

Cognitive Benefits of BioAstin Natural Astaxanthin

Some other nutraceuticals have begun to attain a certain level of fame for having beneficial properties for the brain. But due to BioAstin's superior antioxidant and anti-inflammatory properties, indications are that it will prove to be superior to all other nutraceuticals for brain health. There is substantial evidence that most diseases associated with the brain are the result of oxidation and/or inflammation. Free radicals and singlet oxygen wreak havoc over time in your head, and the consequences, if left unchecked, manifest in such horrible diseases as:

- Alzheimer's disease
- Parkinson's disease
- Huntington's disease
- Amyotrophic lateral sclerosis (Lou Gehrig's disease)
- Senility
- Injuries resulting from trauma
- Inflammatory injuries
- Other forms of age-related dementia

It is essential that people take antioxidants that can cross the blood-brain barrier as they get older to protect these vital organs. 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.

Many antioxidants and even carotenoids that are closely related to Natural Astaxanthin cannot cross the blood-brain barrier. Dr. Mark Tso, PhD was the first person who proved that Astaxanthin could cross the blood-brain barrier. He took laboratory rats and tested their eyes for Astaxanthin. As expected, he did not find any present. Then he fed the rats Astaxanthin and retested, this time finding Astaxanthin present in the retina. He 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 brain and eyes. Among the many benefits that Dr. Tso found include Astaxanthin's ability to protect the eye from:

- Light-induced damage
- Photoreceptor cell damage

- Ganglion cell damage
- Neuronal damage
- Inflammatory damage

(Tso, et al, U.S. Patent No. 5,527,533, 1996).

A series of tests on rodents at the International Research Center for Traditional Medicine in Japan show great potential. In the first experiment, **blood pressure was reduced** by the introduction of Astaxanthin to hypertensive rats. Blood pressure is a causative factor for many diseases including some associated with the eyes and brain. The researchers went on to examine the effects of Astaxanthin on stroke prone rats. They found that after five weeks of continuous supplementation, the **incidence of stroke was delayed** in the treated group. Next, they established a possible mechanism for these results in-vitro, which they believed to be nitric oxide suppression.

The same study went on to demonstrate a **neuroprotective effect (protection of brain function)** in ischemic mice. Ischemia is the condition where there is a deficient supply of blood to the brain as a result of the obstruction of the arteries. In the case of these mice, ischemia was induced by blocking the carotid artery. In humans, this condition can be caused by plaque buildup which can block the flow of blood through the carotid artery in the neck, the primary source of blood to the brain. This build up of plaque can lead to many different maladies including stroke and different types of dementia.

The ischemic mice were fed Astaxanthin only once—just one hour before the ischemia was induced. Remarkable results were seen in the treated group—the mice performed better in a maze designed as a learning performance test. “The present results suggest that Astaxanthin can attenuate the development of hypertension and may help to **protect the brain from stroke and ischemic insults**...In addition, Astaxanthin showed **neuroprotective effects** at relatively high doses by preventing the ischemia-induced impairment of spatial **memory** in mice. This effect is suggested to be due to the significant antioxidant property of Astaxanthin on ischemia-induced free radicals and their consequent pathological cerebral and neural effects. The current result indicates that Astaxanthin may have beneficial effects in **improving memory in vascular dementia**” (Hussein, et al, 2005). It appears that Astaxanthin actually made these mice with restricted blood flow to their brains **smarter by improving their memory**. The implications of this study are extremely exciting, as our aging population sees growing numbers of Alzheimer’s patients, stroke sufferers and people afflicted by dementia caused by other factors. Further research in humans must be done to fully understand the potential benefit, but these pre-clinical experiments indicate that Astaxanthin may **help sufferers of many brain-related diseases live better lives**.

A similar study had been done previously and was published in Carotenoid Science. This study also demonstrated that Astaxanthin could **prevent brain damage due to ischemia** (Kudo, et al, 2002). A company in Japan did some further work in this area in a rat model. The company fed rats Astaxanthin twice: Twenty four hours before and again one hour before inducing ischemia by occluding the rats’ middle arteries. The blood flow stoppage duration was one hour, at which point blood flow to the brain was permitted to resume. The rats were given one more dose of Astaxanthin after blood flow

restarted, and then two hours later the rats were sacrificed and their brains were removed. The brains were compared to rats from a control group fed olive oil, and it was found that the **rats fed Astaxanthin had 40% less brain damage** than the control group (Oryza, 2006).

To summarize, there is strong evidence that BioAstin Natural Astaxanthin holds great promise for those wishing to prevent cognitive diseases and maintain general brain health. In particular, daily supplementation with BioAstin may have tremendous benefits for those wishing to protect their brains as they age.

References

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