



# EPIRETINAL MEMBRANE

VITRECTOMY SURGERY  
FOR EPIRETINAL MEMBRANE



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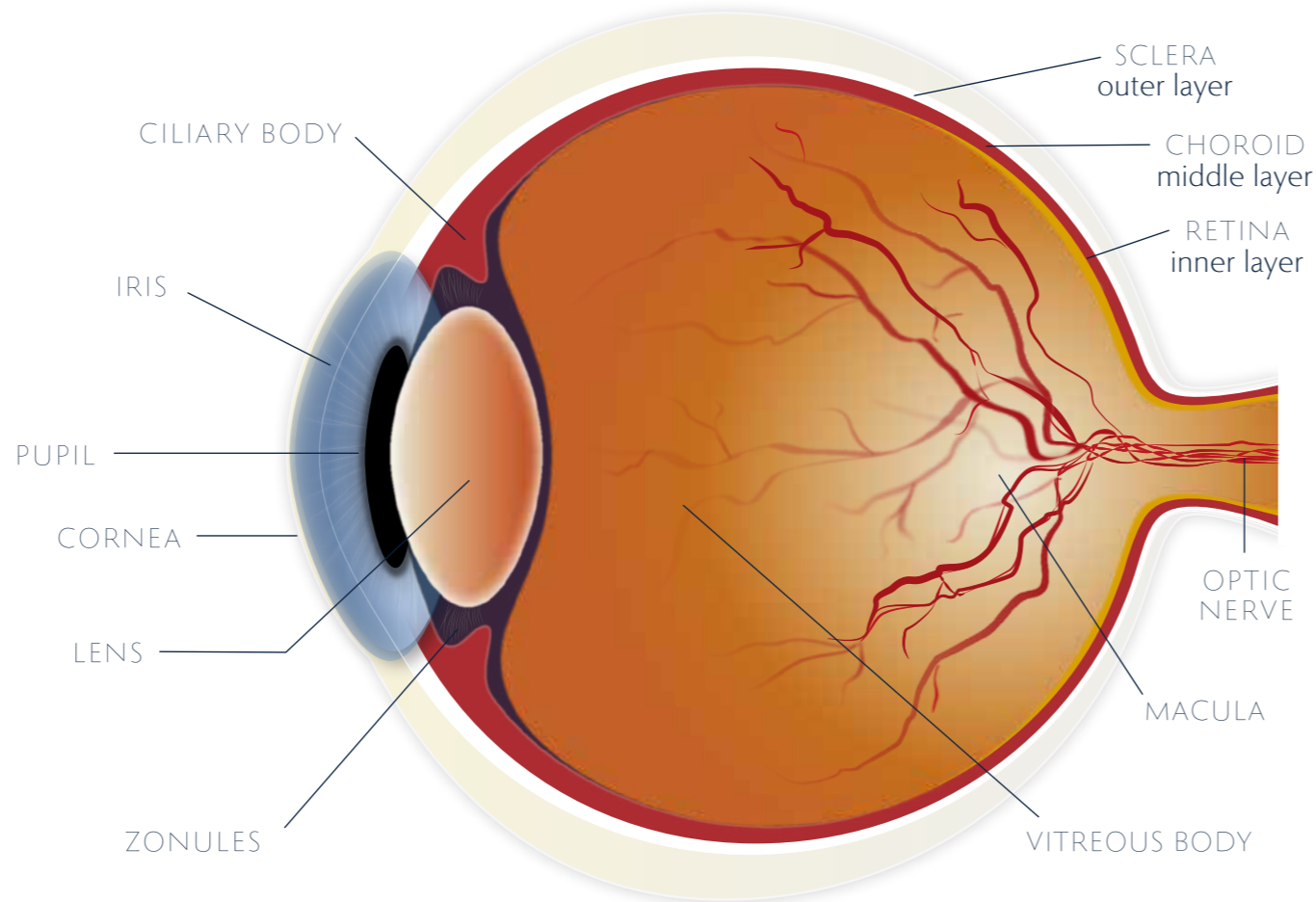
07.

AFTER SURGERY

# anatomy

## EYE ANATOMY

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



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 a 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, allows us to see fine detail, and enables us to see colour. The choroid is the underlying vascular (blood vessel) layer of the eye from which the photoreceptors of the retina receive oxygen and nutrients. The vitreous is the clear gel-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 75 per cent of people over the age of 65. 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.

WHAT IS  
epiretinal  
membrane?

02.

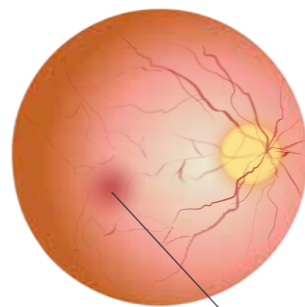


Epiretinal membrane (ERM) is a condition characterised by the growth of abnormal tissue across the surface of the macula – the central part of the retina. It behaves as a form of scar tissue which, as it contracts, 'puckers' the underlying macula causing distortion and visual loss.

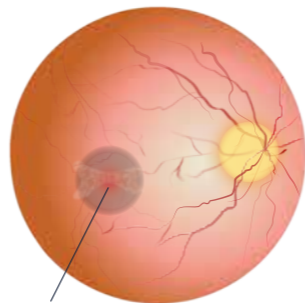
# 03.

## CAUSES OF epiretinal membrane

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.



