

# Epiretinal Membrane (ERM)

Information and advice for patients

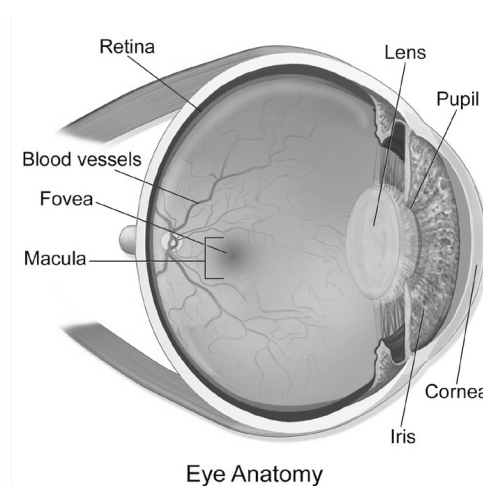
## Ophthalmology

### What is an epiretinal membrane (ERM)?

Imagine your eye as a camera, with the retina acting as the photographic film. The retina is a very thin layer of tissue where images are focused on and interpreted by the brain. The macula, at the very centre of the retina, is responsible for central vision. It is also responsible for most colour vision and the fine detail used for reading and recognising faces.

ERMs commonly known as cellophane maculopathy or macular puckers, are membranes or scar tissues that form on the inner surface of the retina and over the macula.

The membrane can appear like a cellophane and may eventually contract, causing the retina to pucker leading to decreased vision and visual distortion (metamorphopsia).



Pic 1: an image of the normal eye showing the retina, macula

Image sourced with permission Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014".

### What causes epiretinal membrane?

In most cases, there is no known cause for ERM which is called idiopathic.

ERMs can also be associated with several eye conditions like previous retinal tears/detachment, retinal vascular diseases like diabetic retinopathy or blood vessel blockages.

They can also occur after eye surgery or due to inflammation inside the eye.

## Am I at any risk of acquiring ERM?

The risk of developing ERMs increases with age. Studies have shown that 2% of patients over the age of 50 and 20% over 75 years have ERMs though most do not need treatment.

People with certain eye conditions, like posterior vitreous detachment (PVD), may develop ERM earlier in life. Both men and women are equally likely to get it. About 10-20% of cases affect both eyes, and the severity can differ from person to person.

## How will ERM affect my vision?

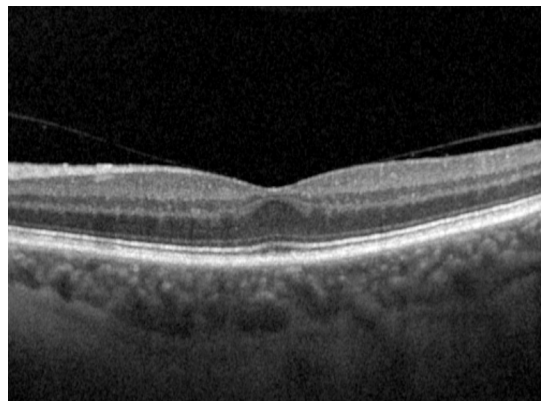
Most of time, the scar tissue does not affect your vision, and you may see normally to nearly normally. However, when the tissue contracts (shrinks), you may notice metamorphopsia, where straight lines appear wavy or crooked, like window blinds or a door frame, looking "wavy" or "crooked." This distortion is more noticeable when you close the unaffected eye, like during an eye test. Symptoms usually appear when the macula is affected.

In advanced cases, this can lead to severely decreased vision. Less commonly, ERMs may also be associated with double vision, light sensitivity or make images looking larger or smaller than they really are.

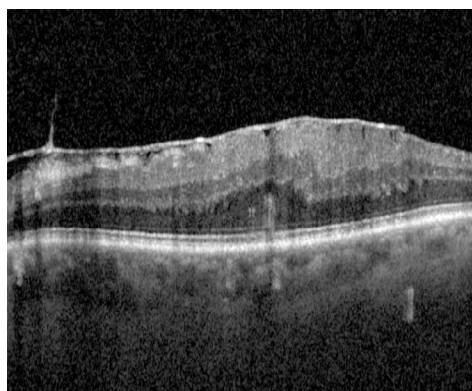
## How is ERM diagnosed?

ERMs are usually discovered by chance during fundoscopy (dilated retina) examination or through retinal imaging like ocular coherence tomography (OCT). The OCT is important for assessing how severe the ERM is.

Sometimes additional testing such as fluorescein angiography is used to check for other underlying retinal problems that might have caused the ERM.



