



Ophthalmology • Refractive Surgery
Laser, Cataract & Implant Surgery

Cataracts

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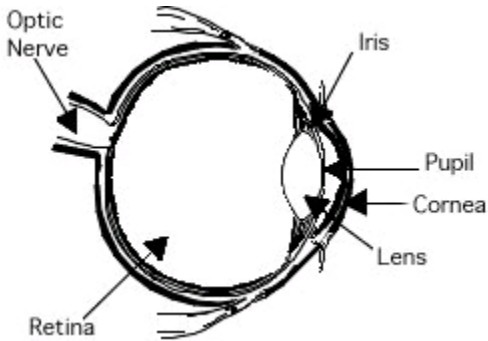
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This fact sheet has been written to help people with cataracts and their families better understand the condition. It describes the symptoms, diagnosis, and treatment of cataracts.

Definition

A cataract is a clouding of the eye's lens that can cause vision problems. The most common type is related to aging. More than half of all Americans age 65 and older have a cataract.

In the early stages, stronger lighting and eyeglasses may lessen vision problems caused by cataracts. At a certain point, however, surgery may be needed to improve vision. Today, cataract surgery is safe and very effective.



What is the lens?

The lens is the part of the eye that helps focus light on the retina. The retina is the eye's light-sensitive layer that sends visual signals to the brain. In a normal eye, light passes through the lens and gets focused on the retina. To help produce a sharp image, the lens must remain clear.

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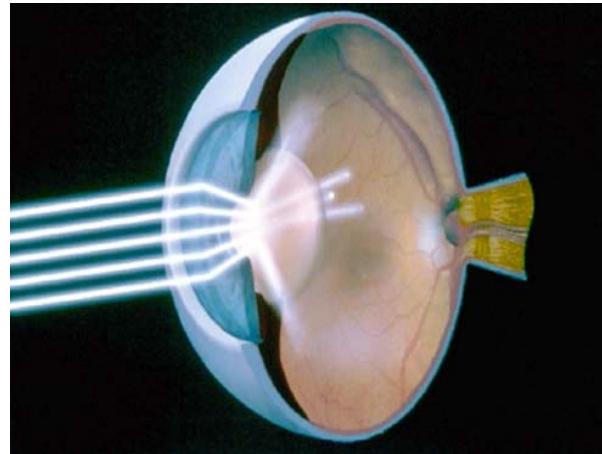
The lens is made mostly of water and protein. The protein is arranged to let light pass through and focus on the retina. Sometimes some of the protein clumps together. This can start to cloud small areas of the lens, blocking some light from reaching the retina and interfering with vision. This is a cataract.

In its early stages, a cataract may not cause a problem. The cloudiness may affect only a small part of the lens. However, over time, the cataract may grow larger and cloud more of the lens, making it harder to see.

Because less light reaches the retina, your vision may become dull and blurry. A cataract won't spread from one eye to the other, although many people develop cataracts in both eyes.

Although researchers are learning more about cataracts, no one knows for sure what causes them. Scientists think there may be several causes, including smoking, diabetes, and excessive exposure to sunlight.

Light scatters from cataract



Symptoms

- The most common symptoms of a cataract are:
- Cloudy or blurry vision.
- Problems with light. These can include headlights that seem too bright at night; glare from lamps or very bright sunlight; or a halo around lights.
- Colors that seem faded.
- Poor night vision.
- Double or multiple vision (this symptom often goes away as the cataract grows).
- Frequent changes in your eyeglasses or contact lenses.

These symptoms can also be a sign of other eye problems. If you have any of these symptoms, check with your eye care professional.

When a cataract is small, you may not notice any changes in your vision. Cataracts tend to grow slowly, so vision gets worse gradually. Some people with a cataract find that their close-up vision suddenly improves, but this is temporary. Vision is likely to get worse again as the cataract grows.

Normal vs. Hazy Vision



Cloudy vision



Types of Cataracts

- Age-related cataract: Most cataracts are related to aging.

- Congenital cataract: Some babies are born with cataracts or develop them in childhood, often in both eyes. These cataracts may not affect vision. If they do, they may need to be removed.
- Secondary cataract: Cataracts are more likely to develop in people who have certain other health problems, such as diabetes. Also, cataracts are sometimes linked to steroid use.
- Traumatic cataract: Cataracts can develop soon after an eye injury, or years later.

How is a cataract detected?

To detect a cataract, an eye care professional examines the lens. A comprehensive eye examination usually includes:

- Visual acuity test: This eye chart test measures how well you see at various distances.
- Pupil dilation: The pupil is widened with eye drops to allow your eye care professional to see more of the lens and retina and look for other eye problems.
- Tonometry: This is a standard test to measure fluid pressure inside the eye. Increased pressure may be a sign of glaucoma.
- Your eye care professional may also do other tests to learn more about the structure and health of your eye.

Treatment

For an early cataract, vision may improve by using different eyeglasses, magnifying lenses, or stronger lighting. If these measures don't help, surgery is the only effective treatment. This treatment involves removing the cloudy lens and replacing it with a substitute lens.

