# Epiretinal membrane

## What is epiretinal membrane?

Epiretinal membrane (ERM) is a condition where a sheet of naturally occurring cells develops on or above the surface of the central part of your retina, an area called the macula.

Your retina is the light sensitive layer that lines the back of the eye. An epiretinal membrane is sometimes described as “scar tissue” on the retina. Other names for this include epi-macular membrane, macular pucker, or cellophane maculopathy.

ERM can affect vision if this sheet of cells starts to shrink, causing the retina to wrinkle up under it. This wrinkling of the retina can then cause distortion and blurring of your vision, as well as a possible reduction in your level of sight (how far down the letter chart you are able to read). However, it doesn’t cause you to lose all your vision and it isn’t painful.

ERM does not always cause sight problems. If you are not noticing any vision problems, then you may not need any treatment. Many epiretinal membranes do not get any worse and may never affect vision, so can just be left alone.

If the epiretinal membrane is affecting your sight and making everyday activities such as reading and driving difficult, it is possible to have surgery to remove the membrane. This surgery is very effective in improving the visual symptoms. However, not everyone who has vision problems due to ERM needs to, or chooses to have surgery, particularly if they have good vision in the other eye and are managing well.

## How does ERM affect vision?

When you look at something, light is focused onto your retina.

The retina converts the light into electrical signals that travel along the optic nerve to your brain. The brain then interprets these signals to “see” the world around you.

The macula is a tiny area in the centre of your retina, which is very important for seeing fine detail for activities such as reading and watching television, as well as seeing in colour. Epiretinal membranes develop over the macula area and this can affect central, detailed vision.

If an epiretinal membrane affects your central vision, it can make it distorted and blurred so that it’s more difficult for you to do things like read and watch television.

Whether or not an epiretinal membrane will affect sight and how badly sight will be affected can be quite variable. In the early stages of its development, an epiretinal membrane may not cause any problems with vision.

However, if the membrane shrinks and wrinkles it can cause distortion of your central vision. Your vision can seem blurred and straight lines may look wavy or bent. You may find things like reading or seeing detail difficult.

When your vision is measured in the hospital eye clinic or by your optometrist (optician) you may also find that it is harder to read as far down the letter chart. Epiretinal membranes don’t affect peripheral (side) vision so do not lead to total loss of sight.

## Why does ERM develop?

ERM is most common in people over the age of 50. It is thought that most epiretinal membranes occur because of another change in the eye called posterior vitreous detachment (PVD).

PVD is a common natural age-related change in the eye. Your eye is filled with a jelly called the vitreous. As you get older the vitreous in your eye becomes more watery, less gel-like and can’t keep its usual shape. The vitreous moves towards the centre of the eye and peels away from the retina at the back of the eye.

During this process, cells may be released and then multiply on the surface of the retina to form a sheet, which is known as an epiretinal membrane. As the numbers of these cells increase, the sheet can start to shrink and cause the retina to wrinkle.

You can find out more information about PVD by looking at our website or by calling our helpline on **0303 123 9999** and requesting our information on PVD.

If the cause of an epiretinal membrane is unknown, not caused by PVD or another condition it is referred to as “idiopathic”.

ERM can also be associated with other eye conditions or because of previous eye surgery. This is known as an epiretinal membrane secondary to another problem.

Secondary epiretinal membranes most commonly develop after retinal detachment surgery but can also be caused by laser treatment for diabetic eye disease, treatment for retinal tears, conditions that cause changes to retinal blood vessels in the back of the eye, inflammation (swelling) in the eye and trauma.

Secondary epiretinal membranes tend to affect vision more than idiopathic ERM, or ERM caused by PVD.

## Could I develop ERM in the other eye?

Most epiretinal membranes affect only one eye. About 10 percent of idiopathic epiretinal membranes affect both eyes. This means that most people who have an epiretinal membrane will not go on to develop one in the other eye.

If you have an epiretinal membrane secondary to another condition, whether you will develop one in the other eye will depend on if the cause of the membrane is also present in this eye. Your ophthalmologist (hospital eye doctor) would be able to explore with you whether you are at risk of developing an epiretinal membrane in your other eye.

**Is there anything I can do to avoid or improve ERM?**

There is nothing you can do to avoid getting ERM. Diet and exercise haven’t been found to have any link with the development of ERM. Having an eye test at least every two years is the best way to make sure your eyes are healthy and checking that no new eye conditions are developing. There is nothing you can do to fix ERM yourself.

