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Published by WellnessOne of Redding

This Vitamin Found to Rejuvenate Aging Eyes

Reprinted from Mercola.com | February 06 2012

By Dr. Mercola

It's becoming common knowledge that vitamin D is important for far more than bone health.

In the last several years, research has been pouring showing that higher levels of vitamin D are necessary to provide protection from serious chronic diseases such as cancer, heart disease, infections, multiple sclerosis and, now, researchers have revealed an important role in aging -- particularly eye aging.



Vitamin D is Good for Your Eyes

When most people think of nutrients and eye health, they immediately think "vitamin A. or beta carotene."

However, new evidence suggests that vitamin D may be more crucial.

New research from the Institute of Ophthalmology at University College London revealed striking eye benefits from vitamin D3 supplementation in older mice.

Specifically, after receiving the supplement for just *six weeks*. Improvements included:

- Improved vision
- Reductions in retinal inflammation and levels of amyloid beta accumulation, which is a hallmark of aging
- Significant reductions in retinal macrophage numbers and marked shifts in their morphology (macrophages are immune cells that can cause inflammatory damage)

The findings suggest vitamin D3 may very well help prevent age-related macular degeneration (AMD), which is the most common cause of blindness in the elderly. AMD is associated with both

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amyloid beta accumulation and inflammation, and vitamin D supplementation appears to benefit both of these conditions.

Researchers concluded:

"These changes were reflected in a significant improvement in visual function, revealing that vitamin D₃ is a route to avoiding the pace of age-related visual decline. Excess amyloid beta deposition and inflammation are risk factors leading to age-related macular degeneration (AMD), the largest cause of blindness in those older than 50 years in developed countries. Recently, vitamin D₃ has been linked epidemiologically to protection against age-related macular degeneration. Hence, vitamin D₃ enrichment is likely to represent a beneficial route for those at risk."

As researchers noted, separate research has also implicated vitamin D deficiency in the development of macular degeneration, with those whose vitamin D intake was among the top one-fifth of participants having a 59 percent lower risk of developing AMD compared to women whose intake was among the lowest fifth.^[1]

How This Might Relate to Alzheimer's, Heart Disease and Other Age-Related Conditions



Interestingly, amyloid beta accumulation is not only associated with blindness; it's also the protein that tends to accumulate in the brains of Alzheimer's patients, causing plaque buildup. It is believed that amyloid beta destroys nerve cells, contributing to the cognitive and behavioral problems typical of the disease. Given that vitamin D affects accumulation of amyloid beta in the eyes, there is reason to believe it may do so in your brain and other areas as well, and the researchers did find a reduction in amyloid beta in the animals' aorta as well. The study's lead researcher explained, as reported by LifeExtension:

"People might have heard of amyloid beta as being linked to Alzheimer's disease and new evidence suggests that vitamin D could have a role in reducing its build up in the brain. So, when we saw this effect in the eyes as well, we immediately wondered where else these deposits might be being reduced."

"... Finding that amyloid deposits were reduced in the blood vessels of mice that had been given vitamin D supplements suggests that vitamin D could be useful in helping to prevent a range of age-related health problems, from deteriorating vision to heart disease."

Additionally, [research performed in 2009](#) and published in the *Journal of Alzheimer Disease* showed that vitamin D₃ enhanced the beta amyloid clearing effect of curcumin in the brains of patients with Alzheimer disease. Considering that [optimizing your vitamin D levels](#) is a relatively straightforward and inexpensive fix -- and is linked to numerous other health advantages, including cancer prevention -- there's really no reason to miss out on these important benefits.

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Additional Important Nutrients for Eye Health

As with all aspects of health, your lifestyle will play a role in how well your eyes "hold up" as you age. For instance, obesity and diabetes are at epidemic proportions right now, and both can impact your eyesight. Similarly, if you smoke or spend a lot of time in front of the computer, this too can take a toll on your vision health.

Basic healthy lifestyle principles, like eating right, limiting environmental toxins, and exercising, are important for eye health. But if you're looking for more specific strategies to maintain healthy vision, certain antioxidants and nutrients stand out above the rest. Among those that have been shown to be of particular benefit to your eyes are:

Lutein and Zeaxanthin

Of all the carotenoids, only zeaxanthin and lutein are found in your retina, which has the highest concentration of fatty acids of any tissue in your body. This is because your retina is a highly light and oxygen rich environment, and it needs a large supply of free radical scavengers to prevent oxidative damage there.

It is theorized that your body concentrates zeaxanthin and lutein in your retina to perform this duty. The concentration of these two pigments in the macula of your retina are what give it its characteristic yellow color. (The macula is actually called the "macula lutea" which literally means "yellow spot.") Zeaxanthin and lutein both cross the blood-brain-retina barriers, as astaxanthin (see below) does.

It is interesting that your eye preferentially concentrates zeaxanthin over lutein in the central macular retinal area (called the fovea), where the greatest amount of light impinges -- and zeaxanthin is a more effective singlet oxygen scavenger than lutein. Your body seems to naturally "know" this and accumulates it where it's most needed! Lutein and zeaxanthin are found in green leafy vegetables like spinach and kale, and also in egg yolks.