A cataract needs to be removed only when vision loss interferes with your everyday activities, such as driving, reading, or watching TV.

You and your eye care professional can make that decision together. In most cases, waiting until you are ready to have cataract surgery will not harm your eye. If you decide on surgery, your eye care professional may refer you to a specialist to remove the cataract.

If you have cataracts in both eyes, the doctor will not remove them both at the same time. You will need to have each done separately. Sometimes, a cataract should be removed even if it doesn't cause problems with your vision. For example, a cataract should be removed if it prevents examination or treatment of another eye problem, such as age-related macular degeneration or diabetic retinopathy.

Is cataract surgery effective?

Cataract removal is one of the most common operations performed in the U.S. today. It is also one of the safest and most effective. In about 90 percent of cases, people who have cataract surgery have better vision afterward.

How is a cataract removed?

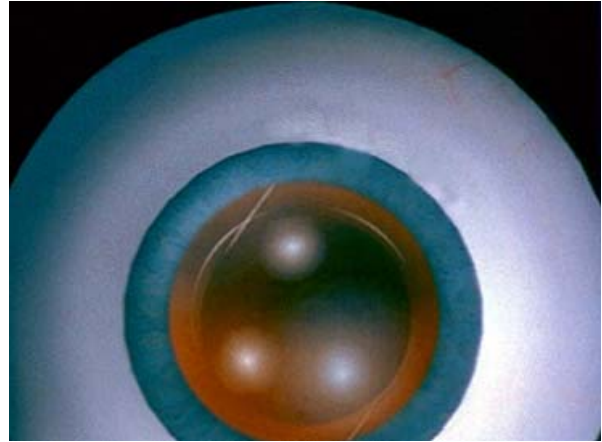
There are two primary ways to remove a cataract. Your doctor can explain the differences and help determine which is best for you:

Phacoemulsification (Phaco)



Phacoemulsification is a surgical method used to remove a cataract, which is a clouding of the eye's naturally clear lens. A cloudy lens interferes with light passing through to the retina, the light-sensing layer of cells at the back of the eye. Having a cataract can be compared to looking at the world through a foggy window.

In phacoemulsification, an ultrasonic oscillating probe is inserted into the eye. The probe breaks up the center of the lens. The fragments are suctioned from the eye at the same time. A small incision that often does not require sutures to close can be used since the cataract is removed in tiny pieces. Most of the lens capsule is left behind and a foldable intraocular lens implant, or IOL, is placed permanently inside to help focus light onto the retina. Vision returns quickly and one can resume normal activities within a short period of time.



NO STITCH CATARACT SURGERY

Extracapsular Cataract Extraction (ECCE)

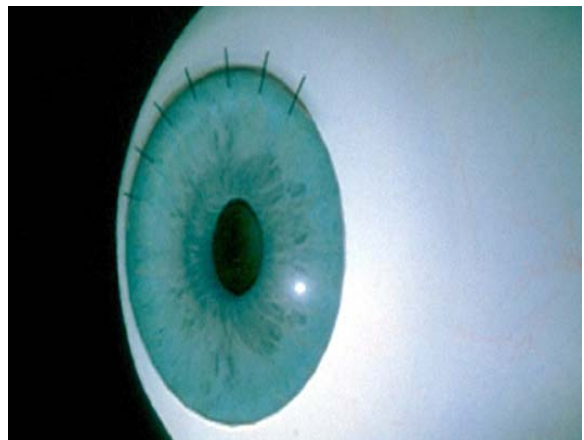
Extracapsular cataract extraction is a method for surgically removing a cataract, which is a clouding of the eye's naturally clear lens. A cloudy lens interferes with light passing through to the retina, the light-sensing layer of cells at the back of the eye. Having a cataract can be compared to looking at the world through a foggy window.

In extracapsular extraction, an incision is made in the side of the cornea at the point where the cornea and sclera, the white part of the eye, meet. Carefully entering the eye through the incision, the surgeon gently opens the front of the lens capsule and removes the hard center, or nucleus, of the lens. The soft lens cortex is then suctioned out leaving the back of the capsule in place.

An incision requiring sutures is necessary because the lens is removed in one piece. A plastic implant called an intraocular lens, or IOL, is substituted for the original lens. The implanted IOL allows light to be focused on the retina.

It may be up to six weeks before the sutures are removed and best-corrected vision is achieved. During recovery, it may be necessary to avoid bending over or lifting heavy objects.

Some people cannot have an IOL. They may have problems during surgery, or maybe they have another eye disease. For these people, a soft contact lens may be suggested. For others, glasses that provide powerful magnification may be better.



Possible complications that could occur during and after surgery include the following:

- Loss of vision or decrease in vision
- Loss of eye
- Infection
- Bleeding inside or behind the eye
- Uncomfortable or painful eye
- Less attractive appearance, i.e. droopy eyelid
- Need for laser surgery to correct clouding of vision
- Need for additional treatment and/or surgery
-

What happens before surgery?

