



SEEING THE FUTURE

How technical developments in
cataract surgery are revolutionising
how we see the future

by Mr Vik Sharma



INTRODUCTION FROM

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“Things are getting smaller! And replacement lenses are getting more precise! As an eye surgeon, compelled to create positive outcomes for my patients, in my opinion we are in one of the most exciting times that I have ever seen for eyes. Technology is bringing us ultimate precision in a minimally invasive surgical environment, providing life changing optimised results for your eyes.

But what does this mean for you? If you are having vision problems, if you have cataracts, are worried about a family history of glaucoma or are juggling glasses you might not be aware of the options that are now available to you. The most advanced of these treatment developments is lens replacement and it is designed to last 100 years. That means your vision is restored perfectly for the rest of your life without glasses. This is life-changing for people who experience it.

I’m going to outline the developments that excite me the most to make you aware of the great advances technology is making for eyes in the world right now.”

Vik Sharma

Cataract surgery has benefited from the experience of millions of cataract surgeries

Cataract surgery is one of the oldest surgeries ever recorded. There are records in Sanskrit of early cataract extraction as far as 600BC. The roots of the modern intracapsular cataract extraction (i.e. removal of the cataract from inside the eye) date back to 1747 when French surgeon Jacques Daviel performed the first basic extraction in Paris.

This is important because it means that hundreds of thousands of cataract extractions have taken place, improving and refining over time to reduce infection and increase success. It is one of the most successful operations of all time and has evolved to become a simple yet sophisticated procedure.

Cataracts are common and removal is swift

Around 2.5 million people aged over 65 have cataracts and it’s the main cause of impaired vision worldwide.



However, Lens Replacement, the optimal cataract treatment is now being used to correct several different eye problems and prevent cataracts developing at all in the first place. There is one painless incision, followed by a swift removal and replacement with the new synthetic lens. The crystalline lens of the eye is a natural lens which produces one third of the eye’s total optical power and focuses light into an image on the retina (the light-sensitive tissue at the back of the eye). The crystalline lens is elastic which allows it to flex to change its shape. The lens regulates the amount of light into the eye and controls sharpness of image. It does the job of seamlessly making sure everything is in focus near and far all the time, and in our twenties and thirties works perfectly to provide accurate sight.



Over time however, the lens begins to harden as we first start to develop what will eventually become cataracts. We start to notice this in our forties as the muscles don't work as quickly to focus and refocus, and we start to notice problems with our (near) vision as the lens hardens. Lens replacement switches out the old lens with a new synthetic lens designed to last for 100 years! There are different types of synthetic lens which are multifocal and can be bespoke for the individual depending on their requirements.

Your cataract is replaced with a new synthetic lens

Lens Replacement is performed using local anaesthetic, so it is a day case surgery taking only 10-15 minutes, and a painless procedure with a recovery time of around 1-2 days with optimum vision within 2- 4weeks.

- **Intracocular Lenses (IOL)** are optimised for your unique lifestyle and there are different kinds intraocular lenses available. You and our Consultant choose the best one to suit your needs. IOLs are:
- **Monofocal** - gives excellent vision at one distance (near, mid-range (computer) or distance)
- **Toric** - on the peripheral parts of the lens there are markers that allow the surgeon to orientate the astigmatism and correct it in the lens
- **Presbyopic-correcting** - this corrects nearsightedness or farsightedness or multi-focus
- **Accommodative and Multi-focal** - there are new lenses in developed and coming online right now which give even more personalisation and choice. These include combined accommodative and multifocal lenses that can optimise both near and far vision



Through the lens – how amazing to have your site restored

Synthetic lenses are designed to last 100 years



These lenses were invented in the 1940s by a British surgeon and are made from safe and stable materials. These new synthetic lenses are permanent and for life. It means you could be 80 years old and have the same eyesight that you had as a child. No glasses, no contact lenses just perfect vision for the rest of your

life. You will never go on to develop cataracts if you have this done early in your life. If you have this done to treat cataracts you will go on to have near perfect vision.

