

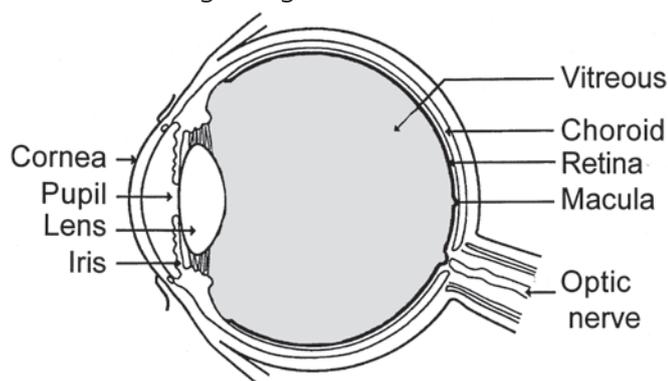
# Vitrectomy Surgery for Macular Hole and/or Epiretinal Membrane

## Introduction

We expect you to make a rapid recovery after your operation and to experience no serious problems. However, it is important that you should know about minor problems, which are common after this operation, and also about more serious problems that can occasionally occur. The section **“What problems can occur after the operation?”** describes these, and we would particularly ask you to read this. The headings from this section will also be included in the consent form you will be asked to sign before your operation.

## What is a macular hole and epiretinal membrane?

The eye is shaped like a ball. The pupil is the opening which allows light to enter the eye. Just behind the pupil is the lens which focuses light onto the retina at the back of the eye. The retina is a delicate tissue which sends the messages of the light rays along the optic nerve to the brain, where they are processed, like developing a camera film. The macula is a small area at the very centre of the retina. It is very important and is responsible for our sharp, detailed, central vision. This is the vision we use when looking directly at things, e.g. reading, writing, computer work and recognising colours and faces.



**A macular hole** is a small hole that can form at the macula. If this happens, the macula cannot work normally and you may notice changes in the central vision ranging from; difficulty in reading small print, distorted or ‘wavy lines’ to a small blank patch. However, it will not cause total blindness.

**An epiretinal membrane** is a condition in which a thin layer of scar tissue grows on the surface of the macula. It is a transparent membrane, which over time, can contract, causing the retina to wrinkle. This can then reduce the quality of your central vision, causing distortion, difficulty in reading or carrying out other visually demanding tasks. However, it will not cause total blindness.

## What causes a macular hole and epiretinal membrane?

### Macular hole

This occurs when there is a change in the vitreous (the jelly that takes up the space within our eyeball). This can then pull a hole open in the centre of the retina.

### Epiretinal membrane

This is most commonly associated with a degeneration of the vitreous gel.

## What is the treatment?

The only way to treat a macular hole or epiretinal membrane is by an operation called a vitrectomy. Eye drops or glasses are ineffective.

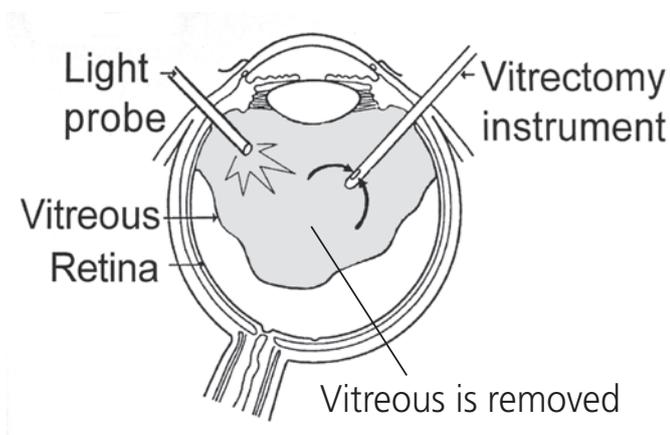
## Reasons for having surgery

Your surgeon will help you to decide if surgery is appropriate for you. The main reason to proceed with the operation is to attempt to improve the vision and to correct the distortion of your central vision. If you are not aware of any visual problems, or decide to accept the poor central vision (especially if the vision is good in the unaffected eye), you may decide not to proceed with surgery. However, if the distortion affects your ability to read, work, drive or carry out other important activities, you may consider an operation. There is no 'right' or 'wrong' decision as everyone has different needs and priorities. Please be aware that the aim of the surgery is to improve, not cure the sight problem.

### As a general rule:

- **Epiretinal membrane:** 80% chance of improving vision – often distance vision improves the most.
- **Macular hole surgery:** on average, vision can improve by 2-3 lines on the optician's chart. 9 out of 10 holes close with one operation.

## The surgery (vitrectomy)



The operation will usually take between 1-2 hours and involves the surgeon making tiny cuts on the outside of your eye and very fine instruments are then inserted which remove the vitreous gel. The gel is broken up and removed very gently by cutting it and sucking it out through these specialised instruments (see page 1 for diagram).

