Patient information

Eye Removal Surgery

Ophthalmology Department - Elective Care Centre
Aintree Hospital

Who is this leaflet for?

This leaflet is for people who are undergoing eye removal surgery, also known as enucleation or evisceration.

What is eye removal surgery?

Unfortunately it is sometimes necessary to remove an eye surgically.

The main reason for this surgery is when an eye has become blind and painful. Some blind eyes are also unsightly. This surgery and the subsequent fitting of an ocular prosthesis should improve the appearance.

The other reason for eye removal is cancer growing inside the eye. In this situation the eye may not be blind or painful but may need to be removed to completely excise the cancer.

Many different diseases can result in blind, painful eyes, for example: glaucoma, diabetic eye disease, trauma, infection, retinal detachment.

The aim of surgery is to remove the eye and then create an eye socket, which is a space that will be able to hold an ocular prosthesis (artificial or ‘glass’ eye).

The eye socket is the shallow space between the inside of the eyelids and the conjunctiva behind it.

What is an Orbital Implant?

Usually an orbital implant is inserted at the time of surgery. This is a spherical man-made implant about the same size as an eyeball. It is buried deep in the orbit in order to replace the volume of tissue that is lost when the eyeball is removed. If an implant is not placed the socket will be very deep. As a result the artificial eye (ocular prosthesis) will need to be large to fill the space.

A large prosthesis causes ongoing problems in a socket such as discharge and lower lid laxity. It will also not move very well.

Not placing an orbital implant may lead to Post Enucleation Socket Syndrome (PESS): lower eyelid laxity; shrinkage of the conjunctiva; loss of the conjunctival fornix; chronic discharge from the socket; an unstable ocular prosthesis that easily falls out.

Implants are made from a number of different materials.

The commonest of which are:

- **Acrylic** is a type of plastic. These implants are solid and non porous.

- **Medpor** is also a type of plastic but it has pores and channels through it to allow blood vessels and tissue to grow through it. It is porous.

- **Hydroxyapatite** is a material similar to coral. It is porous and eventually becomes incorporated into the tissue of the orbit

If the eye has been enucleated the implant may be wrapped in a synthetic material so that the eye muscles can be sutured back onto it. (See later for the differences between evisceration and enucleation). This wrapping material may be a mesh of absorbable fibre called vicryl or other collagen-based materials.

What additional procedures may be required?

In order to ensure a well-formed socket is created it may be necessary to graft other tissues during the procedure:

- **Temporalis fascia** – An incision is made within the hairline above the ear. A piece of fascia or muscle sheath is removed and the skin closed with sutures that will be removed one to two weeks later.

- **Dermis fat graft** – An incision is made on the side of the abdomen (tummy). A piece of skin and fat are removed, and then the skin is closed with sutures that will be removed one to two weeks later.

- **Autologous scleral graft or wrap** – When an eyeball is completely removed (enucleation) the sclera (white of the eye) may be subsequently cleaned and re implanted in front of, or used to wrap, the orbital implant. No further sutures are required.

- **Mucous membrane graft from the lip** – A piece of oral mucosa (the wet skin lining the inside of the mouth) may be taken from inside the lip and used to add to the lining of the socket. The lip is not sutured – the area heals up by itself over a period of two weeks.

Often a suture is placed at the end of the procedure to hold the eyelids together. This ‘temporary suture tarsorrhaphy’ is removed two weeks later in clinic.

There are two types of surgery to remove an eye: Enucleation and Evisceration.

