



Dr Geoffrey Ryan

# Cataract Surgery

A comprehensive guide to your cataract operation



P: (07) 3239 5000

F: (07) 3844 2246

E: [reception@qei.org.au](mailto:reception@qei.org.au)

[www.qei.org.au](http://www.qei.org.au)

[www.drgeoffreyryan.com](http://www.drgeoffreyryan.com)



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A **cataract** is a clouding or opacity of the lens inside the eye. The lens directs rays of light onto the back of the eye (the retina), which sends messages to the brain allowing us to see. When a cataract develops, the lens becomes cloudy and prevents the light rays from passing through. This leads to blurring of your vision gradually over time. The aim of cataract surgery is to replace the cloudy lens with a clear artificial lens, to try and restore your vision.

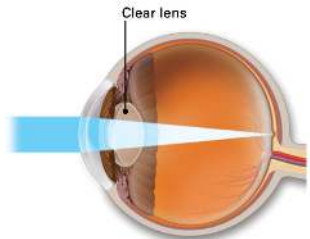
#### What does a cataract operation involve?

The most common form of cataract surgery is performed by making a small incision in the eye followed by a process called "phacoemulsification". This technique uses ultrasound to soften the lens, which is then broken up and flushed out using fine instruments and fluids. A clear artificial lens (intraocular lens implant or IOL), made of a plastic-like material, is placed inside the eye. The back membrane of the lens (capsule) is left behind and this holds the artificial lens in place.

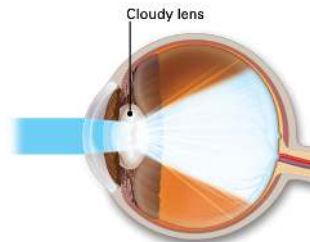
The surgery is performed in an operating theatre, however, you can return home on the same day. An anaesthetist is present to administer medication which reduces anxiety and provides heavy sedation.

#### Do I ever have to have cataract surgery again?

No, a cataract does not grow back, the new implanted lens will last a lifetime. The only intervention required (for 10% of cataract patients) is a quick painless laser procedure to remove hazy areas that may develop in the capsule that holds the lens. Your optometrist can monitor for signs of this and notify Dr Ryan if treatment is required.



A normal eye has a clear lens which transmits light to focus clearly on the retina.



An eye which has a cataract will scatter the light resulting in blurred vision.

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## Artificial lens/ Intra-ocular lens (IOL)

During your consultation with Dr Ryan measurements will be taken of your eye in order to choose an appropriate artificial lens for your surgery. Several factors can affect the accuracy of these scans including contact lens wear or prior refractive surgery. Soft contact lenses should be removed two weeks prior and rigid contact lenses should be removed four weeks prior to these measurements being taken. It is critical to inform Dr Ryan if you have had prior laser eye surgery or any other refractive eye surgery. Once Dr Ryan understands your visual needs and completes a comprehensive eye exam, he can then recommend a particular lens. It is important to understand that there are three main distances in which we describe where we focus for certain activities:

1. **Far** - Driving, television, golf, tennis and other sports.
2. **Intermediate** - computer, car dashboard, items on a shelf and cooking.
3. **Near** - Reading, smart phones, tablets, sewing and detailed hand work.

## Types of artificial lenses

**Mono-focal lens** - This lens provides the highest quality of vision by using all the light rays available to focus at one distance. Glasses are required for other distances.

The following lenses aim to reduce the need for glasses with some compromise on the quality of vision:

**Extended depth of field (EDOF) lens** - This lens stretches the focus of light resulting in a larger range of vision.

**Multifocal lens** - This uses different optical powers across the lens to allow different images to focus on the retina.

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There are four main options to choose from when planning for artificial lens selection:

### **Option 1. Far vision both eyes**

This is the standard approach to cataract surgery and is still the most common option selected. Both eyes receive a mono-focal lens which targets far vision. Glasses are required for intermediate and near visual activities. These lenses target one focal point allowing for the highest quality of vision. This option is recommended in the following situations:

- You would like high quality vision for far activities and accept glasses are required for intermediate and near vision.
- If you suffer from an ocular condition such as glaucoma, macular degeneration or diabetes.
- You would not tolerate imperfections in vision such as glare and haloes.

