

# CATARACT SURGERY

Jonathan Luck FRCS FRCOphth



THE LUCK VISION

PARTNERSHIP



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## INTRODUCTION

Over the years technological advances have made cataract surgery one of the safest and most frequently performed procedures worldwide.

People undergoing cataract surgery will often comment on the life-changing qualities of the procedure, with not only their sight being restored, but colours being brighter and more vivid, and also being less dependent on glasses afterwards.

We've created this short brochure to give you an introduction to cataract surgery and what to expect when you come for a consultation, and if you have surgery.

It's not designed to replace a detailed consultation, but we hope it'll give you a reasonable idea about what to expect.

## INTRODUCTION

What our patients say:

“The operations to remove my cataracts were performed quickly and efficiently by Mr Luck with minimal discomfort and great success. The supporting staff at Circle were professional, excellent and attentive. I cannot recommend Mr Luck too highly”

Mrs Joye D - cataract patient



MR JONATHAN LUCK

## ABOUT JONATHAN LUCK

Various factors influence the likelihood of a successful outcome after surgery, but the surgeon performing the procedure is amongst the most important. Jonathan Luck is a Consultant Ophthalmic Surgeon at the CircleBath Hospital and the Royal United Hospital, Bath. As a specialist cataract and refractive surgeon, he has carried out many thousands of procedures over the last 20 years. He has an excellent reputation both for his surgical expertise and his professional and personable approach.

Mr Luck is a senior examiner for the Royal College of Ophthalmologists (RCOphth), and sits on the committee that designs and writes the final RCOphth examinations. He is a faculty and committee member of the RCOphth microsurgical skills team. He is an elected council member of the United Kingdom Society of Cataract and Refractive Surgery, and the secretary of the British Society of Refractive Surgeons.

Mr Luck uses only the latest technology and lens implants, and unlike some other clinics, Mr Luck will see you personally at the consultation, and will carry out and supervise every aspect of your care.

## WHAT IS A CATARACT?

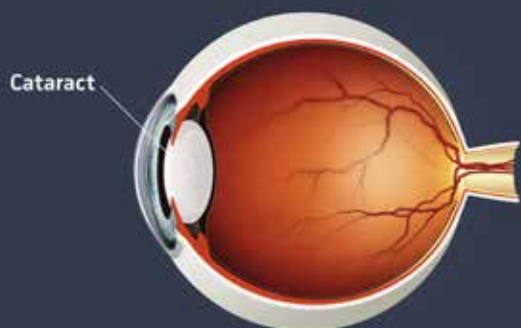
Your eye is like a camera, and has a lens at the front of the eye that sits just behind the iris, the coloured part of the eye. Light travels through the pupil, which is the hole in the middle of the iris, and is focused by the lens onto the retina, the light sensitive tissue lining the back of the eye.

A cataract is a cloudy or opaque area in the normally transparent lens of the eye. If this is significant, it scatters or blocks the light passing through the lens and results in blurred vision.





AN EYE WITH A  
CLEAR LENS



AN EYE WITH  
A CATARACT



## HOW DOES A CATARACT AFFECT SIGHT?

Early lens changes or opacities may not disturb vision, but as the lens continues to change, several specific symptoms including blurred vision, glare, increased nearsightedness or distorted images may develop.

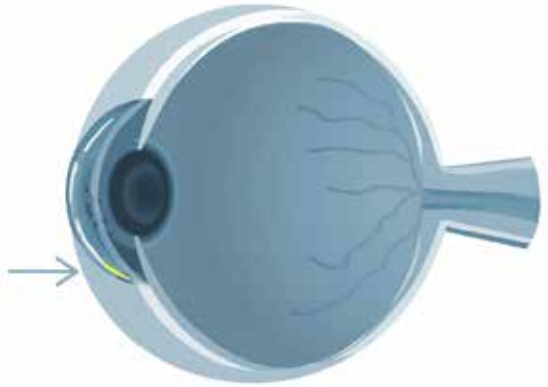
Approximately 50% of people in the UK aged 65 to 75 and 70% of those aged 75 and over have cataract, although it's possible to develop cataract at any age. Cataract usually develops as part of the ageing process, but can also result from eye injuries, certain medical problems such as diabetes, medication such as steroids, or by genetic inheritance.

