
# Vitrectomy Surgery for Vitreomacular Traction

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## Vitrectomy Surgery for Vitreomacular Traction

Your eye specialist, Andrew Luff, has diagnosed a condition known as vitreomacular traction and has recommended a surgical procedure. Without treatment this condition can worsen causing increasing distortion of vision and blurring.

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

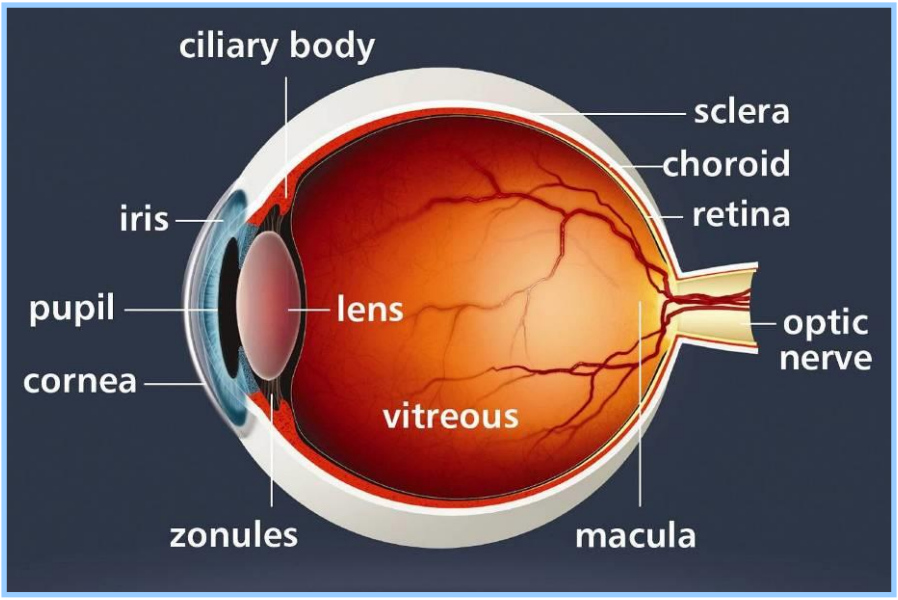
If you have questions that are not answered in this booklet, you should ask any member of our team.

## What is Vitreomacular traction? (VMT)

Vitreomacular traction is an uncommon condition in which shrinkage of the vitreous jelly within the eye pulls on the central macular area of retina. This causes central visual impairment, either in the form of a generalised blurring or distortion.

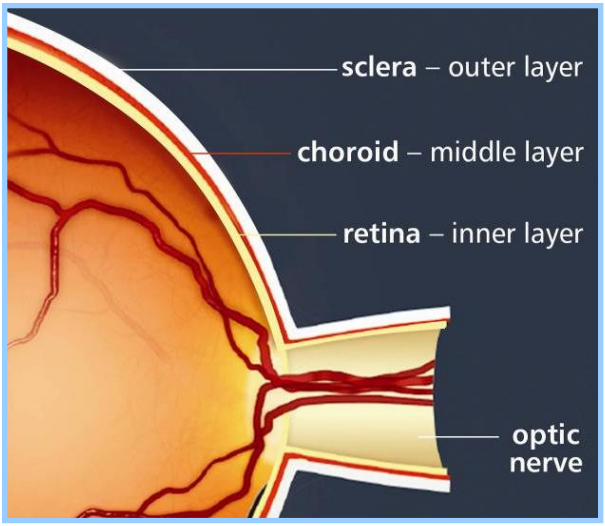
Rarely, the shrinkage of the vitreous jelly within the eye results in a partial separation, with some jelly remaining attached to the very central macular area of retina. The cause of this is unknown and it is only in the last few years with the advent of OCT retinal scanning that we have been able to recognise this appearance.

It is helpful to know a little about the eye and how it works in order to understand what effect vitreomacular traction 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 these light rays 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.

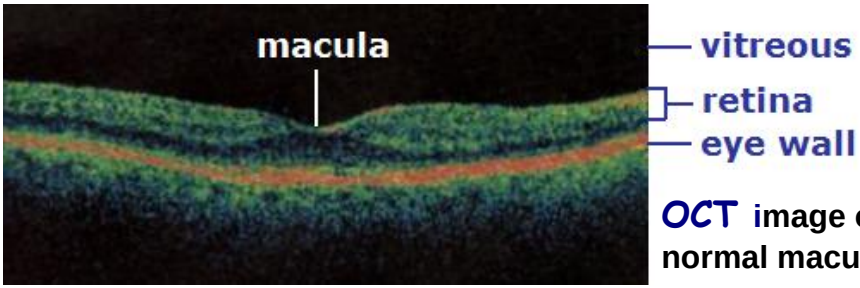
Separation of the vitreous gel from the retina is known as posterior vitreous detachment or “PVD”. It does not itself cause any permanent loss of vision although floaters may be troublesome.

