

All about  
**Cataract Surgery**



Changi  
General Hospital

## How does the eye help you see?

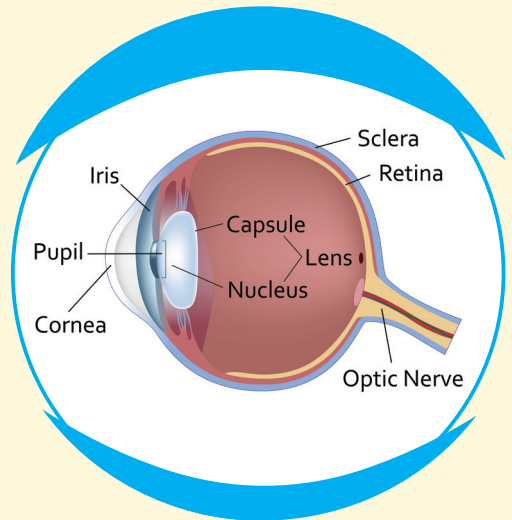
The eye works like a camera and together with the brain, they help you to see the things around you.

The coloured part of the eye is known as the 'iris'. In the centre is an opening, the pupil, which appears as a black circle within the iris.

Light rays coming from an object are transmitted through the cornea and the pupil. The size of the pupil controls the amount of light entering the eye.

Behind the pupil is the lens which focuses the light rays. These focused light rays fall onto the retina. The retina is a light-sensitive sheet at the back of the eye and is similar to the film inside a camera.

The retina then transmits the clear images to the brain.



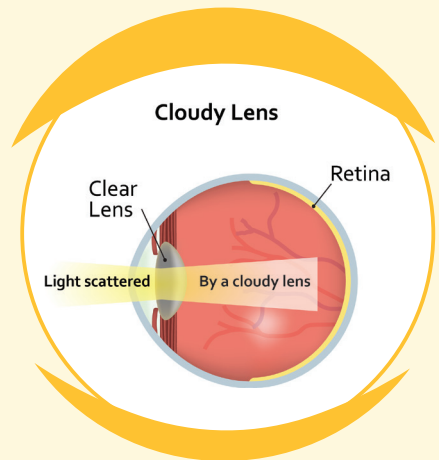
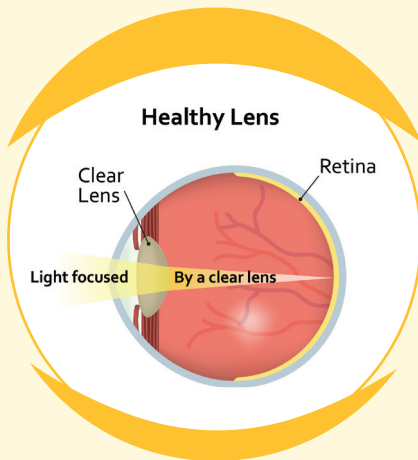
## What does a normal lens consist of?

A normal lens consists of a central portion, the nucleus, which is enclosed within a thin membrane called the capsule.

## What is a cataract?

A cataract is a clouding of the lens in your eye. The normal eye lens is clear but may gradually become cloudy due to: -

- normal ageing process
- eye injury or inflammation
- certain medications or
- certain illnesses e.g. diabetes



## How do you know if you have a cataract?

A cataract normally forms slowly over months. Its effect on your vision may not even be noticeable since it is a gradual change. Cataracts result in difficulties for the eyes to focus. Some of the other signs that may indicate the presence of cataract are:

- Blurring of vision, which does not improve even with spectacles
- Difficulty in seeing both near and far objects
- Difficulty in reading small prints
- Discomfort from glare, occurring in the day or at night
- Becoming short-sighted again after many years

## How can you know whether you have a cataract?

The eye specialist, also known as an ophthalmologist, will need to examine your eyes using a slit lamp. He will also examine



the inside of the eyes using an ophthalmoscope. These examinations will confirm if you have a cataract. You may also be advised if you have any other eye conditions such as glaucoma.

### **When should you have your cataract removed?**

A cataract needs to be removed when: -

- it blurs your vision to the extent that you cannot perform your work or daily activities safely or as well as before
- it prevents your eye doctor from treating any problems that you may have inside your eye such as diabetic retinopathy or
- it is so “ripe” that it may block the drainage system of your eye and cause an increase in your eye pressure (glaucoma).

### **How is a cataract removed?**

A cataract can only be removed by surgery. An artificial lens is often implanted at the time of surgery, which will take on the function of focusing light rays. This artificial lens implant most closely resembles the natural eye lens and is the preferred method of correcting your vision at present. However, there are occasions when an artificial lens cannot be safely implanted in to the eye. In this case, you may need to wear special glasses or contact lenses to help you focus instead.