Currently there are no medications, eye drops, glasses or exercises that will make cataracts disappear. You may wish to have your cataract treated as soon as your vision interferes with your daily life and your ability to work, read, or do the things that you enjoy. You may need surgery if you have a driving licence and wish to continue to drive, as you must reach the Drivers and Vehicle Licensing Authority (DVLA) Standard (the ability to read a standard number plate in daylight with both eyes open at about 20 metres).

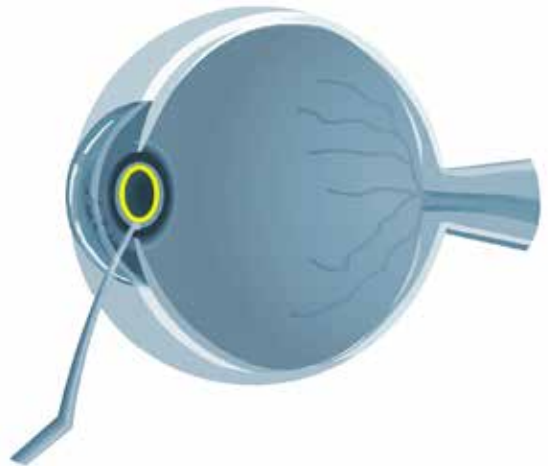
## HOW IS THE SURGERY DONE?

The surgery is usually done as a day-case under a local anaesthetic which freezes the eye. Through a tiny cut in the front of the eye, so small it doesn't need stitches, the cloudy lens is broken up by an ultrasonic probe by a process called phakoemulsification (or 'phako' for short). An artificial lens, known as an intra-ocular lens implant (or IOL) is then inserted, folded, into the space left where the natural lens used to be. The lens then unfolds into its original shape. The lens membrane, or 'capsular bag', is left intact to provide support for the new lens.

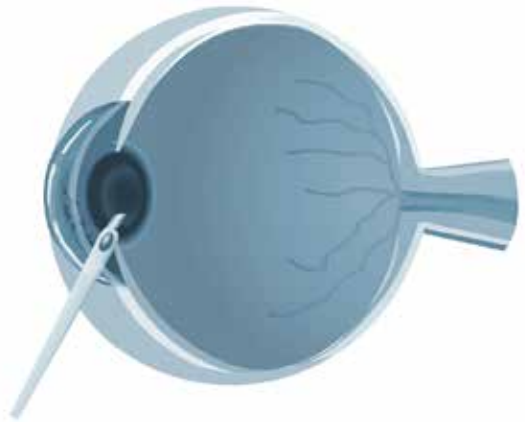
1) A tiny incision is made in the edge of the clear part of the eye, allowing access to the front chamber of the eye



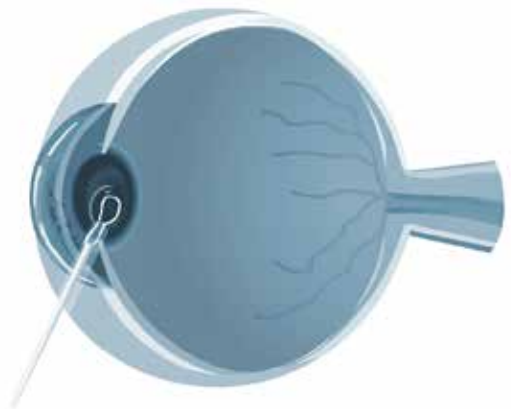
2) A circular opening is made in the transparent lens capsule



3) An ultrasonic instrument is used to remove the lens leaving the clear lens membrane 'bag' behind



4) The intraocular lens implant is injected, folded, into the capsular bag where it unfolds into place. No stitches are required.



## WILL SURGERY IMPROVE MY VISION?

Cataract surgery is an extremely safe and effective procedure, with generally excellent results. If however you have other problems with the eye, such as Age Related Macular Degeneration or Glaucoma for example, then your expectations may have to be modified. This forms part of the important discussion with Mr Luck that takes place before surgery.

