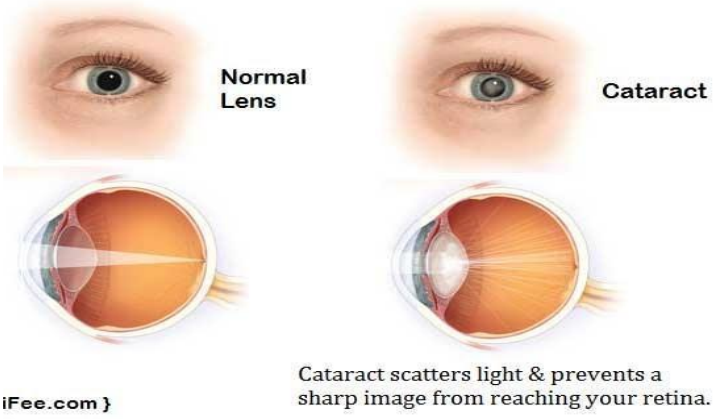
A. Cataract Surgery/Lens replacement surgery

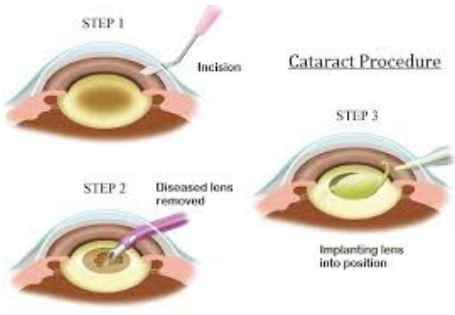
A cataract is a clouding of the eye's natural lens, which lies behind the iris and the pupil. With modern surgical techniques, you can have surgery at any stage when the cataract is affecting your daily life.



What does cataract surgery involve?

Cataract surgery involves removing your cloudy lens and replacing it with an artificial lens. It is normally performed as day surgery under local anaesthetic, so you are awake but your eye will not feel any pain. The operation usually takes approximately 15-30 minutes. Most patients do really well with numbing eye drops only but sometimes local anaesthetic injection may be required. Some patients choose to have surgery under sedation or general anaesthesia. *Please discuss it during your first consultation.*

Measurements were taken before the operation to decide which lens strength is right for you. *The most common choice is the standard monofocal lens, which aims to make you glasses-free for distance so that you only need glasses for reading. However, there is a chance (10-20%) you will need glasses for both distance vision and reading after surgery, particularly if you have a history of astigmatism or a high refractive error.*



What are the risks of cataract surgery?

Cataract surgery is usually very successful, with over 95 % of people noticing an improvement in their vision after surgery if there are no other pre-existing eye conditions. However, it is important to realise that there is always a risk of complications associated with any operation.

Some of the complications that may occur **during** the operation include:

- Internal bleeding, Damage to other structures of the eye, including the capsule surrounding the lens, Incomplete removal of the cataract, Part of cataract moves in the jelly of the eye.

Some of these complications can be dealt with at the time of the surgery or just after surgery as a second procedure but rarely (<0.5%) it involves another surgical team to manage the complication.

Potential complications occurring **after** the operation include:

- Severe infection, Fluid accumulating in the retina, Detachment of the retina, Incorrect strength of lens inserted, Clouding of the membrane behind the lens

These complications can sometimes occur even if the operation itself is carried out perfectly. Many of these complications are manageable, although it may mean that other treatments may be required and that the recovery period may be longer than usual. This includes the need for additional surgery in approximately one in 100 cases. The most serious consequence of all the complications is the risk of loss of vision, which may be temporary or permanent. The chance of severe or complete permanent loss of vision in the operated eye is less than one in 1,000. In approximately one in 10 cases, the membrane behind the artificial lens can become cloudy making your vision more blurred again. If this happens an outpatient laser procedure may be needed some time after surgery (YAG laser capsulotomy).

We would like to reassure you that these risks are not common, with over 95 of every 100 operations occurring without any complications.

Are there any alternatives?

