



Cataract Surgery

Information for Patients



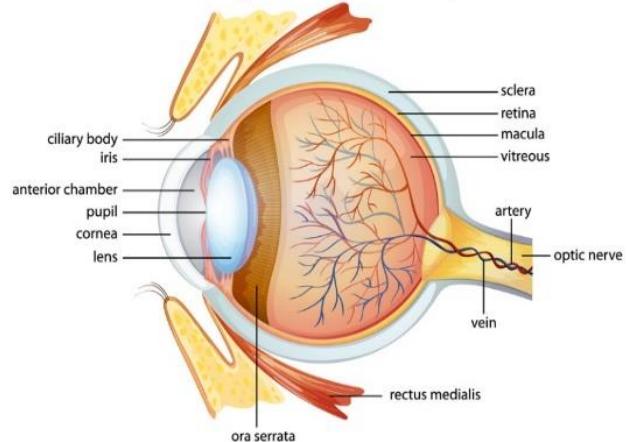
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Anatomy of Eye

- **Iris:** the colored part of the eye that regulates the amount of light that enters your eye.
- **Pupil:** the circular opening in the centre of the iris through which light passes into the lens of the eye.
- **Cornea:** the transparent circular part of the front of the eyeball.
- **Sclera:** the white part of the eye, a tough covering with which the cornea forms the external protective coat of the eye.
- **Lens:** a transparent structure situated behind the pupil. It helps to refract incoming light and focus it onto the retina.

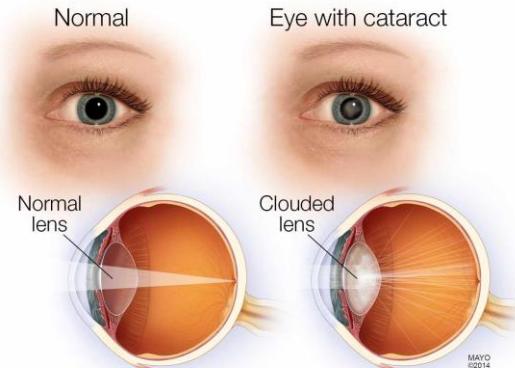
Anatomy of the Human Eye



- **Retina:** a light sensitive layer that lines the interior of the eye. It is composed of light sensitive cells known as rods and cones.
- **Optic disc:** the visible portion of the optic nerve, also found on the posterior pole of retina.
- **Optic nerve:** leaves the eye at the optic disc and transfers all the visual information to the brain.

What is Cataract?

- Lens is a clear, flexible structure made mostly of proteins (crystalline).
- In older age, the proteins in the lens break down, forming cloudy patches that affect the vision.
- A cataractous lens is when the lens become opaque.
- **Age wise Lens Opacity:**



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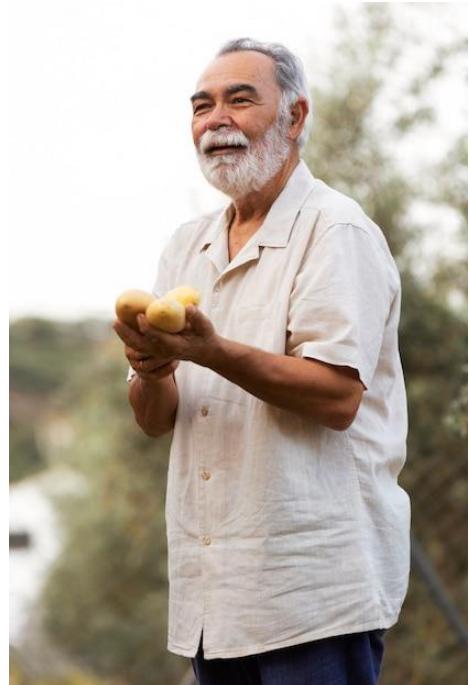
Age Group (years)	Lens Opacity (%)
50-59	65
60-69	83
70-79	91
>80	100

What Causes Cataracts?

Most cataracts are the natural result of ageing.

