



Vitreotomy Surgery for Epiretinal Membrane

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Vitreotomy Surgery for epiretinal membrane

Your eye specialist, Andrew Luff, has diagnosed a condition known as epiretinal membrane or macular pucker and has recommended a surgical procedure. Without treatment this condition can worsen causing increasing distortion of vision and permanent central blurring.

This leaflet provides information for you to understand the condition and how it can be treated.

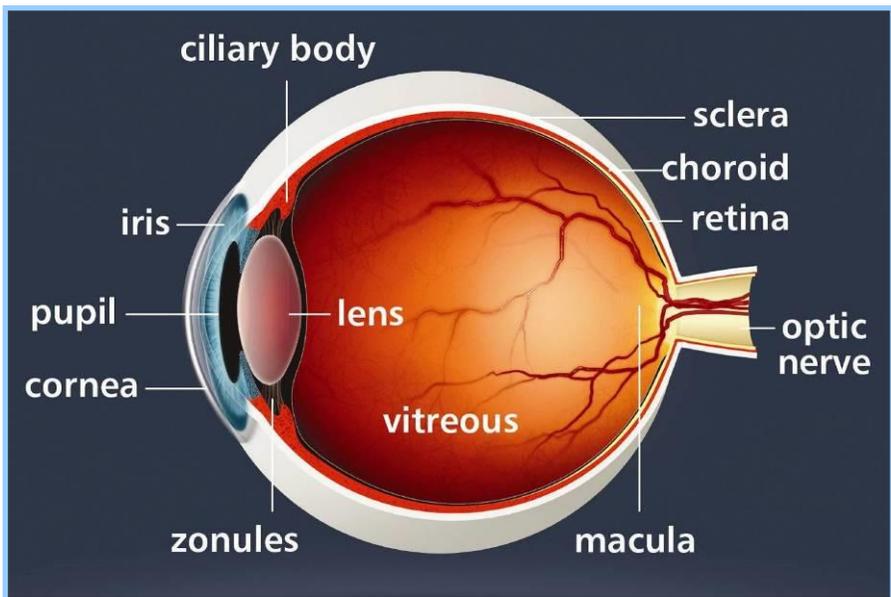
If you have questions that are not answered in this leaflet, you should ask any member of our team.

What is an epiretinal membrane?

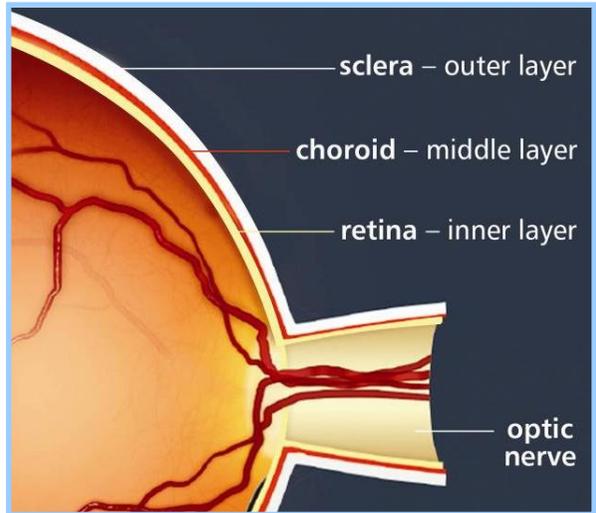
Epiretinal membrane (ERM) is a condition characterised by the growth of abnormal tissue across the surface of the macula, the central part of the retina. It behaves as a form of scar tissue which, as it contracts, “puckers” the underlying macula causing distortion and visual loss.

It is helpful to know a little about the eye and how it works in order to understand the effect epiretinal membrane has on the vision, and how it can be treated.

Anatomy of a normal eye



The wall of the eye is formed by three layers, the **retina**, the **choroid** and the **sclera**.



The retina is the light-sensitive nerve tissue that lines the inner wall of the eye. Rays of light enter the eye, passing through the cornea, pupil and lens before focusing on to the retina. The retina contains photoreceptors which convert light into electrical impulses.

In the healthy eye these impulses are sent via the optic nerve to the brain where sight is interpreted as clear, bright, colourful images. The retina can be likened to photographic film in a camera.

