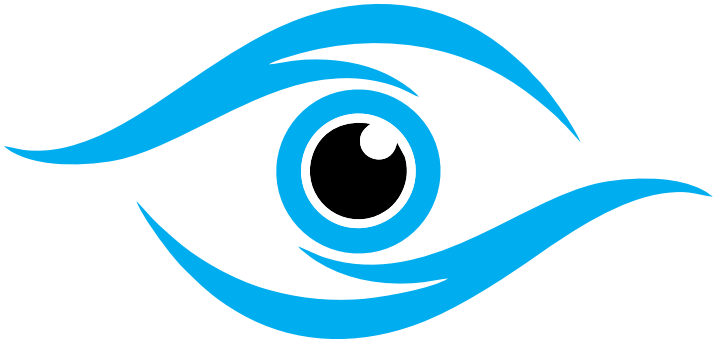
# Cataract Surgery



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## About Mr Kashani

Mr Shahram Kashani is a UK trained consultant ophthalmologist with specialist interest in high volume and complex cataract surgery as well as premium intraocular lens (IOL) implant. He also has an interest in management of challenging retinal disorders and inflammatory eye disease as well as general ophthalmic pathology. He held the prestigious position of clinical lead in ophthalmology at East Sussex NHS Trust and is currently the lead and registered manager for the South East Eye Surgeons (SEES) consortium as well as medical appraiser at East Sussex NHS Trust and an examiner for the Royal College of Ophthalmology.

He obtained his medical degree at St George's Hospital Medical School, London, in 1998. He completed his higher specialty training in ophthalmology at the competitive North London training programme, across many teaching hospitals including 3 years at the world-famous Moorfields Eye Hospital. He was selected for advanced fellowships in medical retina and inflammatory eye disease at Chelsea and Westminster hospital and Moorfields Eye Hospital before being appointed as a substantive consultant ophthalmologist at East Sussex NHS Trust in 2011.

As a highly experienced cataract surgeon, Mr Kashani has a keen and active role in the mentorship and training of future ophthalmic surgeons. He has received many plaudits from junior trainees, consultant colleagues and nursing staff.

Mr Kashani was a valued member of the curriculum subcommittee at the Royal College of Ophthalmologists and has been involved in the process of national selection of trainees for doctors entering a career in ophthalmology. Mr Kashani is a member of both the Royal College of Ophthalmologists and Royal College of Physicians. He has a Master's degree in Healthcare Leadership and Management.

## *How does the eye work?*

The eye, albeit small, is a vastly complex organ which relies on precision to produce the clear images that help us see the world around us.

An outline of the basic anatomy of the eye is illustrated below (figure 1).

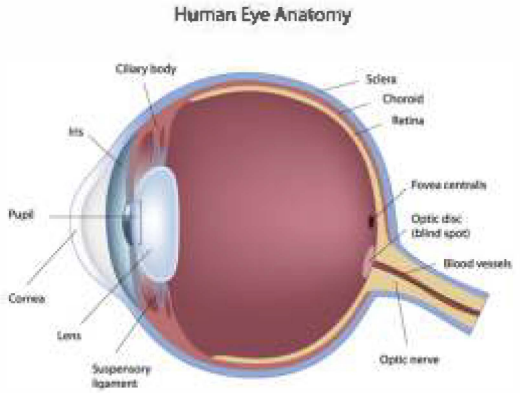


*Figure 1: How light is focused on the eye*

In order for one to 'see' anything, light passes through the front of the eye, and is precisely focused by the cornea and the lens, onto the retina at the back of the eye (figure 2).

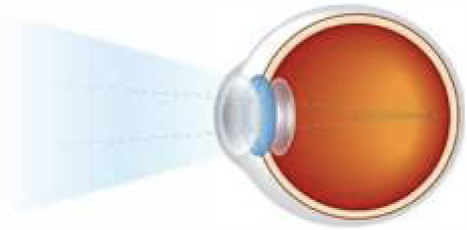

*Figure 2: How light is focused in the eye*

When light reaches the retina, it activates its sensitive photoreceptor cells, which in turn form electric signals. These signals travel along nerve fibres to the optic nerve which acts like a large cable and carries them to the brain, where they are interpreted so we can see the world around us. Any interruption in this delicate pathway can result in blurry vision.