### **Option 2. Near vision both eyes**

Both eyes have a mono-focal lens implanted targeting near vision. Glasses are required for long distance vision. The same type of lens is used as option one, however, the focus of vision is for near distance activities. This is recommended in the following situations:

- People who are short-sighted prior to the operation and would like to remain this way.
- You spend long periods of time reading or performing close up work.
- You are happy to wear glasses for long distance visual activities.

### **Option 3. Distance vision for one eye and near vision for the other eye (Mono-vision).**

A mono-focal lens targeting far vision is implanted into one eye, with a mono-focal lens targeting near vision inserted into the other eye. This provides a range of focus and reduces your dependence on glasses. Not everyone will tolerate this option. A trial simulating this difference between the eyes is recommended using contact lenses before proceeding.

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## Option 4. Multifocal lens or Extended depth of field (EDOF) lens

The lens implanted in each eye targets far, intermediate and near activities. Patients opting for this lens do not require glasses for the majority of activities. This option is recommended in the following situations:

- Highly motivated to be free from glasses.
- Willing to accept imperfections in vision in order to achieve a reduction in dependence on glasses.

### **To proceed with a multifocal or EDOF lens you must accept the following:**

- Glasses may be required for some activities e.g. in dim light, fine visual demands or prolonged computer work.
- It can take several months for your eyes to adjust to the lens.
- Glare or halos around lights, or decreased sharpness of vision (also known as contrast sensitivity) may occur with these lenses, especially at night or in dim light. Many patients adapt over time, with the glare and haloes typically diminishing over a few months following surgery.
- A multifocal lens is not appropriate for people who drive frequently at night. It may stop you driving at night altogether.
- Rarely, a second procedure such as laser eye surgery is required if there is any residual refractive error not fully treated by the implanted lens.
- These lenses are not suitable for patients with underlying eye problems e.g. glaucoma, macular degeneration or diabetes.
- The small number of patients who can not tolerate these lenses require a procedure to remove the lens and implant a standard lens.
- Pilots, truck drivers or anyone with a hobby/job requiring high visual demands should avoid this type of lens.

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## Prior to surgery

### Fasting instructions

Do not have anything to eat or drink for 6 hours prior to your operation. This ensures it is safe to give sedating medicine during your operation.

### Medication

You should continue your regular medications before and on the day of surgery. Despite the instructions regarding fasting, you are still permitted to take your regular medication with a small sip of water. Blood thinning medication may continue but do expect some redness and bruising around the eye following surgery. Diabetic medication including tablets and insulin will need to be adjusted and you will be advised accordingly.

Please notify Dr Ryan if you take the following medication (they may affect surgery):

- **Tamsulosin (Flomaxtra)**
- **Terazosin, Doxazosin, Alfuzosin**

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## On the day of surgery

Your operation will take place at the South Bank Day Hospital located in South Brisbane (140 Melbourne St). It is expected that you will spend 3-4 hours at the hospital whilst the anaesthetist and nursing staff perform pre and post-operative safety checks.

### Prior to the operation

Eye drops will be instilled to dilate your pupil. Several times you will be asked confirm your name, date of birth, allergies and which eye has been selected for surgery. These are routine safety checks performed in all operating theatres.

### Anaesthetic

Medication is administered by an anaesthetist through a needle in the back of the hand. You will be heavily sedated to reduce any anxiety and awareness of the procedure. Medication is also applied around the eye to ensure there is no pain associated with the procedure.

### During the operation

The operation takes place in a surgical theatre. You will be positioned flat on your back on a theatre bed. At the conclusion of the operation a plastic shield is placed over the eye.

### After the operation

Following the operation you will be given something to eat and drink in the recovery area. The nursing staff will conduct some final safety checks and provide you with your eye drops. You will then be discharged home. **You can not drive home after the operation. You must have a friend or family member drive for you.**

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## Caring for your eye after surgery

As the anaesthetic wears off, a dull ache or a sharp pain can be felt in and around the eye. Your eye will be red, watery and your vision may be very blurred. You may wish to use over the counter pain medications such as Paracetamol and Ibuprofen during the first 24 hours. Your eye will settle over two to four weeks after the operation, however, this can vary between patients with some taking longer than others. A feeling of grittiness or the sensation of a foreign body in your eye can last several months after the operation, as the small wound gradually heals.

