

**Manchester
Centre for Vision**

Manchester Royal Eye Hospital
The Private Patient Unit

Who we are

Manchester Royal Eye Hospital is acknowledged as a centre of excellence for all aspects of ophthalmology, including out patient care, surgery, education and research, and is renowned both globally and nationally for its pioneering work.

The hospital provides an extensive range of eye services for both adults and children. All types of eye surgery are carried out by the Manchester Royal Eye Hospital consultants, many having practiced at the hospital for many years. All the consultants are ably assisted by the superb after-care team that prides itself on the delivery of the very best in patient care.

Manchester Centre for Vision (MCV) is the private patient / fee paying unit of the Royal Eye Hospital and is based within the hospital. The Vision Correction service is part of MCV and was set-up by Mr Arun Brahma MD FRCOphth to provide a comprehensive service for people who want to correct their refractive errors on one site. It is one of the few places in the United Kingdom where all aspects of laser and surgical vision correction are provided on one site.



The New Manchester Royal Eye Hospital is one of the largest eye teaching hospitals in Europe and opened in August 2009.

Refractive errors

Many people have 20:20 vision but this depends on three things; the curvature of your cornea, the focusing power of your lens, and the length of your eye. Any imbalance between these three will result in a focusing / refractive error. Refractive errors are measured in Dioptres (D).

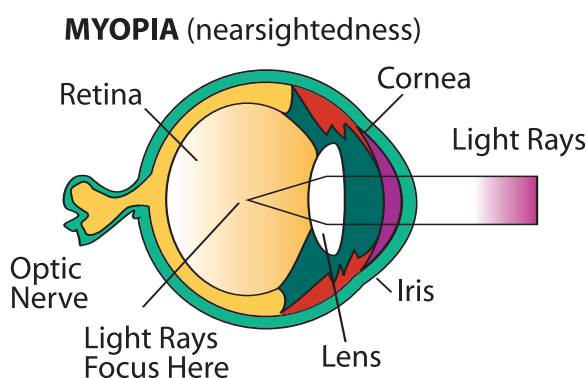
There are three main types of refractive errors - short-sightedness (myopia), long-sightedness (hyperopia) and astigmatism. In these eyes the focusing power does not form a clear image on the retina (photographic layer) of the eye. The focusing / refractive error can be corrected by glasses or contact lenses to give clear vision.

The optician's prescription is written as below:

[+ / - Sphere] [+ / - cylinder] [axis]

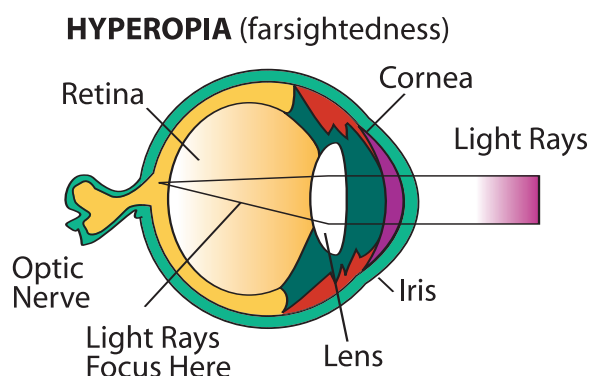
SHORT-SIGHTEDNESS (Myopia)

Myopia is when near objects are seen clearly but those in the distance are blurred. It occurs if the cornea is too steeply curved or if the eye is slightly longer than normal so that light is focused in front of the retina. Without glasses or contact lenses, short-sighted people are able to see objects clearly if held close to their eyes, but usually those objects beyond arms length are blurred or out of focus. This is a common eye problem affecting approximately one in five adults. Myopia is indicated with a minus sign (-) on prescriptions. This refractive error can be corrected by laser and implants.



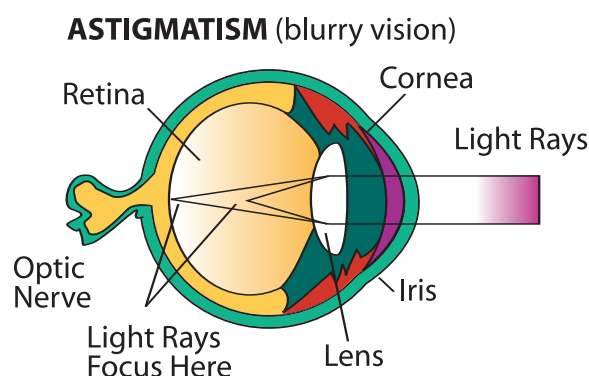
LONG-SIGHTEDNESS (Hyperopia)

Hyperopia occurs when the cornea is too flat for the size of the eye. This time light is focused beyond the retina so that close objects are blurred. Depending on their age, long sighted people may also have difficulty focusing on distant objects as well. Hyperopia is indicated with a plus sign (+) on prescriptions. This refractive error can be corrected by laser and implants.