Astaxanthin

[Astaxanthin](#) is the ultimate carotenoid for eye health and the prevention of blindness. It's even more powerful an antioxidant than both lutein and zeaxanthin, and easily crosses into the tissues of the eye and exerts its effects safely and with more potency than any of the other carotenoids.

Specifically, astaxanthin may help ameliorate or prevent light-induced damage, photoreceptor cell damage, ganglion cell damage, and damage to the neurons of the inner retinal layers. It has also been found to have protective benefits against a number of eye-related problems, including:



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Cataracts	Age-related macular degeneration (AMD)	Cystoid macular edema
Diabetic retinopathy	Glaucoma	Inflammatory eye diseases (i.e., retinitis, iritis, keratitis, and scleritis)
Retinal arterial occlusion	Venous occlusion	

Astaxanthin is produced only by the microalgae *Haematococcus pluvialis* when its water supply dries up, forcing it to protect itself from ultraviolet radiation. It's the algae's survival mechanism—Astaxanthin serves as a "force field" to protect the algae from lack of nutrition and/or intense sunlight. There are only two main sources of astaxanthin: the microalgae that produce it, and the sea creatures that consume the algae (such as salmon, shellfish, and krill).



Anthocyanins from Bilberry and Black Currant

The most noted water-soluble antioxidants for the eye are the anthocyanins found in black currant and bilberry. They are important for eye health because they are soluble in the aqueous humor, thick watery substance filling the space between the lens and the cornea. The aqueous humor maintains the intraocular pressure, provides nutrition for other ocular tissues and serves to transport antioxidants.

Anthocyanins can also reduce intraocular pressure and help in maintaining collagen, which is the main component of the eye lens and is the connective tissue that supports your eye.

Animal-Based Omega-3 Fats

Omega-3 fats like those found in krill oil may help protect and promote healthy retinal function. One type, docosahexaenoic acid (DHA), is concentrated in your eye's retina and has been found to be particularly useful in preventing AMD. Further, inflammation is likely involved in AMD progression, and omega-3 fats have anti-inflammatory effects.

Research has shown that those who had the highest intake of animal-based omega-3 fats had a 60 percent lower risk of advanced AMD compared to those who consumed the least.^[ii] A 2009 study also found that those with the highest consumption of omega-3 fats were 30 percent less likely to progress to the advanced form of the disease over a 12-year period.^[iii] Adding further support for omega-3 fats, another 2009 study showed that participants with diets high in

omega-3 fats, along with vitamin C, vitamin E, zinc, lutein and zeaxanthin, had a lower risk of AMD as well.^[iv]

A Comprehensive Plan to Optimize Your Eye Health

Keeping your eyes in pristine working order as you get older is more about a comprehensive strategy than simply honing in on one nutrient or another. Ultimately, a multi-faceted approach will protect your eyes on multiple levels. This includes:

- **Optimize your vitamin D levels.** Vitamin D from sun exposure is the BEST way to optimize your vitamin D levels; exposing a large amount of your skin until it turns the lightest shade of pink, as near to solar noon as possible, is typically necessary to achieve adequate vitamin D production. If sun exposure is not an option, a safe tanning bed (with electronic ballasts rather than magnetic ballasts, to avoid unnecessary exposure to EMF fields) can be used, or, as a last resort, a vitamin D3 supplement can be taken orally.
- **Care for your cardiovascular system.** High blood pressure can cause damage to the miniscule blood vessels on your retina, obstructing free blood flow.

One of the primary ways to maintain optimal blood pressure is to avoid fructose. Research by Dr. Richard Johnson, chief of the division of kidney disease and hypertension at the University of Colorado, shows that consuming 74 grams or more per day of fructose (equal to 2.5 sugary drinks) increases your risk of having blood pressure levels of 160/100 mmHg by 77 percent!



- **Normalize your blood sugar.** Excessive sugar in your blood can pull fluid from the lens of your eye, affecting your ability to focus. And, it can damage the blood vessels in your retina, also obstructing blood flow. To keep your blood sugar in a healthy range, follow my [comprehensive nutrition guidelines](#), exercise and avoid excess sugar, especially fructose.
- **Eat plenty of fresh dark green leafy vegetables, especially kale.** Studies have shown that a diet rich in dark leafy greens helps support eye health, and those with the highest consumption of carotenoid-rich vegetables, especially ones rich in lutein and zeaxanthin, had increased vision health.
- **Get plenty of healthy animal-based omega-3 fat.** As noted above, omega-3 fatty acids like those in krill oil are protective of your healthy vision.
- **Avoid trans fats.** A diet high in trans fat appears to contribute to macular degeneration by interfering with omega-3 fats in your body. Trans fat is found in many processed foods and baked goods, including margarine, shortening, fried foods like French fries, fried chicken and doughnuts, cookies, pastries and crackers.

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- **Avoid aspartame.** Vision problems are one of the many potential acute symptoms of aspartame poisoning.
- **Quit smoking.** Smoking increases free radical production throughout your body, and puts you at risk for less-than-optimal health in many ways, including the risk of decreased vision.

WellnessOne offers a high quality, high potency Vitamin D3 by Metagenics that is very effective in helping you supplement. Ask your WellnessOne practitioner about their recommendation for your individual needs.



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