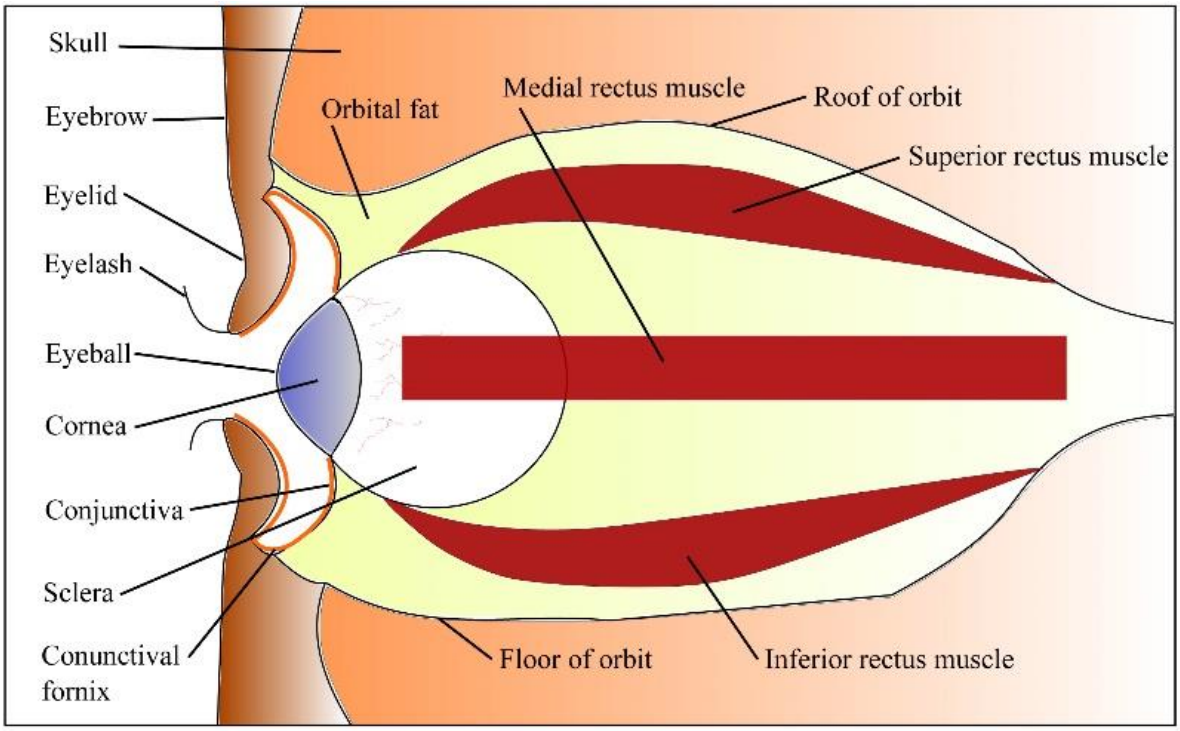
What is Enucleation Surgery?

During this operation the whole eyeball is removed. The four muscles that move the eye (rectus muscles) are detached and then reattached over a wrapped orbital implant.

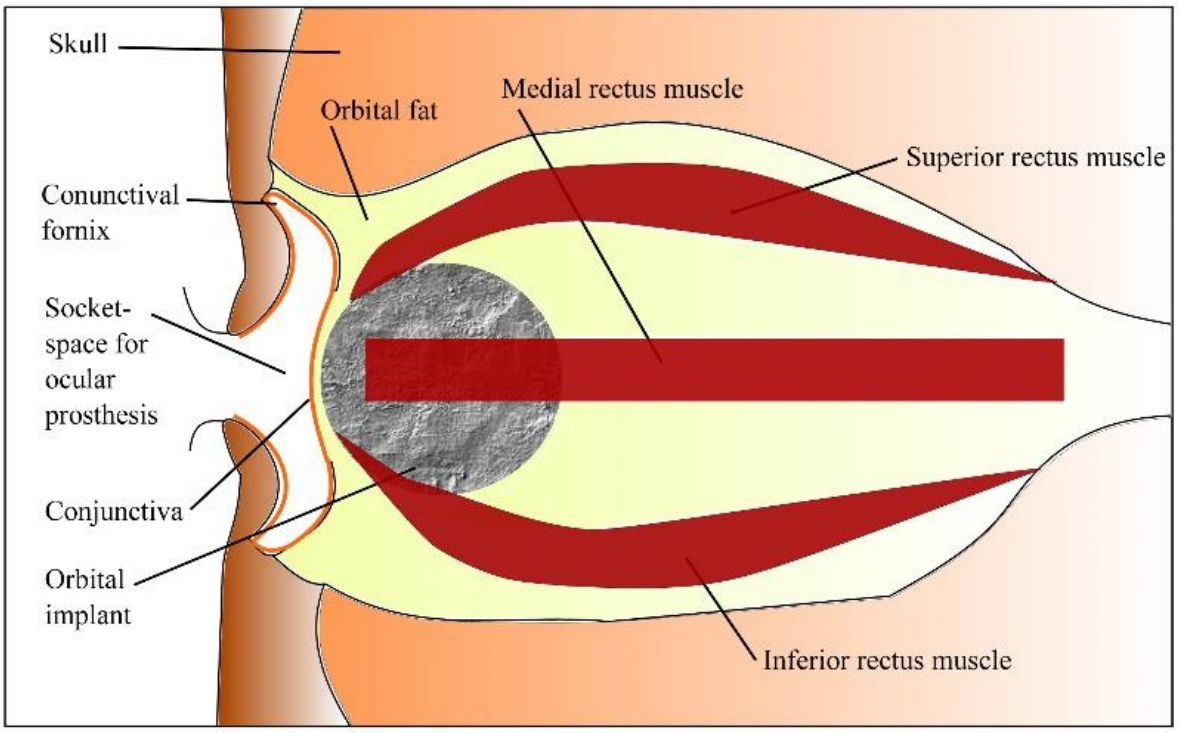
What is Evisceration Surgery?