ASTIGMATISM

This is when the eye has two different degrees of long (or short) sightedness combined. For example, vertical objects may be clear but horizontal ones blurred. No amount of focusing can give a completely clear image. Most people have a degree of astigmatism, which may co-exist with myopia or hyperopia. This is indicated as the cylinder (cyl) and will either have a + or a - sign in front of a number. This refractive error can be corrected by laser, implants and corneal microsurgery.

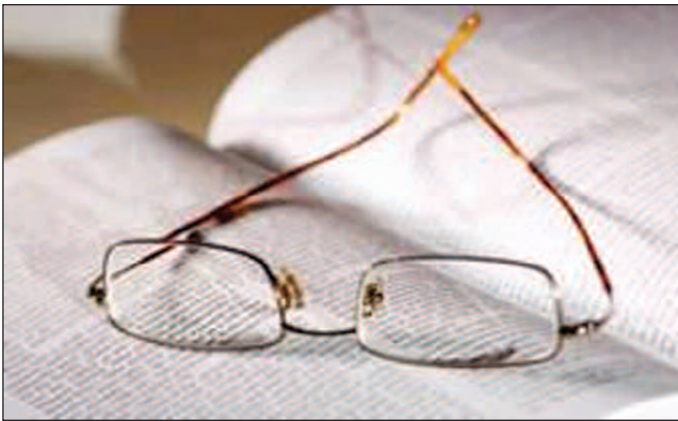




Refractive errors

PRESBYOPIA

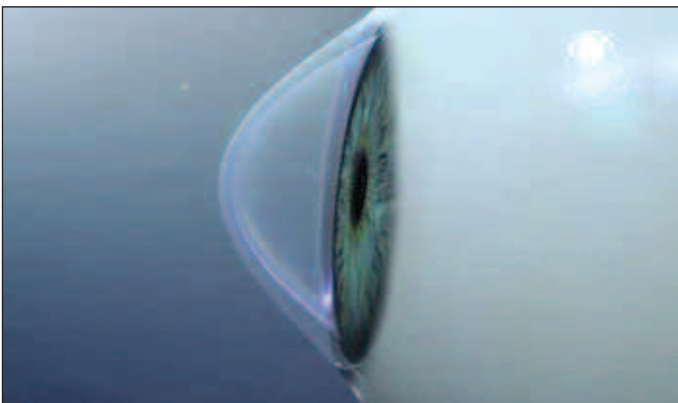
This is the need for reading glasses that occurs when the eye becomes unable to focus on close objects. It is a natural ageing process that affects everyone between the ages of 40 and 50 years. This often co-exists with other refractive errors and can be corrected by implants and presbyopic laser (Monovision)



KERATOCONUS

In this condition, the cornea is not a spherical surface / round but is distorted due to thinning of the cornea. This leads to unusual refractive errors with high amounts of astigmatism and may need complex glasses or hard contact lenses to improve vision. In its extreme form, the cornea becomes conical in shape. Certain types of keratoconus can be treated with specialised implants (Intacs/Keraring) within the cornea to reduce the distortion allowing better vision with glasses or contact lenses.

Some keratoconic eyes develop superficial scarring which prevents good vision and this scarring can be removed with the Excimer laser.



CATARACTS

Cataracts (clouding of the natural lens of the eye) develop as we age leading to reduced vision. Cataract surgery is the most common surgical procedure performed in the UK and effectively restores sight. Cataract surgery usually involves insertion of a single vision lens and thus people will require either distance or reading glasses. Today, multifocal lenses tailored to the individual's prescription are available at the Manchester Centre for Vision to enable both distance and near vision. For more information on these specialised lenses, please see the information on lens implants overleaf.



with cataract



without cataract

Vision correction surgery

LASER VISION CORRECTION

A number of surgical techniques have been developed to correct refractive errors and the most common form of surgery is laser vision correction. Laser vision correction is now one of the most common surgical procedures in the developed world and involves the use of an Excimer laser to alter the shape of the cornea, (the clear portion of the eye in front of the pupil). The Excimer laser has been in use since the 1980s but both the technology and procedures have changed significantly over the last fifteen years. Today, two different techniques, LASIK and LASEK, are used.

