

# Nutrition and Eye Health

**Anna Cason, RDN**

Senior Extension Associate

**Heather Norman-Burgdolf, PhD**

Associate Extension Professor

Eye health is an important part of overall health. Changes to eye health can impact day-to-day activities. Nutrients that support other aspects of health including the heart, brain, bones, and skin also support eyes. Supporting eye health throughout the lifespan with nutritious foods can help prevent the onset or worsening of common eye conditions and help protect vision.

## How does nutrition influence eye health?

As you age, the risk of common eye conditions like cataracts, glaucoma, and age-related macular degeneration (AMD) increases. Diabetes, high blood pressure, and high cholesterol can increase the risk of eye conditions and impact vision as well. We are not able to reverse damage to our eyes but there are steps we can take to prevent onset or worsening of vision issues. Eating a balanced diet with a variety of nutritious foods helps promote eye health, protect vision, and support overall health.

## What foods are rich in eye-healthy nutrients?

Nutrients that are linked to eye health include vitamins A, C, and E, zinc, carotenoids, and omega-3 fatty acids. These specific nutrients either support the natural processes in the eye that allow



people to see or they are needed for the physical structure and function of the eye.

- **Vitamin A** helps eyes adjust to changes in light. It helps us see in low light and at night.
- **Vitamin C** is a vitamin and an antioxidant. It is also called ascorbic acid within ingredients lists. These chemicals help protect cells from damage. This can support eye health in addition to overall health.
- **Vitamin E** is a vitamin and an antioxidant. It is also called tocopherol on food labels. This nutrient can protect the healthy tissue found inside the eye over time.
- **Zinc** is a mineral that supports the functions of vitamin A and helps vision in low light or at night.
- **Carotenoids** aren't a vitamin or mineral, but a chemical often found in brightly colored fruits and vegetables that have benefits in

the body. Beta-carotene is a carotenoid that gives orange fruits and vegetables their color. Other important carotenoids are lutein and zeaxanthin. These two chemicals are found in your eye and protect the eye from sun damage.

• **Omega-3 fatty acids** are unsaturated fats. These specific fats make up a large part of your inner eye. Choosing foods high in omega-3 fatty acids won't reverse damage but may protect and help maintain eye health.

The table below provides examples of good food sources for these nutrients.

Nutrient	Food Sources	
Vitamin A	<ul style="list-style-type: none"> <li>• Beef liver</li> <li>• Dark green leafy vegetables</li> <li>• Fish</li> </ul>	<ul style="list-style-type: none"> <li>• Milk</li> <li>• Yellow and orange fruits and vegetables (mango, cantaloupe, carrots, apricots, sweet potato)</li> </ul>
Vitamin C	<ul style="list-style-type: none"> <li>• Bell peppers</li> <li>• Citrus fruits (oranges, grapefruits, lemons, limes)</li> <li>• Dark green and yellow vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Papaya</li> <li>• Potatoes</li> <li>• Tomatoes</li> </ul>
Vitamin E	<ul style="list-style-type: none"> <li>• Almonds and almond milk</li> <li>• Avocados</li> <li>• Green vegetables (broccoli, collard greens, spinach)</li> </ul>	<ul style="list-style-type: none"> <li>• Sunflower seeds</li> <li>• Vegetable oils</li> <li>• Whole grains</li> </ul>
Zinc	<ul style="list-style-type: none"> <li>• Dried beans and peas</li> <li>• Nuts and seeds</li> <li>• Lean red meat</li> <li>• Oysters</li> </ul>	
Beta-carotene	<ul style="list-style-type: none"> <li>• Yellow and orange fruits and vegetables (pumpkins, winter squash, and those listed above for vitamin A)</li> </ul>	
Lutein/ Zeaxanthin	<ul style="list-style-type: none"> <li>• Citrus fruits</li> <li>• Corn</li> <li>• Eggs</li> </ul>	<ul style="list-style-type: none"> <li>• Green vegetables (asparagus, broccoli, Brussels sprouts, collard greens, kale, Romaine lettuce, spinach, Swiss chard)</li> <li>• Winter squash</li> </ul>
Omega-3 fatty acids	<ul style="list-style-type: none"> <li>• Canola oil</li> <li>• Chia seeds and flax seeds</li> <li>• Fish (salmon, sardines, mackerel, trout, tuna)</li> </ul>	<ul style="list-style-type: none"> <li>• Oysters</li> <li>• Walnut</li> </ul>

## Tips to increase eye-healthy nutrients in the diet

- Enjoy a leafy green salad with roasted sweet potato, sunflower seeds, a hard-boiled egg, and a vegetable oil-based dressing (olive, canola).
- Roast Brussels sprouts and potatoes to enjoy alongside a lean steak.
- Make a tuna salad sandwich with grapes, celery, and walnuts on whole-grain bread.
- Top tacos with a salsa made with tomatoes, corn, black beans, herbs, and spices.
- Eat your favorite whole-grain cereal with cow's milk or almond milk with a fruit salad or glass of orange juice.
- Add ready-to-eat carrots, bell peppers, and other vegetables to your grocery list to have handy to snack on with ranch dressing.
- Use canola and olive oil for everyday cooking, such as roasting, stir-frying, and sauteing vegetables.

