Professor Timothy L Jackson
PhD, MB ChB, FRCOphth

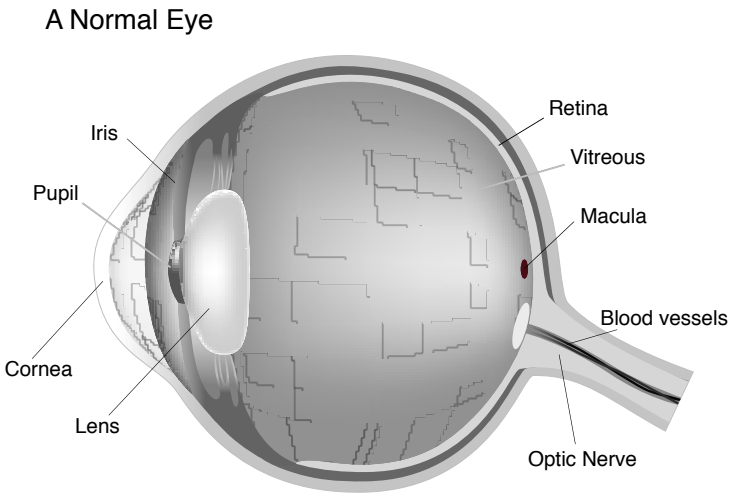
Consultant Ophthalmic and Retinal Surgeon

Patient Information: Cataract Surgery

What are cataracts?

As you age the lens inside your eye gradually changes and becomes less transparent. If you have a cataract, you have a lens that has turned misty or cloudy.

Cataracts are a very common eye condition. You can get them at any age but they are more common the older you get. Certain conditions like diabetes, trauma or other eye diseases can increase the chance of getting cataract. Also, smoking and certain medications may increase your risk.



What are the symptoms of cataracts?

For most people, the clouding of vision happens very gradually, so you may not even notice it initially. It may be that your optician identifies the cataract before you notice symptoms. However, common symptoms are:

- A gradual decline in vision – for example, you may need more light to read small print
- Vision seeming cloudy or washed out – as if your glasses are dirty
- Needing stronger glasses, or more frequent changes of glasses
- Problems with bright lights – light can seem to glare and headlights at night can be dazzling
- Changes in colour vision – this may be very subtle, but things may appear more yellow.

How are cataracts treated?

Very early cataracts that are not causing symptoms do not necessarily need treatment. Treatment for cataracts is generally recommended when they start interfering with your everyday life eg. reading or driving. The only treatment for cataracts is to remove the cloudy lens and replace it with an artificial one. The vast majority of people have this procedure done under a local anaesthetic (awake but with anaesthetic to numb the eye). Some people may choose to have a general anaesthetic (asleep) or light sedation.

Surgery aims to replace your cloudy natural lens with a clear, artificial lens (intraocular lens implant).

The time to have cataract surgery is when you feel that your sight is giving you trouble day-to-day.

What are the likely benefits of cataract surgery?

The likely benefits of cataract surgery are:

- Improved vision - 95% of patients undergoing cataract surgery see better after surgery. Your chance of gaining vision may be lower if you have other eyes diseases, for example, age-related macular degeneration or diabetic eye disease.
- Seeing things in focus – cataract surgery may reduce your reliance on spectacles, however glasses may still be required for reading and/or distance vision.
- Less glare in bright lights
- Brighter colour vision – often people do not notice the change in their colour vision due to cataracts, until the cataract is treated, when they realise colours are much brighter in the operated vs unoperated eye.

What are the possible risks of cataract surgery?

Modern cataract surgery is a straightforward and reliable operation. It is one of the most common operations performed in the UK and one of the most successful. Most patients get a meaningful improvement in vision, with greater clarity and more vibrant colours.

However, all surgical procedures carry risk, and it is important that you know about these before you consent to surgery. The following is a list of the most frequent or important complications or risks. The most common complications can often be dealt with and hence they do not necessarily affect the final outcome, but some may.

Possible complications during surgery

- Tearing of the back part of the lens capsule can disturb the gel (vitreous) inside your eye. If this occurs your operation will take longer than usual because Professor Jackson will need to stabilise the eye before your new lens can be inserted. Recovery of vision may take longer, but in most cases the final visual outcome is similar to uncomplicated surgery. The risk of capsule rupture varies for each person, but is typically about 2%.

- All or part of the cataract may fall into the back of your eye. If this happens you will need another operation to put it right (vitrectomy). This occurs in less than 1% of operations.

- Bleeding inside the eye. This can lead to severe loss of vision or even loss of the eye. This occurs in less than 1 in 500 operations.

- Damage to other parts of the eye.