During this operation most of the eyeball is removed. The sclera (white of the eye) is not removed and the muscles that move the eye are not disturbed. An orbital implant is usually inserted behind the sclera at the time of eye removal.

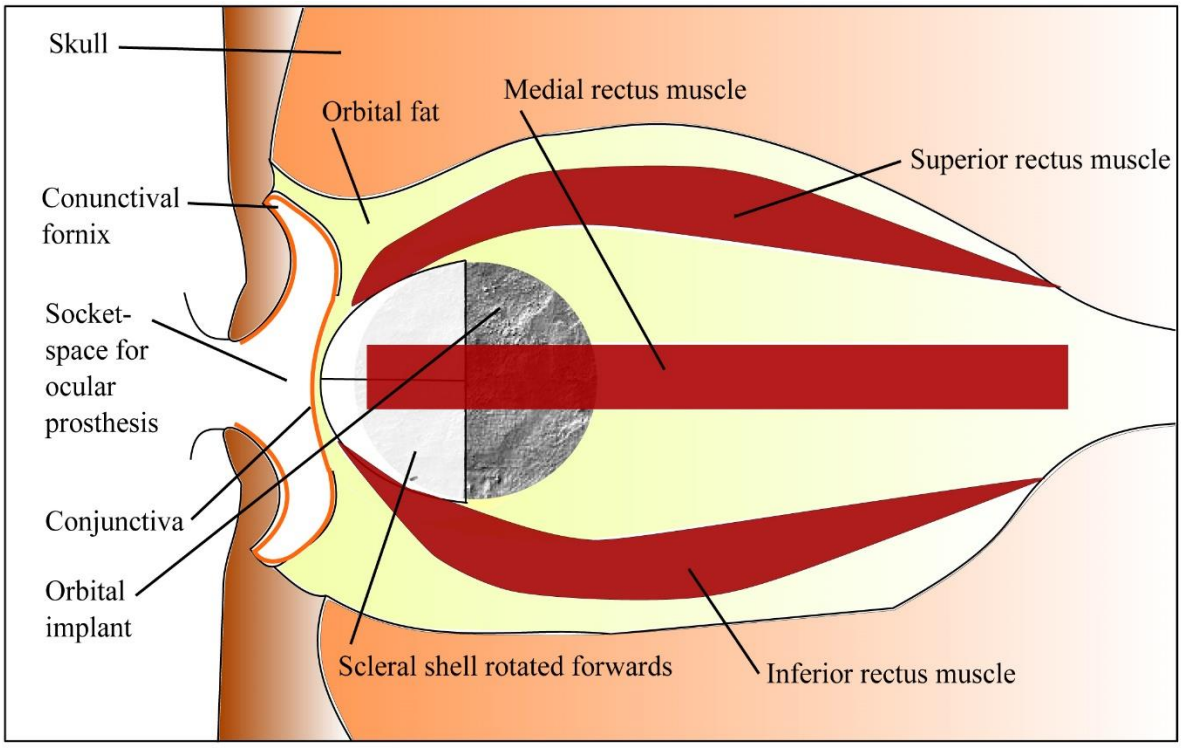
The Normal Anatomy of the Eye and Orbit



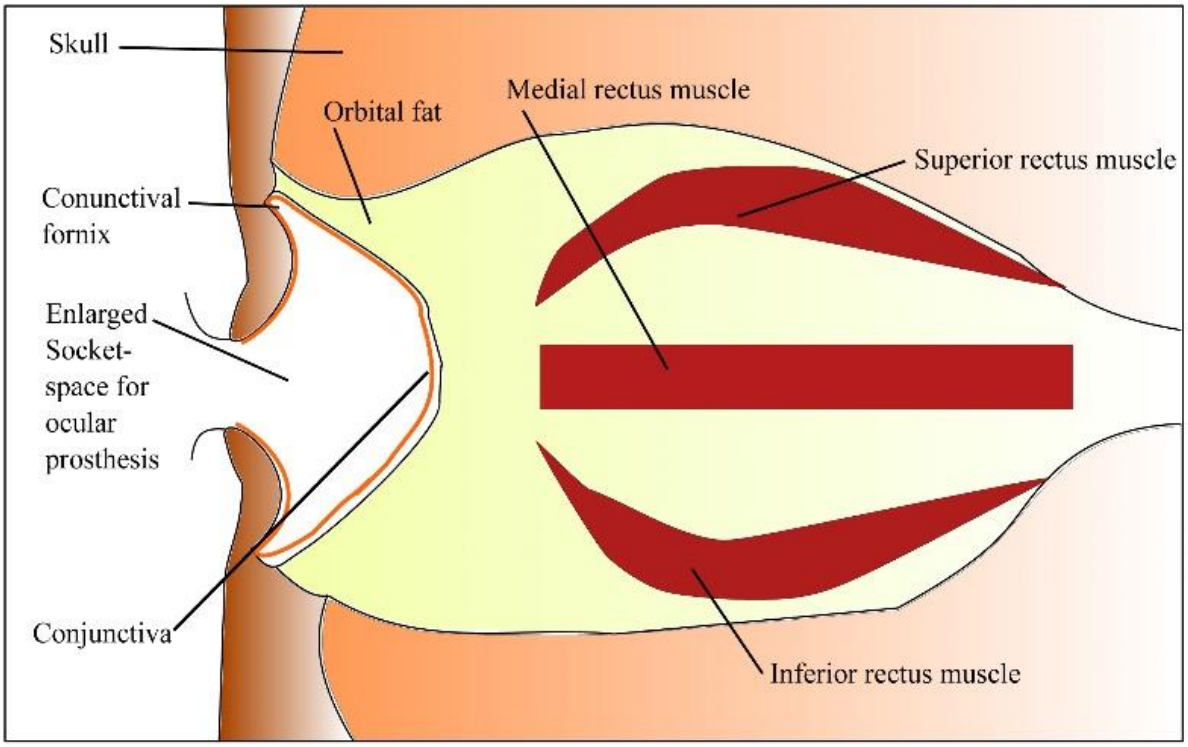
The Orbit After an Enucleation



The Orbit After an Evisceration



The Orbit If No Implant is Inserted



What are the benefits of surgery?

The first goal of this surgery is to remove a blind and painful eye or one that contains an eye tumour.

The second goal of this surgery is to create a shallow socket behind the eyelids that can comfortably hold an ocular prosthesis (artificial eye).

What are the alternatives to surgery?

It may be able to improve pain to the point where you decide you can live with it. This may be by using eye drops or pain medication. Sometimes a specialist pain team are involved in this aspect of care.

If your eye is unsightly and blind but not painful, it may be possible to fit an ocular prosthesis over your eye and avoid eye removal surgery.

If you have an eye tumour and your ocular oncologist has recommended eye removal surgery then it is very unlikely that there is an alternative to this surgery.

What will happen if I decide not to have surgery?

In most cases you will continue as you are. Some blind painful eyes may deteriorate with time and shrink until they do not look much like an eye.

In some rare cases, not removing an eye may increase the risk of inflammation in the other eye (sympathetic ophthalmitis). This is usually in cases of severe trauma. In this situation your surgeon may recommend early eye removal surgery.

What will happen before surgery?

Before the operation your consultant will see you in the clinic. The consultant will ask you about your problem. He/she will also ask about other medical problems you have and medications you take (bring a list or the tablets themselves with you to clinic). The doctor will examine both of your eyes. If you are to proceed with surgery the operation will be discussed in detail.

This will include any risks or possible complications of the operation and the method of anaesthesia.

You will be asked to read and sign a consent form after having the opportunity to ask any questions.

You will also see a preoperative assessment nurse. You will have blood tests and an ECG (heart tracing) if required. You will be told for how long you should starve before the operation.

What should I do about my medication?

In some cases you may be asked to stop or reduce the dose of blood thinning tablets like: warfarin, aspirin, clopidogrel (plavix), dipyridamole (persantin), pradaxa (dabigatran), xarelto (rivaroxaban), and eliquis (apixaban).

This decision is made on an individual basis and you should only do so if it is safe and your GP or surgeon has instructed you. This will be discussed with you before surgery.

Other medication should be taken as usual unless the pre-operative team instruct you otherwise.