## WILL I NEED GLASSES AFTERWARDS?

Usually, a lens is placed inside the eye that corrects the vision for distance, and reading glasses are required afterwards.

This approach gives excellent results, as lots of people don't mind using readers. Sometimes, although the distance vision is quite good, glasses are needed for demanding distance visual tasks such as driving or going to the theatre or cinema. If you have significant astigmatism (where the front of the eye is shaped more like a rugby ball than a football), then this can be a barrier to good unaided vision afterwards, unless treated at the time of surgery. This can either be by using special incisions in the cornea (the clear part of the front of the eye) or by using a special 'toric' lens implant (see below).

If someone is highly motivated to reduce their reliance on reading glasses, then a multifocal lens can be considered (see below)

## HOW SAFE IS IT?

Cataract surgery has a good safety record, but all surgical procedures carry a degree of risk. It's very important for patients to clearly understand not only what the benefits of surgery are, but also to know what frequent or serious risks exist.

In general, 95% of patients will have no problems at all either during or after surgery. Of the remaining 5%, most will have only minor problems that can either be dealt with at the time or will resolve spontaneously, and do not affect the outcome of the surgery. Some however will need further treatment, including further surgery. 0.1% of patients (1 in every 1000) may have a problem that results in loss of vision.

Complications or problems may occur during the surgery, or afterwards. The following only discusses frequent or serious risks, and is not exhaustive.



## HOW SAFE IS IT?

### DURING SURGERY

One of the complications that can occur during surgery is tearing of the lens capsule; this thin cellophane-like membrane is left intact to support the new lens. It is very delicate, and sometimes is torn during surgery. This can make lens implantation more difficult, and can disturb the vitreous gel inside the eye. This may require a different type of lens to be placed within the eye, or on some rare occasions, the eye is left without a lens for a short time and then a new lens is placed at a second procedure. The risk of this happening is very low (about 1 in 500).

Very rarely, if the capsule of the natural lens is torn, a fragment of the natural lens can drop into the vitreous jelly at the back of the eye. This would require a second specialised operation to remedy.

Bleeding at the back of the eye may occur, and can result in loss of vision, but is extremely rare.

## HOW SAFE IS IT?

Occasionally the lens may be damaged on insertion, and needs to be removed and a new lens implanted. This is usually uneventful, but increases the complexity of the surgery and can result in further complications.

### AFTER SURGERY

Serious risks include infection inside the eye (1 in 1000 approximately), and retinal detachment (1 in 1000 approximately). Although these conditions are potentially treatable, they could result in loss of vision in the affected eye.

Other less serious but more frequent complications include inflammation greater than normal and swelling of the cornea (usually self-limiting).

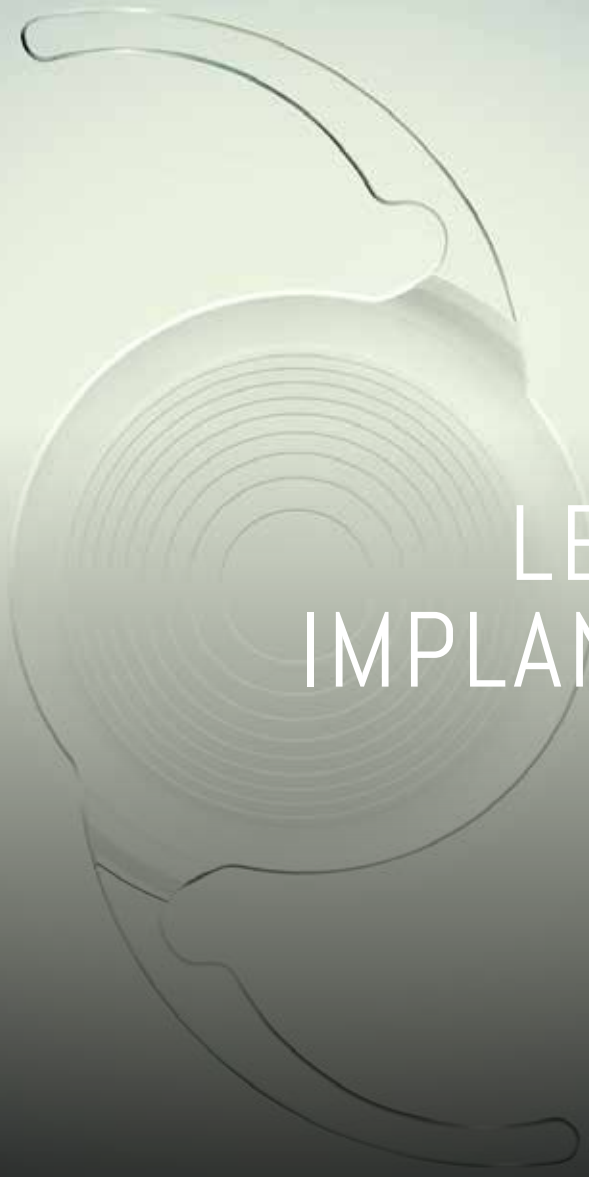
Swelling or waterlogging of the central retina, (or Cystoid Macular Oedema as it is properly known) occurs in approximately 2% of patients. It is generally self-limiting with additional drop treatment, but can on occasions lead to a reduction in vision that is permanent. We now prescribe a special drop after surgery to help lower this risk.