In myopia (short-sight), the eye is too long for the focusing mechanism (cornea and lens) to form a clear image on the retina. To correct this, the cornea is reshaped (the curvature is reduced to allow light to be focused on the retina).

In long-sightedness, the eye is too short for the focusing mechanism (cornea and lens) to form a clear image on the retina. To correct this, the cornea is reshaped (the curvature is increased) to allow light to be focused on the retina.





Vision correction surgery

LASIK

(Laser-Assisted In-situ Keratomileusis).

This is one of the most popular methods of laser eye treatment, routinely carried out throughout the world. LASIK is performed under local anaesthetic. A thin flap of corneal tissue is created with a microkeratome and then lifted to one side. This enables the laser to accurately reshape the tissue underneath and then the flap is gently eased back into place. Treatment is usually carried out in around twenty minutes and discomfort is minimal. Within a few hours you will begin to notice the benefits.

LASEK

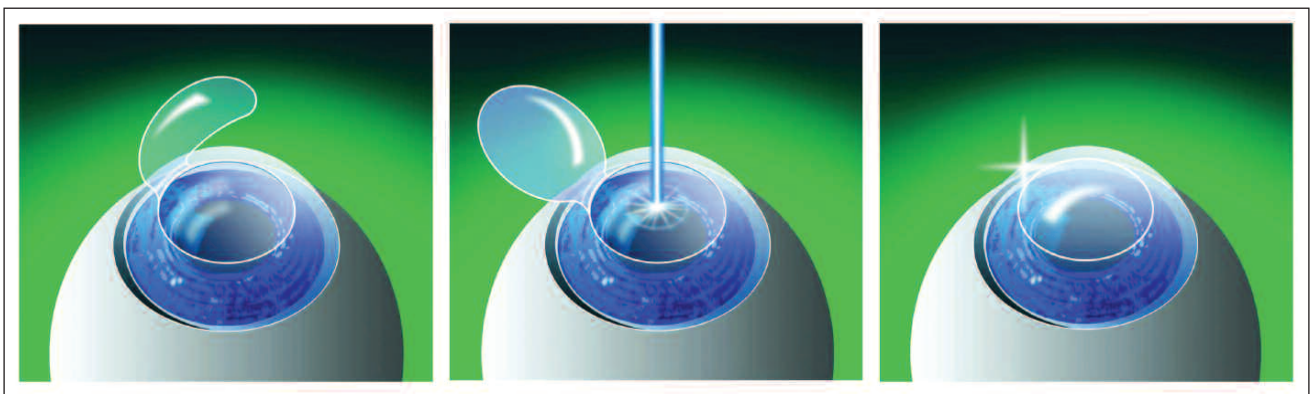
(Laser-Assisted Epithelial Keratomileusis)

With this technique, although similar to LASIK, no corneal flap is made. This procedure involves softening the outer layer of the eye (known as the epithelium) and this then rolled back. The cornea beneath is then exposed to the laser before repositioning the epithelium. This treatment also takes approximately twenty minutes. Visual recovery is slightly slower than LASIK, often taking two to three days. However, there is no difference between the LASIK and LASEK treated eyes after a few weeks.

CUSTOMISED TREATMENTS

First developed by astrophysicists, this is the latest technology in laser eye surgery and combines advanced diagnostics and laser ablation. Your eyes are unique. By pinpointing and measuring the tiniest imperfections and natural distortions of your vision, with the exact measurements we take from the Wavefront and Topolyzer, we are able to create a tailor-made treatment plan that is as individual as you are. It is rather like having a 'made to measure' suit made just for you!