Once the gel has been removed, the surgeon can access the retina to repair the macula hole or remove the epiretinal membrane. Because the

vitreous gel cannot replace itself, the surgeon will need to place a substitute inside the eye. Various substitutes can be used, depending on the type of surgery:

- Salt solution
- Gas (absorbed within 6 weeks)

Over time, the eye will produce fluid called aqueous to fill the space.

**Please note:** Patients who have a gas bubble inserted cannot fly in an aircraft and must avoid high altitudes until the gas has been absorbed. They should not drive until the gas bubble has gone. It is also vital that if you require a general anaesthetic for any further surgery whilst the gas bubble is in your eye, that you inform the anaesthetist as the gas bubble may expand, causing the pressure within the eye to rise significantly. You will be given a safety wrist band to carry with you after surgery if you have a gas bubble.

## What about the anaesthetic?

The surgery can be performed under general or local anaesthetic and your surgeon will discuss these options with you.

### Local anaesthetic

If you have a local anaesthetic, you will be awake during the operation. A local anaesthetic solution will be injected into the area around your eye. This will numb the eye and affect the ability to see what is happening, although you will be aware of a bright light. You will be asked to lie as flat as possible and to keep your head still. The anaesthetist will monitor your heart rate, blood pressure and blood oxygen levels throughout the procedure. You may be able to have some sedation to relax you during the procedure.

### General anaesthetic

If you have a general anaesthetic, you will be asleep throughout the operation. When you arrive into the theatre's anaesthetic room, the anaesthetist will give you an injection in your hand or arm, which will ensure you remain asleep during the surgery. Your heart rate,

breathing, blood pressure and oxygen levels will be monitored throughout the surgery. Following the operation, you will be transferred to the recovery room to wake up prior to returning to the ward. You will feel sleepy for a few hours, but will be allowed to eat, drink and mobilise as soon as you are awake enough.

See separate Anaesthesia leaflet for more information on local and general anaesthetics.

## What happens before the operation?

You will be asked to attend a pre-operative assessment clinic in our Day case unit to assess your general health and to ensure you have all the information you need about the operation. You will have an opportunity to discuss any worries or issues about your surgery with the nurse carrying out your assessment, so it may be an idea to write down any questions you have prior to this appointment.

If you are going to have a general anaesthetic, you will also be examined by a doctor to assess your health and have a blood test and a tracing of your heart (ECG) If you are a diabetic or take Warfarin, you will be given special instructions.

You will be admitted to Parkerswell Day Case Unit on the morning of your operation. Vitrectomy surgery is usually carried out as a day case procedure, so you can expect to go home later that afternoon / early evening. However, it is a good idea to bring an overnight bag and your medication with you, in the unlikely event that you are required to stay overnight.

## What happens after the operation?

When you return to Parkerswell DCU or Otter Ward following your operation, the eye will be covered with a pad and eye-shield to protect it. These can be removed the following morning. The eye may feel uncomfortable and 'gritty', but is not usually very painful. The nurses will be able to give you some pain killers if required. You will be able to eat and drink once you feel able to and will be allowed to go home once you have

made a satisfactory recovery (usually 2-4 hours after returning from the operating theatre)

Depending on your eye condition, you may be asked to posture, that is to lie or sit in a face down position which allows the gas or air bubble to press against the macula. This is usually required with macular hole surgery and occasionally with epiretinal membrane surgery. This is a very important aspect of the recovery period and will help the successful outcome of your surgery. (Please see further on in the leaflet for more information about posturing).

## Discharge from hospital

### On leaving the hospital

- If you have had sedation or a general anaesthetic, you should not drive, operate machinery, consume alcohol or use sedative drugs for 24 hours. You must also ensure that you have someone with you for 24 hours post operatively
- Your eye may feel uncomfortable, gritty or itchy and appear red or bruised. This is normal for 7-10 days. You may take a simple painkiller, such as Paracetamol if needed
- Please do not rub your eye
- You can shower / bath and wash your hair, but please avoid soap or shampoo getting into your eye
- Depending on the type of surgery, you may be asked to return the following day for a check up and the nurse will inform you of the time of this appointment. You will then be sent an appointment to return to the Out-Patient clinic in about 2 weeks
- You will be given eye drops to reduce inflammation, rest the eye and prevent infection. The nurse will explain how and when to use them. Please be aware that some of these drops will continue for at least 4 weeks. Please check with the eye doctor at each of your follow up visits.
- The vision will be very poor if you have had a gas bubble put into your eye.

- As the gas disperses, you will begin to see a line which will first appear at the top of your vision, like a spirit level. This line will continue to move downwards until only a tiny bubble is left, which will finally disappear. The bubble may also break up into a few smaller bubbles before it disappears – this is normal.
- It can take the gas 6 weeks to disperse completely

## When can I drive?

You must be able to read a number plate at a distance of 20.3 metres (25 yards) in good daylight and with spectacles if worn, using both eyes. You must also have an adequate field of vision. To drive when unable to meet both these requirements is a criminal act and invalidates insurance. You must inform the DVLA (and insurance company) of any change in your health or sight that may affect the safety of your driving.

