

Mr Vaughan Tanner
BSc MBBS FRCOphth
Consultant Ophthalmic Surgeon

Telephone: 01189 553457
01753 743418

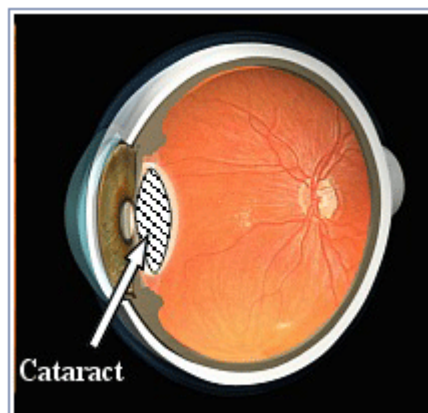
<http://www.tanner-eyes.co.uk>

Patient Information: Modern Cataract Microsurgery

What is a Cataract?

A cataract is a clouding of the natural focusing lens in your eye. It is usually a part of the normal age related process and most people over the age of 70 have some signs of lens change. Light cannot pass through a cataract easily, so the retina only receives blurred and distorted images. The retina is then unable to send clear signals to the brain, and vision is gradually impaired. Other symptoms include excessive dazzle from car headlights or bright sunshine and the need to change glasses frequently. If cataracts are not removed all vision may be lost, but usually only in very advanced cases and the decision whether or not to have cataract surgery depends on how much your daily life is affected.

Fortunately, almost all cataracts can be successfully removed and vision restored through modern microsurgery techniques.



Cataract Microsurgery

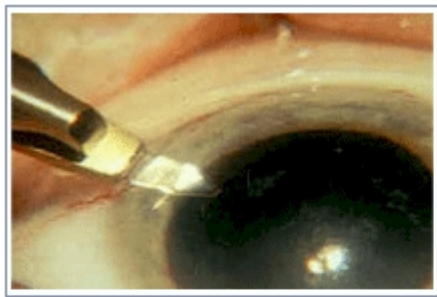
Modern cataract surgery begins with a very small incision. Mr Tanner has recently introduced a new technique allowing incision size to be decreased to less than 2 mm. These small incisions seal themselves immediately after surgery and heal over the following few weeks. No stitches are used, and normal daily activities can be resumed soon after surgery. Another advantage of no-stitch incisions is that they are less likely than other incisions to cause a focusing problem known as astigmatism. In fact, depending upon where the incision is made, no-stitch incisions can actually reduce astigmatism which exists naturally in some patients before surgery.

After the incision has been made, a small instrument is used to create a round opening in the lens capsule. Another instrument, called a phacoemulsification tip, is then inserted through this opening. Phacoemulsification uses high-speed ultrasound waves, vibrating 40,000 times per second, to break the cataract into tiny pieces which are then sucked out of the eye. Ultrasound is currently the most effective method for removing cataracts.

Once the cataract has been removed, a lens implant is placed in the lens capsule to replace the focus power of the natural lens.

Lens implants are very small (6-12mm) and are designed to fit permanently within the lens capsule, where they replace the focusing function provided by the natural lens. They are made of stable polymer plastics which will not be rejected by the eye. Lens implants come in different powers, as do glasses or contact lenses and are selected to improve the eye's focusing ability. Many people discover that lens implants improve their vision and give them greater freedom from their glasses than they enjoyed before they developed cataracts.

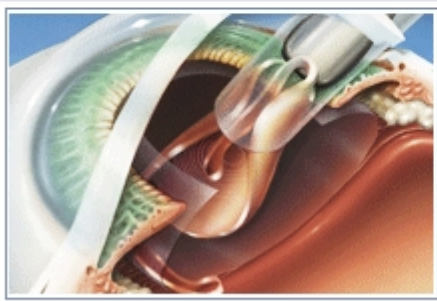
Recent advances in lens technology now allow for the shape of the intraocular lens to be adjusted to the profile of the cornea, allowing increased contrast sensitivity and better visual acuity post-operatively. Specialist lenses also allow correction of astigmatism and multi-focal lenses allow the possibility of good reading and distance vision without the aid of spectacles post-operatively.