The alternative to cataract surgery is to discuss with your optician if a change in glasses can improve vision. You can delay surgery as long as you can function normally and you are getting eye checks regularly. Sometimes, cataracts can become dense after some time, which can increase the risk of cataract surgery.

B. Premium intraocular lenses

When a cataract is removed from the eye, a new lens (intraocular lens, IOL) is typically placed within the eye in order to allow clear vision. One of the benefits of private cataract surgery is the ability to choose what kind of lens is implanted; *only standard monofocal lenses are available on the NHS and via insurers.*

Most people choose to have a lens placed in the eye that typically allows them clear distance vision without glasses, but, with the placement of a 'standard' IOL, patients would almost certainly require reading glasses for close work. With modern eye measuring techniques, the overwhelming majority (apx 90% but not all) of patients achieve their 'refractive' goal or desired refraction.

There are three main kinds of *premium* intraocular lenses (IOLs),

A. To correct astigmatism: (if you have astigmatism >0.75D)

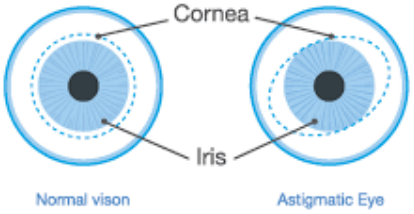
1. **Toric IOL**

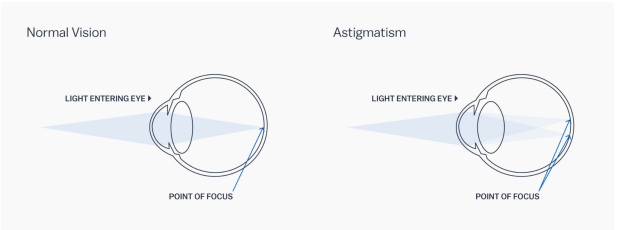
B. To correct Near vision (need a toric version of below if you have astigmatism >0.75D)

1. ***MF or Multifocal IOLs*** **(Normal or toric)**
2. **EDOF IOLs'** **(Normal or toric)**
3. **EMV** blended or enhanced monoision lens (toric version not available at present)

Toric lenses

When we think of an eye's shape, we generally think of a round structure, like a football. In truth, most eyes are more rugby ball-shaped, with the eye being a little squashed in one direction. This irregularity is known as astigmatism and is needs to be corrected with glasses.

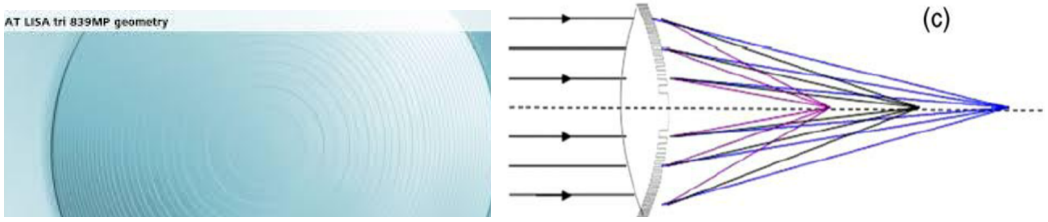




A *toric IOL* is a customised lens placed inside an eye to correct a patient's astigmatism. After surgery, the chance of needing glasses for distance is greatly reduced (90%), although, *without* the simultaneous placement of a *multifocal lens* (*'toric multifocal'*), patients should still expect to need reading glasses. Cataract surgery in patients with marked astigmatism using standard, non-toric IOLs do typically lead to improvements in vision, but patients should not expect that their final distance or near vision will be perfect without glasses.