NORMAL MACULA  
centre of retina



EPIRETINAL MEMBRANE

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

## Symptoms

### EPIRETINAL MEMBRANE SYMPTOMS

Common symptoms of epiretinal membrane or macular pucker are:

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





# 04.

## EPIRETINAL MEMBRANE *treatment*

### **WHEN SHOULD YOU HAVE EPIRETINAL 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 membrane peeling surgery is appropriate for you.



05.

BEFORE  
SURGERY

**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 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. 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 lists. 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 TO 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 to pay for your procedure as a self-funding patient.

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

# 06.

## THE DAY OF surgery

### 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, or a pellet, 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 normal clothes, so it is important to wear something comfortable.

## DURING SURGERY

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

Vitrectomy means removal of the vitreous, the gel-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 will be offered sedation which will help you relax while 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.

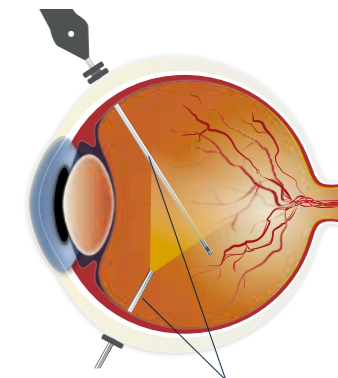


You will be made comfortable on the operating table, following which the skin around your eye will be thoroughly cleansed and a sterile cover ('drape') will be placed over your eye and face.

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.

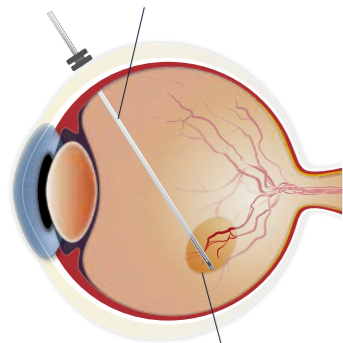
The theatre staff will make sure you are comfortable and help you to relax. The operation usually takes about 30 minutes, but will be longer if cataract surgery is performed simultaneously. Surgery is performed with the aid of an operating microscope and special lenses which give the surgeon a clear 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.

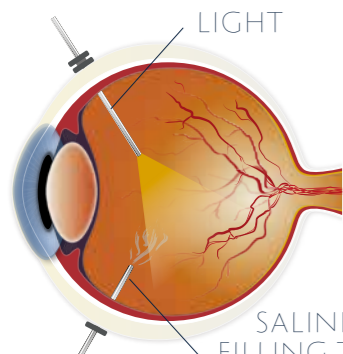


INSTRUMENTS IN THE VITREOUS

VITRECTOMY CUTTER



REMOVAL OF VITREOUS GEL



SALINE FILLING THE VITREOUS CAVITY

The first incision is a saline infusion (a 'drip') to replace fluid as vitreous is removed from 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. 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 saline solution, which is gradually exchanged for natural aqueous fluid. For technical reasons your surgeon may decide to leave the eye filled with an air bubble rather than saline. This will blur your vision for the first few days, and can take anything up to eight days to disappear completely. The three tiny scleral incisions seal spontaneously, so we no longer require sutures in the vast majority of cases.



### 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.

While 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 standard analgesics can be taken, such as those taken for headache.



07.

## AFTER Surgery

### THE DAY AFTER YOUR SURGERY

The plastic shield can be removed on the morning after your surgery. You do not need to use it thereafter, although some patients prefer to wear the 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 pink 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. You will be reviewed in clinic approximately two weeks after surgery. At that stage, you will be advised of any change to your drop regime. If you are running out of drops before your post-operative follow-up appointment at the clinic, we 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 within 48hrs of 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. You will be told after surgery whether or not an air bubble has been used, and how large the bubble is likely to be.

For optical reasons it is not possible to see through the air bubble, and the world will appear extremely blurred. The exception is when you look vertically downwards, when the air bubble can behave like a magnifying glass. Your bubble can take anything up to eight days before disappearing completely from the eye, which gradually refills with your own aqueous (saline) fluid.

For the first couple of weeks the retina may be slightly swollen. This is 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. Travel by road and rail is perfectly acceptable following surgery for epiretinal membrane. However, if an air bubble has been instilled into the eye it is vital you do not fly until the bubble has disappeared completely. Very occasionally, if a retinal tear is encountered during the procedure, a more long-lasting gas may be

used in place of the air. This will take longer to reabsorb. You should not plan to travel by air for at least two weeks following the operation. Please also remember that you will need to continue putting drops in the eye for 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.



### 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.** If the eye is air-filled your vision will be very poor for the first few days.

From your perspective, the air bubble occupies the lower part of your vision and will slowly diminish in size towards the bottom of your visual field.

- **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. No additional treatment is needed for an air bubble.
- **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 (or the retinal holes which cause it) can occur months later. Any increase in floaters and flashing lights, or the appearance of a shadow spreading inwards from the edge of your vision, should be reported urgently.
- **Post-vitrectomy cataract.** Acceleration of the development of cataract 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 most 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, but occasionally a laser procedure or even surgery 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.



### **ADVICE AFTER YOUR SURGERY**

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

**0238 2000 200**

During out-of-office hours, please contact the hospital where the surgical procedure was conducted.

### **SAPPHIRE EYE CARE**

1 Sleepy Hollow, Ampfield Hill,  
Romsey, Hampshire SO51 9AW

**[WWW.SAPPHIRE-EYECARE.CO.UK](http://WWW.SAPPHIRE-EYECARE.CO.UK)**