Possible complications after surgery

Minor / common

- Your eye is usually red and your eye lids may be bruised. This will not affect your eyesight and will clear, like any bruise, over a few days or weeks.

- The pressure inside your eye might become raised. This is fairly common and can be easily treated with eye drops, and usually settles over a few days or weeks. However, if it is left untreated it can cause serious problems.

- Inflammation inside the eye. Surgery usually leads to some mild inflammation inside the eye, and for this reason steroid eye drops are prescribed after surgery to dampen the inflammation. Sometimes, more intense inflammation may necessitate more frequent eye drops.

- Clouding of the cornea (the clear window at the front of the eye). Usually this will clear within in a few weeks, but very occasionally there may be longer-lasting problems. Rarely (<1%), further surgery is required (corneal graft).

- Around 8% of patients develop macula oedema – this is when fluid collects inside the back of the eye. This is more common if you have diabetes. You will be given drops to reduce the fluid and improve vision, although you may need to take the drops for several months. In a very small number of patients the fluid persists, but usually it settles with time.

- In about 5% of eyes the natural capsule that the new artificial lens sits within can become cloudy, usually over months or years. This is sometimes called an ‘after-

cataract' (posterior capsular opacification), but it is not actually a recurrent cataract. It can be treated very simply with a laser, without further surgery.

Serious/rare

- Retinal detachment requiring emergency surgery occurs in less than 1 in 500 operations. Sometimes despite retinal detachment surgery vision is damaged.

- Infection in the eye occurs in less than 1 in 500 operations. This requires intensive treatment to identify and treat the infection, but even with treatment it can severely damage sight, or very rarely lead to loss of the eye.

There are risks associated with all eye surgery, and complications have the potential to damage your sight or require further surgery to address unexpected problems. However, it should be restated that the vast majority of patients have a significant improvement in their vision.

What happens before surgery?

Before surgery you will need a biometry appointment to take measurements of your eye, to work out what intraocular lens you need. This is often done on the day of surgery, but if you may need a special lens this will be done in advance, so that the lens can be ordered for you. *If you wear contact lenses you should remove them 2 weeks before biometry.*

If you take medications such as Flomax (tamsulosin) or other drugs for prostate disease, or drugs to thin your blood such as warfarin, please tell Professor Jackson in advance of surgery as you may need to stop these before your operation.

Otherwise, you should continue all your other medications as normal, including on the day of surgery. If you take regular eye drops these should usually continue before and after surgery, including on the day of surgery, but please check with Professor Jackson. Avoid eye makeup on the day of surgery.

If you are having the operation under local anaesthetic you can eat and drink normally, but please avoid alcohol and heavy foods.

If you are having a general anaesthetic *you need to stop eating and drinking 6 hours before surgery, with the exception of still water which you can drink until 2 hours before surgery*.

Choice of lens for cataract surgery

In cataract surgery, your cloudy lens is removed and replaced with an artificial lens called an intraocular lens (IOL) implant. As with spectacles and contact lenses, there is a choice of different strengths (power) of lens and also different types of lenses.

During your initial assessment, Professor Jackson will talk through the lens options and help you choose the best lens for you.

With all lens options there is usually a small difference between the intended refractive outcome, and what is achieved. Occasionally this error is significant ('refractive surprise') and this may mean that the spectacle correction is not as intended, and consequently you may be more dependent on spectacles than planned. Very occasionally, further procedures are needed to replace the lens.

Lens Options:

Standard monofocal lenses: Standard monofocal lenses will allow you to have better focus for either close vision or for distance vision, but not both. Most people choose good distance vision, aiming to minimise or eliminate their dependence of spectacles for distance vision, but accepting they will need reading glasses. Spectacles may still be needed for some distance tasks, such as driving. This is the most suitable option for the majority of patients.

A small minority of people choose good close vision, especially if they like to read without glasses or do a lot of detailed close work such as embroidery. If you choose this option, you will need glasses for distance. You may sometimes need reading glasses for specific near tasks, but in general the aim is to read without spectacles in most situations.

Monovision: It is possible to aim for distance vision in one eye and near vision in the other, to try and minimise the need for glasses. This is called monovision. Whilst many patients like the idea of not wearing spectacles for either near or distance tasks, patients can find the vision less comfortable, as the two eyes never work together, rather, they only ever see clearly out of one eye at a time. You may still need glasses for some tasks such as computer work or night driving.

This option is not ideal for many patients and you should only choose this after very careful consideration. It may be worth trying to simulate the post-operative situation with contact lenses prior to surgery, to see how monovision feels. This is most suited to people whose priority is to reduce their dependence on glasses, but who are happy to accept that their vision may not be as clear or comfortable.