Pic 2 showing a segment of normal OCT



Pic 3 showing an ERM on the topmost layer, a shimmering line. (red arrow)

## **How will my ERM be treated?**

Since most ERMs are fairly stable after diagnosis, you can be routinely monitored as long as your vision is not affected significantly. In rare cases, the membrane can detach from the retina on its own, improving your vision.

If the condition however worsens and starts to impact your ability to work, drive, read or perform other relevant activities, surgery might be recommended. Eye drops, medications, glasses or nutritional supplements cannot treat ERMs.

## **Should I have surgery for my ERM?**

Some patients may choose not to have the surgery and instead live with the distorted central vision in the affected eye. This can be a reasonable choice, especially if the other eye is not affected. There is no right or wrong decision, as each patient's needs and priorities are different.

## **What kind of operation will be conducted should I agree?**

A surgical procedure termed vitrectomy is the only surgical treatment option. Most ERM surgeries are conducted under local anaesthesia (when you are awake, but the eye is numbed), but some are done under general anaesthesia (asleep). The operation will be performed by an experienced surgeon. In vitrectomy, tiny cuts (<1 mm) are made in the white part of the eye and the vitreous jelly is replaced with saline. This allows the surgeon to reach the retina and remove the ERMs with delicate forceps, helping the macula to relax and reducing wrinkles. Sometimes small stitches are placed in the eye, which dissolve naturally in about 4 to 6 weeks. A pad and shield will be placed over the eye for protection and removed the next morning.

The surgery is usually successful (90%), and most patients experience better vision and less distortion after a vitrectomy.

## **What happens after your operation?**

At the end of the operation, you will be able to go home on the same day and will usually have a follow up appointment in a few weeks. Your eye may feel uncomfortable, gritty, and itchy and might appear red and bruised for about 7 to 14 days, which is normal. You can take paracetamol for pain relief every 4 to 6 hours. We will provide you with eye drops and explain how and when to use them to reduce inflammation, give your eye rest and prevent infection.

Please do not rub your eyes as this can increase the risk of infection and lead to complications.

## **What are the complications of my surgery?**

The risk of complication from the surgery is rare with about 1 in 1000 patients developing infection.

However, the chance of getting a cataract (cloudy lens) increases after vitrectomy, thus, you might need cataract surgery sometime in the future.

About 1 in 50 patients may need further surgery as a result of recurrence.

Around 1 in 100 patients develop retinal detachment, where small tears cause the retina to move away from its normal position. If the surgeon sees this risk during the surgery, they may place a bubble of gas/air in your eye to prevent any damage.

If a gas/air bubble is used, **you must not fly for the periods** below as the bubble can expand in size and lead to raised eye pressures leading to visual loss. You will be informed about the type of bubble used after surgery.

**C3F8:** Long acting and can stay for up to 10 weeks

**C2F6:** Can stay in the eye up to 4 weeks

**SF6:** Can stay up to 2 weeks

**Air:** Up to 7-10 days

If you need general anaesthetic for any reason after the eye operation, it is important to inform your anaesthetist that you have had surgery and gas in your eye.

You may also have to keep to a certain posture (head position) after the operation while the gas bubbles dissolves. (More Information found on post-operative posturing following retinal surgery leaflet)

## **What improvement in my vision can I expect after my operation?**

It takes about 2 to 6 weeks for the eye to heal, but getting back to your vision happens slowly. Usually, the best improvement in vision happens within a year in 70 to 80% of patients. However, in some cases, vision might not get better after the surgery due to the damage already caused by ERM by pulling on the eye (the degree of traction), if ERM has been there for a long time or if there are other problems with the eye. Eyes with unknown causes for the ERM tend to have a better chance of getting better compared to eyes with previous retinal problems like detachment or retinal vascular disease.

In some patients, the membrane may return causing the symptoms to return.

Surgery usually makes your vision better in the affected eye, but it will not go back to exactly how it was before.

## **When to seek advice?**

After the surgery, it is normal to feel some discomfort, however, if you experience any of the following, you should contact the hospital right away:

- A lot of pain that does not go away with paracetamol, as it could mean high eye pressures
- Loss of vision
- Eye becoming increasingly red.

## **Contact Details**

**Department:** Vitreo-Retina

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## Sources used for the information in this leaflet

Images sourced and used, with permission from The Heidelberg Eye Explorer.

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## Further Information

The Foundation American Society of Retina Specialists (2024) Retina Health Fact Sheet. Available at: <https://www.asrs.org/patients/retinal-diseases> [Accessed 22 July 2024].

Moorfields Eye Hospital NHS Foundation Trust (2024) Patient information leaflet library. Available at: <https://www.moorfields.nhs.uk/for-health-professionals/leaflet-library> [Accessed 22 July 2024].

National health service (2024). Available at: <https://www.nhs.uk/> [Accessed 20 May 2024].

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