The macula is a small area at the centre of the retina. It is very important as it is responsible for our central vision. It allows us to see fine detail for activities such as reading, recognising faces, watching television and driving. It also enables us to see colour.

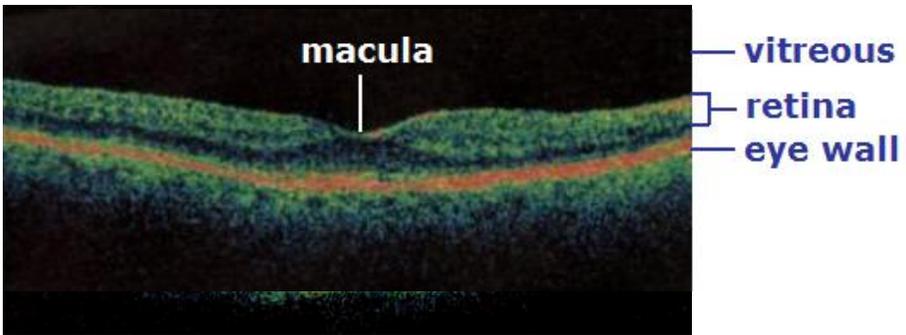
The choroid is the underlying vascular (blood vessel) layer of the eye from which the retina receives oxygen and nutrients.

The **vitreous** is the clear jelly-like substance which fills the hollow space behind the lens.

As we age this vitreous gel opacifies and shrinks away from the retina. This is very common, occurring in about seventy-five per cent of people over the age of sixty-five.

Separation of the vitreous gel from the retina is known as posterior vitreous detachment or “PVD”. It does not itself cause any permanent loss of vision although floaters may be troublesome.

Rarely, the effect of posterior vitreous detachment, or of continuing traction as the gel collapses, is to start a process of scarring over the central macular retina resulting in **epiretinal membrane**.



OCT image of a normal macula and a macula with epiretinal membrane

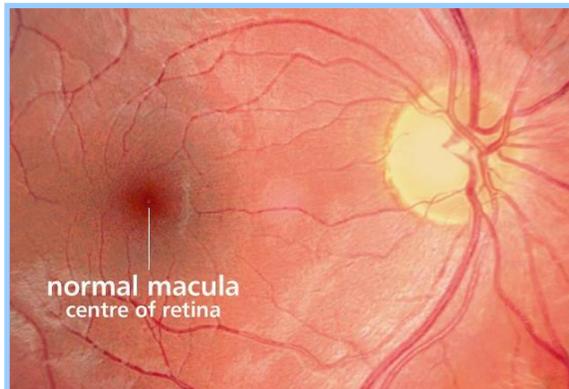
What causes an epiretinal membrane to form?

The cause of the majority of epiretinal membranes is unknown (idiopathic) but the condition is frequently associated with previous posterior vitreous detachment.

It is more common when vitreous detachment has resulted in retinal tearing (requiring laser or freezing therapy) or retinal detachment. Less commonly ERM is associated with previous occlusion of retinal blood vessels or inflammation in the eye.



Comparison of a healthy eye and an eye with epiretinal membrane.



How does epiretinal membrane affect your sight?

Common symptoms of epiretinal membrane or macular pucker are:

- distortion of straight lines;
- blurred central vision;
- disparity in image size between the two eyes.

When should you have membrane surgery?

The procedure to treat this condition involves removal of the scar tissue from the retina. This is known as epiretinal membrane peeling and requires a vitrectomy operation.

The indication for surgery depends largely on the level of distortion or visual interference you are experiencing. The presence of epiretinal membrane is not necessarily an indication for surgery. The decision to treat depends on both the progression of symptoms in the affected eye and your ability to use the two eyes together.

We will help you decide if a membrane peeling operation is appropriate for you.



What do you need to consider prior to surgery?

It is important that we have knowledge of any prescribed medications you are taking. You will probably be asked to continue taking these in the usual way, but some medications can cause complications during any surgical procedure. These include warfarin, an anti-clotting agent. If you normally take this you may be asked to stop it for a few days prior to admission. You can resume taking it immediately after surgery.