## *What is a cataract?*

The natural lens of the eye is normally clear due to the specific arrangement of the cells that make up the lens.

Cataract is the medical term given when the natural lens becomes cloudy as a result of changes in its structure (figure 3).

A cloudy lens cannot focus light as precisely onto the back of the eye. This gives rise to symptoms such as:

- Reduction in vision (misty/cloudy)
- Glare (from headlights or sunlight) and halos
- Reduced hue and quality of colours
- Reduction in contrast sensitivity
- Frequent change in your spectacle prescription

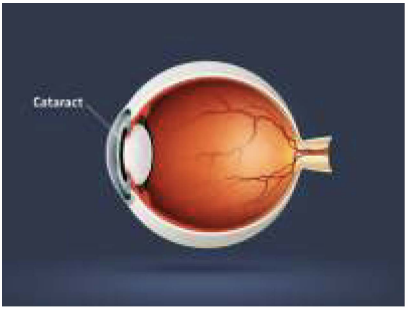


*Figure 3: Cataract - the natural lens has become cloudy*

Cataracts are a common and important cause of visual impairment worldwide.

Most frequently, cataracts develop as we get older and are a normal part of the ageing process.

Other causes include trauma, diabetes, using certain medications (e.g oral steroids), hereditary factors and history of inflammatory eye disease. Cataracts can develop very slowly and are often diagnosed as an incidental finding during a routine eye exam by the optician. However, in certain situations cataracts can progress much more rapidly. Most people will develop cataracts in both eyes and if left untreated, cataracts will eventually lead to significant visual impairment.

## *How are cataracts treated?*

The only way to treat cataracts is surgery, which is curative. There are no drops or tablets for management of cataracts.

Cataract surgery is the most common elective surgical procedure in the UK and accounts for a significant proportion of the surgical workload of most ophthalmologists.

The surgery involves extraction of the natural cloudy lens (cataract) and insertion of a new, clear artificial lens. This is called an intraocular lens (IOL) and it will stay in the eye for life.

## *Do I need to have cataract surgery?*

It is not harmful to leave a cataract once you are diagnosed.

Cataract surgery is only indicated when the vision in your eye is decreased to such an extent that it interferes with your everyday life.

The threshold for cataract surgery is different for different people depending on their lifestyle and need for change.

Certain factors, such as the presence of other coexisting eye conditions (e.g. glaucoma or retinal disease) can affect the success of cataract surgery and these factors should be discussed with you when making a decision whether to proceed with surgery. During your consultation, Mr Kashani will be able to explain what to expect from the surgery and the optimum time to have your cataract operation.

## *Before the surgery*

You will have an appointment with Mr Kashani. He will perform a thorough examination of your eyes and discuss the pros and cons of cataract surgery with you.

Please bring:

- A list of your regular medications
- Your most recent prescription from your optician if you have it
- A list of any previous eye problems or interventions

You will also have a pre-assessment, where measurements of the eye will be taken in order to help determine which type of new intraocular lens (IOL) is best suited to you.

**It is very important to let Mr Kashani know if you have had refractive laser eye surgery in the past, as this may affect the calculations and choice of IOL**.

Mr Kashani will go through intraocular lens options during your appointment. Below is a **general** outline of the types of lenses that Mr Kashani works with, including 'Premium Lenses':

Premium IOLs mainly include toric, Extended Depth Of Focus (EDOF) and multifocal IOLs which aim to improve your vision and reduce your dependence on spectacles for various focal points such as driving (far vision), working on your computer (intermediate vision) and reading a book (near vision).