Multifocal lenses: Multifocal lenses are lenses that aim to correct vision for both near and distance. They do this by focussing some of the light-rays entering the eye for distance, and some for near. Optically, this entails a degree of compromise and multifocal lenses do not work for all patients. Sometimes they cause visual quality problems, such a glare at night, or haloes in the vision. Therefore, the use of multifocal lenses needs careful consideration.

Toric lenses: Toric lenses are suitable for some patients with moderate to high astigmatism. Astigmatism describes a condition where the light entering the eye is focussed unevenly on the back of the eye. Astigmatism reduces the quality of vision for both near and distance. Glasses correct astigmatism. Therefore, people with high levels of astigmatism may need glasses for both distance and near work even after cataract surgery. The aim of a toric lens is to reduce the level of astigmatism, so that patients are less dependent on their spectacles. Toric lenses can be used in a standard manner (to provide a distance correction for both eyes), or for monovision. They are also available as a multifocal lens.

Toric lenses are not required if you are happy wearing glasses for near and distance, and are not suitable if you have certain other eye problems. The surgery is the same as standard cataract surgery except that once a toric lens has been inserted, it is carefully rotated to the correct position (angle) for each patient. A standard lens does not need to be placed so precisely.

There are some potential risks with toric lenses:

- A toric lens may not fully correct the astigmatism and you may still need glasses for near and/or distance.
- If complications occur during cataract surgery, it may not be possible to insert a toric lens and a non-toric lens may need to be used.
- The lens can rotate and a second operation may be needed to rotate the toric lens back into position for best vision, with the additional risk of further surgery.
- Some patients may require further surgery to remove the toric lens and replace it with a standard lens.

There are some alternative options to using toric lenses for those with high astigmatism. You may choose surgery with standard lenses and correct the astigmatism with glasses or contact lenses. Standard cataract surgery can be combined with additional cuts in the cornea (limbal relaxing incisions or LRIs) to reduce the astigmatism. Whilst LRIs may help, they are less effective at eliminating astigmatism than a toric lens. In addition, laser refractive procedures can correct astigmatism.

What happens on the day of surgery?

On the day of surgery you will be asked to come to the hospital about 1-2 hours before your operation, or longer if you are having a general anaesthetic as you will require pre-operative tests to be undertaken.

You will be given a series of eye drops to dilate your pupils. These may sting for a few seconds and then your vision will start to blur as your pupil dilates. You remain in your usual clothes, but may be required to wear a gown on top of these.

Professor Jackson will see you briefly before surgery. If you have any questions or concerns, please raise them. He will draw a small mark on your forehead above the eye that is undergoing surgery, to confirm the correct side.

What happens during surgery?

The anaesthetist, or sometimes Professor Jackson, will give you a local anaesthetic injection around your eye before surgery commences. This stings for a few seconds as the anaesthetic goes in, but thereafter you should not feel anything other than occasional mild discomfort. If your eye is painful, let Professor Jackson know, as he can easily top-up the anaesthetic.

Professor Jackson will clean around your eye with iodine (if you have an iodine allergy let Professor Jackson know in advance of surgery). Don't worry if you can feel this, as the anaesthetic aims to numb the eye rather than the skin around it. For surgery you will lie flat on your back with a sterile cloth draped over your face. It can feel a bit claustrophobic as the drape is initially placed over your face, but Professor Jackson will lift it off your face as much as possible. There will be oxygen pumped under the drape so even if it feels a bit stuffy, there will be plenty of air to breath.

As the eye is anaesthetised you do not need to worry keeping your eye still or blinking during surgery. However, you should try and keep you head and gaze still during the operation and try not to speak, unless you need to raise a concern. If you feel a cough or sneeze coming, let Professor Jackson know.

You will often feel water running down the side of your face and your hair may get wet during the operation. You will hear what is going on in theatre and Professor Jackson will speak to you at certain points in the operation. You may see light, but you will not see the instruments or the operation itself.

During surgery a very small incision is made into the cornea (the clear window at the front of the eye), the cataract is removed by liquidising it with an ultrasound probe, and then the replacement lens is inserted into your eye. Antibiotics are administered to your eye and the wound is usually closed without stitches.

A dressing and a protective shield will be taped over your eye. The nurses will give you instructions about caring for your eye post-operatively, and once you have your prescription for eye drops and feel well enough, you will be free to leave.

The actual surgery itself (phacoemulsification and intraocular lens implant, or 'phako+IOL') usually only takes 15-30 minutes, however you may be in theatre for longer than this and you can expect to be at the hospital for about 3-4 hours.