If you take a diuretic (“water tablet”) and are having surgery on a morning operating list, you may wish to postpone taking it until after your operation.

As most vitrectomy surgery is carried out under local anaesthesia there are usually no restrictions on what you may eat and drink prior to admission. If the use of sedation during surgery has been discussed, you should avoid eating a heavy meal during the two hours prior to hospital admission.

Occasionally surgery may be carried out under general anaesthesia and if you are going to have a general anaesthetic you will be advised of the need to fast prior to surgery.

What happens next?

Once a decision has been made to proceed with surgery, our secretarial team will liaise with you to arrange a convenient date on one of our operating sessions. This will be at one of the private hospitals in your local area.

You will receive confirmation of your admission date from the hospital bookings department, together with a health questionnaire and some general information about your chosen hospital.

The procedure is usually carried out as a day case, with a hospital stay of a few hours.

Remember, you should not drive yourself to the hospital. You may want a relative or friend to accompany you, or to drop you off and return to collect you when you are ready to go home.

Alternatively if you find getting to and from the hospital difficult, we may be able to offer assistance. Please alert the secretarial team if this is the case as the hospital bookings office is not able to help with transport arrangements.

How do you pay for surgery?

If you belong to a private health insurance scheme you may be obliged, under the terms of your policy, to undergo surgery at a particular hospital. It is therefore important that you notify your insurer of the intended procedure and check whether you are fully covered for admission to the hospital of your choice.

If you do not have private health insurance, you may choose any of the local hospitals and attend as a self-funding patient.

Please ask for details of the costs involved as prices may vary between hospitals and are subject to change.

What to expect on admission to hospital

You will be welcomed at the hospital and shown to the ward where you will be settled in. A nurse will carry out routine investigations including checking your pulse and blood pressure. The nurse will also check the details of any medications you are taking and ask questions about your general health.

Once this has all been completed the nurse will instil the drops which dilate your pupil in readiness for the operation.

The Ophthalmic Nurse will come to see you on the ward to explain what will happen during and after the operation, and to answer any further questions you may have.

You will be asked to sign a consent form to state that you have been provided with, and understand all the information given relating to the operation (including the risks and benefits of surgery) and that you agree to the proposed treatment.

You will be taken to the operating theatre in your own clothes, so it is important to wear something comfortable.

What happens during surgery?

The surgical procedure to peel away the epiretinal membrane begins with a **vitrectomy**.

Vitrectomy means removal of the vitreous, the jelly-like substance that fills the eye behind the lens; this is a necessary part of the treatment for a number of conditions affecting either the retina of the eye or the vitreous itself. In your case, vitrectomy allows access to the retina for membrane peeling to be carried out and removes any troublesome floaters.

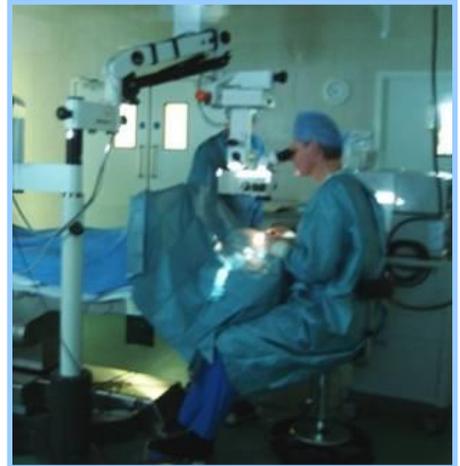
Surgery is usually carried out under local anaesthesia which involves gently injecting anaesthetic around the eye. The anaesthesia will numb the eye and allow it to remain still during the procedure. You may be offered sedation if you are particularly anxious, which will help you relax whilst the procedure is carried out. You will be awake during the operation and will be aware of some movement and touch, but the procedure will be painless.

You will be made comfortable on the operating couch, following which the skin around your eye will be thoroughly cleansed and a sterile cover (“drape”) will be placed over your eye and face.

The cover will be lifted off your mouth so you can talk and breathe easily.