## What treatment is available for ERM?

Surgery is the only treatment for ERM as there are no medications or other treatments that can improve or remove it. Surgery only needs to be considered if you are experiencing difficulties with your vision.

### Monitoring

If your ERM is not causing any problems with your vision, or only affecting your vision slightly and you are managing OK, then your ophthalmologist may suggest just monitoring the membrane to see whether it worsens. Many people do not have any worsening of their ERM and may never need treatment.

Sometimes the vision problems caused by the membrane can improve without treatment, as the membrane can separate from the retina, although this is less common.

To monitor a membrane, you will have an Optical Coherence Tomography (OCT**)**. This is a painless, non-invasive scan which shows a cross-section of the eye. At your hospital appointments, you will also have your level of vision measured to detect any worsening of your sight.

### Surgery

If your vision is affecting your everyday activities, your ophthalmologist may recommend surgery to peel away the membrane.

This surgery usually helps improve or completely remove the distortion, and for about three quarters of people also improves their level of vision (how far you can read down the letter chart).

#### Should I have surgery?

There is no wrong or right time to have epiretinal membrane surgery. Some people may choose not to have surgery and to accept the distorted vision in one eye. If you have good vision in the other eye, over time you will adapt to the distorted vision in the affected eye and this may no longer bother you.

If ERM is left untreated, it will not cause any other problems in your eye.

#### How well does surgery work?

The main benefit of having surgery is that it usually improves or completely removes the distortion in your vision. Most people notice this improvement in the first month following surgery.

Approximately, 80 percent of people who have surgery to remove an epiretinal membrane also have an improvement in their level of vision (how much of the letter chart they are able to read).

It can take about two to three months after surgery for the extent of this improvement to be seen, although your vision may continue to get better for up to 6-12 months before the final level of vision is known.

How well your vision is likely to recover after surgery can depend on several things, including how affected your vision was before the surgery, how long your vision has been affected for, whether there are any complications resulting from the surgery, as well as if the membrane is idiopathic or secondary to another condition.

Your ophthalmologist will be able to give you an idea of how much improvement you are likely to get to help you decide whether having surgery is the right choice for you.

#### What happens during the surgery?

Surgery to remove an epiretinal membrane takes between 30 and 60 minutes to complete. You would usually have a local anaesthetic, which involves an injection to numb the eye so that you don’t feel any pain.

If you have a local anaesthetic, you’ll be awake so you’ll be aware of a cloth over your face and of a light above you, but it’s unlikely you’ll be able to see any detail of what’s happening. You should ask your ophthalmologist to explain the procedure to you and if you have any concerns about having a local anaesthetic, you should tell them before the day of your surgery. A general anaesthetic or sedation may be offered if you feel unable to have the surgery awake.

Surgery to remove an epiretinal membrane involves a procedure called a vitrectomy. This involves the ophthalmologist making tiny cuts in your eye and inserting fine instruments to gently remove the vitreous gel from the middle of your eye.

Your surgeon will then grasp and gently peel away the epiretinal membrane from the retina. Sometimes a gas bubble is inserted inside the eye to help the retina heal. If a gas bubble is inserted, you might need to “posture” (position your head in a certain way for some part of the day over several days following the surgery), although it is uncommon to need to do this.

The stitches used in the surgery will dissolve on their own but can take several weeks.

#### Can ERM return after surgery?

In about ten per cent of people ERM can return, causing vision problems again. Further surgery may be carried out to remove this.

### What are the risks of surgery?

ERM surgery has a high success rate. All surgery carries some risk of complications, but with ERM surgery, the risk rate is low and if a complication develops, there are treatments available. For this reason, it is rare for someone to lose vision following ERM surgery due to complications. Your ophthalmologist is best placed to advise you on what the possible complications are and the chances of them happening to you. Complications of surgery include:

#### Cataract

Cataract is a clouding of the lens in your eye. Almost everyone who has surgery for ERM will develop a cataract, usually within 6-12 months of having the procedure. As it’s almost certain that you’ll develop it, your ophthalmologist may suggest cataract surgery at the same time as ERM surgery. Even if you don’t have cataract surgery at the same time, you can still have your cataract removed later.