Assuming your vision is sufficient in the unoperated eye, and you had a local anaesthetic, you can head home by yourself in a taxi, but ideally you should ask someone to collect you after surgery and escort you home. If you have had sedation or a general anaesthetic you will need someone to escort you home and you should have someone remain with you for 24 hours.

What can I expect after surgery?

Following surgery your eye will be covered with a soft pad and hard plastic shield. You may find that you have a few bloody tears that escape from the pad. For this reason you may want to protect your pillow at night.

The morning after surgery you should remove the pad and shield. The eye will look red and will often have bloody tears, with the eyelids stuck together. Clean the eyelashes and around the eye with sterile water (for example, cooled, previously boiled tap water or sterile sachets of saline from a pharmacy) and clean tissue paper or gauze.

Keep the plastic shield to cover your eye at night for one week, by taping it over the eye like a pirate's patch. Orient the shield as it was after surgery. Discard the eye pad.

When you first take the pad off your vision will be very blurry – this is normal. Some double vision is also common, as is a droopy eye lid. As the dilating drops wear off through the day your vision will tend to gradually improve, and continue to do so over the next few days. You may find it helpful to wear sunglasses if the light feels too bright. You are likely to have some bruising – this is normal too and will gradually fade like all bruises.

It is also normal that your eye might feel a little gritty for a few days or even weeks after surgery, like you have something in your eye. If this is troublesome you can use lubricating drops eg. Celluvisc 0.5%, which can be bought at any pharmacy.

If you have any mild pain or discomfort you can take paracetamol, or ibuprofen assuming you have tolerated this before.

If you experience any of the following you should contact Professor Jackson without delay on 020 7060 1968 (NB. Out of office hours, the voice message will give an emergency mobile phone number for you to call):

- moderate to severe, or worsening pain
- increased redness or feelings of pressure in or around the eye
- rapid deterioration of vision

If you cannot contact Professor Jackson for any reason you should attend a walk-in eye emergency clinic, such as Moorfields Eye Hospital or the Western Eye Hospital.

What medication do I need to take after surgery?

The nursing staff will give you eye drops to use in the operated eye, after surgery. These eye drops contain an anti-inflammatory and antibiotic. In most cases, these will need to be used for 4 weeks - four drops a day for the first week, three drops a day for the second week, two drops a day for the third week, reducing to one drop a day for the fourth week before stopping. If you require any other eye medications, Professor Jackson will advise you. If you are unable to give yourself eye drops make sure you have someone available to help you. You can take any of your regular oral medications immediately after surgery. If you take regular eye drops these will usually re-start as soon as the eye pad is removed, but check with Professor Jackson. If using more than one eye medication space the eye drops apart by a few minutes, or you may find that one drop just washes the other out of the eye. If you worry that an eye drop has not gone into your eye, it is usually better to give an extra drop than risk missing one.

Do I need to take any precautions after surgery?

Most people are able to return to their normal activities within a few days of cataract surgery. If you work, you should allow about five days off work. If you wish to return to work sooner it will not damage your eye, but you may need the time to recover so it is best to have the time available.

For two weeks after surgery you should avoid:

- dusty environments
- swimming
- heavy lifting
- contact sports or other activities that could lead to a blow to the eye
- getting water into the eye when washing your hair etc.

Wait 5 days after surgery before resuming running or other strenuous exercise. You can apply make-up one week after surgery.

It is safe to fly after cataract surgery. However, it is sensible to remain in the UK for a least a week after surgery, in case you have any post-operative problems.

You only need one normally seeing eye to drive a car or motorbike, but not if you have just lost vision in the second eye, as it takes time to adapt to driving with one eye. Straight after surgery your vision in the operated eye may be worse than before surgery, as you recover from the operation. Therefore, if you have normal vision in the unoperated eye, you can resume driving as soon as the vision in your operated eye has settled to at least the level prior to surgery, and you feel safe. If your unoperated eye has reduced vision you should check with Professor Jackson about if and when you can drive.

Whilst the vision is reduced in the operated eye you should take care to avoid injury, as judging distances may be more difficult than usual.

When will I need to come back to see Professor Jackson after surgery?

Most people come back for review 2-3 weeks after surgery. In some cases you may be asked to come back the next day or in the first next week.

Professor Jackson asks you to see your optician 4-6 weeks after surgery to check your refraction and dispense new glasses as necessary. If you are going to have your second eye operated on straight away, it will be sensible to wait until after this, and get both lenses changed together. It would help if you could please ask your optician to send Professor Jackson a copy of your final spectacles prescription, for his information.

Any further questions?

If you have any further questions regarding cataracts and the benefits and risks of treatment please do not hesitate to contact our office on 020 7060 1968.