However, there are several other factors that may increase your risk of developing cataracts, including:

- Diabetes
- eye injury
- previous eye surgeries (such as retina surgery, glaucoma surgery)
- long term use of medications (such as steroids)
- Prolonged exposure to ultraviolet sunlight
- Sometimes congenital / developmental



What Are the Symptoms of a Cataract?

Cataracts usually develop slowly over many years, so you may not notice symptoms at first.

The most common symptoms of a cataract are:

- Blurred, misty or clouded vision
- Colors seem faded.
- Glare - headlights, lamps, or sunlight may appear too bright.
- A halo may appear around lights.
- Poor night vision - difficulty driving at night.
- Double vision or multiple images in one eye. (This clears as the cataract gets larger.)
- Frequent prescription changes in your eyeglasses or contact lenses.

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



Normal vision



Vision in cataract



How Is a Cataract Detected?

Cataract is detected through a comprehensive eye exam:

- **Visual acuity test** - This eye chart test measures how well you see at various distances.
- **Dilated eye exam** - Drops are placed in your eyes to widen, or dilate the pupils, so that cataract type and grading becomes easy to diagnose. Your eye care professional uses a special magnifying lens to examine your retina and optic nerve for signs of damage and other eye problems. After the exam, your close-up vision may remain blurred for several hours.
- **Tonometry** - An instrument measures the pressure inside the eye. Numbing drops may be applied to your eye for this test. Your ophthalmologist also may do other tests to learn more about the structure and health of your eye.



What Treatment Is Available if I Am Affected by Cataract?

- **Reading glasses** - You should ensure that your distance and reading glasses are up to date. Sometimes a change of glasses can give a temporary improvement of sight, particularly if your cataract is at an early stage of development.
- **Lenses** - Tinted lenses, magnifying lenses and appropriate lighting may also help. Both these options improve quantity of vision but not the quality of vision.
- **Surgery** – It is usually recommended when up to date glasses or contact lenses do not help enough, and the reduced vision is interfering with your daily activities or lifestyle. If you do not have a problem with your vision or do not wish to have surgery for cataract then, in most cases, it can be left alone after discussion with your clinician.



Occasionally you might need to get surgery even if your cataract doesn't bother you. Your doctor may suggest it if the cataract makes it hard to get a clear view of the back of the eye during an eye exam, or if the cataract narrows the front part of the eye, putting your eye at risk of acute glaucoma.

What if I Decide Not to Have an Operation?

When left untreated, cataracts become denser and further impair vision. If a cataract is left untreated for too long, it becomes what is sometimes called “hyper-mature.” When this occurs, the cataract has become more dense, more difficult to remove, and more likely to cause complications during surgery.



Do Cataracts Get Better on Their Own?

Usually, cataracts gradually get worse. The time they take to get worse is very unpredictable. Some people have cataracts for years before they need surgery, others get worse in a matter of months.



Do Cataracts Need to Be Ripe to Be Operated On?

No, this is an old wives' tale. With modern equipments and technology, cataracts can be operated on at any stage. However, that does not mean they need to be operated on just because they are there. You only need an operation if you feel the cataract is impairing your vision, such that you cannot carry out everyday tasks for example; reading, driving, watching TV etc.

What Are the Benefits of Cataract Surgery?

Cataract surgery can:

- significantly improve your vision (quantitatively and qualitatively)
- reduce or eliminate the need for distance glasses
- correct underlying refractive errors (such as astigmatism, and short and long sightedness)
- help improve other eye conditions (such as glaucoma)



Whether to Get One Eye Operated or Both Together?

Cataract usually occurs in both the eyes simultaneously. So eventually, both the eyes would require operation. Still, we **ALWAYS** recommend to get one eye operated at a time for safety reasons. The other eye can be operated after **1 week**.

Ok, I Want to Go Ahead With Cataract Surgery - What Next?

- Once it is decided that you need cataract surgery, special tests are done to determine the power of the lens which is implanted into the eye.
- If you wear contact lenses, you must stop using them before having the measurements on your eyes.
The amount of time you have to stop using them varies depending on the type of lens you wear:
 - soft contact lenses – 1 week,
 - rigid gas permeable contact lenses and hard contact lenses – 4 weeks.
- A complete eye assessment is carried out after instilling some drops to dilate your pupils.