## HOW SAFE IS IT?

### AFTER SURGERY

Modern methods of calculating the power of the lens implant that goes inside the eye are extremely accurate so the desired 'refractive' outcome is often achieved. This means that most of the time the spectacle prescription after surgery is much less, especially for distance.

Although these measurements are generally very reliable, occasionally there is a 'surprise' where the patient has an unexpected requirement for spectacles. Usually this is tolerable, but occasionally will be problematical enough to require treatment. This may involve exchanging the lens for one of a different power. Obviously this is undesirable as a second procedure is required, with further small risk, but can successfully resolve the problem. Sometimes, an additional lens known as a 'piggyback' lens, can be implanted to correct an unexpected spectacle error after surgery.



# LENS IMPLANTS

## LENS IMPLANTS

An intraocular lens implant, or IOL, is an artificial lens that is precisely manufactured and engineered to go inside the eye. They come in a range of styles and strengths, and a key part of the consultation is deciding which type of lens would be the best to suit the requirements of the patient.

Lens technology has improved significantly since they were first conceived in the late 50's. There are now lenses that can correct very high spectacle error, including astigmatism, and also correct vision for distance and near using multifocal optics (see below).

## LENS IMPLANTS

There are 3  
main types of  
lens implant:



# LENS IMPLANTS

## 1. MONOFOCAL LENSES

These are the most commonly implanted lenses. Mr Luck uses Aspheric lenses, which are designed to give the best quality vision. These would be suitable for patients who don't mind wearing reading glasses, although often it is possible to offset the focus in one eye to allow 'blended' vision (often called monovision). This can work well, especially if this has already been experienced with contact lenses.

## 2. MULTIFOCAL LENSES

These lenses are specially designed to provide multiple focal points for both distance and near vision, and some of the very latest lenses can provide intermediate vision as well. They are excellent for those who are very motivated to reduce reliance on reading glasses. They are generally very successful, but there is a degree of compromise. Some patients will notice a degree of glare and haloes around lights, especially at night, and although this is generally not too bothersome, a small percentage of patients find it troublesome. These effects often improve with time.

# LENS IMPLANTS

## KEY POINTS ABOUT MULTIFOCAL INTRAOCULAR LENSES:

- They can offer true spectacle independence
- Many thousands have been successfully implanted
- There is a very high satisfaction rate
- They are not suitable for patients who are only slightly short-sighted, or who have a large amount of astigmatism (although in some special cases a Multifocal Toric lens can be fitted to treat the astigmatism)
- Approximately 75-80% of patients never wear glasses afterwards
- Some patients will have difficulty with glare and halos, especially at night, but this often improves with time
- Both eyes need surgery to have full benefit



## LENS IMPLANTS

- The lenses are not available on the NHS
- The cost of the lens is not covered by private medical insurance so the extra cost has to be borne by the patient if they are implanted after cataract surgery
- Some patients will require glasses for specific tasks afterwards such as using a computer
- After a multifocal lens is implanted, the brain perceives multiple points of focus, and has to learn to ignore the blurry images from the other focal points. This process is called 'neuroadaptation' and can take some weeks to months to fully occur. Many patients find this process seamless and are seeing well very quickly after surgery; some patients find it takes longer. If there is long-term failure to adapt, then rarely the lenses may have to be exchanged