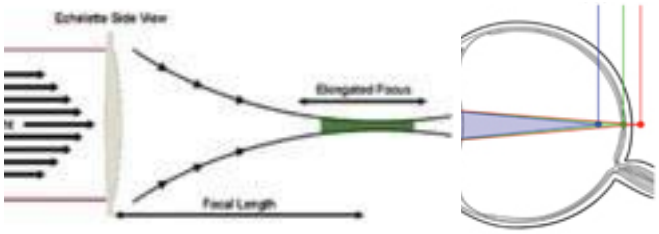
Option 1. Multifocal lenses (MF)

Multifocal lenses are specially designed to create three images at the same time, one of which is in focus for near, one for intermediate and one for distance. The patient's brain decides which image will be 'inspected' depending on what is being looked at. With such lenses, about 85% of people achieve day-to-day spectacle independence, meaning that typically they can both drive and read, e.g. a restaurant menu, without glasses. For more prolonged reading, such as a novel, however, many patients still choose to wear reading glasses. As multifocal lenses split the light entering the eye into three images, there is sometimes a compromise in the quality of vision in a form of reduced contrast and glare/haloes at night which may affect night driving. Multifocal lenses are probably unsuitable for patients with optically demanding hobbies & occupations. In the dark, some patients do complain of glare and haloes around lights; multifocal lenses are thus unsuitable for occupational night drivers or similar needs.



Option 2. Extended Depth of Focus (EDOF) Lens

EDOF is a new technology that has recently emerged as a premium IOL. EDOF lenses work by creating a single elongated focal point to enhance "range of vision" or "depth of focus" by creating a diffractive pattern. They provide better intermediate and near vision as compare to monofocal lenses and have less risk of reduced contrast and glare/haloes at night.



Option 3. Blended or enhance monovision (EMV)

RayOne EMV is the only patented lens that induces controlled positive spherical aberration to enhance the depth of vision in a monovision setup but one eye (the dominant eye) undergoes cataract surgery aiming to achieve good distance vision, while the other eye is set for closer distances. Aiming for a subtle difference in prescription between the two eyes (apx 1.00Dioptres) allows greater functionality around the house, and is often sufficient to allow supermarket shopping without glasses and some reading, all without the disadvantages of multifocal lenses.

Toric multifocal or Toric EDOF lenses

These lenses combine the benefits of both *toric* and *multifocal*/EDOF lenses, i.e. simultaneously improving astigmatism and aiming to achieve spectacle-independence for distance and near.

Costs of premium lenses

The cost of *toric* and *multifocal* lenses is significantly greater than for standard intraocular lenses. Most of the larger insurance companies do not fund the extra cost of these lenses, the cost is passed directly to the patient as an 'excess'. It is worth considering, however, the potential likely savings made on, for example, varifocal glasses in the future. There is no extra charge for the monovision technique, as standard lenses are used unless the patient has significant amounts of astigmatism, in which case toric lenses will be suggested.

What are the risks of lens implants?

Although your eyes will have been measured using a modern, laser-scanning technique, there is no absolute guarantee that the refractive outcome (spectacle prescription, if any, following surgery) will be perfect due to: the empirical nature of the formulae used to estimate the lens power; and the variation between individual patients' eyes in their response to surgery (e.g. lens position within the eye and astigmatic effect of incisions). This means that for distance, approximately 90% achieve a refractive outcome within 1 Dioptre of their goal. In other words, despite using modern laser-scanning techniques for measuring eyes, there is a small, but significant chance of being spectacle-dependent following surgery, for both distance and near. Subsequent corrective refractive surgery may be possible for some patients at a later date but is not included as part of this surgical package. For patients who have chosen multifocal and/or toric lenses, there will be a period of adaptation required and there is a risk of reduced contrast and glare/haloes at night which can interfere with nighttime driving. This may require further treatment which will not be covered in the current package.

In the unlikely event of a surgical complication, it is possible that a premium lens would not be an appropriate choice of lens, the decision being taken during surgery. It is important to understand that, in this eventuality, it may be necessary to use a standard intraocular lens (i.e. not a toric or multifocal lens). For some such patients, subsequent surgery to achieve spectacle-independence *may* be possible. In the rare event of a non-premium lens being used, the cost of the surgery will naturally be adjusted downwards to reflect the lower cost of the lens implanted.

