Cataracts

A cataract is when the lens of an eye becomes cloudy and affects vision. Cataracts most commonly occur in older people and develop gradually. Cataracts can usually be treated with a routine day case operation where the cloudy lens is removed and is replaced with an artificial plastic lens. However, in developing countries where treatment is not available, cataracts are a major cause of blindness.

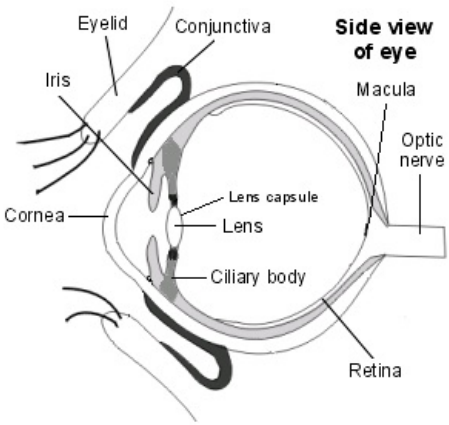
How do we see?

When you look at an object, light from the object passes through the cornea, then the lens, and hits the retina at the back of the eye.

The lens of the eye acts like the lens in a camera. It focuses much of the light coming through the eye on to the macula. The macula is the part of the retina that is the most densely packed with seeing cells.

Nerve messages pass from the seeing cells (rods and cones) in the retina down nerve fibres in the optic nerve to the brain. The messages are interpreted by the brain, which enables us to see.

For us to see clearly and sharply, the lens of the eye has to be clear (transparent) - just like the lens in a camera.



What are cataracts?

Cataracts are cloudy (opaque) areas that develop in the lens of an eye. The lens should normally be clear. But, with cataracts, the affected lens becomes like frosted glass.

Some people have the wrong idea about cataracts. For example, some people wrongly think that a cataract is like a skin that forms over the eye or lens. This is not true. A cataract is a gradual change in the structure of the lens in an eye, which makes it gradually more and more cloudy.

Who gets cataracts and how common are they?

There are different types of cataracts:

Age-related cataract (senile cataract)

This is by far the most common type and affects older people. It becomes more common with increasing age. In the UK about 1 in 3 people over the age of 65 has a cataract. Men and women are equally affected. Often both eyes are affected, but one eye may be worse than the other.

Typically, an age-related cataract forms gradually over many years. Many people with an early cataract do not realise they have it. This is because the cloudiness caused by an early cataract is not too bad and the vision is only mildly affected. In some people, the cataract does not become too severe. However, in many cases, vision becomes gradually worse over the years.

Congenital cataracts (present at birth)

These are uncommon but important to diagnose early. This is because vision and seeing have to be learnt very early in infancy. A cataract that is present at birth stops the eye from learning to see and can cause blindness which may persist even if the cataract is removed later in life. A congenital cataract must be removed as early as possible after birth. This is why doctors examine the eyes of babies as part of routine baby checks.

Other types of cataract

There are some uncommon causes of cataracts. A cataract may develop after an injury to an eye, or as a result of radiation exposure. Cataracts sometimes develop as a secondary problem if you have another condition. For example, as a complication of some other eye conditions, and some people with diabetes develop cataracts.

The rest of this leaflet is only about the common age-related cataract.

What causes age-related cataracts?

The cause is not entirely clear. There seems to be a change to the structure of the proteins in the lens. This may be caused by a disturbance in the way fluids and nutrients get to the lens as you become older. Some of the proteins may then clump together in places within the lens. This causes tiny areas of cloudiness. Each tiny area of cloudiness blocks a bit of light getting past to the retina. The severity of the cataract depends on the number of areas of cloudiness that develop in the affected lens.

Most affected people develop a cataract for no apparent reason. Factors that may increase the chance of developing cataracts include:

- Having a poor diet.
- Smoking.
- Being exposed to a lot of ultraviolet light.
- Diabetes.
- Steroid medicines.
- Having a family history of cataracts.

What are the symptoms of age-related cataracts?

At first you may notice your vision becoming a bit blurred. With time, you may notice some of the following:

- Having spots in your vision.
- Seeing halos around bright lights; for example, street lights.
- Not being able to see as well in brightly lit rooms or in sunshine.
- Becoming easily dazzled by bright lights such as the headlights of an oncoming car.
- Your colour vision may become washed out or faded.
- Over the years your vision may gradually become worse and cannot be corrected by glasses.