## What do you need to do before surgery?

- You will be asked to have some tests done before surgery to check that you are fit enough to undergo surgery. The curvature and length of the eye need to be measured in order to select the proper artificial lens implant to suit your eye.
- You may be asked to apply eye drops for one or two days prior to the surgery.
- The night before surgery, you should stop taking all food and drinks after midnight. If you are on any medication other than diabetes medication, take it with small sips of water, on the morning of the surgery. If your surgery is in the afternoon, you can have light breakfast at 6am.
- Should the doctor give you any additional instructions, you should follow them too.
- The surgery will be carried out on an outpatient basis and you will not have to stay overnight in the hospital.

## What to expect during surgery

The eye specialist will operate on the eye using tiny surgical instruments and a special operating microscope to enable him to see the fine features within the eye.

Before the surgery, the doctor will give a few injections of painkillers to the eye area so that no pain will be felt during the surgery. You may also be given some sedative

medication to help you feel sleepy and minimise any anxiety that you may experience. Eye drops will also be applied to help dilate the pupils to allow the doctor to see inside the eye.

As a result of the medication, your vision will be blurred significantly and you need not worry about seeing the surgical instruments approaching your eyes. The staff in the operating theatre will cover you with clean linen before surgery commences. The eye specialist will apply a special instrument known as a retractor to keep the eye open and prevent you from blinking during the operation.

### During Surgery

During the surgery, an opening is made in the eye so that the nucleus and cortex can be removed. The capsule of the lens is retained so as to provide support for the artificial lens implant, after which the incision wound is closed with very fine sutures.



## Removing the cataract

The eye specialist may use one of two methods to remove the cataract. One method involves a longer surgical incision than the other. The benefit of having a smaller incision is a shorter recovery period. The longer surgical incision is used when the cataract is too thick and cannot be broken into small pieces.

The two methods are:

### 1. Extracapsular cataract extraction

In this method, the surgical incision or cut, about 10 mm long is made on the white of the eye above the iris. The cataract is removed in one piece through this surgical opening. The anterior lens capsule is also removed in the process but the posterior lens capsule is left in place.

### 2. Phacoemulsification

A smaller surgical opening about 4 to 5 mm long is made on the eye. A small, narrow probe with an ultrasonic tip is inserted into the lens. The ultrasonic waves emitted from this probe break the cataract up into tiny pieces. The anterior lens capsule is also removed in the process. These tiny pieces are then removed using a small suction device.

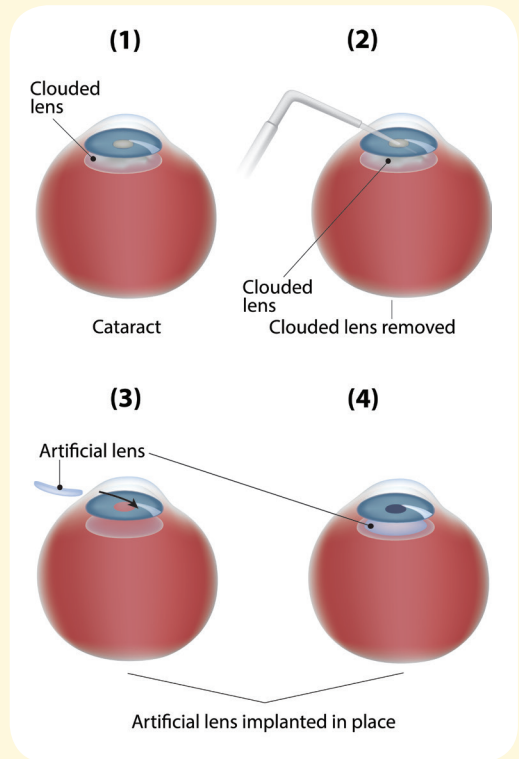
## Implanting the artificial lens

After the cataract has been removed, by either of the above methods, the eye specialist will then insert the artificial



lens implant into the eye. The new lens will remain in the eye permanently. The lens implant is inserted in the space between the iris and the posterior lens capsule. It is held in position by special loops that are part of the design of the lens implant.

In some rarer cases, the lens implant may have to be positioned in front of the iris as the posterior lens capsule is damaged or not present.



## After the surgery

The operation will be over in about half an hour. However, you will be asked to remain in the day surgery ward for a few hours. This is to make sure that you have fully recovered from any after-effects of the pain killers or sedatives. An eye patch and an eye shield will be placed over the operated eye to protect it.

We suggest that you do not drive immediately after the surgery and if possible, arrange to have someone accompany you home.