What are the risks and possible complications of surgery?

Infection might present as increased swelling and redness of the skin. There might also be yellow discharge from a wound. Infection is treated with antibiotics.

Bleeding may present as fresh blood oozing from the site of surgery or a lump appearing near the wound after the operation. Simple pressure on a skin wound is usually enough to control minor bleeding. It may require a return to theatre if more severe.

Further surgery: Most patients, who have had eye removal surgery and have an ocular prosthesis fitted, require at least one minor surgery at a later date. This is usually lower lid tightening, as the ocular prosthesis may cause the lower lid to sag with time. Rarely a conjunctival cyst can form that requires excision surgery and further eye socket reconstruction.

Some people require more extensive surgery to the eye socket to help maintain comfortable prosthesis wear.

Implant problems: The orbital implant, inserted at the time of eye removal surgery, may become infected or extrude. This may require surgery to bury it deeper, cover it or completely remove it. An implant can migrate over many years. If this causes problems with the fit of an ocular prosthesis,surgery may be required to reposition or replace it.

Postoperative pain and inflammation: There is always some inflammation, bruising and pain after surgery. Throughout your stay in hospital you will be prescribed a range of analgesic medication. You should not worry about postoperative pain because you will receive whatever painkillers are required to control it.

You will not be discharged until you are happy with your pain control medication.

A granuloma is a type of inflammation that forms as a small lump in the eye socket. This usually settles with time and topical medication but may require further surgery to remove it.

Post Enucleation Socket Syndrome: If no orbital implant has been inserted or if the implant was too small, Post Enucleation Socket Syndrome (PESS) may result. This may include: lower eyelid laxity; shrinkage of the conjunctiva; loss of the conjunctival fornix; chronic discharge from the socket; an unstable ocular prosthesis that easily falls out. It is possible to treat all of these problems with further surgery.

Socket Contracture: In very rare cases the whole eye socket contracts due to an unrelenting scarring process. This can result in marked shrinkage of the socket and eyelids, sometimes to the point of being unable to wear an artificial eye. This usually only occurs after repeated surgery, prolonged inflammation or radiotherapy.

Sympathetic Ophthalmitis: After any eye surgery on an eye there is a risk that the body's immune system will subsequently attack the other non-operated eye. This is called Sympathetic Ophthalmitis.

It can occur after even the simplest eye surgery such as cataract surgery. In the past it was more serious but today, new treatments mean that it is treatable. Fortunately it is extremely rare. It has been estimated to occur in 1 in 50,000 eviscerations or 1 in 6,000,000 enucleations. As this is risk is extremely rare for both operations, most surgeons do not consider this in choosing which procedure to carry out, if there is a choice.

The exception to this is after eye trauma. Sympathetic Ophthalmitis is commoner after an initial traumatic eye injury and so some surgeons will recommend an enucleation rather than evisceration in that situation. If there is a cancer in the eye enucleation will always be recommended.

Scar: The eye removal surgery itself should not cause any visible skin scars but additional procedures such as temporalis fascia graft or dermis fat graft could do. These are usually minimal.

Eyelid Ptosis: Drooping of the upper eyelid is called ptosis. This can only be assessed once the ocular prosthesis has been finally fitted. Even then, the ocularist may be able to alter the prosthesis to lift the eyelid a little. Sometimes ptosis surgery is performed to lift the eyelid.

What type of anaesthesia will I have?

This procedure will be carried out under general anaesthesia. This means you are completely asleep with a breathing tube inserted.

What are the risks of anaesthesia?

You will have the opportunity to discuss the risks of anaesthesia with your surgeon and anaesthetist prior to surgery. It is worth noting that modern anaesthesia in all its forms is extremely safe. General anaesthetic has an extremely low risk of heart attack, stroke and death. The risk very much depends upon your general health and will be assessed prior to surgery.

Anaesthetic risks can usually be greatly reduced by thorough pre operative assessment, which you will receive.

What should I expect after surgery?

After surgery you may experience some pain. Simple paracetamol/codeine is usually enough to control this. For some people the pain is more severe requiring morphine type painkillers. For this reason it is routine to admit patients over night to ensure pain is well controlled prior to discharge.

The eyelids may be bruised and swollen. Bruising will take up to two weeks to settle. Swelling is greatly reduced after two weeks but may not completely resolve for three months.

For the first two weeks you may have a suture in place to hold the eyelids closed. If so, this will be removed in clinic two weeks after surgery.