- During this assessment, we will:
 - take different measurements of your eyes and your eyesight
 - ask you questions about how your day-to-day life has been affected by your cataract(s)
 - explain the potential benefits and risks of the surgery to you
 - discuss what type of intraocular lens (IOL) you would like.
- Do not drive to your clinic appointment. You will be given eye drops during this appointment to dilate (widen) your pupils and this will blur your vision for around four hours. You will not legally be able to drive within this period.
- Please arrange for someone to bring you to and take you home from your appointment.
- If you have had laser surgery to reduce your need to wear spectacles you must let us know as soon as possible. Additional measurements of your eyes will be required to assist us in selecting the most appropriate lens implant for your cataract surgery.



- When you are listed for surgery, you will have a pre-operative workup. This is to assess your fitness for surgery and to assess any special factors that may affect the way the operation is done. A physician will check your fitness for the surgery. A few medicines, like blood thinners, may need to be stopped. For this, please bring any medication you use.
- A date for your operation will be confirmed with you by our OT coordinator.
- Once your surgery is scheduled, antibiotics eye drops will be prescribed to you. These drops need to be put for 3 days before surgery. Instructions about the same will be given to you by our medical coordinator.

Please avoid eye make up for at least three days before surgery

If you feel you have an eye infection or red eye before the operation then please inform us at least 3-4 days in advance.

Care on the Day of Your Surgery

Eating and drinking

Continue to drink water as normal. You will be able to eat light meal until two hours before your surgery.

Medications

- Take all your medications as normal on the day of surgery, including aspirin. (unless you have been advised otherwise).
- If you take warfarin or any other newer blood thinning agents, then please inform the physician during pre-operative assessment so that specific instructions can be given.
- Please bring a list of your current medications with you (including any eye drops).



If you have diabetes

Continue to take your prescribed medications and eat and drink as normal (unless you have been advised otherwise). Your blood sugar will be checked on admission.

Personal belongings

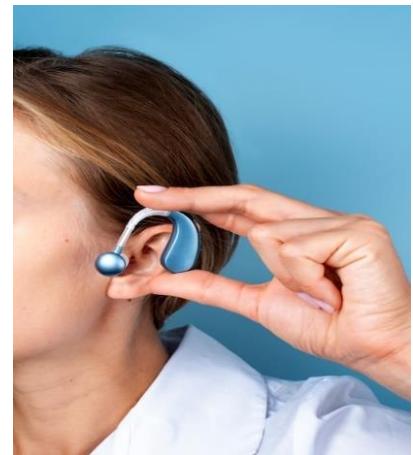
Please keep valuables (including jewelry) to a minimum, as there is restricted storage for your personal belongings.

Clothing and make up

It is best to wear loose, comfortable clothing. Do not wear any make up.

Hearing aids

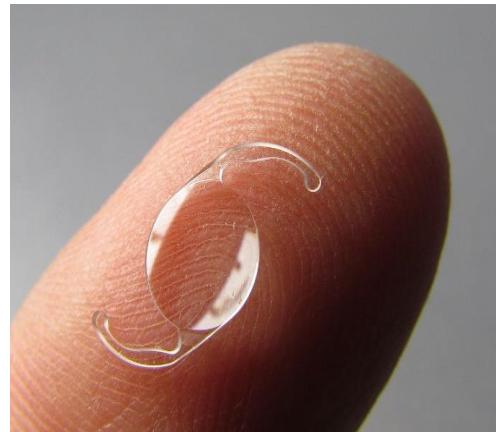
If you normally wear hearing aids, please bring them with you.



What Are the Intra-Ocular Lens (IOLs) Options Available?

Monofocal -

- It has one focusing distance.
- It can clear distant vision.
- It is ideal for walking, running, driving, and seeing people who are far away.
- Glasses are needed for intermediate & near work.
- It is the cheapest option, often covered by insurance



Bifocal -

- It has two focal points.
- It can clear distant & near vision
- It is ideal for those who want independence from glasses.