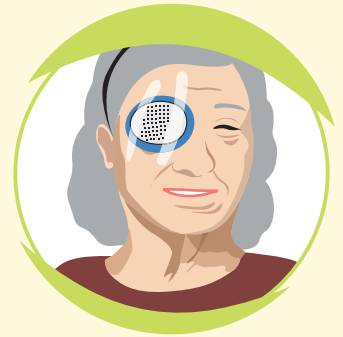
You will be required to come back to the clinic the next day to have the dressing removed.

## What to do after the surgery?

### Precautions to take

The eye specialist will prescribe antibiotic eye drops and may prescribe some medicines for pain relief. Take all prescribed medicines including your own medicines, if any.

- You may have some discomfort in your eye because of the sutures, but you must avoid rubbing your eye. Wear the eye shield at night for two to three weeks after the operation.
- Avoid strenuous physical activity e.g. jogging, swimming, tai-chi. Light household tasks, short walks, climbing a short flight of stairs are alright, but do be careful.
- Avoid bending, lifting or carrying heavy objects. When picking anything up from the floor, do so by keeping your back straight. Avoid bending your head downwards to avoid exerting pressure on the eye.
- Avoid bending down to put on your shoes. Sit on a stool and lift up your feet to put on shoes or have someone put them on for you.



- Avoid close contact with or carrying children as they may unwittingly poke at your eye.
- Avoid getting soap, shampoo and water into your eyes when washing your face and hair for the first few weeks. You may choose to have your hair washed in a hair salon. Alternatively, you can sit on a chair to wash your hair with your head tilted slightly backwards as in a hair salon.
- Avoid driving for at least 6 weeks after your operation.
- You may resume your normal diet. Eat more vegetables and fibre-rich foods to prevent constipation and straining to move the bowels.
- Take all prescribed medicines and apply eye drops as instructed.

### How to apply the eye drops prescribed

Follow these directions when applying eye drops to prevent infection after surgery.

1. Wash your hands with soap and water.
2. Tilt your head back.
3. Pull the lower eyelid downwards.
4. Squeeze one drop from the bottle into the eye. Take additional care not to let the tip of the eye drop bottle touch the eye.

5. Close the eye for a few seconds.
6. If a second type of eye drop is required, wait for five minutes before instilling the second drop.
7. Do not touch the tip of the eye drop bottle with your fingers.

### What should you look out for after surgery?

Cataract surgery is normally a fairly safe procedure and most patients heal well with good vision. However, infection may sometimes occur and can result in poor vision. Warning signs of infection include: -

- increasing pain and redness of the eye
- discharge from the eye
- sudden blurring of vision or sudden floaters
- or swelling of the eye

If you notice any of these signs, you should see your eye doctor immediately.

After the surgery, when the eye has completely healed, reading or distance glasses may be prescribed if necessary.

## Frequently Asked Questions

**Q** How long will the lens implant last?

**A** The lens implant is left in place for life.

**Q** Can everyone have the lens implant?

**A** Implants are safe and can be implanted in almost everyone. Your eye specialist will advise you if the implant is not suitable for you.

**Q** Will the cataract grow back?

**A** The lens implant will not get cloudy over time. However the posterior lens capsule, which remains intact in the eye, may become cloudy with time. You will notice this happening if your vision was first clear after the operation but has become blurred again with time. The clouding of the lens capsule can be treated using laser treatment which is carried out painlessly by the doctor at the eye clinic.

## Q What can go wrong with the surgery?

A Cataract surgery is a simple and safe operation for most people. However, as in all surgery, there is a small chance that problems may arise. The two main kinds of problems are:

- Allergy to the medications used for pain relief  
Some people may be allergic or develop side effects from these medications such as nausea and vomiting, difficulty in breathing, rashes, swelling of the face and lips and possibly fits.
- Surgical complications  
There is always a possibility of infection with any operation. If a severe infection develops, the eye may become blind. Other problems that may occur and cause poor vision are bleeding and damage to the cornea or retina. These may require further operations.

## Q Who is not suited for cataract surgery?

A Age itself is not a problem. Cataract operations have been performed on infants and people in their 90s as long as they do not have other illnesses such as severe heart disease, poorly controlled high blood pressure or diabetes. You may be asked to see your own doctor for control of these problems before the surgery.

**Q** Can I eat prawns, crabs and other seafood after the operation?

**A** There is no food restriction after the operation unless you are already allergic to seafood.

**Q** How soon can I return to work?

**A** You would normally be given 1 month of medical leave. This is to ensure that the wound has healed sufficiently before you resume your normal work routine.

**Q** Do the sutures have to be removed?

**A** The sutures can be left in the eye in most cases. They only need to be removed if:

- they become loose or break
- infection sets in the tissue around it
- they are too tight

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