- **Monofocal lens** – the type available on the NHS. It can only correct farsightedness (hyperopia) or short-sightedness (myopia), and never both at the same time, which could leave you wearing glasses for one focal point. These lenses do not address the issue of pre-existing astigmatism in your eye. If you have significant astigmatism, you will likely need glasses for far and near vision regardless, after surgery with a monofocal lens.
    - Monovision technique – a monofocal lens can be used to focus one eye for distance vision and the other for near vision to reduce your dependence on glasses. Both eyes are able to work well together but this technique is not suitable for everyone.
- **Toric lens** – a premium lens which aims to neutralise the astigmatism of the cornea. Astigmatism, in simple terms is present in people whose eyes are shaped more like a rugby ball than a football and where the cornea is not a perfect curve. An eye with significant corneal astigmatism will not focus the light onto the retina when using a monofocal lens, giving rise to blurry vision without glasses. A toric lens can help focus your vision at a particular distance and correct your astigmatism, reducing your dependence on spectacles for one single focal point (distant or near vision).
- **Multifocal lens** – a premium lens which helps focus your vision at multiple distances, far, intermediate and near vision. Multifocal lenses work by splitting light that enters your eye in more than one focal point allowing you to switch between far, intermediate and near vision. These lenses significantly reduce the need to wear glasses after surgery. However, there are potential side effects (e.g halos, glare, reduced contrast) with this type of lens that need to be explored in detail at your consultation to make sure that this lens will suit your needs.
- **Extended Depth of Focus (EDOF) Lens** – a premium lens which works by creating a single elongated focal point when light enters the eye and enables you to focus at a continuous range of distance, intermediate and near vision. EDOF lenses tend to cause less glare/halo effect when compared to multifocal lenses but the near vision can be less clear when compared to a multifocal lens.

Patient selection and discussing expectations is of paramount importance when choosing a premium IOL. At the time of your consultation, Mr Kashani will discuss the pros and cons of having a premium vs monofocal IOL, as well as what you may expect after the surgery. Choosing the correct lens is very important, as 'lens exchange' requires further surgery and should be avoided due to high surgical risk.

## *During the surgery*

Cataract surgery is performed as a day case procedure, which means you will not need to stay in hospital overnight.

The operation itself normally takes 15 to 20 minutes. However, you should be prepared to spend a few hours in the day surgery unit. During this time the nursing team will admit you and insert a pellet under your lower lid or use drops to dilate your pupils. Mr Kashani performs the majority of his cases under local anaesthetic. If you are feeling very nervous please discuss this with Mr Kashani during your consultation – there are other anaesthetic options that can be employed such as oral or intravenous sedation or even general anaesthetic.

The operation will be performed whilst you are lying on your back. The operating tables are adjustable and the team will ensure you are comfortable before the surgery starts.

The eye will be cleaned, and your face will be covered using a sterile drape. When the eye is anesthetised, Mr Kashani will proceed with the operation. It is likely that you will see bright lights and colours, rather than anything detailed.

Mr Kashani will make a small incision in the cornea of the eye and will inject a viscoelastic agent to create space between the cornea and the lens, which will allow him to proceed with the surgery.

The natural lens lies within a capsule bag and a small circular cut is made in the front part of the bag, in order to gain access to the lens.

The lens is then 'emulsified' using ultrasound energy (phacoemulsification) and removed (figure 4). The back part of the capsule bag is left intact in order to hold the new artificial lens in place.

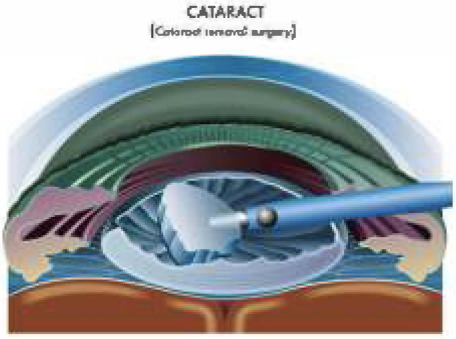


*Figure 4: Phacoemulsification of the natural lens*

The bag is then polished and the new IOL is inserted in place (figure 5).

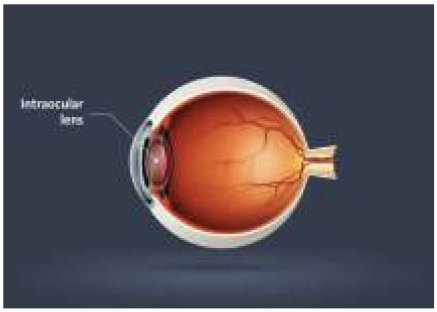


*Figure 5: The new artificial lens (IOL) is in place*

The viscoelastic agent is removed in order to return the space between the cornea and lens back to its normal dimensions. The wounds are hydrated to prevent leakage – under normal circumstances, there is no need to place any sutures in the cornea.