### Eye drops

Dr Ryan will prescribe eye drops for you to use after the operation. South Bank Day Hospital will arrange the pharmacy to supply these. There will be clear instructions on the frequency and length of time these are to be taken. There is a cost associated with the medication and the pharmacy will give you instructions regarding payment.

### Protecting the eye

Avoid rubbing or touching your eye. This is extremely important in the first two weeks after the operation. An eye shield is provided for you to wear for two weeks when sleeping (there is a risk of unintentionally rubbing your eye when asleep). During the day sunglasses can be worn if you feel increased sensitivity to light or glare.

### Follow-up

You will return for a post surgical check up the day after surgery. Some patients will be seen the same day of surgery if they reside outside of Brisbane.

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## Caring for your eye after surgery

### Exercise

In the first week after surgery do not do any strenuous activities like running or lifting weights heavier than 5kg. A light walk around the neighbourhood is an acceptable form of exercise in the first week. You may then resume normal activities after this period of time. Eye protection should be worn if you feel there is a risk of inadvertent trauma to the eye.

### Driving

Most patients can drive 3-4 days following cataract surgery. Your ability to drive will depend on your recovery and the vision in your other eye. Dr Ryan can advise you when it is safe to resume driving.

### Swimming

Do not swim for two weeks after cataract surgery.

### Work

Returning to work depends on your occupation and this can be discussed with Dr Ryan (most patients can resume office duties 1-2 days following surgery).

### Cleaning around the eye

You are advised to be careful when washing: do not directly splash water into your face in the shower or immerse your head in the bath for one week after surgery. A clean face cloth can safely be used. It is also advised to avoid make-up around the eye for two weeks.

### New glasses

You may have your eyes checked for new glasses by your optometrist six weeks after the operation. If you are also having cataract surgery on your second eye, wait until both operations are completed to avoid excessive costs in relation to new glasses.

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## Risks

Cataract surgery is the most common elective operation carried out each year in Australia. The procedure is aimed at improving your vision which directly enhances your quality of life. In order to make an informed decision, you should read through the potential risks.

### Serious (1 /1000)

- **Endophthalmitis** - infection inside the eye which needs injections of antibiotics into the eye.
- **Retinal detachment** - the inside back surface of the eye peels away which requires surgical correction.
- **Sympathetic ophthalmia** - very rare condition where inflammation occurs in the non-operated eye.
- **Loss of vision in the operated eye** - this is very rare and can be a result of a serious bleed or infection.

### More common but less serious (1/100)

- **High pressure in the eye** - requiring eyedrops or tablets to control. Rarely this can develop into glaucoma.
- **Cystoid macular oedema** - Swelling at the centre of a patients vision. Majority of cases resolve with a course of eyedrops. Serious cases may require an injection into the eye.
- **Swollen cornea (front window of the eye)** - most cases resolve over time but rarely a corneal graft may be required.
- **Persistent anterior uveitis** - inflammation in the front chamber of the eye requiring a longer course of topical steroids.
- **Failure to remove the entire cataract or inability to place an artificial lens into the eye** - this requires a second operation and in some cases a lens needs to be secured into position via an alternative method.

### Common issues after surgery

- **Glare** - increased sensitivity to light is expected which can be managed with sunglasses. Majority of cases settle by 3 months.
- **Dry eyes** - this often occurs due to an altered tear film. It will often resolve after a few months. Lubricant eye drops can be used during this time to alleviate the symptoms.
- **Increased awareness of floaters** - a floater is a mobile piece of vitreous (jelly-like substance that supports the back of the eye). These can be more pronounced post cataract surgery. Over a few months your awareness of these floaters will diminish.

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## Eye drop Chart

	Chlorsig eye drops (0.5%) One drop to the operated eye four times a day for two weeks.				Prednefrin Forte eye drops (0.12%/ 1%) One drop to the operated eye four times a day for one month.			
Day 1								
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## QUEENSLAND EYE INSTITUTE

QEI South Brisbane  
140 Melbourne Street  
South Brisbane QLD 4101

QEI Clayfield  
College Junction  
695 Sandgate Road  
Clayfield QLD 4101

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F: (07) 3844 2246

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