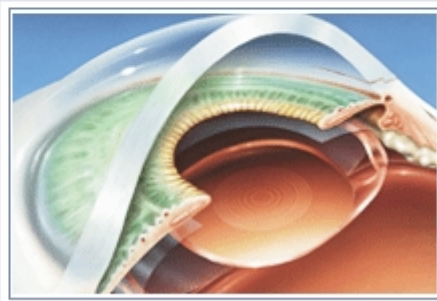
Step 1. A clear corneal incision is made



Step 2. The cataract is removed using ultrasound energy delivered via a phacoemulsification machine



Step 3. A replacement intraocular lens is inserted and then unfolded in the eye



Step 4. Following completion of surgery the new lens can be seen sitting just behind the iris

Painless Cataract Surgery

Thanks to recent developments in anaesthesia, cataract surgery is a painless experience and the vast majority of operations are now done as a day case procedure. I commonly use two kinds of anaesthesia - topical anaesthesia and regional anaesthesia.

Topical anaesthesia is very popular with many people because no needles are required. Instead, topical anaesthesia simply uses drops which numb the eye. No eye patches are needed and patients usually notice improved vision immediately after surgery.

Regional anaesthesia involves gently injecting a local anaesthetic into the tissues around the eye. The eye is patched for a few hours and people begin to notice their improved vision by the next day.

Topical anaesthesia is now my preferred technique as it offers a quicker recovery with fewer side effects and is completely pain free. The eye is fully anaesthetised but otherwise you are awake during the procedure, which takes about 15

minutes. This means the operation can usually be done as a 'day case', which has many advantages such as shortening the time in hospital and reducing expense for the patient. Local anaesthesia also avoids the post-operative 'hangover' from a general anaesthetic, as well as avoiding the risks of an anaesthetic in patients with, for example, chest problems. The majority of my patients now have their operation done using only anaesthetic drops on the eye (topical anaesthesia), although of course, general anaesthesia is still available for patients who prefer to be completely asleep.

What to expect on the day of operation

A nurse will put drops into the eye for surgery, which will dilate the pupil; this is crucial for good access to the cataract during the operation itself. Mr Tanner will then put a pen mark on your forehead above the eye to be operated on and you will be given the opportunity to ask any questions or go over any details about the forthcoming surgery. You will then be asked to sign a consent form.

It is essential you feel you have been given all the information you need to be happy with the decision to go ahead with the cataract operation.

It is important that you are aware that all surgical procedures and anaesthetics have risks, which can potentially happen to anyone. You should be familiar with the following principles:

1. I understand that just because a cataract is present, it is not absolutely necessary to have it removed and I may choose not to have an operation until the cataract itself progresses at a later date.
2. All surgery carries some risk and the main problems associated with cataract surgery include intra-operative bleeding, infection, problems with intraocular lens position or power and post-operative complications such as retinal detachment.
3. I understand that the majority of people undergoing cataract surgery have better vision afterwards but the final level of vision cannot be guaranteed. A few patients may not have improvement in their vision (especially if they have other coexistent eye problems, such as age-related macular degeneration, diabetic retinopathy, glaucoma or a lazy eye). Unfortunately, a small number of people may have worse vision than before the operation or may require a second operation.
4. I understand that unless I have opted to have a multifocal lens inserted, then I will need reading glasses post-operatively. Even with a multifocal lens, although the majority of activities will be completed free of spectacles, there will be occasions when spectacle use could improve the vision and would be useful.

The Surgical Procedure

Mr Tanner will use an operating microscope to perform your cataract operation. You will have to lie flat (with a single pillow) and fairly still for approximately 20-30 minutes.

Many patients worry that they will see what is happening during the operation. Most patient notice a bright light and vague shapes but you cannot see the actual instruments. Furthermore, although you have to lie fairly still, there is no need to be rigidly immobile; you can adjust your position or even cough or sneeze, provided some warning is given. Age or infirmity is no longer a bar to successful cataract surgery.

You will be unable to see any instruments or what is happening during the procedure, but you will see a bright light over the eye and hear noises from the equipment around you. The eyelashes and surrounding skin are covered by a sterile adhesive sheet (a drape). This sheet extends over your chest but is lifted up over your nose and mouth to allow air to flow freely. It is normal during the procedure to:

- a. feel a sensation of pressure in the eye
- b. see bright or coloured lights
- c. feel water running down the side of your face

A white pad or transparent plastic shield will be taped over the eye at the end of the operation and you will not be able to see clearly from the eye until at least the next morning.

After the operation

You will be taken back to the ward and a drink and light refreshments are provided. You will be given eye drops and a sheet of written instructions about how to care for your eye after the operation. These are mostly common sense dos and don'ts but please ask about any specific queries you have. An appointment for you to attend clinic for your post-operative follow up will be arranged.