**You should not drive until the gas bubble has dispersed.**

## When can I resume my normal activities?

It is important to discuss this with your eye doctor but as a general guide:

- Fitness training / Gym – 1 month
- Golf – 2 weeks
- Swimming – 4 weeks
- Gardening – 2 weeks
- Sexual intercourse – 1 week
- Return to work – 2 weeks minimum, depending on your job

A gas bubble can restrict your activities.

Please discuss any other specific activities with your eye doctor or nurse.

## Do you need to return to hospital for a check?

Yes – you may need to be reviewed by the doctor the day after your surgery, especially if you have a gas bubble in the eye, so it is important to ensure

that you have transport available for this visit. You will usually then be sent a follow up appointment for two weeks time to be seen in the Out Patient clinic, as directed by your surgeon.

## Posturing Information

This can be the hardest part of the recovery period following your operation but is very important. You may be asked to posture face down. This will allow the gas / air bubble to float upwards to press against the macula, providing support whilst healing takes place. You will be required to maintain this position night and day. The nurses will tell you how long you need to posture for at home as this varies from patient to patient depending on the type of problem you have with your eye.

It is not usual for patients having surgery to remove an epiretinal membrane to have to posture. For macular hole patients, the duration of the posturing varies between no posturing (except to avoid lying flat on your back) to one week face down.

## If you are required to posture

You will be required to posture face down for ..... days and nights following your surgery.

**You need to have a 10 minute break every hour (during the day) where you get up and move around, visit the bathroom, eat & drink etc.** It is important to avoid sitting or lying for long periods of time without moving your legs. When you are sitting, try moving your ankles around and flexing your calf muscles to encourage the circulation. You cannot go shopping, gardening etc. You are confined to the house.

## Instructions for face down posturing

Your face and eyes must be looking down into your lap. You could try sitting in a comfortable chair, leaning over a table, resting your arms on a pillow.



At night, you will have to sleep on your stomach. You may like to try to adapt your bed by moving the mattress



down to allow a space at the top of the bed and use cushions on the base of the bed to form a "V" shape to allow you to have a breathing space. You must not sleep on your back, so you may want to place pillows on either side of you to prevent you from rolling over. If you find face down posturing difficult you can alternate your left and then your right cheek onto the pillow.

Alternatively, we are able (according to availability) to hire out some equipment to help you with your posturing.



**You will be required to pay a deposit of £30 which will be returned to you on return of this equipment.**

The nurses at the pre-assessment clinic can give you information about this.

### Tips for successful posturing

- You may read, providing you have good vision in your other eye
- Listening to the TV or radio
- Talking books
- Card games
- Ask friends to visit to break up the day
- Ensure you have your 10 minute break every hour and get up and move around
- Buy ready meals if you live alone
- Have plenty of drinks close to hand and use straws while you are posturing
- Keep the phone close by
- Use of a heat pad or warm wheat cushion to relieve any back or neck pain
- Ensure your back is supported with cushions when sitting

- Move your ankles around and flex your calf muscles to encourage the circulation.

## What problems can occur after the operation?

### Common problems/complications

- Raised eye pressure
- 1 in 1000 risk of infection
- 1 in 1000 risk of significant haemorrhage
- 1 in 10,000 risk of severe complication resulting in total loss of vision
- 1 in 10 failure of macular hole to close
- Retinal tear or detachment

### Cataract formation

Any patient having vitrectomy surgery will develop a cataract in the lens of the eye in due course. In Exeter, it is part of our routine procedure to usually remove the lens at the time of surgery to prevent this happening, in all patients for macular hole surgery and in some patients for epiretinal membrane surgery.

### Deep vein thrombosis (DVT)

Deep vein thrombosis is a possible problem, but is uncommon. If you are at particular risk then special precautions will be taken to reduce the risk. Moving your legs and feet as soon as you can after the operation and walking about early, all help to stop thrombosis occurring.

### The risks of a general anaesthetic

General anaesthetics have some risks, which may be increased if you have chronic medical conditions, but in general they are as follows:

- **Common temporary side effects** (risk of 1 in 10 to 1 in 100) include bruising or pain in the area of injections, blurred vision and sickness, these can usually be treated and pass off quickly.
- **Infrequent complications** (risk of 1 in 100 to 1 in 10,000) include temporary breathing difficulties, muscle pains, headaches, damage to teeth, lip or tongue, sore throat and temporary problems with speaking.

- **Extremely rare and serious complications** (risk of less than 1 in 10,000). These include severe allergic reactions and death, brain damage, kidney and liver failure, lung damage, permanent nerve or blood vessel damage, eye injury, and damage to the voice box. These are very rare and may depend on whether you have other serious medical conditions.

## What eye problems do I look out for following surgery?

While a certain amount of discomfort is normal, you should contact the hospital immediately if you notice any of the following;

- A lot of pain
- Increasing redness or discharge from the eye
- A significant reduction of vision

## What should you do if you develop problems?

Please phone:

**Eye Triage Team** ..... **01392 402399**  
(Monday-Friday, 9am to 4pm)

**Otter Ward**..... **01392 402807**  
(All other times, including Bank Holidays)

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