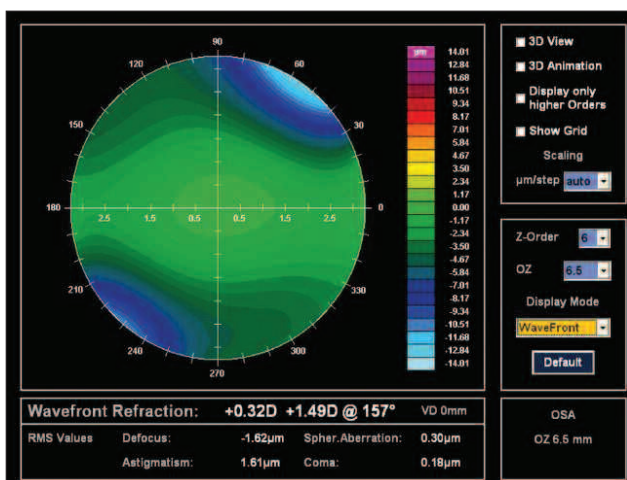
Optimised custom ablation- the shape of the cornea is kept similar to the natural shape, i.e., prolate shape (steeper in the centre and flatter in the periphery) as compared to standard laser treatment where the shape of the cornea is shaped to be steeper in the periphery and flatter in the centre. This significantly reduces aberrations and can lead to better vision.



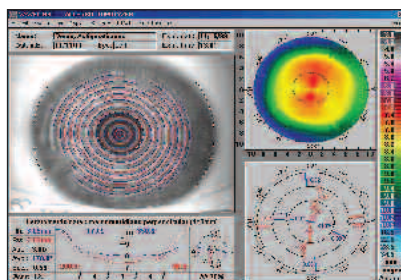
Vision correction surgery



Wavefront custom ablation- in addition to optimised custom ablation, wavefront diagnostics look for aberrations in the whole optical system. This information then alters the laser ablation pattern in order to correct imperfections. This type of customised treatment is useful for people with large pupils.



Topolyser based treatment- people who have high degrees of astigmatism or irregular corneas due to certain diseases can benefit from this type of customised treatment. This ablation is based on the data collected during computerised corneal topography which is performed during the assessment.



MONOVISION

Monovision addresses the problem of presbyopia that most people start to encounter at the age of 40 - 45 when they begin to need reading glasses or bifocals for close vision. With monovision, the dominant eye (the eye you would use to focus a camera) is focused for distance vision, and the non-dominant eye is focused for near to intermediate vision. This can be done with laser vision correction or intraocular lens surgery.

Monovision certainly isn't appropriate for everyone. However, when paired with the right person, it can be a great fit. Monovision is a blend of near and distance vision, and is ideal for people with an active lifestyle. However, there is a caveat to consider: since it is a compromise, most people's vision isn't perfectly crisp up close or far away. Instead, it offers the best of both worlds.

THERAPEUTIC TREATMENTS

The excimer laser can be used to treat not only longsightedness, shortsightedness, and astigmatism, but also other conditions, such as corneal scarring, recurrent corneal erosion syndrome, certain corneal dystrophies and band keratopathy.

CORNEAL MICROSURGERY

A super sharp diamond knife, which can accurately cut within a few microns (millionth of a metre) is used on the cornea to reduce astigmatism.



Vision correction surgery

LENS IMPLANTS (IOLs)

Some peoples' eyes are unsuitable for laser vision correction but their eyes focusing abnormalities can be corrected by specialised intra-ocular implants.

Refractive Lensectomy- This treatment is more suitable for patients over the age of 40 who have high refractive errors. Refractive lensectomy is very similar to cataract surgery which is the most commonly performed eye surgery in the world. Having this surgery also avoids the need to undergo cataract surgery in the future.

There are 3 different types of IOL implants:

- Single vision IOLs correct myopia and hyperopia.
- Accommodative / multifocal IOLs correct presbyopia, hyperopia and degrees of myopia.
- Toric IOLs correct astigmatism, myopia and hyperopia.

PHAKIC LENS IMPLANTS

Young patients who have very high refractive errors who are not suitable for laser may be suitable for phakic lens implants, without the need to remove the natural lens of the eye. This is suitable for people who are short-sighted and/or have astigmatism.

Aphakic lens implants are suitable for patients who have an absence of a natural lens, i.e., did not have a replacement lens inserted at the time of cataract surgery.

KERATOCONUS TREATMENTS

The majority of patients who have keratoconus cope very well with contact lenses or glasses but as the keratoconus progresses, contact lens intolerance develops due to the abnormal shape of the cornea.