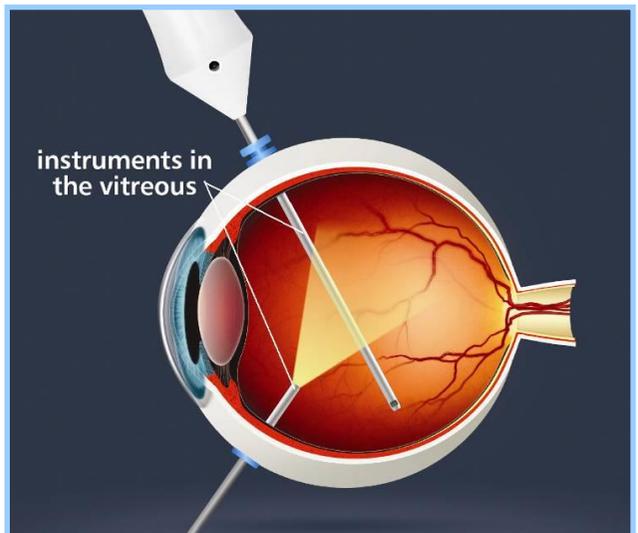
Your eyelids will be gently held open, although your eye may feel closed. You will see little of what is happening during surgery but we will explain what we are doing as the operation goes along.

The theatre staff will make sure you are comfortable and help you to relax. The operation usually takes about forty-five minutes, but in some cases may take longer.

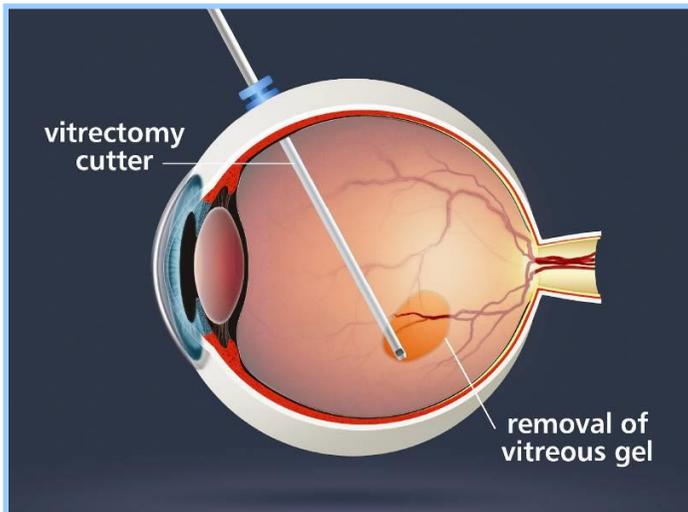


Surgery is performed with the aid of an operating microscope and special lenses which give the surgeon a clear image of the vitreous and retina.

Three tiny incisions are made in the sclera (the white of the eye) to enable instruments to be passed into the vitreous.

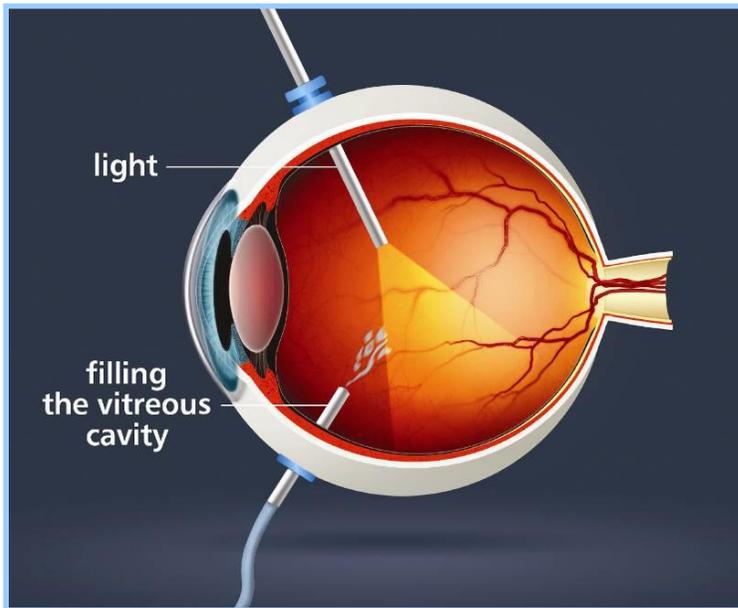


The first of these is a saline infusion (a “drip”) to replace fluid in the eye, maintaining the pressure and therefore the shape of the eye during surgery; the second is a fibre-optic light to illuminate inside the eye; and the third is for the operating instrument, starting with a vitrectomy cutter which enables safe removal of the vitreous gel from inside the eye.