A week or two before surgery, your eye care professional will do some tests. These may include tests to measure the curve of the cornea and the size and shape of the eye.

For patients who will receive an IOL, this information helps your doctor choose the right type of IOL. Also, doctors may ask you not to eat or drink anything after midnight the morning of your surgery.

What happens during surgery?

When you enter the hospital or clinic, you will be given eye drops to dilate the pupil. The area around your eye will be washed and cleansed.

The operation usually lasts less than 1 hour and is almost painless. Many people choose to stay awake during surgery, while others may need to be put to sleep for a short time. If you are awake, you will have an anesthetic to numb the nerves in and around your eye.



After the operation, a patch may be placed over your eye and you will rest for a while. You will be watched by your medical team to see if there are any problems, such as bleeding. Most people who have cataract surgery can go home the same day. Since you will not be able to drive, make sure you make arrangements for a ride.

What happens after surgery?

It's normal to feel itching and mild discomfort for a while after cataract surgery. Some fluid discharge is also common, and your eye may be sensitive to light and touch. If you have discomfort, your eye care professional may suggest a pain reliever every 4-6 hours. After 1-2 days, even moderate discomfort should disappear. In most cases, healing will take about 6 weeks.

After surgery, your doctor will schedule exams to check on your progress. For a few days after surgery, you may take eye drops or pills to help healing and control the pressure inside your eye. Ask your doctor how to use your medications, when to take them, and what effects they can have. You will also need to wear an eye shield or eyeglasses to help protect the eye. Avoid rubbing or pressing on your eye.

Problems after surgery are rare, but they can occur. These can include infection, bleeding, inflammation (pain, redness, swelling), loss of vision, or light flashes. With prompt medical attention, these problems usually can be treated successfully.

When you are home, try not to bend or lift heavy objects. Bending increases pressure in the eye. You can walk, climb stairs, and do light household chores.

When will my vision be normal again?

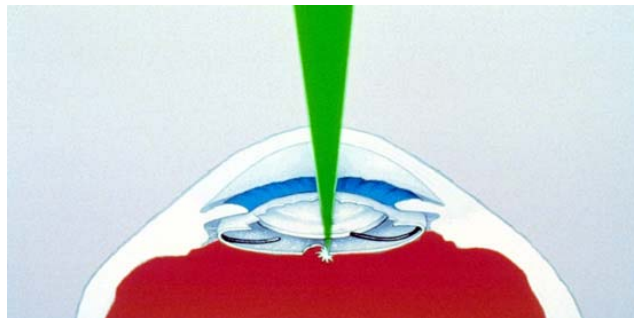
You can quickly return to many everyday activities, but your vision may be blurry. The healing eye needs time to adjust so that it can focus properly with the other eye, especially if the other eye has a cataract. Ask your doctor when you can resume driving.

If you just received an IOL, you may notice that colors are very bright or have a blue tinge. Also, if you've been in bright sunlight, everything may be reddish for a few hours. If you see these color tinges, it is because your lens is clear and no longer cloudy. Within a few months after receiving an IOL, these colors should go away. And when you have healed, you will probably need new glasses.

What is an "after-cataract"?

Sometimes a part of the natural lens that is not removed during cataract surgery becomes cloudy and may blur your vision. This is called an after-cataract. An after-cataract can develop months or years later.

Unlike a cataract, an after-cataract is treated with a laser. In a technique called YAG laser capsulotomy, your doctor uses a laser beam to make a tiny hole in the lens to let light pass through. This is a painless outpatient procedure.



What research is being done?

The NEI is conducting and supporting a number of studies, such as the Age-Related Eye Disease Study (AREDS). In this nationwide clinical study, scientists are examining how cataracts develop and what factors put people at risk for developing them. Also, they are looking at whether certain vitamins prevent or delay cataract development.

Other research is focusing on new ways to prevent, diagnose, and treat cataracts. In addition, scientists are studying the role of genetics in the development of cataracts.

What can you do to protect your vision?

Although we don't know how to protect against cataracts, people over the age of 60 are at risk for many vision problems. If you are age 60 or older, you should have an eye examination through dilated pupils at least every 2 years. This kind of exam allows your eye care professional to check for signs of age-related macular degeneration, glaucoma, cataracts, and other vision disorders.

For more information about cataracts, you may wish to contact:

- Agency for Health Care Policy and Research Publications Clearinghouse

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<http://www.ahcpr.gov>

- American Academy of Ophthalmology
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(415) 561-8500
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- American Optometric Association
243 Lindbergh Boulevard
St. Louis, MO 63141
(314) 991-4100
<http://www.aoanet.org>

- National Eye Institute
2020 Vision Place
Bethesda, MD 20892-3655
(301) 496-5248
<http://www.nei.nih.gov>
- Prevent Blindness America
500 East Remington Road
Schaumburg, IL 60173
1-800-331-2020
(847) 843-2020
<http://www.preventblindness.org>

For more information about IOLs, contact:

- U.S. Food and Drug Administration
Office of Consumer Affairs
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