# LENS IMPLANTS

## 3. TORIC LENSES

Both monofocal and multifocal lenses are available in a toric form. Toric lenses are designed to help astigmatism – the condition where your eye is shaped more like a rugby ball than a football. A small degree of astigmatism is in fact extremely common and almost normal; higher degrees of astigmatism are treatable with toric implants but there may be a small amount of residual spectacle error that requires correction with glasses. They are not available on the NHS and most medical insurers do not cover the extra cost involved.

A photograph of a modern, curved cafe counter. The counter is light-colored wood with a white top. Behind the counter, three staff members are working. In the foreground, there are stacks of white plates and coffee-making equipment. The ceiling is white with several pendant lights hanging down. The background shows a multi-level interior with a balcony and large windows.

# THE CONSULTATION

## THE CONSULTATION

Consultations with Mr Luck take place at the Circle Hospital near Bath. These involve careful and detailed discussion about present difficulties and any previous eye problems. A thorough eye examination takes place to ensure that there are no other problems present. This includes dilating the pupils, so that the back of the eye can be examined. This can blur vision for several hours, so you will need to bring a driver or take public transport.

The eyes will be scanned to determine the correct power of intraocular lens implant that will be placed during surgery. This quick and simple test is performed using the latest technology, using a laser beam to accurately measure the eye.

Some people with minimal cataract may choose to postpone treatment if their symptoms aren't too troublesome. The small risk of surgery needs to be balanced with the difficulties each individual is having with their vision.

For contact details or to book a consultation please see the back of this booklet.

## THE CONSULTATION

# For your consultation, please:

- Bring all your present glasses with you, and a copy of your most up-to-date spectacle prescription
- Bring any tablets or medicines you are taking (or a list of them)
- Avoid eye make-up on the consultation day (make-up can get into the tears and can make measuring the surface curvature difficult)
- Leave out your contact lenses prior to the consultation as they affect the measurements that we perform

## THE CONSULTATION

# The minimum time to leave out your lenses is:

SOFT LENSES

→ One week

HARD GAS PERMEABLE LENSES

→ Two weeks

We realise that this a major inconvenience for many, especially for those who wear contact lenses most of the time for high spectacle prescriptions. Measurements of the curvature of the cornea are very important for the calculation of the correct power of lens implant, and contact lens wear can significantly affect those measurements.

If you have private health insurance you will need a letter of referral from your GP or Optometrist so that your claim is authorised. You can send this in advance to Mr Luck at the address at the back of the booklet or bring it on the day.



# Treatment & Aftercare



## TREATMENT & AFTERCARE

The procedure is carried out at the Circle Hospital near Bath as a daycase. You should expect to be at the Hospital for about 3<sup>1/2</sup> - 4 hours in total.

If you are having a local anaesthetic, you may have a light breakfast or lunch beforehand. If you are having a general anaesthetic, then you should not have anything to eat or drink at least six hours prior to surgery. The day surgery unit will send you some pre-admission advice that will give you specific instructions.

## On the day of surgery:

- Wear light and comfortable clothing
- Remove all eye and face make-up including eye-liner, face powder, foundation and mascara (preferably avoid using these products the day before)
- Bring any prescribed medicines and / or inhalers with you
- If you wear contact lenses please remove them the day before
- If the weather is bright bring some dark glasses
- Make arrangements for a friend or partner to escort you home

Upon arrival for surgery, one of the Day Case Unit staff will place a small drug delivery bead just inside your lower lid. This is a very easy process, and you will not feel the bead once it is in position. It releases medication to dilate the pupil, and saves you having lots of stinging eye drops put in.

Mr Luck will come along and see you for a brief chat prior to surgery, to explain the process to you, and to answer any last minute queries or concerns. He will place a felt-tip mark on the skin above the eye - this is a very standard safety procedure for everything you have two of! There will be quite a few 'pre-flight' checks that are there for your safety. They seem obvious, but are very important. He will also ask you to sign the informed consent document which you will have been sent in advance.