The eye may feel a little scratchy as if there is an eyelash in the eye for a few days following the operation and the vision should continue to improve over the first week post-operatively. If the eye becomes painful or vision deteriorates it is essential that you phone the hospital immediately and you should be given a contact number following your procedure.

Risks and Benefits

In recent years there have been enormous advances in cataract surgery that make the operation safer and improve the visual outcome. However, you should be aware that there is a small risk of complications, either during or after the operation. Complications are usually treatable, possibly requiring further surgery. In a few cases serious problems such as infection or retinal detachment occur which may result in visual loss.

The vast majority of patients are delighted with the results of their cataract surgery finding that the clarity and quality of colour vision improve rapidly and substantially. As a result, the quality of life often also improves as many can resume driving and continue with sports including golf, tennis and bowls, etc. Near tasks such as artwork, sewing, playing bridge, reading music may all become easier with an improved quality of vision.

Mr Tanner runs a continuous audit programme and in the last 10 years has had no cases of intra-ocular infection of any kind. His results for other indicators are also significantly better than national benchmark data.

Overall benefits of cataract surgery include:

Improved Colour Vision: Colours are brighter and more vivid.

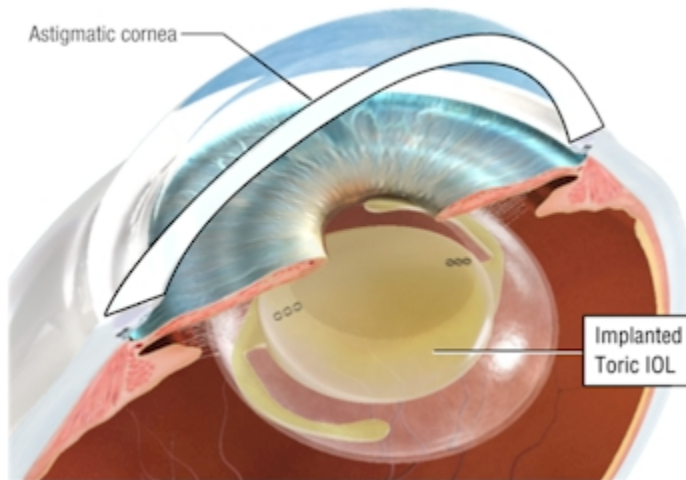
Greater Clarity of Vision: Vision is crisper and sharper.

Improved Quality of Life: Studies have shown that people enjoy improved quality of life after successful cataract surgery. Many people can resume driving and activities such as reading, sewing, golf and using a computer are generally easier after cataract surgery.

Greater Freedom from Corrective Lenses: Because lens implants are selected to compensate for pre-existing focusing problems, most people find that their vision improves considerably after surgery. Ideally, people are able to see clearly without glasses after surgery, although glasses may be necessary for some activities such as reading or driving. Even people who still need to use glasses can usually use thinner lenses than they relied upon in the past.

Toric Lenses – Removal of Astigmatism

Newly developed Toric lenses allow the power of the lens to be different at different orientations within the eye. This allows correction of abnormal corneal curvature, known as astigmatism, and increases independence from spectacles post-operatively without the need for additional incisions on the cornea.



Multifocal lenses - no reading glasses: These lenses now offer the possibility of clear focus for near and distance without the use of glasses following cataract surgery in selected cases. Many people are delighted with this option but it does have some drawbacks which Mr Tanner will be happy to discuss with you in more detail

Toric-Multifocal Lenses - Decreased astigmatism and no reading glasses
A very recent development is the combination of both the Toric and Multifocal components of intraocular lens technology, allowing insertion of a lens which corrects for almost all refractive errors within the eye and minimises use of glasses for both near and distance, even in patients with high degrees of astigmatism. These lenses have now removed the need for additional incisions on the cornea for those patients who wish to have a multifocal lens inserted and are a great step forward.

If you would like to make an appointment to discuss cataract surgery please contact my personal assistants:

Telephone : 0118 955 3457 or 01753 743418

E-mail: secretary@tanner-eyes.co.uk

Disclaimer *The information provided in this document is intended as a useful aid to general practitioners, optometrists and patients. It is impossible to diagnose and treat patients adequately without a thorough eye examination by a qualified ophthalmologist, optometrist or your general practitioner. Hopefully the information will be of use prior to and following a consultation which it supplements and does not replace.*

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