#### Raised eye pressure

Following all types of eye surgery there is a risk of raised eye pressure. This is the pressure inside the front part of the eye and is different from blood pressure. Eye pressure will usually go up in the short-term following eye surgery and you may be given eye drops to reduce it while you recover. Eye pressure comes down to normal for most people during their recovery. However, for some people, eye pressure may become and possibly remain high in the long-term, so some people may need to use eye drops in the long term to keep their eye pressure under control.

If raised eye pressure is not controlled, it can damage the optic nerve at the back of the eye and reduce vision and this is known as glaucoma. There are treatments available for glaucoma to control your eye pressure and protect your vision.

#### Infection

Following all types of eye surgery there’s the risk of getting an eye infection and you’ll be given antibiotic drops to use after surgery to help prevent this. Infection occurs in about 1 in 1000 in ERM procedures, and in most cases, it can be treated. A serious infection can cause sight loss, but this is very rare.

#### Retinal detachment

ERM surgery carries a small risk that the retina may detach away from the back of your eye requiring more surgery. This happens to one to two percent of people. If this happens, the retina will be reattached as soon as possible to prevent you losing your sight.

#### Bleeding

This is a very rare complication and can lead to blindness if the bleeding is severe.

You can find out more about some of the complications mentioned here by looking at our website or by calling our Helpline on **0303 123 9999** and requesting information about cataract, glaucoma or retinal detachment.

### What eye drops will I need after surgery?

Immediately after the surgery you will be given eye drops. These usually include an antibiotic to prevent infection and a steroid to help reduce any swelling. You might also be asked to use eye drops to help control your eye pressure if it remains raised after surgery.

It’s important to take these drops exactly as your ophthalmologist recommends and to complete the course. Your eye clinic should be able to give you information on how to use your eye drops. If you have problems using the drops you should let your GP know as they may be able to arrange some help for you.

You should let the hospital know straight away if, after surgery, your eye becomes painful, increasingly hot or red, your vision suddenly gets worse, or you notice new or increased symptoms such as floaters or flashes of light in your vision. These symptoms may be a sign of complications and need to be checked straight away.

### What activities can I do after surgery?

After surgery, you can usually go back to your everyday activities straight away, unless you have been told to posture following surgery.

You can carry on as normal while taking your course of eye drops but you may need to avoid the following activities for the first few weeks, or as advised by your ophthalmologist, after surgery:

* Rubbing your eye. You may be asked to wear an eye patch or shield when you are sleeping to protect your eye
* Swimming, to avoid infection from the water while your eye is healing
* Strenuous exercise, contact sports and heavy lifting. Everyday lifting like light shopping is usually fine, but heavy lifting, like moving furniture is best avoided.
* Wearing eye make-up until your ophthalmologist is happy for you to do so.

Following surgery, you also need to take extra care:

* When it’s windy or dusty outdoors, in case something blows in your eye, although you don't need to stay indoors. Wearing sunglasses or your usual glasses can help to protect your eyes
* Washing your hair and face. Avoid getting soapy, dirty water in your eye.

Usually, you will see your ophthalmologist about two to three weeks after surgery to check that your eye is healing. At this appointment, you can ask about returning to all your usual activities, depending on how your eye is recovering.

If you have had a gas bubble inserted into your eye during the surgery:

* **You must not fly** **or travel to high altitude on land** until your gas bubble has fully absorbed, which can take up to 12 weeks. The gas bubble expands at altitude, causing very high pressure in your eye which can cause permanent sight loss.
* While the gas bubble remains in your eye, it can react with another gas, nitrous oxide, which is used in some general anaesthetics and as pain relief in A&E and during childbirth. Nitrous oxide can make the gas bubble in your eye expand, raising your eye pressure, which can damage your sight. You should tell any medical staff treating you that you have gas in your eye and that you shouldn’t be given nitrous oxide. Similarly, if you need a general anaesthetic while you still have gas in your eye, it’s important to tell the anaesthetist before your operation.
* It is unlikely that your vision will be good enough for you to safely drive while you have a gas bubble in your eye. Although you may meet the legal driving standard in these circumstances, many ophthalmologists think that it would be unwise to drive while the bubble remains in your eye.

### It is important to ask your ophthalmologist about driving after surgery.

If you have a gas bubble inserted after surgery, your vision will be very blurred, a bit like trying to see underwater. You may find your balance is affected and that you have less depth perception, so you may misjudge steps and kerbs or have difficulty picking things up accurately or pouring out liquids safely.