## Do dietary supplements benefit eye health?

While you may find dietary supplements that contain these nutrients, it is best to get them from food. The nutrients in food work better when they are combined with other parts and nutrients found in a food, such as fiber, fat, and additional vitamins and minerals. For example, vitamins A and E both need fat in the diet to be best absorbed. So, while the specific nutrient may come in a supplement form, it may not be absorbed or used as efficiently in the body.

Some studies suggest that supplementing vitamin A, vitamin E, zinc, and carotenoids might benefit different aspects of eye function, but we need more information to know how much, how often, and who would benefit the most. It is best to choose

whole, nutritious foods over supplements, unless directed by an eye-care provider or registered dietitian to supplement.

## How does aging affect eye health and vision?

It is common to experience changes in vision as you age. It could simply be that your vision is not as sharp as it used to be. For example, it may be harder to see up close or farther away, distinguish similar colors such as black and blue, or it may take longer for your eyes to adjust to changes in light. There are also diagnosable age-related eye diseases or conditions. Several of these issues are related to changes in the fluid and proteins in the eye that help it to function properly. It could also be that your lens becomes thicker and less flexible as you age, among other things. Damage to the eyes cannot be reversed, but regular trips to an eye-care provider and choosing nutritious foods are important steps for maintaining eye health.

## How do vision changes impact nutrition and food safety?

Changes in vision may affect what foods we choose to eat and how we prepare and eat our food. Specifically, those with low vision or age-related vision changes may be more at risk for food safety concerns. These changes may make it harder to read recipes and safely use kitchen equipment or utensils such as knives and vegetable peelers. It might become harder to check the doneness of food when cooking or tell if food has spoiled. Those with low vision may have limited variety in the foods they choose to eat each day. It is OK to ask for help in the kitchen and choose convenience foods, such as frozen chopped vegetables, to support nutritious eating.

In addition to a nutritious diet, several lifestyle factors can help keep eyes healthy. To support eye health, visit an eye-care provider every 1 to 2 years, engage in regular movement, and take steps to stop smoking and reduce alcohol consumption. These behaviors are also linked to improvements in overall health and well-being.

## References

- Diet and Nutrition. (2013, May 24). American Academy of Ophthalmology. <https://www.aaopt.org/eye-health/tips-prevention/diet-nutrition>
- Diet and Nutrition*. (n.d.). [www.aaopt.org](http://www.aaopt.org/healthy-eyes/caring-for-your-eyes/diet-and-nutrition?sso=y). <https://www.aaopt.org/healthy-eyes/caring-for-your-eyes/diet-and-nutrition?sso=y>
- Duffy, R.L. (2017). Academy of Nutrition and Dietetics Complete Food and Nutrition Guide. Houghton Mifflin Harcourt.
- Ellis, E. (2022, January 7). *Foods for Eye Health*. [www.eatright.org](http://www.eatright.org); Academy of Nutrition and Dietetics. <https://www.eatright.org/health/wellness/healthful-habits/5-top-foods-for-eye-health>
- Garden-Robinson, J., Stastny, S., Kjera, C., & McNeal, K. (2022, October). *Cooking and Eating with Low Vision*. North Dakota State University Extension. <https://www.ndsu.edu/agriculture/sites/default/files/2022-10/fn1671.pdf>
- National Institutes of Health. (2023, December 15). *Office of Dietary Supplements - Vitamin A*. [Nih.gov](http://Nih.gov); National Institutes of Health. <https://ods.od.nih.gov/factsheets/VitaminA-HealthProfessional/>
- National Institutes of Health. (2021b, March 26). *Vitamin C*. National Institutes of Health; National Institutes of Health. <https://ods.od.nih.gov/factsheets/VitaminC-HealthProfessional/>
- National Institutes of Health. (2021). *Office of Dietary Supplements - Vitamin E*. [Nih.gov](http://Nih.gov). <https://ods.od.nih.gov/factsheets/VitaminE-HealthProfessional/>

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