Following removal of the gel we use extremely fine forceps to gently peel away membrane from the retina and remove it from the eye. Sometimes a dye is used to stain the membrane to enable better visualisation of areas to be peeled.

During the surgical procedure vitreous is replaced with a salt-water solution, which is gradually exchanged for natural aqueous fluid.



Traditionally the three scleral incisions are sutured at completion of the operation but with the finer instruments now available, most patients will benefit from a “sutureless” technique, with self-sealing incision sites.

Immediately after your operation

After the operation you will return to the ward with a pad and plastic shield covering the operated eye. This remains in place overnight.

You will be given a combination antibiotic and anti-inflammatory eye drop to take home, with written instructions on how to instil this and the frequency with which it should be used.

We will make sure you know how to care for your eye when you get home.

Whilst resting after the operation you will be offered refreshments. You may leave the hospital when you feel ready.

During the first few hours after your operation the eye may feel sore. This is nothing to worry about and your normal headache tablets should settle any discomfort.



The day after your surgery

The pad covering your eye can be removed on the morning after your surgery. You do not need to use it thereafter, although some patients prefer to wear the clear plastic shield for the first few nights for peace of mind.

You may find the eye is a bit sticky and there might have been a slight discharge overnight. This is quite normal and you should cleanse the eye only if necessary, by wiping gently across your closed eyelids with cotton wool dampened with clean water.



You will then need to start your eye drops, following the detailed written instructions given to you before you left the hospital.

Advice will be given on when to reduce and stop your eye drops.

At that stage you will be advised of any change to your drop regime. If you are running out of drops before your appointment at the clinic, your GP will be able to provide you with a repeat prescription (usually without the need for you to be seen at the Practice).

The operated eye may be sore for the first few days and feel gritty for a couple of weeks.

You will receive a telephone call from the Ophthalmic Nurse on the day after your surgery to check that all is well. If you have any concerns before this, please do not hesitate to contact us via the telephone number at the back of this booklet.

How quickly will your vision improve?

Successful peeling of the epiretinal membrane is almost always achieved. This usually leads to a reduction in distortion and visual improvement over time, particularly in the way the two eyes function together. Recovery depends upon the duration of symptoms and your visual acuity prior to surgery.

For the first couple of weeks the retina may be slightly swollen, an inevitable effect of the mild trauma associated with the peeling process. This may cause a temporary worsening of vision. Thereafter steady improvement is expected.

Your final visual result however, may not be known for several months and occasionally patients may still be aware of some distortion and visual limitation if permanent retinal damage occurred prior to removal of the epiretinal membrane.

When can you resume normal activities?

You may return to your normal daily activities as soon as you feel ready to do so. As a guide however, for the first few weeks you should refrain from swimming, strenuous activities, high impact sports, heavy lifting and wearing eye make-up.

Your ability to drive will depend upon a number of factors including the vision in your other eye and the level of your vision when using both eyes together.

If you are in any doubt regarding your visual status you should refrain from driving until you have been seen for review in the clinic.

It is acceptable to travel (including by air) following routine surgery for epiretinal membrane. All vitrectomy surgery, however, carries a small risk of inducing a retinal tear, for which the eye may be filled temporarily with a gas bubble. For this reason you should not plan to travel by air for one month after your operation. Please also remember that you will need to continue putting drops in the eye for approximately three to four weeks.

What can you do to help make the operation a success?

Following your epiretinal membrane peeling procedure it is very important that you instil the eye drops as instructed as this will help prevent any complications such as infection or inflammation in the eye.

You should avoid knocking or rubbing your eye, but you may touch the surrounding area. Although it is safe to have a shower or bath, take care when washing your hair to avoid getting soapy water in your eye.

The eye can seem more sensitive to bright light for the first few days and you may find dark glasses helpful, especially in strong sunlight.