CORNEAL CROSS LINKING

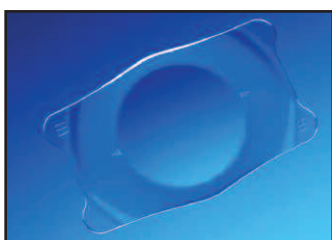
Corneal cross linking is a curative approach to increase the mechanical stability of corneal tissue. The aim of this treatment is to create additional chemical bonds inside the corneal stroma by means of a highly localised photopolymerisation. The treatment involves soaking the eye with riboflavin (which is a B vitamin) then applying ultraviolet light to promote increased cross linking and strengthening of the cornea, thereby slowing down the bulging of the cornea.

INTACS

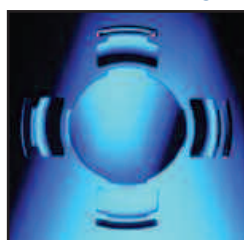
Intacs or Kerarings are micro-thin biocompatible plastic implants of varying thickness. The rings are designed to reinforce the cornea and reshape the ocular surface therefore reducing the size and improving the shape of the cone. By improving the shape of the cone patients suffering from keratoconus, and other similar disorders, may improve the fit of their contact lenses.

These intra-corneal rings are well tolerated by the eye and there is no risk of rejection. Use of these rings may improve the structural integrity of the eye and delay the requirement of a corneal graft.

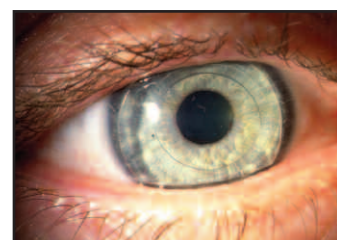
Phakic IOL



Accommodating IOL



INTACS



AFTERCARE



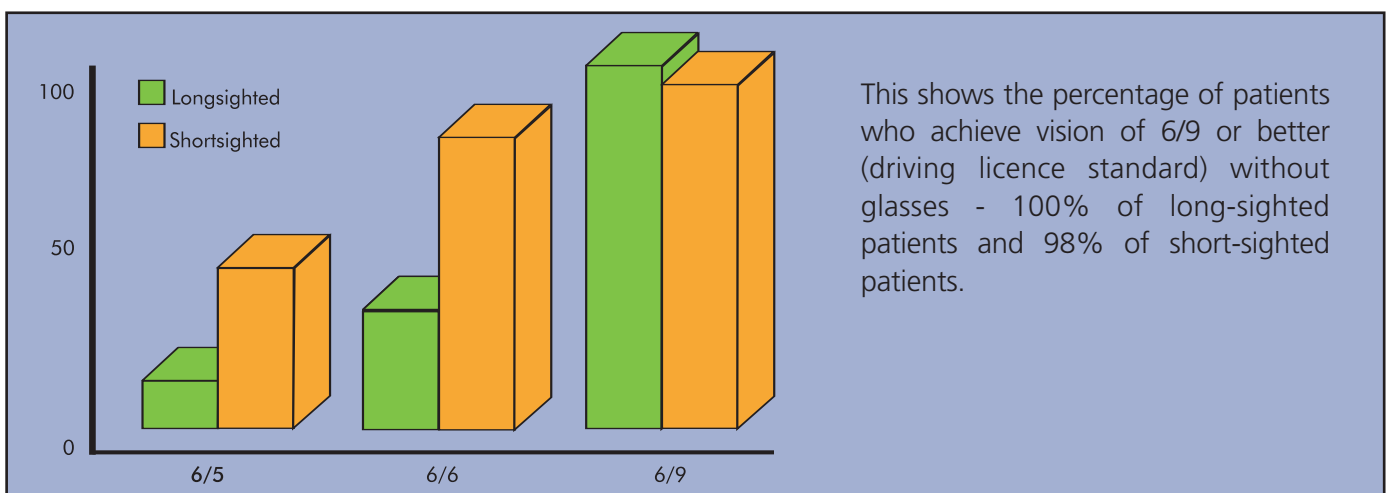
We provide a comprehensive and personal aftercare programme for twelve months following your surgery. You will be seen for follow-ups as appropriate, which usually means 3 to 4 visits to the Centre. The Manchester Royal Eye Hospital has been in existence for over 100 years, providing care for both emergency and routine patients during this time and thus, as a patient of this Hospital, you will have access to this service 24 hours a day and 365 days of the year.