Example of vision with floaters

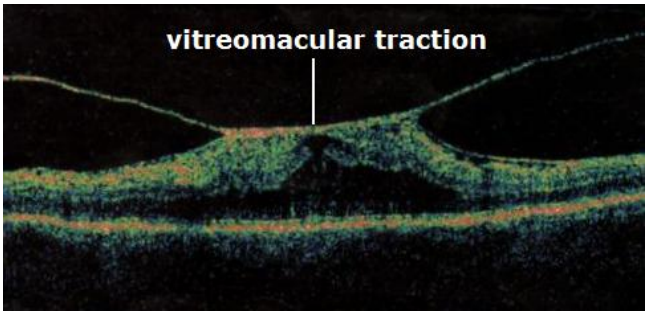
**What causes vitreomacular traction?**

The normal ageing process of the vitreous results in shrinkage of the gel and ultimately a separation from the retina. There are points on the retina where the vitreous jelly can be unusually adherent and one of these is in the very central macular area.

The retina is multi-layered and ongoing traction ("pull") from the jelly can result in a swelling of the macular area as the retinal layers separate. The inner layers are pulled inwards towards the vitreous cavity whilst the outer layers remain adherent to the eye wall. The situation worsens as normal eye movements cause the jelly within the eye to rotate, this movement producing a relentless pull on the macula.




**OCT image of a normal macula**




**OCT image of vitreomacular traction** showing "pull" and swelling of the macular area

**How does vitreomacular traction affect your sight?**

Common symptoms of vitreomacular traction are;

- the appearance of a blurred patch in the central vision;
- distortion of straight lines, which appear broken or bent;
- a loss of contrast sensitivity – "greying" of central vision;
- loss of colour vision

## When should you have surgery for vitreomacular traction?

The procedure to treat this condition involves removal of the vitreous jelly, and requires a vitrectomy operation.

The purpose of surgery is to separate the vitreous gel from the underlying macula, such that the retinal layers can return to a more normal position.
As this happens, there is every chance that further visual loss will be avoided and in most cases a degree of visual improvement is possible.

Vitreomacular traction is potentially progressive. Early surgery offers the best chance of long-term visual success. Even when few symptoms are present, surgery may be considered to prevent further worsening.

We will help you decide if vitrectomy surgery for vitreomacular traction is appropriate for you.

## What do I 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. This includes 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 are 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.

The fixed cost covers all procedures carried out on the day of surgery, additional surgical correction within one month and the first post-operative check.

Additional costs may be incurred for more prolonged follow-up and subsequent treatments.

## 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 recommended for you is **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 the retina or affecting the vitreous itself. In your case, vitrectomy prevents the vitreous
gel from pulling on the central macular retina, allowing it to return back to a normal position.

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.

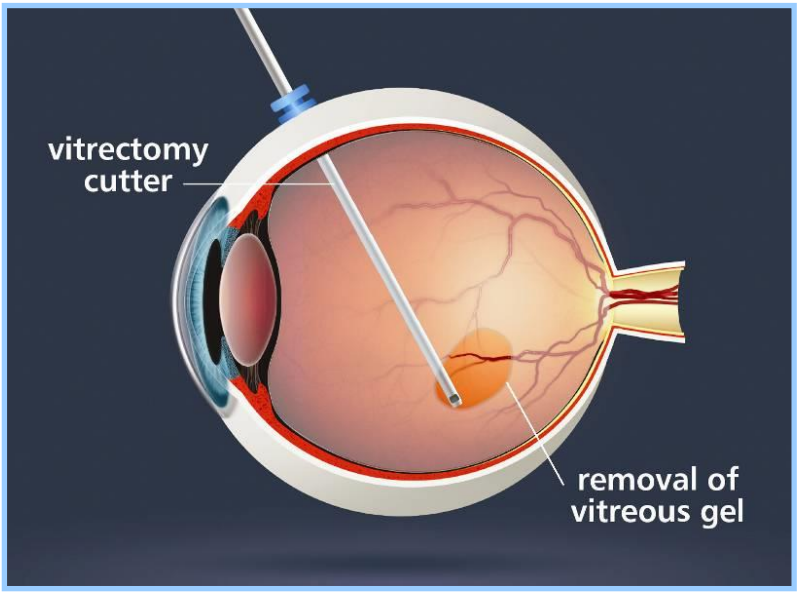
You will be made comfortable on the operating couch, following which the skin around your eye will be thoroughly cleansed and a sterile cover (“drape”) will be placed over your eye and face.

