

Patient information

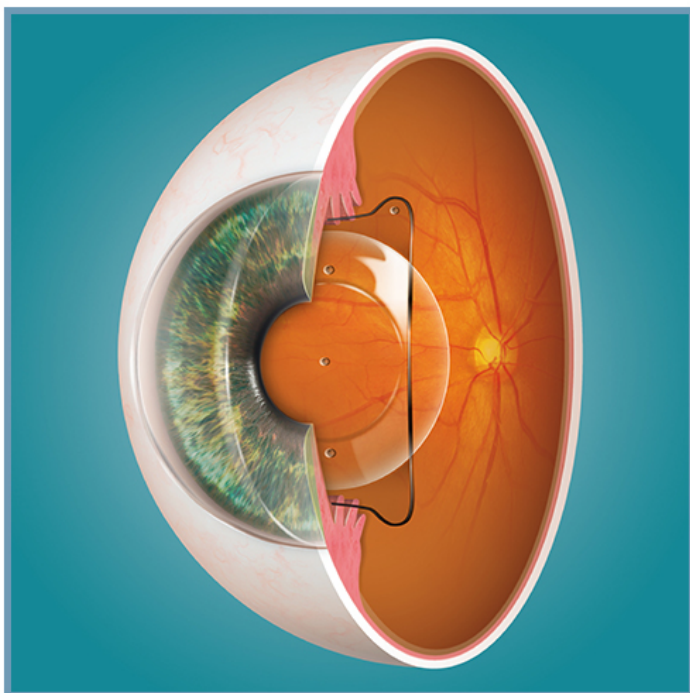
## Implantable Collamer Lens (ICL)

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### *What is Phakic Intraocular Lens implantation?*

Lenses that are implanted into the eye to correct vision without taking out the natural lens are called phakic intraocular lenses (PIOLs). PIOLs are made of clear synthetic plastic.

PIOL implantation is effective in treating high spectacle prescriptions, and is widely used to treat younger patients who are not suitable for laser eye surgery. The commonest type of PIOL implanted worldwide is the Visian ICL (implantable collamer lens). This is a soft flexible implant designed to sit just behind the pupil and in front of the natural lens in the eye. You cannot see or feel ICLs after implantation, and you do not need to clean them.



## ***What are the benefits?***

ICLs are highly effective at treating both high glasses prescriptions and astigmatism. For most patients, vision after ICL surgery is similar to vision in contact lenses before surgery without the discomfort and limitations on activity. Glasses may still be required for some activities after treatment, particularly reading in older patients, but these will be a low prescription and relatively inexpensive.

## ***Who is suitable for ICL implantation?***

Young patients who are unsuitable for laser vision correction are often offered ICL implantation. This is because ICLs can correct a wider range of spectacle prescriptions than laser vision correction, and may be a safer option if you have pre-existing cornea or eye surface problems.

You may not be suitable for ICL implantation if you have other problems with your eye health including cataracts, glaucoma, or recurrent inflammation in the eye (uveitis). You also need to have enough room in the front of the eye to fit the ICL safely. This is normally determined by a scan of the eye at your initial consultation.

## ***What are the alternatives?***

### **Vision correction surgery alternatives**

ICL implantation is one of three main categories of operations to correct vision.

The other two are laser vision correction and refractive lens exchange (RLE).

- Laser vision correction does not require a lens implant, and works by altering the curvature and focusing power of the front surface of the eye.
- Refractive Lens Exchange (RLE) is identical to modern cataract surgery, and works by replacing the natural lens with a lens implant.

Laser vision correction is generally preferred if you have a lower glasses prescription. This is because there are very few longer-term risks associated

with laser vision correction; whereas problems including cataract though rare can occur many years after ICL implantation.

Older patients with a high spectacle prescription are more at risk of getting a cataract after ICL implantation, and they have already lost most of the flexibility of focus provided by the natural lens in the eye. So after about 50 years of age, RLE is the usually the best option if you are unsuitable for laser vision correction.

**Your surgeon will advise on your best treatment options after reviewing your test measurements and your eye health.**

### **Continuing in glasses or contact lenses**

ICL implantation is elective. This means you can choose to proceed with it at any time, or not at all. The alternative is staying in glasses or contact lenses

Glasses are risk free but can be expensive and very limiting in terms of the range of activities, particularly sport, that you can participate in if you have a higher prescription.

