

Guide to Cataract Surgery



According to Prevent Blindness America's *Vision Problems in the U.S.* report, more than 24 million Americans age 40 and older have cataract. By age 80, more than half of all Americans will have cataract. Every year in the U.S., more than one million cataract surgeries are performed. Cataract surgeries are performed without complication in 95% of cases.

Why does cataract form?

Cataract is probably caused by changes related to aging. Throughout our lives, our bodies replace old cells with new ones. As we grow older, the old cells in our eye's lens build up and block light as it tries to pass through. The end result is cloudy vision.

Besides getting older, other factors may cause cataract to form. Eye infections, some medicines (such as steroids), injuries or exposure to intense heat or radiation may cause cataract. Too much exposure to non-visible sunlight (called UV or ultraviolet light) and various diseases, such as diabetes or metabolic disorders, may also contribute to cataract forming.

What are the types of cataract?

Age-related – 95% of cataract are age-related, usually after age 40.

Congenital – These are present at birth, usually caused by infection or inflammation during pregnancy; possibly inherited.

Traumatic – Lens damage from a hard blow, cut, puncture, intense heat or chemical burn may cause cataract.

Secondary – Some medicines, eye disease, eye infection, or diseases such as diabetes cause these cataract.

How can the eye doctor tell if I have cataract?

Everyone who gets cataract experiences it differently. But a person with cataract commonly experiences cloudy or blurry vision. Lights may cause a glare, seem too dim or seem too bright. It may be hard to read or drive, especially at night. If you have cataract, you may see halos around lights, such as car headlights, that make it hard to focus clearly. Colors may not seem as bright as they used to be. Or you may have to change your eyeglass prescription often.

To find out if you have cataract, your eye doctor will want to:

- > find out your general medical history
- > find out your specific eye history, including problems and symptoms



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- > test your vision (visual acuity)
- > test your side vision (peripheral vision)
- > test your eye movement
- > test you for glaucoma (by measuring the eye's internal pressure)
- > do a microscopic exam of the front of the eye (using something called a slit lamp) to assess the density of the cataract and how it interferes with light passing through the lens
- > widen (dilate) the pupils of your eyes to examine the retina, the optic nerve (which carries visual messages from the retina to the brain) and the macula (responsible for the best part of central vision)
- > test you to see how glare affects your vision

Should I have cataract surgery?

You must decide whether to have cataract surgery. Cataract will not cause large vision changes for some people. A cataract at the outer edge of your lens, for example, may hardly affect your vision. A cataract at the center of your lens, however, may greatly affect your sight.

Only you can decide if a change in your vision keeps you from doing all the things you want or need to do.

Note: If a cataract keeps your eye doctor from viewing the inside of your eye, he or she may suggest surgery.

When can I avoid cataract surgery?

Prevent Blindness America recommends that individuals do not have cataract surgery if:

- > cataract has not affected your lifestyle or kept you from doing all the things you want and need to do
- > your vision will not improve with surgery because of other eye problems
- > glasses or contact lenses can provide satisfactory vision
- > you are not well enough/fit enough for the surgery
- > you do not want surgery

What kind of lens will replace my cataract lens?

When the eye surgeon removes the lens with the cataract, you will need something to replace it, so that you can focus and see clearly. You have three choices to replace your own lens:

- > **Intraocular lenses (IOLs)**
- > **Contact lenses**
- > **Cataract glasses**

Intraocular lenses

Intraocular lenses (IOLs) replace your cataract, or cloudy lens. If you have certain eye diseases or problems which prevent safe placement of an IOL, you will need either contact lenses or cataract glasses in order to see clearly after surgery.

IOLs have become the most popular choice for replacing lenses with cataract. Unlike contact lenses, these lenses are implanted inside the eye and are meant to be permanent. They do not require replacement or cleaning.

The eye surgeon implants the IOL in about the same place as your natural lens, so that it results in the most natural vision.

IOLs are the best option to replace your own lenses. However if you have certain other eye diseases or problems, you may not be able to have lens implants. You and your eye doctor will need to discuss whether any restrictions apply.

Contact lenses

If you are unable to have an IOL implant, you may opt to wear contact lenses after cataract surgery. By wearing a contact lens on your operated eye, you will be able to see about as well as you did before the cataract developed. These lenses cannot cure all your vision problems. You may still need glasses for close-up work.

There are two types of contact lenses: daily-wear and extended-wear. You must remove daily-wear contact lenses before you go to sleep. You can wear extended-wear contact lenses for longer periods of time. Extended-wear contact lenses are usually prescribed for people who would have trouble inserting and removing daily wear contacts (for example, people with severe arthritis).