- Glasses are usually not required for most of the times, but intermediate distance vision has to be adjusted.
- Not ideal for those having glaucoma, retinal pathologies and who drive at night frequently.
(They may get glare & haloes due to design of rings on the lens).

Trifocal -

- It has three focal points.
- It can clear distant, intermediate & near vision.
- Ideal for those who want independence from glasses for all distances.
- Glasses are usually not required for most of the times.
- Not ideal for those having glaucoma, retinal pathologies and who drive at night frequently.
(They may get glare & haloes due to lens design of rings on the lens).

Modified Monofocal -

- It can clear distant and to some extent intermediate vision.
- Ideal for walking, running, driving, seeing people far away and for computer/laptop work.
- Low power glasses are needed for near work.
- Can be used for patients with glaucoma, retina pathologies and who drive at night frequently.
(No glare/haloes due to design)

Toric

- It is used to treat astigmatism (cylindrical power >1 D) along with above mentioned lenses.
- The cost for this type of lens is high.

How Is Cataract Surgery Done?

Cataract surgery is usually done as a day care procedure.

To the hospital

- On the day of surgery, you need to arrive at the waiting area in the old AHCH building.
- A member of staff will greet you and check all your personal details, including which procedure you are having, which eye is being operated on, which lens implant have you opted for and if you have any allergies.
- If you are happy to go ahead with the surgery, they will ask you to sign a consent form. This states that you agree to have the surgery and you understand what it involves.
- Your vitals will be checked to confirm that they are fine. Blood glucose will be checked if you are diabetic.



- Your operative eye will be marked with a marker.
- Prior to the operation, the nurse will put drops to dilate your pupil. This will allow the surgeon to have a better view of the cataract. Your vision will be blurred for a number of hours after these drops.
- You will be able to go into the theatre wearing your own clothes.
- Dentures (if you wear them) need not be removed.



To the operation theatre

- You will be escorted to the holding room outside the theatre where you will be given an anaesthetic to numb the eye. This may consist simply of eye drops or injecting local anaesthetic solution around the eye. After the anaesthetic you will not feel any discomfort or pain.
- The area around your eye will be cleansed to prepare for surgery.
- If you are very anxious some sedation may be given orally or by an intravenous line.
- Once you are taken in the OT, our OT team will introduce themselves and you will be asked to lie down on the OT table.



- Your head will be positioned into a special pillow that keeps it still. Please let us know before the operation if you find it difficult to lie down or have problems with your neck or have any breathing difficulty.
- After cleaning around the eye, your head will be covered with a sheet to prevent infection.
- You will need to lie still during the operation.
- The lids of the eye to be operated on, will be held open with a small instrument.
- You will be asked to refrain from talking during the operation but you can be assured that a nurse will be present to ensure that you are comfortable.
- There will be someone to hold your hand throughout the surgery. You are requested to squeeze their hand if you need to cough or adjust your position, so that the surgeon can be warned.



- The surgery usually takes about **10 minutes** and is performed by a process known as '**phacoemulsification**'.
- The surgeon makes small incisions (cuts) in the eye and uses an ultrasound probe to break up the cataract and remove it by suction.
- It is then replaced with an artificial lens that is made of acrylic and will stay in your eye forever.
- The cut is usually self-sealing and most cases do not need stitches. In some circumstances the surgeon may choose to secure the wound with fine stitches.
- The surgery is done using an operating microscope and very fine instruments, some of which make noise. You may also experience some pressure around your eye
- As water is used during the surgery you may feel a slight trickle down your cheek.
- After the operation, a goggle will have to be worn over your eye.
- Our medical team will watch for any problems, such as bleeding or pain.

Your eye is never removed and replaced during cataract operations.

Care After Your Surgery

Immediately after surgery

- A member of staff will take you back to the waiting area. A nurse will check your:
 - blood pressure and pulse (if needed)
 - blood sugar levels (if you have diabetes)
- You will usually be allowed to go home on the same day, but you should arrange for someone to drive you home and look after you for 24 hours after surgery.
- After your surgery we would like you to go home and take it easy. Instructions regarding what to do after reaching home and the use of eye drops will be given to you by our medical coordinator.