Jane Fallon, bestselling author



Jane Fallon is the bestselling author and partner of comedian Ricky Gervais. Jane was treated by us after she experienced primary angle-closure glaucoma (PACG). In severe cases this can lead to a sudden attack that destroys vision in 24 hours. Detected during a routine eye check Jane hadn't had been checked for 8 years.

PACG occurs when the lens that sits in the front of the eye and is responsible for visual focus – grows too thick, blocking the natural drainage of fluid in the eye and causes damaging high pressure in the eyeball.

Patients who undergo lens replacement will typically no longer need glasses, and will also never develop cataracts, which affect 60 per cent of those over 60. Jane

said, *"I had to try to do something rather than just wait and risk blindness. I was terribly nervous in the run-up. But in fact, it wasn't uncomfortable at all. It's awful to think that if I hadn't gone for that test, I may have ended up losing my sight. I tell everyone to go to their optician at least once a year now whether they have any vision problems or not."*

Jane had an intraocular lens – or IOL – implanted in each eye. During the ten-minute procedure, a laser breaks up the natural lens. This is then sucked out via a tiny tube. The artificial lens is inserted through the same tiny incision in the front of the eye.

Mr Sharma said: *'Multifocal IOLs are graduated, much like multifocal spectacle lenses. They typically give excellent close-up vision. Accommodative IOLs have tiny hinges that allow the lens to move forward and back with the muscles and ligament inside the eye responsible for focusing. These give better intermediate and night-time vision.'*

Michael Rosen, former Children's Laureate



I treated the former Children's Laureate, Michael Rosen with his cataract surgery for Primary Angle-Closure Glaucoma (PACG) which is a common cause of blindness. In 2021 we saved his sight using a new, non-invasive technique on Michael for the application of Xen stent into the eye to treat acute glaucoma. Michael woke from a coma in hospital and the first thing he noticed was that he had a distinct fogginess in his left eye. I knew that if he was not treated in the next week or two, he could go blind. I used the Xen stent combined with a new technique to fit which creates a new pathway for the fluid

to drain out of, but without the cuts and stitches, making it quicker and safer giving greater likelihood of a successful outcome for the patient. The traditional treatment pathway for glaucoma is managed with early diagnosis from an ophthalmologist where patients are usually prescribed drops to reduce the production of fluid and improve drainage. Alternatively, a short laser treatment can open the drainage channels to release fluid. The revised and enhanced treatment to apply the Xen stent into the eye results in less scar tissue and faster healing times for patients leading to better.

Presserflo

Presserflo is a new microfibre made of the same material as heart stents so it is extremely safe and stable. It will help to drain the eye in the same way, but even more accurately. If you need to have a glaucoma procedure make sure that you ask your consultant about **Presserflo**.

Checklist

When we see a person who has concerns about their eyes, we look for lifestyle factors first and foremost. Ask yourself these questions: **Have you got any of the following?**

- Poor vision or other eye conditions
- Are over the age of 40
- Do you have thin and sensitive corneas?
- Do you have diabetes, high blood pressure or anaemia?
- Do you have a genetic vulnerability to glaucoma? Myopia?
- Eye injury

If you do you should seek the help of specialist to look at your eyes. Specifically, glaucoma is so dangerous because it rarely has symptoms however, we look for the following:

- Headaches
- Red eyes
- Tunnel vision
- Dizziness
- Blurry vision
- Halo-rings in the line of sight
- A vision that progressively worsens – initially in the peripheral vision, later centrally
- Pain on and around the eye
- Nausea and vomiting

Having an eye test checking for glaucoma once each year is very important

If you are over 40 then please, get your eyes tested. Limit screen time late at night with blue light in a dark room which is not good for you. If you have any concerns then we are here to help.



We are happy to advise you. Please contact us at the London Ophthalmology Centre (LondonOC) on 020 7000 3193 / 0800 7569993 or email reception@londonoc.co.uk and visit www.londonoc.co.uk/Free_guide_to_cataracts