Finally, an antibiotic is injected under the cornea in order to minimise the risk of infection.

Your eye may be covered with a dressing or a shield.

Once the team has performed a few checks after the surgery you will be discharged home. Please refer to the animation section for cataract surgery on Mr Kashani's website: https://eastbourneeyesurgeon.co.uk.

## *After the surgery – aftercare*

Once the anaesthetic wears off your eye may feel sore. Over the counter pain killers such as paracetamol should help ease any discomfort. A post-operative instruction sheet will be provided to you as well as details of your follow up appointment with Mr Kashani and emergency contact details.

**Shield/Dressing:**

- A plastic shield will be used to cover the operated eye; most patients are advised to wear this when going to sleep for the first night after surgery after which point it can be discarded. Your eye might be red when you remove the dressing – this should improve over the next few days.

**Drops:**

- After the surgery you will be asked to put drops in the eye for about 4 weeks. These contain an antibiotic (to prevent infection) and a steroid (to reduce inflammation and encourage healing). A member of the team will give you the instructions before you leave on the day and will go over eye drop administration technique and frequency with you. Sometimes an additional drop may be given to minimise inflammation.

**Washing Your Face:**

- You should be careful when washing your face. Avoid direct splashing with water for the first week after your surgery. Use a clean face towel/cloth to gently cleanse your face and wash around the eye, avoiding direct pressure over the eye.

**What to avoid until your eye has recovered fully from surgery:**

- Rubbing your eyes
- High risk activity such as swimming or taking part in contact sport
- Wearing make-up
- Heavy lifting, gardening and strenuous exercise

**What to consider:**

- Your eyes may feel sensitive to light – using a pair of dark glasses may come in handy.
- Your vision will be very blurred initially. It may take a few days for it to become clearer.
- Full recovery after cataract surgery can take 3-4 weeks.
- The eye may feel slightly gritty for a while after the operation. Using a new bottle of preservative free lubricants can help soothe your eye. Please allow 5 minutes between using various drops.

**When can you drive:**

- It depends on the health of your other eye. If your non-operated eye has good vision and has no other problems, then you can drive a normal sized car (please see DVLA guidance – https://www.gov.uk/driving-eyesight-rules) when you feel comfortable to do so.
- If you have any problems with the non-operated eye, it is best to wait until your post-surgery appointment.

**Time off work:**

- This depends on your occupation, however, in general Mr Kashani advises patients can have up to 2 weeks off work following surgery.

## *Complications of cataract surgery*

Cataract surgery is very safe with an overall success rate of 98% or higher.

However, as in all surgical procedures, cataract surgery carries the small risk of complications, which may require the need for further treatment or surgery. Examples of the main potential complications include (list not exhaustive):

- Rupture of the capsule bag on the back of the lens (1-2 %)
- Retinal tear / retina detachment (0.2-0.5%)
- Cystoid macular oedema – small pockets of fluid accumulating at the macula needing prolonged use of drops (2%)
- Suprachoroidal haemorrhage – a bleed during surgery, which can require the operation to be stopped and completed at a later date (0.06-0.2%)
- Eye infection (endophthalmitis) causing irreversible blindness (1 in 1000)

Despite having a complication, the majority of patients will make a slow recovery and vision can be improved unless a significant infection or bleeding has occurred.

## ***Please contact us straight away or go to A&E if you develop any of the following symptoms after cataract surgery:***

- The eye becomes increasingly **red, painful**, with **reduction in vision** or there is **discharge from the eye**
- You see **flashing lights, floaters, shadows** or **curtains** in your field of vision
- **Worsening of your vision** – blurred central vision or distortion
- **Red, sore, light-sensitive** eye after completing the course of eye drops

## *Further information and Contacts*


Secretary: Lisa Hyde

Phone: 07307 184 540

Email: shahram.kashani@nhs.net

www.eastbourneeyesurgeon.co.uk

@eyesurgery1

@eastbourneeyesurgeon1


Please do visit Mr Kashani's website for more information. It has a breadth of images, and animation videos that can aid your understanding of cataract surgery. For more in-depth knowledge, the website also provides access to his educational talks targeted at ophthalmic professionals.

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