- On the first few nights at home after the operation, you should wear goggles to prevent disturbing the eye. Take any tablets that have been prescribed for you by the doctor. Avoid watching TV or using mobile for long hours on the day of surgery.

What happens the next day?

- Clean your eye according to the instructions given on discharge. You should continue using your eye drops as prescribed. You must use these drops for a prescribed period after the operation.
- If you have glaucoma and are using drops regularly, please continue to use them after the surgery, unless you have been advised otherwise.

Eye shield and pad

- Usually, the surgery is done under topical (local) anaesthesia by just putting eyedrops. So, there is no need for any eye shield or patch in most of the cases.

- In rare cases, when an injection of local anaesthetic is required to be given for your operation, your eye may also be covered by a pad (under the shield) until the anaesthetic wears off. This is because the muscles that move your eye may still not be working properly, and this can cause double vision. The pad will prevent you from being aware of this.



Pain after surgery

- Your eye may feel uncomfortable and a little gritty for a few days after your surgery. Try taking regular paracetamol three times a day for few days to help ease your symptoms.
- If your eye becomes more painful, red and your vision gets worse, contact us or go to the emergency department. You may have an infection.

Bathing and showering

- Keep your eye dry for **four weeks** after your surgery.
- Avoid splashing water into the eye for **four weeks**.
- Please shower from the neck down for **one week**.
- If you need to wash your hair, you can:
 - visit a hairdresser so they can wash your hair backwards over a sink
 - wear well-fitted swimming goggles while bathing or showering
- You should not go swimming or use a sauna for **four weeks** after your surgery.

What can I do after the operation?

The majority of patients can resume routine, non- strenuous activity within a day or two such as:

- Walking in and out of the house. (Take care on stairs and when bending). Wear sunglasses outside in windy weather and/or bright sunlight
- Watching television
- Reading
- Using a computer



What should I avoid after the operation?

- Avoid rubbing your eye for **four weeks**.
- Avoid sudden stooping, bending, straining, lifting or carrying for **two weeks**.
- Avoid driving for about **one to two weeks** after the operation; until the eye has settled and you are able to read the new style car number plate at 20 meters without double vision.
- Avoid dusty atmospheres for about **two-four weeks**.
- Cooking is to be avoided for **one week**.
- Do not sleep on the side of your operation for **one week**.
- Avoid any vigorous activity including contact sports, squash, badminton, swimming, heavy gardening and vacuum cleaning until the eye has settled.
- Avoid eye make-up for **four weeks**.

When can I get back to work?

This will depend on the type of your work you do. Generally, **two weeks** off work are adequate unless you do heavy manual work. It is advisable to discuss this in advance with your surgeon.

Travelling abroad

It is advisable to discuss this in advance with the surgeon. Ideally, avoid travelling abroad before your review appointment unless you are visiting a place where good emergency eye care is available if you develop a post-operative problem.



In most cases, healing will be complete within **four weeks**. Your doctor will schedule exams to check on your progress.

Return of your vision

- Your vision may be blurred for the first couple of days after your surgery. This is normal.
- You should start to see a gradual improvement over the next few days.
- Your eye may also temporarily be more sensitive to light. Wearing dark glasses will help with this.
- It is recommended that you wait for your **four to six weeks** after surgery before visiting your optician for glasses.
- If you have been advised to have cataract surgery on the other eye, it might be better to wait until you have had that operation before getting new glasses.
- The lens power is chosen on best measurements and calculations, which do have limits of accuracy. You may need a glasses prescription or a further procedure to correct power.



Normal Patient Experiences After Cataract Surgery

- When you remove your goggles the next morning, you may notice an improvement in brightness and color.
- Initially the vision is likely to be misty and out of focus.
- The eye may be red and a bit light sensitive and feel bruised or gritty.
- There may be increased watering.
- You may also become aware of a shadow to the side of your vision often described as a half moon or a crescent.



All these symptoms are usually temporary as your eye rapidly adapts to the new lens. Your eye usually settles over 2- 4 weeks after the surgery, although some patients take longer.