Cataract glasses

Cataract glasses may be an option if you cannot have an IOL implant or if you cannot wear contact lenses. Cataract glasses are also safe and relatively inexpensive, but they may take some getting used to after surgery. The lenses in cataract glasses are different from regular eyeglasses, so you will see things in a different way. Objects will look larger (by about 25%) and may seem to appear suddenly in your side vision (peripheral field of vision). Vertical lines may appear curved, and it may be hard to judge distances.

If you have cataract in both eyes but only have surgery in one eye, your eyes won't be able to work together when you wear cataract glasses after surgery. The glasses lens for your operated eye makes things appear larger while your other eye will view images as they truly are. Your brain won't be able to put the two images together for normal (binocular) vision. You will have this condition, called monocular aphakia (one eye without a lens), until after your second cataract operation.

Choosing an eye surgeon

Once you decide to have cataract surgery, you'll need to choose an eye surgeon to perform the operation. Some things to keep in mind are the surgeon's experience and skill, how easy it is to talk to him or her and have your questions answered, and your previous experience with this eye doctor, if any.

Referrals may help you choose an eye surgeon. Ask friends who have had cataract surgery or contact a university with a medical school or a hospital for names and references.

If an eye doctor has recommended surgery, you may want to get a second opinion. Make an appointment to see an eye doctor who does not work with, and was not referred by, your regular doctor. You do not have to tell this doctor that someone else has already recommended surgery—let this doctor come to his or her own conclusions about whether you need cataract surgery.

Here are some points you may want to bring up with your doctor. Check the questions you'd like your eye doctor to answer during your next appointment or conversation.

- > Do I really need surgery? What will I gain by having it?
- > What are the risks?
- > What is surgery like? Will it hurt? What will I see?
- > Will any other problems like glaucoma or diabetes affect my cataract or my surgery?
- > How long will I need to recover from the surgery?
- > Will I need glasses after surgery? If I wear contacts, can I wear them again after surgery?

- > Are there some things I won't be able to do after surgery? If so, for how long?
- > Will someone have to take care of me after surgery? If so, for how long?
- > Will the medicines I take for other illnesses interfere with surgery or my recovery?
- > How experienced is the doctor? Is he or she board certified?
- > Is a payment plan available?

Getting ready for surgery

On the day of your surgery, or a few days ahead of time, you may need to see your primary care doctor for a few tests. Because you will be given some form of anesthesia, your doctor will probably ask you not to eat or drink anything after midnight the day before your surgery. If you take medicines or have diabetes, ask your doctor whether different guidelines apply.

Removing the cataract and inserting an intraocular lens usually takes the surgeon ten to fifteen minutes. The entire process, from arriving at the hospital or surgical center to going home, takes about half a day. Less than 1% of surgeries require an overnight hospital stay.

On the day of your surgery, you will be given some eye drops to widen (dilate) your pupils. You may also be given a mild sedative to help you relax. A healthcare worker will take you into the operating room where an anesthesiologist or nurse anesthetist will give you a local or an intravenous anesthetic. He or she will monitor your condition.

You will not feel the surgery because the topical anesthetic numbs your eye during the operation. You may see some lights or vague shapes, but that is all.

Your surgeon will use a special microscope, which magnifies and illuminates the area of the procedure as he or she removes your cataract.

You may not remember much about the operation after it is over. You may feel a little drowsy afterward, but as the sedative wears off, you will be encouraged to walk around a bit. Your doctor will monitor your condition for a while, explain how to care for your eye at home and schedule a follow-up appointment.

Once you're fully recovered, you will be allowed to go home. It is a good idea to have a friend or relative drive you. You may feel tired after surgery, so try to relax the rest of the day.

At home, you should not experience much discomfort. Some people describe the feeling as having an eyelash or a cinder in their eye—slightly uncomfortable but not painful. You will apply eye drops or ointment as your doctor prescribes, and you will learn to rely on your untreated eye during this time.

Three kinds of cataract removal

During the cataract operation, your surgeon will first remove the clouded lens. (If you are able to have a lens implant, your doctor will perform this procedure right after removing your cataract lens.) There are three methods for removing the clouded lens:

- > **Phacoemulsification**
- > **Extracapsular**
- > **Intracapsular**

Phacoemulsification

The most common procedure, phacoemulsification requires a smaller incision in the cornea or, less commonly, the sclera. The surgeon uses sound waves (an ultrasonic device) to break the lens into small pieces, and then

suctions the tiny pieces out through the same incision. Next, the doctor will insert the lens into place. Again, the capsular bag will remain to strengthen the eye and to preserve normal architecture. Most IOLs are foldable, so they can be inserted through the same small incision. The lens usually unfolds slowly once it is placed into the capsular bag. The incision can be closed with either one stitch, or usually none at all.