Contact lenses provide good all-round vision. They do not mist over during sport and will help you to be more active; but they can be inconvenient when travelling, make water sports more difficult, and should not be worn whilst showering, swimming or during sleep. Contact lens wear is sometimes associated with eye surface discomfort, and may be complicated by sight threatening infection.

**The risks and benefits of ICL implantation should be balanced against those for continued contact lens wear, since this is the main alternative for active people considering vision correction surgery.**

### ***How ICL implantation is performed?***

ICL implantation is performed using eye-drop anaesthetic supplemented by an injection in the back of your hand to relax you if required. Anaesthetic may also be washed around the back of the eye to prevent excessive eye movement. A spring clip holding the eyelids apart allows you to blink safely during surgery.

Essential steps in surgery are:

- Entry points – formation of small self-sealing entry points in the front of the eye at the junction of the white of the eye and the cornea.

- ICL insertion – injection of the ICL and unfolding into position using a supporting gel to fill the front of the eye.
- Wash out and refilling – washout of the supporting gel and refilling with fluid and antibiotics.

Some centres offer surgery for both eyes on the same day. More commonly, second eye surgery is delayed for a day or longer to ensure that the recovery in the first eye is progressing well and, for ICLs, that sizing in the first eye is correct.

**The surgery typically takes about 20 minutes per eye. You can return home on the same day as surgery.**

### ***What are the risks?***

In all forms of eye surgery, problems can occur during the operation or afterwards in the healing period. Most commonly, problems can be corrected with changes in medication or additional surgery.

- **Loss of vision** - Permanent, serious loss of vision is very uncommon after ICL implantation. Causes include damage to the nerve at the back of the eye caused by a sudden rise in fluid pressure within the eye after surgery, and damage to the retina caused by infection or retinal detachment. Sudden pressure rises are much less common with the newer v4c ICL used for treating myopic patients. The v4c ICL allows natural fluid flow through the pupil and does not require a bypass drainage hole in the iris. All patients with high levels of short sight have a higher risk of retinal detachment. This risk is not increased by ICL implantation, which does not involve surgery to the back compartment of the eye. Infection rates after ICL implantation are very low (approximately 1 in 6000). Complete loss of vision can occur after any operation involving the inside of the eye; but this is rare after ICL implantation.
- **Additional surgery** - Cataracts may occur earlier in life than they would have done otherwise after all types of PIOL implantation. Cataract surgery can normally be combined with PIOL removal if necessary, and substitution of a new lens implant during cataract surgery helps to minimize any additional requirement for glasses. In other words, PIOL implantation does not stop you having successful cataract surgery or RLE later in life if this is required. Statistical techniques are used to size ICL implants. The size prediction is sometimes incorrect, and in

approximately 1 case in 40, the ICL needs to be replaced with a lens of a different size in order to get the best fit in the eye. A minor rotation of the position of an ICL implant is also sometimes required after surgery to optimise the correction of astigmatism. ICLs can be removed if they are causing problems. This usually means that your vision and eye health will be the same as it was before ICL implantation. But not all problems caused by ICLs can be corrected by removing them, and additional treatment may be required even after ICL removal.

- **Risks of contact lens wear** - Continuing in contact lenses is often the main alternative for people considering sight correction surgery. If you follow the right safety advice, contact lens wear is low risk; but approximately 1 in 3000 wearers each year will develop a serious corneal infection. To minimize this risk, you should not swim or shower in contact lenses, and should not wash them in tap water. Sleeping in contact lenses, including those designed for overnight wear, increases the risk of infection significantly. Soft, daily disposable lenses are safer than non-disposable lenses

### ***What are the side effects?***

Side effects are problems which most patients experience to some degree after surgery. They normally improve with time, but do not always resolve completely.

- **Vision** - It is normal to experience some light scatter side effects in the early period after PIOL implantation, particularly if you have treatment for a very high spectacle prescription. These can take a variety of forms including glare, halos, starbursts and ghost images. Increased flare from oncoming car headlights is a common symptom, and night driving may be difficult at first.

**Visual side effects are usually mild and improve within a few months.**

ICLs can be removed if visual side effects persist, but this is rarely required.

### ***How much does ICL cost?***

Your eye measurements will determine the type of ICL needed to be customized for your eye. Our office will give you a quotation based on that.