

Out of Focus

Why Cataracts Develop & How to Lower Your Risk

By Jonna Jefferis

The eye's clear lens plays an important role in the remarkable process of sight. It focuses light—just like a camera's lens—on the light-sensitive tissue at the back of the eye. The lens adjusts its focus, changing shape so that we can see things clearly both up close and far away. Light is then transformed into nerve signals that travel to the brain, which interprets the light as an image, creating our experience of sight.

The lens is made up of protein and water. As we age, some of the protein may clump together and begin to cloud a small area of the lens. This is a cataract.

The American Optometric Association has declared August Cataract Awareness Month to spotlight this most common age-related eye disease, which affects more than 17 percent of Americans over age 40. By age 80 more than half of us either have a cataract or have had cataract surgery.

Cataracts are one of the leading causes of vision loss among American seniors. Worldwide, they are the number one cause of vision loss.

Seeing the World Through a Cataract

A cataract forms slowly and painlessly. In the beginning, it affects only a small area of the eye, and vision changes might not be noticeable. As it gradually progresses, the cataract grows larger. It clouds the lens and prevents it from focusing properly.

A cataract may change your vision in one of two ways:

- Eyesight becomes blurred, as though you were looking through a cloudy piece of glass or at an impressionist painting. Lights may seem too bright. Halos may appear around them.
- The lens takes on a yellowish-brownish color. This tinting does not affect the sharpness of the image, but makes colors seem faded. Night vision may be poor.

If you have any of the above symptoms, make an appointment to see your eye care provider for a comprehensive exam.

Vigorous exercise and healthy eating may help prevent vision loss.

Are You at Risk for Cataracts?

Your chances of developing a cataract increase as you get older. Other risk factors include being female, a family history of cataracts, eye inflammation or injury, surgery for another eye problem, hypertension, diabetes, smoking, long-term use of steroids, heavy alcohol use and prolonged exposure to the sun's ultraviolet light.



Many risk factors are out of our control, but not all. New research suggests that vigorous exercise and healthy eating may help prevent vision loss from cataracts and other eye diseases. A U.S. Dept. of Energy study tracked 41,000 male runners for more than seven years. Men who ran more than 5.7 miles per day had a 35 percent lower risk of developing cataracts than those who ran less than 1.4 miles per day.

A separate study of over 1,800 women ages 50 to 79 determined that those who followed nationally recommended dietary guidelines most closely had a 37 percent lower risk of cataracts. (See sidebar.)

There is a link between depletion of the Earth's ozone layer and increased incidence of cataracts.

Focus on Eye-Healthy Foods

The American Optometric Association recommends the following foods, which contain key nutrients for eye health:

- Lutein and zeaxanthin: Brightly colored fruits and vegetables such as broccoli, spinach, kale, corn, green beans, peas, oranges and tangerines.
- Essential fatty acids: Fatty fish such as tuna, salmon or herring, whole-grain foods, chicken and eggs.
- Vitamin C: Fruits and vegetables, including oranges, grapefruit, strawberries, papaya, green peppers and tomatoes.
- Vitamin E: Vegetable oils, almonds, pecans, sweet potatoes, sunflower seeds.
- Zinc: Extra-lean red meat, poultry, liver, shellfish, milk, baked beans, whole grains

It's long been known that ultraviolet (UV) radiation from the sun can harm eyes. Now Prevent Blindness America (PBA) is raising awareness about the link between depletion of the Earth's ozone layer—which blocks some UV light from penetrating the Earth's atmosphere—and cataracts that are caused by prolonged exposure to UV light.

This makes it more important than ever to protect your eyes from the sun. PBA suggests wearing a wide-brimmed hat

and sunglasses that block 99 to 100% of both UV-A and UV-B rays whenever you spend time outdoors.

Surgery: The Only Treatment

The only treatment for a cataract is surgery to remove it. Cataract surgery is one of the safest and most common operations in the U.S., and boasts a high success rate. Fully 90 percent of patients experience better vision afterwards.

During surgery, the doctor inserts a tiny probe through a small incision on the side of the cornea. The probe emits ultrasound waves to soften and break up the lens so that it can be removed easily by suction. Or the doctor may make a longer incision to remove the cloudy core of the lens in one piece. The rest is suctioned out.

During surgery, the natural lens is replaced with an artificial intraocular lens (IOL). The new IOL can be folded and slipped or rolled into place through the small incision, which is self-sealing. The IOL cannot be felt or seen, needs no care, and becomes a permanent part of the eye.

21st Century Science at Work

Scientists have learned a lot about cataracts in the past few years. In 2009 researchers at the University of Wisconsin-Madison discovered a cataract-related gene. Scientists believe that the normal gene keeps the lens clear while the mutant variations create proteins that cloud the lens. They hope this discovery will lead to new treatments.

In 2008 scientists created a new diagnostic tool that can reveal the earliest damage to the lens before a cataract develops. People may then be able to reduce their cataract risk by making simple lifestyle changes: shielding their eyes from the sun, eating right, exercising, quitting smoking, cutting back on alcohol and controlling high blood pressure and diabetes.

Cataracts may be prevalent among older Americans, but when you take control of the many lifestyle-related risk factors, chances are good that you can maintain eye health well into your senior years.

Sources: American Optometric Association, National Eye Institute, All About Vision, Vision Monday, Live Science, U.S. News & World Report, Insciences Organization, Lawrence Berkeley National Laboratory, WebMD