What are the risks and complications?

The aim and potential outcome of your epiretinal membrane peeling will be discussed with you in clinic and again prior to your operation.

Our team operates from modern private hospitals where the equipment and products used in the operating theatre are of the highest standard. Every effort is made to minimise risk and ensure your operation is safe. Serious problems during or after surgery are rare, however every surgical procedure has risks and potential complications.

Complications early in your recovery:

- **Initial poor vision.** All vitrectomy surgery carries a small risk of inducing tears in peripheral retina. To prevent subsequent retinal detachment, laser may be used and a bubble of gas injected into the eye. It is not possible to see clearly through a gas bubble and vision will be compromised until spontaneous re-absorption occurs. Specific information will be given after surgery should this be necessary.
- **Bruising of the eye or eyelids.** The local anaesthetic may cause some bruising around the eye, particularly on the lower lid. The sclera may be red where the tiny incisions are made into the eye. This usually resolves completely within the first month.

- **Double vision.** The local anaesthetic injection used to numb your eye takes some time to wear off and this may leave one or more of the muscles around the eye weak for the first few hours. This causes double vision, which resolves spontaneously.
- **A temporary increase in the intra-ocular pressure in the eye.** This necessitates an additional course of eye drops or tablets. If a gas bubble is used, these treatments are given routinely as a precaution.
- **Allergy to eye drops.** Ocular allergy typically causes lid swelling, itching or redness. If this happens please let us know and we can prescribe an alternative. Some patients are allergic to the preservative used in eye drops and if you have previously had a reaction, please inform us prior to surgery so that we can prescribe a preservative-free option.
- **Endophthalmitis.** Infection in the eye is a very rare, but potentially devastating complication affecting fewer than one in a thousand cases. Increasing discomfort, increasing redness of the eye or worsening discharge should be reported immediately.
- **Cystoid macular oedema.** Swelling of the central macular area of the retina causes blurred vision. This usually resolves within a few weeks of using additional eye drops.

Complications late in your recovery:

- **Retinal detachment.** Vitrectomy surgery involves the insertion of instruments into the vitreous cavity of the eye which carries a small risk of tearing the peripheral retina. Although normally identified and treated at the time of surgery, retinal detachment can occur months or even years later. Any increase in floaters and flashing lights, or the appearance of a shadow spreading inwards from the edge of vision, should be reported urgently.
- **Post-vitrectomy cataract.** This is an inevitability following vitreous surgery. It can develop as quickly as a few weeks after surgery, or may take several years to become significant. In some cases patients may be offered phacoemulsification (cataract surgery) combined with the vitrectomy procedure to avoid the need for further surgery at a later date.
- **Glaucoma.** Any ocular surgery can increase the risk of glaucoma in later years. Glaucoma is damage to the main optic nerve of the eye, caused by an unsuitably high pressure. It can nearly always be controlled with eye drops, although prolonged or even indefinite use may be required.
- **Dry eyes.** This is a common symptom with increasing age, for which many sufferers use simple lubricating drops. Interfering with the conjunctiva on the surface of the eye can upset the production of mucus, which is an important constituent of the tear film. In most cases this is temporary, responding to simple measures such as ocular lubricants and warm compress bathing. We will advise you on a treatment regime if required.

Getting advice after surgery

If you experience any deterioration in your vision, increasing discharge from the eye, continual aching or worsening pain, please contact us immediately.

NUFFIELD HEALTH WESSEX HOSPITAL

To speak to Mr Luff's medical secretary at Nuffield Hospital in Chandlers Ford, please telephone 0845 652 2414 or 02380 258405

Out of office hours, please telephone the on-call nurse on 023 8026 6377

OPTEGRA SURREY EYE HOSPITAL

To speak to Mr Luff's medical secretary at Optegra's Surrey Eye Hospital in Guildford, please telephone 01483 903004

Out of office hours, please telephone the on-call nurse on 07912 406 463

OPTEGRA HAMPSHIRE EYE HOSPITAL

To speak to Mr Luff's medical secretary at Optegra's Hampshire Eye Hospital in Whiteley, please telephone 01329 316700

Out of office hours, please telephone the on-call nurse on 07540 703 741