Comprehensive comparison for different lens choices

	Standard Lens	Enhanced Monovision EMV	EDOF lens	Multifocal Lens
Type	Both eyes for distance	One eye for distance and one eye for near	Both Eye EDOF lens	Both Eye Multifocal Lens
Near vision	-	++	+++	++++
Glare and haloes	Least	minimal risk	Mild risk 90% can adapt	Moderate glare risk, 80% can adapt
Re-Surgery	No risk	Very small risk +	Very small risk +	Small risk ++

Re-surgery cost is not covered in package price or by the insurer and may need a different surgeon

Preferred option:

- **Standard intraocular lenses**
- **Toric intraocular lenses**
- **EMV/Enhanced Monovision lens**
- **EDOF intraocular lenses+- Toric**
- **MF/Multifocal intraocular lenses+-Toric**

It is important that you contact me in advance of surgery if you wish to be considered for an alternative type of lens. *Please find below a sample additional consent form, which you will be asked to. Please do not hesitate to contact Mr Wagh in advance if you have any questions regarding the proposed surgery*

Further information from the manufacture:

1. Zeiss At Lisa Lens (multifocal)
.https://www.zeiss.com/content/dam/med/ref_international/products/iols-injectors-bss-ovd/multifocal-iols/at-lisa-tri-family/pdf/atlisa-tri-family_en_32_010_0001iv.pdf
2. Zeiss At lara Lens (EDOF)
https://www.zeiss.com/content/dam/med/ref_international/products/iols-injectors-bss-ovd/edof-iols/pdf/at_lara_family_en_32_010_0062i.pdf
3. Alcon Vivity Lens (EDOF, X wave technology)
https://professional.myalcon.com/international/cataract-surgery/intraocular-lens/vivity/
4. Rayner Rayone EMV lens (Enhanced monovision lens)
https://rayner.com/wp-content/uploads/2020/09/RayOne-EMV-Patient-Brochure-0521-1.pdf

CONSENT FORM

I, ……, date of birth ……..…., give my consent for a LEFT / RIGHT phacoemulsification procedure with placement of an intraocular lens……

I have read the leaflets issued to me by Mr Wagh, including 'cataract surgery' and 'premium intraocular lenses' (delete if not relevant) and understand the contents. After reading this information, I understand that the following risks are involved and I understand that, while uncommon, complications can occur, which may delay recovery or potentially lead to a level of vision with which I am disappointed.

Benefit: To improve the vision

Risks:

Common up to 1 in 20:-

1. Clouding behind the new lens needing a laser (generally after 2-5 years)
2. Inflammation, dry eye or high pressure needing prolonged treatment (Usually settles within days/weeks)

Uncommon less than 1 in 100 (Complications that needs additional surgery): -

1. Rupture of lens membrane or some cataract left in the eye
2. Retina or cornea problems (detachment, fluid build-up, clouding)
3. Unexpected focus problems or abnormal light images may need further treatment

Rare less than 1 in 1000: -

1. Infection or bleeding inside the eye leading to severe or permanent vision loss

I also understand that, although I have had my eyes measured for surgery by a modern technique, there is no absolute guarantee that the refractive outcome (desired spectacle prescription, if any) will be perfect. With a standard monofocal lens, I will definitely need glasses for intermediate and near. Approximately 90% of patients achieve a refractive outcome within 1 Dioptre of their goal. I, therefore, understand that there is a small but significant chance of remaining spectacle-dependent, for distance as well, despite surgery. This applies even if a premium multifocal or toric lens has been used. Subsequent corrective refractive surgery may be possible at a later date for some patients but is not included as part of this surgical package.

Multifocal/EDOF/EMV lens specifics (delete if not applicable)

For patients who have chosen multifocal and/or toric lenses, there will be a period of adaptation required and there is a risk of reduced contrast and glare/haloes at night which can interfere with nighttime driving. This may require further treatment which will not be covered in the current package. In the unlikely event of an intraoperative complication, which makes the placement of such a lens impossible or unsafe, I understand that a standard intraocular lens may need to be used instead.

Additional comments specific to me:…….

……

Surgeon:……..Mr V. Wagh…… Date: …….

Patient: Print and sign…….. …… Date: …….

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The risk with Multifocal/EDOF/EMV lens

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