The red flag symptoms associated with cataract surgery are discussed on page 41. If you experience any of these, contact us immediately on **9924343344**.

Follow-up Appointment

We will invite you to a follow-up appointment, which will usually be after **one week** of your surgery (if you had an uncomplicated surgery). If you have another eye condition, such as glaucoma, you may have an earlier follow-up appointment.



What Is Posterior Capsular Opacification (PCO)?

The artificial lens (IOL) cannot cloud over in the same way, and so cataracts do not grow back after surgery. However, the capsule behind the IOL can become slightly cloudy. This is common and can happen at any point after cataract surgery. It is called posterior capsular opacification (**PCO**). It is treated with a minor procedure (called a YAG capsulotomy) at the outpatient department.

Are There Any Risks With Cataract Surgery?

Generally, cataract surgery is a very safe procedure. However, as with every surgical procedure, there are some potential risks and complications.

They are not very common, and most of them can be corrected with a second procedure or treatment.

- **1 in 10** chance of a minor complication, which may require further outpatient appointments
- **1 in 100** chance of a major complication, which may require a further operation
- **1 in 1000** chance of loss of vision



If you have any other pre-existing eye disease or significant general health conditions this could increase chance of complications and have some effect on the final visual result.

Possible complications during the operation

- Tearing of the back part of the lens capsule, which may result in reduced vision.
- Loss of all or part of the cataract into the back of the eye requiring a further operation
- Bleeding inside the eye

Possible complications after the operation

- Bruising of the eye or eyelids
- High pressure inside the eye
- Clouding of the cornea
- Allergy to eye drops

Rare complications after the operation

- Incorrect power or dislocation of the implant
- Swelling of the retina which can cause blurring of the central vision
- Detachment of the retina which can lead to sight loss
- Infection in the eye – endophthalmitis – which can lead to loss of sight, or even the eye

Serious complications are rare, and in most cases can be treated effectively. In a small proportion of cases, further surgery may be required. Very rarely, complications can result in blindness.

Information About Your Eye Drops

- Before you go home, we will give you three different eye drops to help with the healing process.
 - The first one will be an antibiotic + steroid drop to prevent infection and help reduce inflammation.
 - The second one will be a cycloplegic drop to promote faster healing.
 - The third will be non-steroidal pain killer drops to decrease pain.
- Please continue to use your glaucoma or any other regular eye drops unless we specifically advise you not to do so.
- You will need a new separate bottle for the operated eye to avoid cross contamination from the other eye.
- These drops are usually required to be put for one and a half months.



How to apply your eye drops:

- Wash your hands thoroughly with soap and water.
- Check the dropper tip to make sure that it is not chipped or cracked.
- Avoid touching the dropper tip against your eye or anything else.
- While tilting your head back, pull down the lower lid of your eye with your index finger to form a pocket.
- Hold the dropper (tip down) with the other hand, as close to the eye as possible.
- While looking up, gently squeeze the dropper so that a single drop falls into the pocket made by the lower eyelid.
- Remove your finger from the lower eyelid. Dab any excess liquid from your face with a tissue.
- If you are to use more than one drop in the same eye, wait at least 10 minutes before putting the next drop.
- Replace and tighten the cap on the dropper bottle and store in a cool dark place.



When Do I Need to Contact the Hospital Urgently?



Before the operation:

- If you have an eye infection or red eye
- Any active infection anywhere in the body
- Your blood pressure, blood sugar or INR has become uncontrolled
- Other serious health issues
- If for unforeseen circumstances you cannot attend for your operation

In case of any of these please inform us at least **3 days** in advance.

This will allow us to give you any relevant advice, prevent disappointment on the day and usage of your appointment slot.

After the operation:

Please contact the hospital urgently if:

- Your eye becomes more red or more painful
- Your eye develops a sticky discharge
- Your vision begins to deteriorate
- Your eyelids become swollen
- You get sudden floaters, flashes or new visual symptoms

Please use the space below to write down any further questions to ask the doctor when you come to the hospital for your appointment.

We hope this information will help you clear all your doubts about the cataract surgery.

Jai Sat Chit Anand