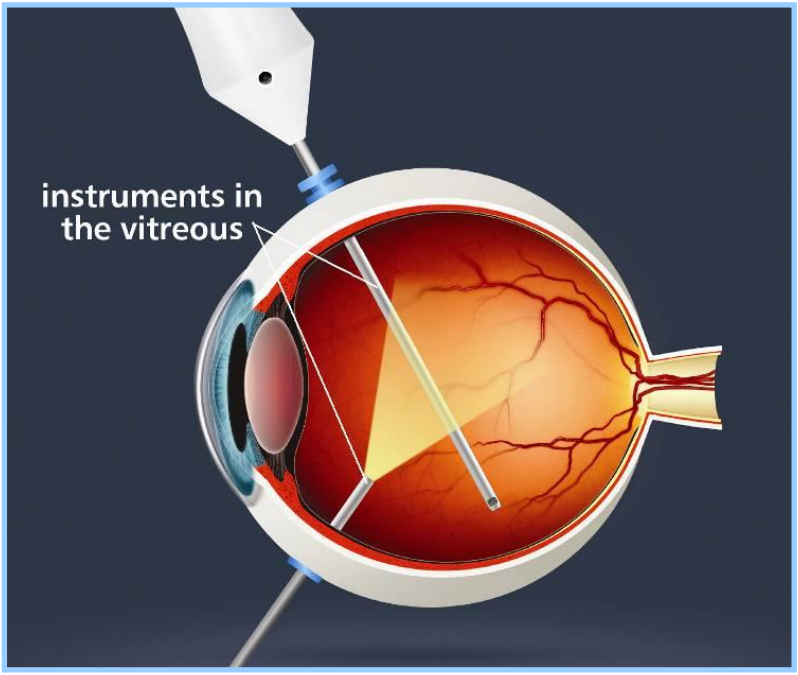
The cover will be lifted off your mouth so you can breathe and talk easily. Your eyelids will be gently held open, although your eye will feel closed.

The theatre staff will make sure you are comfortable and help you relax. Someone will be there to hold your hand if you wish. The operation usually takes
about thirty minutes, but in some cases may take longer.

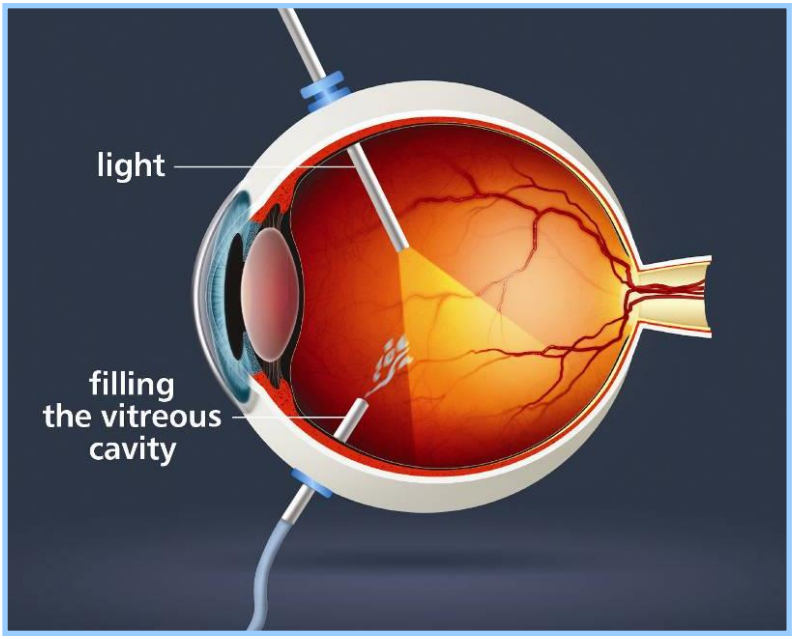
Surgery is performed with the aid of an operating microscope and special lenses which give the surgeon a clear image of the vitreous and retina.

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


vitrectomy
cutter
removal of
vitreous gel


instruments in
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.




Once the surgical procedure is completed the vitreous is replaced with a salt-water solution into which the eye secretes its 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 hospital.
Advice will be given on when to reduce and stop your eye drops.

If you find 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 leaflet.

**How quickly will your vision improve?**

The initial aim of surgery is to prevent further visual loss, although the effect of surgery itself, in producing a sudden separation of jelly from the retina can make swelling temporarily worse.
For most patients, it takes at least a couple of weeks for vision to return to the preoperative level.

Thereafter there is every chance that vision will slowly improve, with a decrease in central blurring, loss of distortion and a gradual improvement in the ability to see letters on the optician's chart.

## 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 vitreomacular traction. 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 after surgery.

## What can I do to help make the operation a success?

Following your surgery for vitreomacular traction, 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 surgery for vitreomacular traction 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 immediately 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.

- **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.

- **Allergy to eye drops.** Ocular allergy typically causes lid swelling, itching or redness.

- 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 less than one in a thousand cases. Increasing discomfort, increasing redness of the eye or worsening discharge should be reported immediately.

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 phaco-emulsification (cataract surgery) combined with the vitrectomy procedure to avoid the need for further surgery at a later date.

- **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.

- **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.

## 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