



Research to Prevent Blindness

ADVANCES IN EYE RESEARCH: CATARACT

A diagnosis of cataract means that your normally clear lens, located behind your eye's colorful iris, has grown cloudy. The lens contains mostly water and proteins that are specially organized to focus light on the retina for clear vision. In many people, the proteins begin to clump and obscure vision.

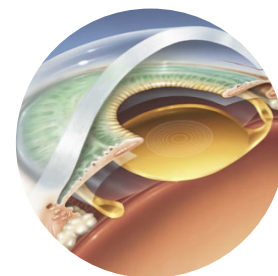
While recent scientific advances are closing in on what causes the proteins to rearrange and the lens to cloud up, we do know key risk factors for cataract formation. Growing older is one. So are long-term exposure to sunlight and smoking cigarettes. Other risk factors are listed below.

The majority of cataracts are age-related. A cataract begins as a small opacity within the lens and grows until it interferes with vision. Many people have cataracts and don't even notice until the defect grows large. Vision might appear a little hazy at first and lights might give off a halo or glare. Colors can appear faded. Blue might look green and yellow might appear white.

Ultimately, everyday tasks become challenging. It is at this point that many people have cataract-removal surgery. By one widely accepted estimate, the ability to delay the onset of cataract by 10 years would eliminate the need for half of all cataract surgeries.

According to the World Health Organization, cataracts are the leading cause of blindness in the world. In the U.S., more than half of all people 65 and older have a cataract.

Fortunately, cataract surgery can be very effective. The surgeon removes the clouded lens and typically replaces it with an artificial lens.



Cataract surgery involves replacement of the eye's natural lens with an artificial intraocular lens (IOL). IOLs are available that let patients see at single distances or at multiple distances. Some block damaging ultraviolet and blue light. Fewer than 2% of patients experience complications.

Since 1960, RPB has led a research effort to preserve vision and restore sight, supporting nearly every major development in the treatment of blinding disorders.

Important Vision Saving News

Scientists funded by Research to Prevent Blindness (RPB) are pursuing the minute details of lens structure and function, and exploring how genetics, age and other risk factors contribute to cataract formation.

- Quitting smoking and wearing protective sunglasses and a hat when outdoors can protect against cataracts.
- Eating a low calorie, nutritionally complete diet can reduce the risk of cataract formation.
- If you have diabetes, it is important to maintain control of blood sugar to prevent all forms of diabetic eye disease, including cataracts.

Recent Strides by Researchers

- Explained a potential link between oxygen exposure and cataract formation.
- Found that diets rich in lutein and zeaxanthin are moderately associated with decreased prevalence of nuclear cataract in older women.
- Investigated lens proteins that maintain lens clarity.

Continued →

Hope Through Research

RPB's mission is to preserve and restore vision by supporting research to develop treatments, preventives and cures for all conditions that damage and destroy sight.

Cataract prevention

Scientists have used a genetically engineered antioxidant protein to reverse abnormal changes and delay cataract formation, opening the door to a non-surgical means of preventing cataracts. The research also holds clues as to how the treatment might be configured to offset age-associated disorders in general.

Plan ahead for cataract surgery

Researchers are suggesting that people who have surgery to correct myopia (LASIK or PSK) should obtain and keep information about their adjusted corneal power in case they elect to have cataract surgery later in life. This would help the cataract surgeon insert artificial lenses (IOLs) with the proper correction.

New options should create new questions

As cataract surgery techniques continue to improve, some younger patients with extreme near- or farsightedness may consider having their otherwise clear lens extracted, and replaced by an intraocular lens that gives them excellent visual acuity. Researchers recommend that these patients discuss risk factors with their doctor when exploring this treatment option. That's because a 25-year study tracked the risk of retinal detachment after cataract surgery and determined that—while still very low—the risk was greater than for those who had not had the surgery.

An Alert to Patients

Scientists are recommending that patients who are considering cataract surgery should first inform eye care specialists about medications they may be taking (or have taken in the past) to treat enlarged prostate and certain types of lower urinary tract symptoms. These medications, called alpha-blockers, may cause a rare problem during the procedure. With advance knowledge, surgeons will be able to alter their surgical approach, and patients can safely continue to take their required medication.

Invest in Your Vision

You can join RPB in supporting critical research in the fight against vision loss by sending your tax-deductible donation to the address shown below or online at www.rpbusa.org. RPB is a public 501(c)(3) foundation.

Keep in Mind

Risk factors for cataract include the following:

Increasing age • Close relative with cataracts • Eye injury • Female gender • High cholesterol • Diabetes • Nearsightedness, retinitis pigmentosa, vitrectomy • Steroid drug usage • High dose radiation to the head

More than 50% of all Americans 65 and older have cataracts, increasing to 70% among those over 75.



Normal Vision



Advanced Cataract



Research to Prevent Blindness

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