graduate School of Medicine, determined that Astaxanthin inhibited inflammation in the eye by blocking nitric oxide synthase [6]. Astaxanthin was also found to have potent antioxidant effects in the prevention of cataracts in rats' eyes [13].

Human clinical studies on Natural Astaxanthin's effects on the eyes has also yielded positive results. This study was done in Japan with subjects comprised of twenty year old men. The treatment group was given 6 mg of Natural Astaxanthin per day for four weeks. Different visual parameters were measured, with statistically significant improvement found in two different parameters for visual acuity. The greatest enhancement was seen in depth perception which improved by 46% in the group supplementing with Natural Astaxanthin [7].

Pre-clinical animal studies and in-vitro experiments on Astaxanthin and eye health.

One such study took the lens from the eyes of pigs and tested the ability of Astaxanthin to protect them from induced oxidative damage. This experiment found that Astaxanthin was capable of protecting the lens proteins from oxidative damage. In fact, Astaxanthin performed better than the antioxidant glutathione which is produced by the pig's own body [12].

A study done in rats was very helpful in that it measured the effect of Astaxanthin on three important inflammatory markers in the uvea (the middle layer of the eye including the iris). Inflammation in the uvea was induced, after which nitric oxide; tumor necrosis factor alpha and prostaglandin E-2 were measured. The rats that had been injected with Astaxanthin had lower levels of all three inflammatory markers. The researchers concluded that Astaxanthin is effective in reducing ocular inflammation [9].

A previous study done on inflammation of the eye of rats yielded similar results, but also demonstrated that the effects of Astaxanthin worked in a dose-dependent fashion. Additionally,

this study proved these anti-inflammatory mechanisms in-vitro [6].

In one Clinical study At the Medical College of Georgia in Augusta, new research has shown that L-carnitine can be of significant value for the protection of ocular tissues, especially in diabetics, who are subject to depletion of this important vitaminoid. Diabetics and others who become susceptible to high levels of glucose in blood serum as they age suffer from the formation of deleterious hybrid protein-sugar complexes known as advanced glycation end products (AGE). Implicated as a benchmark of aging, the aptly named AGEs can accumulate in the lens of the eye (or elsewhere in

the body) and cause serious complications, such as cataracts.

In the study, some samples of calf lens tissue were incubated in a glucose solution samples were incubated in a solution of ALC (acetylated carnitine) for 15 days. The results were clear: ALC decreased the glycation by 42%. ALC also affected the formation of antibodies to AGEs. For the first time, it was shown that ALC can inhibit potential glycation sites of lens tissue and protect them from glycation-mediated protein damage. If, as suspected, it can do the same *in vivo*, ALC may be able to prevent the blindness caused by cataracts. [15].

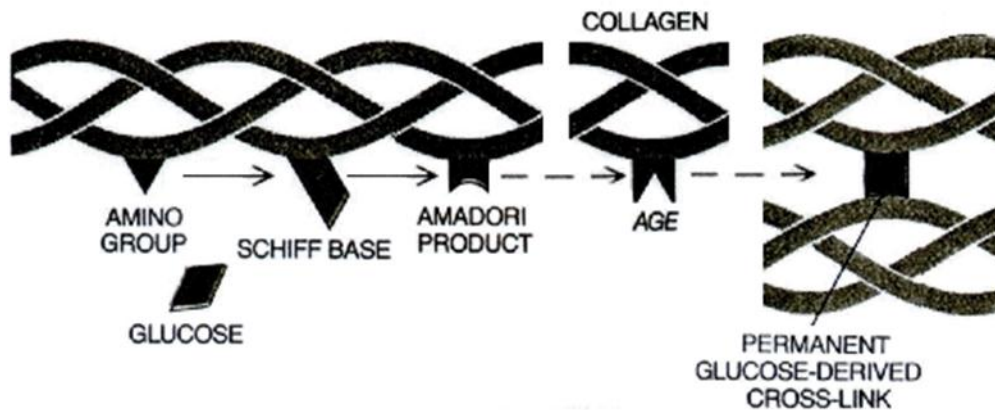


Figure-4

The Glycation Theory of Aging holds that the primary cause of aging is cellular damage resulting from the modification of macromolecules induced by non-enzymatic glycation. This is a series of chemical reactions that result in the irreversible crossed linking of protein molecules such as collagen, which is an important constituent of bone, cartilage, tendon, and other connective tissues

SAFETY OF ASTASHINE SILVER CAPSULES

Astaxanthin has demonstrated safety in numerous human clinical trials. In one open-label clinical study on subjects with metabolic syndrome (n=17) Astaxanthin (16 mg/day, for three months) significantly raised blood bilirubin ($p \leq 0.05$), potassium ($p \leq 0.05$), and creatine kinase ($p \leq 0.01$), although all three values remained within normal

range. Also, astaxanthin significantly lowered the liver enzyme gamma-glutamyltranspeptidase (GGTP; $p \leq 0.05$). Since the researchers noted this enzyme was abnormally elevated in 11 of the 17 subjects at baseline, this astaxanthin effect may have been beneficial. Animal experiments have investigated astaxanthin at levels well over 120 mg/day in human equivalents, without causing apparent harm. Hoffman-La Roche confirmed its safety with extensive tests, including acute toxicity, mutagenicity, teratogenicity, embryotoxicity, and reproductive toxicity. L-carnitine is listed as pregnancy category B, indicating animal studies have revealed no harm to the fetus but that no adequate studies in pregnant women have been conducted. L-carnitine has been given to pregnant women late in pregnancy with resulting positive outcomes. The racemic mixture (D,L-carnitine) should be avoided. D-carnitine is not biologically

active and might interfere with the proper utilization of the L-isomer. In uremic patients, use of the racemic mixture has been correlated with myasthenia-like symptoms in some individuals.

Supplement facts

Presentation: 60 capsules

Usage: As a food supplement combination of antioxidants to improve health and vitality.

Contra-indications: Product is contra-indicated in persons with Known hypersensitivity to any component of the product hypersensitivity to any component of the product.

Recommended usage: *Adults:* Two capsules per day along with food.

“Do not exceed the recommended daily dose”

Administration: Taken by oral route at anytime with food.

Precautions: Food Supplements must not be used as a substitute for a varied and balanced diet and a healthy lifestyle. This Product is not intended to diagnose, treat, cure or prevent any diseases.

Warnings: If you are taking any prescribed medication or has any medical conditions or have any medical conditions (seizures) under age group 17 year

always consults doctor or health care practitioner before taking supplements.

Side Effects: Mild side effects like nausea, headache and vomiting in some individuals have been reported.

Storage: Store in a cool, dry and dark place. Keep out of reach of children.

CONCLUSION

Astaxanthin in Astashine Silver Capsules may work in a preventative role for eye fatigue as compared to a curative one that has already been established. The studies all centered on the use of Astaxanthin in Astashine silver capsules to cure eye fatigue. Both the treatment and the placebo groups were subjected to heavy visual stimuli to induce eye fatigue, and it was found that the treatment group recovered more quickly. This clearly indicates that Natural Astaxanthin in Astashine Silver Capsules may serve to prevent eye fatigue from occurring in healthy people. Astaxanthin & L-Carnitine in Astashine Silver Capsules has great benefits for the eyes, and in fact, may be the best choice for eye health among all nutraceutical products.

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