Phacoemulsification, with its smaller incision, offers the fastest healing and recovery time, produces little discomfort, and reduces the chance of uneven focus (astigmatism) or distorted vision.

Extracapsular and Intracapsular

Less common are the extracapsular and intracapsular procedures. An extracapsular cataract extraction may be needed if your lens is too hard to phacoemulsify. The extracapsular procedure removes only the inside of the lens but leaves the capsular bag that holds the lens in place. Leaving the capsular bag adds to the structural strength of the eye and promotes easier healing.

During the intracapsular procedure, your eye surgeon removes the lens and the entire capsular bag that holds it. Your doctor will make an incision in the sclera, use a special tool to freeze the lens, and then remove it through the incision. He or she may then implant the IOL in front of the iris where its loops hold it in place. Another option is to suture the IOL to the wall of the eye. This latter option enables the IOL to be placed behind the iris.

Cost of surgery

Basic charges you can expect for cataract surgery include fees for the hospital/surgical center, the doctor, the anesthesiologist, basic tests before surgery, medicine after surgery and follow-up visits with your doctor.

Ask your doctor to estimate each of the costs. You may also need new glasses or contact lenses after surgery.

If you have private health insurance or Medicare, it will usually pay for a part of most costs. Try to find out what your health insurance will cover before the surgery. Extra insurance (secondary supplemental insurance) also may cover 80% of the amounts not covered by your primary insurance. You may have to pay 20% of the balance. Ask your doctor about his or her billing and payment methods. Newer “bifocal” IOLs are not usually covered by insurance.

Some hospitals and surgical centers may be able to help you with financial planning. This may include putting together a payment plan or filing claims to your insurance company. Filling out insurance forms can be hard—so be sure to ask questions ahead of time.

Possible complications from surgery

Less than 5% of patients experience complications from cataract surgery, but you should discuss possible problems with your doctor. Here are three areas of complications:

Problems during surgery, called operative complications, such as severe bleeding, happen to less than 1% of patients. Up to 2% of patients lose the gel-like substance that fills the inside of the eye (vitreous humor) during surgery. Complication rates may be higher if you have certain medical or ocular diseases.

Problems soon after surgery, called early post-operative complications, can include leaking from the wound, bleeding or infections.

Problems after healing, called late post-operative complications, include retinal detachment (this requires surgery to correct but happens in about one out of every 100 patients), swelling of the cornea, or swelling of the retina (called cystoid macular edema). Infection is a rare complication. This happens in fewer than one in every 1,000 patients, but it may cause severe vision loss. Remember, the risk of severe problems or blindness from cataract surgery is very low. Still, it may ease your mind to talk about your concerns with your doctor before surgery.

Sometimes after the extracapsular or phacoemulsification procedure, the capsular bag that remains in your eye

can become cloudy. This is called an after cataract or posterior capsular opacification. If this happens, your doctor may suggest laser surgery to make a tiny hole through the cloudy lens capsule. This hole will let you see clearly again.

Your recovery

After surgery, most of the healing takes place in the first few days. But it may take up to 1 month for your eye to fully heal. For the first week or two, or as your doctor recommends, you should minimize vigorous physical activity. You should restrict any lifting or deep bending, which causes increased eye pressure. If you experience severe pain, loss of vision or a sudden increase in redness or swelling of your operated eye, call your eye doctor right away.

Other DO's and DON'Ts

- > **Do** use your medication as directed.
- > **Do** sit down and lift your feet to put on your shoes.
- > **Do** try to sleep on your back or on the unoperated side.
- > **Do** have someone else drive while your eye is healing.
- > **Do** wear sunglasses in bright light.
- > **Do** keep follow-up appointments with your doctor.
- > **Do** keep moderately active.
- > **Don't** rub or press your eye.
- > **Don't** bend over to pick things up; kneel instead.
- > **Don't** get soap, shampoo or other irritants in your eye.

Take care of your eye

Here are some pointers that can help you recover more quickly:

Applying eye medications

Use the eye drops or ointment that your doctor prescribed to help your eye heal. This medicine protects against infection and helps decrease swelling.

How to apply eye drops or ointment

Tilt your head back. Pull your lower eyelid down to create a “cup” that holds the drops or ointment. Put in the prescribed amount of medicine and close your eye to distribute it evenly. If you have trouble doing this, ask a friend or relative for help. Start with a fresh bottle of medicine after surgery so germs don't get transferred.

Eye shields

Your doctor may want you to use an eye shield at night to protect your eye while you sleep.

Follow-up care

Your doctor will suggest a schedule for follow-up visits. The first one will be the day after your surgery. It is important to keep these appointments to find out whether your eye is healing well. These visits will also let you ask your doctor any questions you have about medicine or your activities (such as heavy lifting or exercising).