

Cataract

Cataract surgery has improved dramatically over recent years into one of the safest and most effective operations. New technology and materials have revolutionized our surgical techniques and improved surgical outcomes. This has not only ensured safer cataract removal but more accurate and predictable visual results (and less dependence on glasses.)

How the eye works

Normal vision relies on healthy eyes, normal visual pathways and a healthy visual area of the brain. The eye's function is to focus a clear image onto the retina (much like a camera). Numerous receptors in the retina convert light into electrical impulses via a photochemical reaction. The electrical impulses created in retinal receptors are transferred to the visual area of the brain (occipital cortex) via the visual pathway (optic nerves, tracts and radiations). The brain converts these electrical impulses to vision. The macula is the central area of the retina which is responsible for our sharp central vision.

Focusing-clear Vision

The eye has a dual focusing system consisting of the cornea and lens (whereas the camera has only one lens). The cornea is the clear window at the front of the eye which transmits and focuses an image via the pupil through the lens to the retina. The pupil is a hole in the central iris (the iris gives us our 'eye colour') . The pupil has muscles which can alter its size and thus alter the amount of light entering the eye.

The Lens

The lens is made up of a flexible tissue called the 'lens capsule or 'capsular bag' which encloses/surrounds the internal lens material. The lens material is initially clear (it is made up of water and protein arranged in a precise pattern) and the lens is soft in consistency in children and gradually hardens and yellows with age. The entire lens is suspended in the eye by small fibres called zonules which attach the capsule to the inner layers of the eye. Muscles acting on the capsule via the zonules can change the shape of the lens allowing a wide range of focusing (near to far) in our younger years. With age the lens flexibility decreases in part due to hardening of the lens material. This results in decreased ability to see close up, starting usually in the 40's (this is called presbyopia) and requiring reading glasses.

What are cataracts?

Any loss of lens clarity is defined as a cataract. The lens opacity will block light entering the eye resulting in a blurred retina image and thus poor vision.. These opacities may affect various parts of the lens and may occur in a number of shapes and patterns. The site and extent of the opacity in the lens will determine how vision is affected. Opacities occurring centrally will affect vision sooner than those occurring more peripherally. Some people

may have peripheral cataracts which do not cause visual symptoms for many years.

Causes of cataracts

Cataracts are part of the natural aging process and are evident to some degree in many people in their 60's onwards. Most people will develop cataracts if they live long enough. So, the most common cause of cataract is aging. Apart from aging there are numerous other causes of cataracts including diabetes, cortisone treatment, eye inflammation (uveitis), trauma and rarely due to other diseases.

Cataracts can occur in any age group including babies – in this age group inherited diseases as well as pregnancy related conditions may be the cause. Smoking and sunlight are thought to be contributing factors to cataract formation

Symptoms of cataracts

The most common symptom of cataracts is gradual blurring of vision. One or both eyes may be affected. Cataracts do not usually cause sudden visual loss but can sometimes develop rapidly over weeks or months.

Certain cataracts can cause significant glare especially with bright light (such as from headlights with night driving). Hardening of the lens due to cataract formation can cause improved near vision with loss of distance vision ('myopic shift in refraction').

Some people notice double vision in one eye. Colour vision (often yellowing of vision) can be affected as well as diminished ability to detect contrast between shades of colours or black and white.

The degree of visual symptoms from cataracts will affect individuals differently. This is often determined by visual needs including type of work, hobbies and driving requirements. Early cataracts may only cause mild symptoms which do not affect quality of life. Advanced cataracts can cause profound visual loss and legal blindness unless treated

How are cataracts detected?

The only way to make sure that you do not have a cataract is to be examined by an Ophthalmologist. This can be prompted by visual symptoms or a routine checkup. A comprehensive eye examination including dilation of the pupil allows an excellent view of the lens and cataract detection.

When should cataracts be removed?

This is an individual decision-usually when everyday activities and quality of life are affected. A person having high visual needs (eg- pilot, night driver) may require surgery sooner than someone with less demanding visual requirements. Having a cataract does not necessarily mean that cataract surgery is immediately required – sometimes surgery is indicated only a few years later.

We take into account each person's visual requirements, eye health and general health. Delaying cataract surgery unnecessarily may increase the risk of falls and injury and loss of a driving license. Surgery should not be delayed too long as the surgery may be more technically demanding and the risk of potential complications is higher. In some cases cataract surgery may be indicated to enable a clear view of the retina to treat other diseases such as macula degeneration or diabetic retinopathy- in spite of few symptoms.

How are cataracts treated?

The only treatment of cataracts is surgery. There is no proven non -surgical technique (eye drops, medicines) to treat cataracts. In early cases a change in glasses prescription or better lighting may temporarily improve the vision.

There have been exceptional improvements in cataract surgery over recent years making it a generally safe and successful operation done as day surgery. Surgery involves removing the cataract and replacing it with an intraocular lens (IOL).

Before cataract surgery

Prior to cataract surgery a comprehensive eye examination is undertaken in order to rule out any other eye diseases. Measurements of the eye are undertaken and various formulae are used to determine the appropriate intraocular lens power and type for each individual. We use the latest technology including the IOLMaster, Holladay IOL Consultant Software and Atlas Corneal Topographer.

Modern IOLs and have excellent optical properties to maximize vision- they block ultraviolet light to protect the eye and are highly bio-compatible. There are excellent IOLs available to correct astigmatism. The type of intraocular lens used is governed by each individuals post operative visual requirements.

Although cataract surgery is highly successful there is a small risk of complications. The specific benefits and risks in the context of each case are discussed in detail prior to surgery.

Cataract surgery

Cataract surgery is performed on one eye at a time – the 2nd eye can have surgery from as soon as a few days to a week after the first. The operation is usually performed under local anesthesia in a day surgery facility. We operate at National Day Surgery in Kogarah as well as Figtree Private Hospital

in Wollongong . Routine cataract surgery usually takes less than 30 minutes and patients go home soon thereafter.

Just prior to the operation, the pupil is dilated with eye drops and the eye is anaesthetized by an injection around it. Removal of the cataract is via a small incision (less than 3 millimeters). Through a dilated pupil the cataract is broken up and removed by an ultrasound and aspiration probe (phacoemulsification) leaving the capsule intact. An intraocular lens is inserted into the capsular bag to replace the cataract. The cataract wound is self sealing although sometimes needs to be sutured.

After Cataract surgery

You will usually go home with an eye patch which will be removed at the first post operative visit. Post Operative care involves eye drops to reduce inflammation and infection as well as routine checkups at the rooms. One should avoid strenuous activity and injury to the eye following surgery. Light activities are allowed including bending. Only start driving when given the 'go ahead' by your surgeon. Once the eye has settled down following the surgery (usually a few weeks), new glasses may be prescribed. Modern Intraocular lenses are highly compatible with the eye and remain in place long term- only in rare cases do they have to be removed or exchanges