When you come along to Theatre, a local anaesthetic will be administered to make the operation painless. This is usually just some numbing drops, but occasionally we will deliver the anaesthetic via a tiny tube underneath the eye - no sharp needles are used. The other eye will be covered up. The skin around your eye will be thoroughly cleansed, and sterile coverings will be placed around your head. During the procedure, although you may see light and movement, you will not be able to see the surgery while it is happening, and will not have to worry about keeping your eye open or closed. The operation usually takes about fifteen minutes, sometimes a little longer.





## TREATMENT & AFTERCARE

### Immediately after surgery:

When the operation is over, a clear plastic shield will be placed over your eye. This is just to protect your eye for an hour or two while it wakes up – you don't have to wear it after that.

The local anaesthetic takes anywhere between half an hour and two hours plus to fully wear off. If you have had a tube-delivered anaesthetic then you may notice at first that your eyelid is droopy or even closed – this is normal, and recovers promptly. Double vision during this “waking up” process is also very common and soon wears off. If you have just had drops as anaesthetic, then you will see straightaway, but things will be a bit blurry for 12-24 hours, but improve steadily.

After a short stay back on the day case unit (and some refreshment!) you will be ready to leave. You should plan to have someone drive you home or take a taxi.

## TREATMENT & AFTERCARE

We will give you some drops to use - instructions on how and when these should be used will be given on the day. You should wash your hands before using the drops, and put them in by gently pulling down your lower eyelid, and squeezing the bottle held a safe distance above your eye. Don't worry if you miss - try again - you can't put too much in. If someone can put them in for you, then that's ideal. The daycare staff will give you a contact number in case of any problems.



## Immediately after surgery:

The following day, your vision should be quite reasonable, although possibly quite blurry to start with. It should improve within 24-48 hours. It is normal for the eye to be a little inflamed, gritty, and watery for a time after surgery. You should try to have a restful couple of days, although you should feel able to resume normal activities within a day or two.

You can bend down to pick things up, and after 24 hours you may wash your hair. Be careful not to get any shampoo in your eye, although generally it won't do any harm. Don't use mascara for the first two weeks, or any other products that may cause pressure on the eye. After this time, apply products around the eye sparingly and with care for the next week or two.

You can drive as soon as you feel comfortable and confident, and as long as you can read a car number plate from about 20 metres away (about three car lengths). Mr Luck will normally see you within the first week to check on progress, and advise on driving etc.



## Following surgery you will need to:

- Use the eye drops as prescribed (and only the prescribed drops)
- Avoid very strenuous activities for a couple of weeks
- Be careful not to rub or press on your eye
- Continue normal daily activities and moderate exercise
- Use over-the-counter pain medicine if necessary
- Report any significant pain or deterioration of vision immediately

## TREATMENT & AFTERCARE

What if I have a problem?

## TREATMENT & AFTERCARE

If you have any worries or concerns prior to surgery please contact Mr Luck's secretary Nicky on 01761 422265.

The daycase staff will contact you the day after surgery to make sure that all is well. They will give you a contact number to call if you develop any difficulties.

Following surgery it is extremely unlikely that you will have any problems. However, if you have an accident or you develop significant pain or loss of vision then please contact us on the daycare number provided straightaway.

If this is after normal office hours, then please go the A&E department at the Royal United Hospital in Bath. Mr Luck is an NHS consultant at the hospital, and would usually be able to see you the following day following any urgent treatment. If Mr Luck was away, then one of his consultant colleagues would take over your care.

FAQS

# Frequently Asked Questions about Cataract surgery

## FAQS

Does the lens implant wear out?

No – the lens is made from a high-tech acrylic polymer that is completely inert. There are no moving parts, so the lens can't wear out. They are designed to last a lifetime.

Do you treat both eyes at the same time?

There are some surgeons who treat both eyes at the same time, and it is probably safe to do so. However, common practice (which Mr Luck agrees with) is to treat one eye at a time. The main advantage is to see what the outcome is like for the first eye – this sometimes allows slight modifications to the lens power for the second eye to better suit the requirements of the patient.