Over the weeks that follow your surgery, the gas bubble slowly gets smaller and eventually disappears. This process can take from 2 to 12 weeks depending on the type of gas used. Your ophthalmologist will be able to advise you about this. As the bubble shrinks, you’ll notice a line across your vision, which wobbles as you move, like a spirit level. This line will gradually continue to edge downwards as the gas bubble gets smaller and you’ll be able to see above the line, while your vision below the line will remain blurred. Finally, the bubble becomes tiny before disappearing altogether.

As the gas bubble shrinks, the space that it took up fills with aqueous fluid, so you’ll not be left with an empty space in the middle of your eye. Aqueous fluid is a natural fluid made inside your eye and once it has completely replaced the bubble, your vision should improve.

#### Will I need to get my glasses changed?

Most people will need to change their glasses at some point after their operation, usually about three months after surgery. Your ophthalmologist will be able to advise you as to when you can visit your optometrist (optician) for new glasses.

#### Can I get help to see things better?

Many people who have epiretinal membrane surgery have some visual improvement afterwards in that eye. However, if your vision remains reduced after your surgery, there are lots of things you can do to make the most of the vision you still have. This may mean making things bigger, brighter or using colour to make things easier to see.

We have a series of leaflets with helpful information on living with sight loss, including how to make the most of your sight. You can find out about our range of titles by calling our Helpline on **0303 123 9999**.

You should ask your ophthalmologist, optician or GP about low vision aids and about having a low vision assessment, where you’ll be able to discuss the use of magnifiers and aids to help you to see things more clearly. However, most people only have ERM in one eye and have useful vision in their other eye which can help to compensate. If you also have reduced vision in your other eye due to an eye condition, you should ask your ophthalmologist whether you’re eligible to register as sight impaired (partially sighted) or severely sight impaired (blind). Registration can act as a passport to expert help and sometimes to financial concessions. Even if you aren’t registered, a lot of this support is still available to you.

Local social services should also be able to offer you information on staying safe in your home and getting out and about safely. They should also be able to offer you some practical mobility training to give you more confidence when you are out.

## Coping

It’s completely natural to be upset when you’ve been diagnosed with an eye condition and it’s normal to find yourself worrying about the future of your sight and about going through surgery.

It can sometimes be helpful to talk about these feelings with someone outside your circle of friends or family. At RNIB, we can help with our telephone Helpline and our Counselling and Wellbeing team. Your GP or social worker may also find a counsellor for you if you feel this might help.

Your eye clinic may also have a sight loss adviser (also known as an Eye Clinic Liaison Officer, ECLO or Vision Support Officer) who can be on hand to provide you with further practical and emotional support about epiretinal membrane.

## Further help and support

Whether you have just been diagnosed or have been living with sight loss for a while, we are here to help and support you through your journey.

The RNIB Helpline is your direct line to the support, advice and products you need. We’ll help you to find out what’s available in your area and beyond, both from RNIB and other organisations.

Whether you want to know more about your eye condition, buy a product from our shop, join our library, find out about possible benefit entitlements, be put in touch with a trained counsellor, or make a general enquiry, we’re only a call away.

#### RNIB Helpline

Tel: **0303 123 9999**   
Email: **helpline@rnib.org.uk**

Alexa: you can also say, **“Alexa, call RNIB Helpline”** to an Alexa-enabled device. 

We’re ready to answer your call Monday to Friday 8am to 8pm and Saturday 9 am to 1pm.

You can also get in touch by post or by visiting our website:

#### RNIB

105 Judd Street

London WC1H 9NE

**rnib.org.uk**

## Other useful organisations

### The Macular Society

PO Box 187

Andover

SP10 9AD

**0300 3030 111**

**macularsociety.org**

### BEAVRS (British and Eire Association of Vitreo-Retinal Surgeons)

BEAVRS promote high quality patient care by supporting and representing British and Irish Vitreo-Retinal Surgeons through education, research, audit and revalidation. You can find their information leaflet on epiretinal membrane at the following link:

**beavrs.org/patient-downloads/epiretinal-membrane**

### We value your feedback

You can help us improve our information by letting us know what you think about it. Is this factsheet useful, easy to read and detailed enough – or could we improve it?

Send your comments to us by emailing us at **eyehealth@rnib.org.uk** or by writing to:

### Eye Health Information Service

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All our factsheets are available in a range of formats including print, audio and braille.

This factsheet has been produced jointly by RNIB and The Royal College of Ophthalmologists.

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