Behind the eyelids will be a clear plastic conformer. This looks like a thick contact lens and stays in place until the ocular prosthesis is made for you. This may be up to 12 weeks after eye removal surgery.

It may take three months after surgery before you have a prosthesis (false eye) finally fitted.

During this time you will either have the clear plastic conformer in place or a temporary prosthesis, depending on the ocularist's practice. What you do in this intervening period is very much down to your own personal preference. Some people are happy to have the eyelids uncovered, others will use an eye patch, whilst others simply wear dark glasses or have one lens fogged to conceal their closed eyelids behind.

After surgery your consultant will refer you to the National Artificial Eye Service or a local independent ocularist. An appointment will be sent to you to see an ocular prosthetist or ocularist, who will fit your ocular prosthesis. The prosthesis itself may be made by your ocularist themselves or at the National Artificial Eye Service Laboratory.

Pre operative instructions for eye removal surgery

Do's

- Dress in loose fitting casual clothes.
- Avoid bringing valuable items, such as jewellery, into hospital.
- Thoroughly wash the face and remove all traces of makeup to reduce your chance of an infection.
- Remove your contact lenses.

- Inform your consultant of all your medication and discuss which should be taken on the day of surgery.
- It is usually recommended that all medications be taken until and including the day of the surgery.
- Please attend the hospital $1^{1}/_{2}$ hours prior to the start of the surgical list.

Don’ts

- Please refrain from any non-steroidal anti-inflammatory painkillers such as sspirin, brufen, ibuprofen and voltarol for a period of one week prior to surgery, if in doubt, ask your consultant or your general practitioner.
- Refrain from alcohol consumption for two days prior to surgery, on the day of surgery and the following day.
- Refrain from smoking for a month prior to surgery and a month after.
- Please do not wear eye make up on the day of surgery.

Postoperative Instructions

If any swelling, bruising, discomfort or pain worsens or a discharge (pus) appears around suture line, contact the hospital / clinic immediately. See contact numbers at the end of the leaflet.

First Day post operatively

- Hot showers and baths are to be avoided for the first day.
- Avoid hot drinks for the first day. You can drink tea and coffee but not piping hot.
- Sleeping in an elevated position for 48 hours reduces the swelling. Try using an extra pillow. Sleep is important, so do not persevere without sleep.

- You should rest but you may start your usual daily activities.
- Take your usual medications and eat as you would normally would.
- Avoid certain medications **if instructed to do so** e.g. Warfarin Aspirin and other unprescribed painkillers.
- Take the additional medications prescribed as instructed.
- Drink lots of water, clear fluids, cold drinks, clear soup and tea for the rest of the day.
- You may have a light lunch or dinner, as long as it is 4 hours after surgery, provided you are hungry and are not feeling nauseated.

General post-op instructions

- A firm eye pad is put on after the procedure for one to three days. This should stay on until instructed.
- You will be given Chloramphenicol eye ointment for the eyelids and any incisions before you are discharged. Apply the Chloramphenicol ointment with clean fingertips along any incision lines and to the eyelids four times a day for two weeks, running from the inside along the stitches to the outer end.
- If non-absorbable stitches have been used, these are removed by your consultant at your follow up appointment one to two weeks later. This includes any sutures that have been placed to hold your eyelids shut.
- If absorbable stitches have been used these will fall out after a few weeks.
- The follow up appointment will be organised for you before your discharge.

- Cool compresses should commence as soon as the pad is removed or immediately if there is no pad. Hourly for ten minutes for the first day. This may continue four times a day after this if you find it beneficial.
- Cleanse the lids with cotton wool dipped in cooled boiled water or sterile saline for ten days.
- Do walk, but avoid any form of exercise for ten days.
- Reading and watching television is fine.
- Please try not to bend-over very much for the first two days after surgery.
- If your eye is patched, try not to put your head below your chest for three days.
- Try not to move your eyes around very much. This will lessen the amount of general discomfort you may have.
- If you have pain within two hours of surgery, start taking the painkiller prescribed (or two 500mg paracetamol tablets every six hours) for 48 hours following surgery.
- Eye make-up can be used one week after surgery.

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further information

Who do I contact if I have questions or concerns?

In an emergency
Tel: 0151 529 0186 / 0187
Or
Tel: 0151 525 5980

Pre-op assessment nurses
Tel: 0151 529 0178 / 0179

Secretary for Mr McCormick and Mr Hsuan
Tel: 0151 529 0142

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