Last year 5 million people worldwide underwent laser vision correction. Due to its safety and effectiveness, laser eye surgery is now one of the most common eye operations in the world. As with any surgical procedure however, there are risks involved with this kind of treatment and we will discuss these with you during your consultation.

At present these risks are less than 1% at the Manchester Royal Eye Hospital. Implant surgery has a similar risk factor to cataract surgery and the complication rate is around 1%. These risks will be reviewed by your consultant surgeon and/or Corneal Nurse Practitioner.

All types of Vision Correction Surgery are performed at the Manchester Royal Eye Hospital. It is a team effort of doctors, nurses, optometrists, technical and administrative staff and the use of the latest technologies and treatments to give you, the patient, the best and most appropriate treatment in the safest environment.

RESULTS - Outcomes of Surgery





Questions & answers

Q How successful is laser vision correction?

Laser eye surgery is a safe and highly effective method of correcting short-sight, long-sight and astigmatism. 90% of patients with low to moderate myopia will not require spectacles or contact lenses for everyday activities and unaided vision is good enough to drive a car without spectacles. Overall, the complication rate leading to poor vision in one eye is less than 1% at the Eye Hospital.

Q How successful is implant surgery?

The success rate is the same as cataract surgery, which is the most common and successful surgical procedure performed in the world with a low complication rate.

Q How soon will I see after treatment?

Most patients who undergo LASIK treatment notice dramatic improvement in their vision within the first 24 hours. LASEK treated eyes take about 72 hours to achieve reasonable vision. People with more severe amounts of refractive error, may find their visual recovery is a little slower. After implant surgery, the eye will see within a few hours and vision takes about 2 days to settle down.

Q Will I be restricted from any activities after my surgery?

After LASIK eye surgery, most patients can return to work the following day. Others may choose to wait a few days. You will need to follow certain restrictions as instructed by your surgeon; otherwise you are free to resume your normal daily activities. After LASEK, we recommend that you take 3-4 days off. Other activities (e.g. swimming, exercise, travel) may be affected depending upon the timing, and type, of your surgery. We will discuss these restrictions with you.

Q What about pain?

Pain and discomfort is minimal after LASIK and the ocular surface is usually healed in 48 hours time. However, if you do have any discomfort, painkillers will be provided for you. LASEK can be uncomfortable one hour after the treatment and this may continue for the next 2-3 days.



" I would definitely recommend the Manchester Royal Eye Hospital as you really feel in safe, experienced hands."

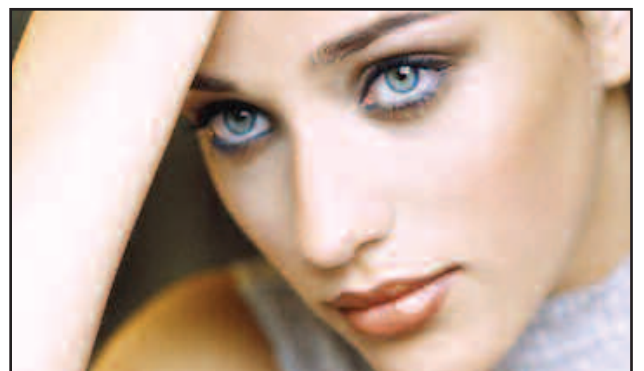
Peter Sharkey, Derbyshire

"I'm really happy that I decided to have laser treatment and would recommend it and Manchester Royal Eye Hospital to anyone."

Stuart Smith, Chester

"I can't praise the Manchester Royal Eye Hospital enough. Everyone is extremely friendly, professional and welcoming."

Wendy Steele, Bolton



How to find us



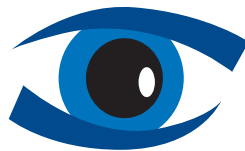
The Manchester Centre for Vision is within the Manchester Royal Eye Hospital. The Centre can be entered via the main hospital entrance, and then follow the directions to the first floor where the Centre/Ward 54 is located. Access at weekends and out of hours is via the Royal Manchester Children's Hospital, along the link corridor.

Manchester Centre for Vision is the private patient facility of the Royal Eye Hospital.

All types of simple and complex surgery are carried out at the Manchester Centre for Vision.

If you would like more information on corneal, cataract, glaucoma, eye lid, squint and retinal surgery on a fee-paying/private health care insurance basis, contact us at the address below.





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Centre for Vision**

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