

Lutein: The Antioxidant That Protects Your Eyes & Skin



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Dr. Axe
FOOD IS MEDICINE

Lutein, nicknamed “[the eye vitamin](#),” is a type of carotenoid antioxidant that is most well-known for protecting eye health. Ask yourself this question: [How many colors are in your favorite foods](#)? The answer will tell you how much lutein you’re getting. Just like many other types of antioxidants, lutein is found in brightly colored foods like fruits and vegetables — especially leafy greens and types that are deep orange or yellow.

Along with another vision-boosting antioxidant called zeaxanthin, lutein is abundant in anti-inflammatory, [cancer-fighting foods](#) including kale, broccoli and many other green vegetables, eggs yolks and citrus fruits — all of which help protect the eyes from oxidative stress.

The average person who eats the [Standard American Diet](#) is likely running low in lutein, in addition to other important antioxidants. The human body cannot synthesize lutein or zeaxanthin on its own, which means we must obtain these important nutrients from our diet (or in some cases, supplements). You already know that filling up on plenty of fruits and veggies is good for you — and here’s just another example of why that is.

Although it’s best to get enough lutein naturally through a healthy diet high in [anti-inflammatory foods](#), nutritional supplements or fortified foods and beverages can also be used by some people in order to help increase lutein levels. Are supplements really necessary to achieve benefits? Likely not, but overall we still have a way to go when it comes to understanding the full potential of lutein in terms of disease prevention, bioavailability, metabolism and dose-response relationships.

How Does Lutein Work?

When we eat foods with lutein or take lutein in supplement form, it’s believed to be pretty easily transported around the body, especially to the parts of the eyes called the macula and the lens. In fact, there are more than [600 different types of carotenoids found in nature](#), but only about 20 make their way into the eyes. Of those 20, lutein and zeaxanthin are the only two that are [deposited in high quantities into the macular portion of the eyes](#).

The antioxidant abilities of lutein help to [fight free radical damage](#) caused by blue light or sun exposure, a poor diet and other factors that increase the risk of developing age-related vision loss or disorders like macular degeneration and cataracts. In the process, antioxidants like lutein protect healthy cells while halting the growth of malignant cells.

Within the eyes, one of the most important functions of the lens is to collect and focus light on the retina, which is exactly why the lens needs to remain “clear” and free from the cloudiness that is indicative of cataracts. The major reason the lens becomes cloudy is damage due to oxidation, which is why we need antioxidants to help neutralize free radicals .

Even in people who have existing eye damage, including plenty of lutein in their diet can help stop the condition from progressing and further damaging vision. But lutein isn’t just beneficial for older adults — taking preventative measures is the real key to preserving your vision and eye

health. Both older and younger people should consume plenty of lutein in order to reduce the risk of oxidative damage that can lead to disorders down the road.

Although lutein and other carotenoids are extremely important for vision and your eyes, their benefits don't stop there. Aside from protecting eyes, lutein is also used to help prevent skin disorders, several types of cancer including colon or breast cancer, type 2 diabetes and risk factors associated with [coronary heart disease](#).

5 Benefits of Lutein

1. Protects Against Eye Disorders Like Macular Degeneration

Lutein is considered a [natural treatment for macular degeneration](#) (AMD), which is considered the most common cause of blindness among older adults. Estimates show that more than 25 million people worldwide are affected by age-related macular degeneration or cataracts, especially people aged 55 and older living in industrialized Western nations. Sadly, the [incidence of AMD is expected to triple by 2025](#) according to the American Optometric Association!

Lutein protects the eyes by filtering out a percentage of damaging short-wavelength UV light that negatively affects delicate parts of the eyes such as the retina (the macula). Researchers at Harvard University have found that supplementing with 6 milligrams daily of lutein can [lower the risk for macular degeneration by an average of 43 percent](#).

Similarly, other studies show that higher dietary intakes of lutein and zeaxanthin along with [beneficial vitamin E](#) is associated with a significantly decreased risk of cataract formation. While the research is still in its early stages, taking lutein three times weekly for up to two years has been shown to [improve vision in older people who already have cataracts](#). Other benefits of lutein for eye health include helping to reduce eye fatigue, glare and light sensitivity, helping to keep the lens and retina at appropriate densities, strengthening eye tissue, and helping vision to be more acute.

When it comes to eye health, every person is different in terms of how much lutein is most beneficial. It's possible that for some people, even with a relatively high intake of [high-antioxidant foods](#), their blood levels might be high enough in nutrients like lutein, but testing tissues within their eyes will show that their retinal levels still remain too low.

Luckily, doctors now have the ability to measure macular pigment levels of lutein in someone's eyes in order to determine if they are at an increased risk for disease. By performing a macular pigment optical density test (MPOD), doctors can better give specialized dietary recommendations for lutein and other protective nutrients based on individual responses, genetic predisposition and lifestyle factors.

2. Helps Protect Skin Health

In addition to being found within the pigments of our eyes, carotenoids including lutein and zeaxanthin are also present within the skin. To preserve skin health and [fight skin cancer](#), lutein helps filter high-energy wavelengths of visible light, which slows down the rate of oxidative stress. Some animal studies show evidence that lutein offers significant [protection against light-induced skin damage](#), such as signs of aging and potentially skin cancer.