Depending on the severity of the cataract, the effect on your sight can range from vision being slightly blurred to complete blindness in the affected eye.

How is an age-related cataract diagnosed?

A cataract can usually be seen easily by a doctor or optometrist (optician) when they examine your eyes. This may be done because you have noticed a problem with vision.

Sometimes an early cataract is detected during a routine eye check, before you have noticed a problem with vision.

Do I need treatment for age-related cataracts?

An early cataract may not cause any noticeable problem with your vision. The rate of decline in vision varies considerably from person to person. It is now common for people to have their cataract treated at an early stage when the cataract is affecting ability to function normally. For example, if you are having problems reading the paper, watching TV, driving, cooking. Treatment is usually successful.

What is the treatment for age-related cataracts?

There are no medicines, eye drops or lasers that can treat cataracts. The only way of treating cataracts is with an operation. This is a very common operation. Around 300,000 cataract operations are performed each year in the UK. The operation involves removing the cloudy lens and replacing it with an artificial plastic lens (an intraocular implant). It is a routine operation that usually takes 10-20 minutes. It is often done as a day case.

What happens during a cataract operation?

Usually one eye is operated on at a time. In most people the operation is done under local anaesthetic. This means that you are awake during the operation but it is not painful because local anaesthetic eye drops are used to numb your eye. (Occasionally, local anaesthetic injections are used around the eye.)

The operation is performed, using a microscope, through a very small opening in the eye. When the eye is numb, the surgeon makes a tiny hole in the front of the eye at the edge of the cornea. Then, the surgeon pushes a tiny thin instrument into the lens through the front part of the lens capsule. The instrument emits ultrasound waves that break up the contents of the lens within the lens capsule.

The contents of the lens are then removed by suction. Once the lens material is removed, a clear plastic lens is placed within the lens capsule through the hole made in the front part of the lens capsule. Usually no stitches are needed. You may have to wear a pad over your eye after the operation.

The standard plastic lens has no focusing capability so you will still need to wear glasses (if you did before the operation). However, it is sometimes possible to have an accommodating lens inserted which allows focusing on near and distant objects. Multifocal lenses are now also available which allow at least two different strengths, such as near and distance vision. Your surgeon will be able to discuss this in more detail if these are suitable for you. These types of lens are not, however, usually available on the NHS.

What are the possible complications of cataract surgery?

In the vast majority of cases, the operation is successful and vision improves immediately. In a small number of cases, complications occur. For example, bleeding into the eye, infection, inflammation of the eye and damage to the cornea or to other parts of the eye. These are all uncommon, can often be treated, but are very occasionally serious enough to cause permanent visual problems.

Posterior capsule opacification (cloudiness)

This is a complication that can occur following a cataract operation. Sometimes the back part of the lens capsule thickens several months after surgery, becomes cloudy (opacifies) and affects your vision. If this occurs it can usually be easily treated with a painless procedure using a laser. The laser can burn a hole in the middle part of the capsule which then allows light through and restores vision.

Note: a laser cannot be used to treat a cataract itself.

Further help and information

The Royal National Institute of Blind People (RNIB)

Web: www.rnib.org.uk
The RNIB supports blind and partially sighted people.

The Royal College of Ophthalmologists

Web: www.rcophth.ac.uk
This is the professional body for ophthalmologists (eye surgeons) in the UK. They have a section on their website dedicated to the general public which gives information about the college, and information about various eye conditions - see www.rcophth.ac.uk/about/public/

Further reading & references

- Cataract surgery guidelines 2010, Royal College of Ophthalmologists (2010); Scroll down the list to locate.
- Implantation of accommodating intraocular lenses for cataract , NICE Interventional Procedure Guideline (2007)
- Implantation of multifocal (non-accommodative) intraocular lenses during cataract surgery, NICE Interventional Procedure Guideline (June 2008)
- Cataracts, Clinical Knowledgs Summaries (September 2010)
- Ocampo VV et al; Cataract, senile, eMedicine, May 2009
- Hodge W, Horsley T, Albiani D, et al; The consequences of waiting for cataract surgery: a systematic review. CMAJ. 2007 Apr 24;176(9):1285-90.

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