

## Refractive lens exchange surgery

Refractive lens exchange surgery (RLE) is a type of surgery performed to treat patients with reading vision difficulty. The surgery is exactly the same as cataract surgery but is performed before cataract develops. Cataract surgery is a safe and well-established procedure and one of the most common operations performed globally. The purpose of lens exchange is that it allows a trifocal or extended depth of focus intraocular lens to be placed within the eye. This allows the patient to be largely independent of spectacles for near and distance vision and has the added advantage of not developing a cataract later in life.

### Which lenses do we use?

Lens choice is one of the most important decision in cataract surgery. Measurements (known as biometry) are taken prior to the surgery in order to ensure that the correct lens implant is used. This usually allows the surgeon to aim for a particular focus for the eye post-operatively. During your consultation, Mr Mitry will discuss with you the options available, which may be best suited to your visual requirements.

A standard (monofocal) lens implant will correct your distance vision as clearly as possible. Some people have some astigmatism, which means the cornea is more oval in shape than average. A toric lens will be required to treat astigmatism to provide properly focused vision. Many patients with monofocal lens implants benefit from monovision. This is where one eye is set for distance vision and the other for more near vision. This improves intermediate and near vision (particularly computer use) and in some cases individuals do not need reading glasses at all, however, not all patients are well suited to this correction.

Multifocal lenses can provide a far greater range of focus. Trifocal lenses target near, intermediate and distance vision and between 80-90% of people are spectacle-free with trifocal lenses. A small proportion of people may require reading glasses for some tasks. The potential downside of trifocal lenses is a compromise in the quality of distance vision as well as optical side effects (glare and haloes), particularly at night.

Extended Depth of Focus Lenses (EDoF) lenses let you see clearly at far and intermediate distances. A proportion of patients will however need reading glasses for certain print sizes. They provide greater spectacle independence than monofocal lenses, while inducing less visual side effects compared to trifocal lenses. This balance of increased spectacle independence and less visual phenomena is particularly attractive to patients with an active lifestyle, who wish to be spectacle-free for most of their daily activities but are more sensitive to halos and glare.

### Night Vision Simulator

Many patients ask about the effects of multifocal lenses on night vision. Have a look at the night vision simulator for multifocal lenses to get an idea of what this might look like. These effects fade with time for the vast majority of patients who have multifocal lenses.

<http://www.tecnisvisionsimulator.com/>

Below are useful links regarding different types of lenses used and information about your surgery

<https://www.rcophth.ac.uk/wp-content/uploads/2015/02/Refractive-Lens-Exchange-Patient-Leaflet-April2017.pdf>

**Q: How safe is cataract surgery?**

Modern cataract surgery is the most commonly performed elective operation globally. Despite every effort, in rare situations, complications can occur. The risk of a complication is significantly lower if the operation is performed by an experienced surgeon and if the complication is managed appropriately. The following are notable risks of cataract or refractive lens exchange surgery:

1 in 1000 (0.001%) risk of a serious complication such as an infection within the eye (which can occur a few days after the surgery) or bleeding within the eye (which can occur at the time of surgery).

1 in 100 (1%) patients may require a second operation on the same eye. This may be to re-position or insert an intraocular lens. Occasionally the lens can't be placed in the eye at the time of initial surgery and requires a second operation to do so.

1 in 10 (10%) patients can develop a membrane over the new intraocular lens. This is called posterior capsular opacification. This can result in vision becoming blurry again. If this does occur it can be treated by a simple outpatient laser procedure called a YAG laser capsulotomy.

**Q: How long does the surgery take?**

Cataract surgery is performed as day case surgery and takes 15-20 minutes per eye.

**Q: What will my eye feel like after cataract surgery?**

Your eye may feel a little sore after surgery and it can be a bit red. Patients often feel like they have a gritty feeling for several days after surgery. Some patients do not feel any discomfort. Most patients will not experience any major discomfort.

**Q: When can I go back to work after surgery?**

You should be able to return to work within 1-2 weeks after surgery. If you work from home and use a computer you can resume work as soon as you feel comfortable.

**Q: When can I resume normal activities?**

You can resume normal activities with some restriction within a few days of surgery. You can read and watch TV as soon as you feel comfortable to do so. You can return to aerobic exercise a week or so after surgery. You can shower normally one week after surgery. You should avoid heavy lifting and swimming for 2 weeks after surgery. You can drive after your vision is checked and can read a number plate at a distance.

**Q: What happens if my glasses prescription after surgery is very different to what was aimed for?**

In this situation where there is a difference of more than 1 diopter from the aimed refraction target, there are several options available which will be discussed with you. These include wearing glasses at certain times when needed, further lens exchange or 'piggyback' lens surgery or in some instances laser eye correction.

**Q: What will my vision be like with a multifocal lens?**

Multifocal lenses are designed to give you as much independence from glasses as possible and have been a huge success. For most patients this means that they don't need to wear glasses for most daily activities. These lenses work by splitting the light that enters the eye into images for distance, intermediate and near vision. As a result, symptoms that occur in some patients with these lenses include haloes or starbursts particularly around bright light sources such as headlights at night. Some patients also report difficulty reading in dim light situations and in some cases a reduction in distance vision clarity. These symptoms often improve with time (neural adaptation) and are rarely.

**Q: Does cataract surgery get rid of floaters?**

Cataract surgery does not get rid of floaters. Vitreous floaters are a common problem, which you may experience as a blob or dark spot that drift across your vision. Floaters generally increase with age and are more common in shortsighted patients. In certain situations, a different procedure called a vitrectomy can be done for floaters. This can be discussed with you if needed.