## FAQS

Can the cataract grow back?

No, but some patients (roughly 10%) may notice some blurring of vision some years after having successful surgery. This due to clouding of the transparent membrane that is left behind to support the artificial lens. The appearance is rather like frost on a window. If it is minor, and no symptoms are noticeable, then it is best left, but if vision is affected then it can be treated with a special laser, the YAG laser, which allows the surgeon to make a hole in the cloudy capsule and clear the vision.

This simple outpatient procedure takes only a few minutes to complete, and swiftly restores vision. Most patients don't have any after-effects, but complications can occur. These include raised internal eye pressure, retinal tears or detachment, especially in myopic patients, and rarely, dislocation or movement of the lens implant. If you require laser treatment, then this will involve a separate fee from the original surgery (which is usually some years in the past). YAG laser treatment is usually covered by private medical insurance.

# FAQS

## THE PROCEDURE

What if I cough / move / blink during the operation?

Before the procedure starts, you will be made comfortable on a bed, and there is a specially shaped pillow to rest your head in. This minimises any movement, although keeping still is important. A gentle metal spring device is used to hold the eyelids apart. An anaesthetic, in the form of drops or delivered via a blunt tube, freezes the eye so you won't feel any pain that might cause you to move. A nurse or orderly will hold your hand if you wish during the procedure, and you can indicate if you feel the need to cough or sneeze, and the procedure can be paused.

Can I have a general anaesthetic?

95% of patients are fine under just a local anaesthetic. It's natural to be slightly apprehensive, but once patients realise that the surgery isn't going to hurt, then they relax. The surgery does not take long. However, if anxiety is a major issue for you, then sometimes a general anaesthetic is preferred.

## FAQS

Will I see anything during the surgery?

Right at the start there may be some vision, but very quickly this gets very blurry. Vague shapes and movements may be seen, and some notice coloured lights.

How long does the surgery take?

The procedure usually takes between 10 and 15 minutes to complete, but sometimes takes longer.

## AFTERWARDS

Will I need to use eye drops afterwards?

Yes - these are normally used to up to four weeks after the procedure. Full instructions are given on the day of surgery.

What do I do between my procedures as far as glasses are concerned?

Mr Luck will provide specific advice tailored to the individual. This may be to wear just one contact lens, or go without glasses.



## FAQS

Will my vision change as I get older?

Changes in the natural lens are usually the reason why vision alters as one gets older. After a lens implant, the vision should be much more stable. Small changes in the requirement for glasses are however possible in the future.

Do I need to see my optician again?

Mr Luck will advise on the need for glasses afterwards, and the patient's outside optician will then do an eye test and dispense glasses in the normal way. Even if no glasses are required, then a regular routine check-up on eye health is a good idea every 18 months or so.

Will I need glasses afterwards?

Most cataract patients will have clear distance vision but require reading glasses, unless a multifocal lens has been implanted or there is monovision. Some people, even if they have had a multifocal lens implanted, will need glasses for some tasks.

## FAQS

Can I bend down to pick things up?

Yes, but don't lift any heavy weights (or any weight that would cause you to hold your breath). We advise patients to avoid heavy gardening duties for a week or so.

How soon can I exercise after surgery?

Gentle low-impact exercise can be resumed after a few days. High impact activities such as running ought to be avoided for at least a fortnight. You should also avoid swimming for a fortnight.

When can I start to use eye make-up?

Avoid eye make-up and mascara for at least two weeks. Facial products such as foundation and powders may be used carefully after a day or so.

## FAQS

When can I drive?

Driving can be resumed can drive as soon as you feel comfortable and confident, and as long as you can read a standard car number plate in daylight from 20 metres away (about three car lengths). Mr Luck will normally see you within the first week to check on progress, and advise on driving etc.

When can I return to work?

This depends on your job. If you are office-based, then usually within a few days you should be comfortable enough to return to work. If you work in a dirty or dusty environment, then it may be longer before you can safely return.

When can I fly?

Flying as a passenger is possible the day after surgery. If you are a pilot, then the Civil Aviation Authority will need to clear you before you can fly.





For appointments and enquiries please contact:

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