3. Can Help Lower Diabetes Risk

According to some animal studies, higher levels of lutein and other carotenoids within the blood are linked with [fewer problems controlling blood sugar and a lower risk for diabetes](#) or related complications. A 2000 study conducted on diabetic rats found that supplementing with lutein and DHA (a crucial type of [omega-3 fatty acid](#)) helped normalize all diabetes-induced biochemical modifications.

Compared to the control of rats not taking lutein and DHA, diabetic rats taking the supplements experienced lower oxidative stress rates and less damage done to the retina of the eyes, despite being under hyperglycemic conditions.

4. Might Help Lower Risk of Cancer

Some evidence shows that people who obtain more lutein from their diet experience [lower rates of breast, colon, cervical and lung cancers](#). While we don't know exactly how lutein and cancer formation is tied just yet, correlational studies have shown that adults with higher levels of lutein in the blood experience a reduced risk of developing several forms of common cancers.

Lutein may act as a [natural cancer treatment](#) because of the fact that foods rich in lutein (like leafy greens and citrus fruits) also provide other beneficial antioxidants and nutrients that lower [disease-causing inflammation](#) and oxidative stress. However, at this time, more research is still needed to help us fully understand the effects of lutein and other carotenoids on cancer, immune, hormonal and cardiovascular health, independent of other nutrients that are found in fruits and vegetables.

5. Can Help Maintain Heart Health

Some observational studies show that xanthophyll carotenoids including lutein can help [reduce the risk of developing heart disease and stroke](#). Just like with the previously mentioned studies that show potential cancer-protective effects of lutein, we aren't exactly sure yet how lutein improves heart health. Because lutein has anti-inflammatory and antioxidant properties, it seems that it would benefit heart health by lowering inflammation, which is an underlying cause of coronary heart disease.

Studies done by the University of Southern California suggest that low levels of lutein within the blood might [contribute to the thickening of artery walls](#). This raises the risk for [arteriosclerosis](#) development and clogging of the carotid arteries that can lead to heart attacks. USC's observational studies show that people with the highest levels of lutein in the

blood experience less plaque buildup in the arteries, while the opposite is also true: The fewer lutein-rich plant foods someone eats, the more clogged their arteries seem to become.

Another convincing factor is that after the researchers tested effects of lutein on human arteries that were removed during surgery, fewer white cells were present within the arteries after lutein supplementation compared to controls, suggesting that less inflammation and clogging occurred.

How Much Lutein Do We Need?

At this time there isn't a general recommendation for daily intake of either lutein or zeaxanthin. However, most studies show that benefits are greatest when someone consumes [10 milligrams of lutein per day or more](#) (along with about 2 milligrams of zeaxanthin per day).

This amount can be obtained pretty easily by eating a healthy and [healing diet](#) (one cup of kale has more than 22 milligrams!), but supplements are also recommended for people who are highly susceptible to eye damage, those who have digestive disorders that can hinder nutrient absorption, and the elderly, who could use more protection.

The 11 Best Sources of Lutein

According to the American Macular Degeneration Association, the following foods are the [best natural sources of lutein](#) (not to mention many other valuable antioxidants, vitamins and minerals too!):

1. [Kale](#)

1 cup raw: 22 milligrams

2. [Turnip Greens](#)

1/2 cup cooked: 9 milligrams

3. [Collard Greens](#)

1/2 cup cooked: 8.7 milligrams

4. [Spinach](#)

1 cup raw: 6.7 milligrams

5. [Broccoli](#)

1 cup cooked: 3.3 milligrams

6. [Brussels Sprouts](#)

1 cup cooked: 2 milligrams

7. Corn

1 cup cooked: 1.4 milligrams

8. Green Beans

1 cup: 0.8 milligrams

9. Eggs

2 whole: 0.3 milligrams

10. Orange

1 medium: 0.2 milligrams

11. [Papaya](#)

1 medium: 0.2 milligrams

Dosage Recommendations and Side Effects of Lutein

The recommended dosage of lutein for preventing oxidative damage and lowering symptoms of eye or skin disorders is [between 6 milligrams and 30 milligrams daily](#) for adults. People who don't eat many vegetable or fruits can probably benefit from supplementing with higher doses, as can [older adults, smokers and post-menopausal women](#). You can find lutein supplements in soft-gel capsule form in health food stores and online.

It's recommended that you take lutein supplements along with meals because lutein acts like a fat-soluble nutrient and is absorbed better when eaten with [omega-3 foods](#). The same goes for eating foods that naturally contain lutein — try pairing things like squash, carrots or eggs with [healthy sources of fats](#) including nuts, coconut, olive oil or avocado to boost their effectiveness.

As with other antioxidants, people seem to differ in terms of how capable their body is of absorbing lutein. Some might have a harder time utilizing lutein and other antioxidants from foods and transporting these to tissues within the eyes or other organs. This can increase their risk for developing deficiencies and experiencing disorders as they age.

For people with a genetic predisposition to eye disorders or cancer, taking more lutein might be necessary. As another example, one group of people who can usually afford to take more lutein are those with cystic fibrosis. It seems that people with this disorder [might not absorb some carotenoids from food](#) very well and often show low blood levels of lutein.

As far as side effects go, lutein appears to be nontoxic and safe for consumption in relatively high doses. Lutein supplements have been used safely by adults in doses up to 15 milligrams daily for as long as two years without any serious side effects. There aren't any known special precautions for women who are pregnant or breastfeeding, however it's always a good idea to speak with your doctor when pregnant before beginning new supplemental treatments.