



Vitrectomy Surgery for Retinal Detachment

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Your eye specialist, Andrew Luff, has diagnosed a retinal detachment and has recommended a surgical procedure to repair it. Without treatment this condition usually leads to blindness in the affected eye.

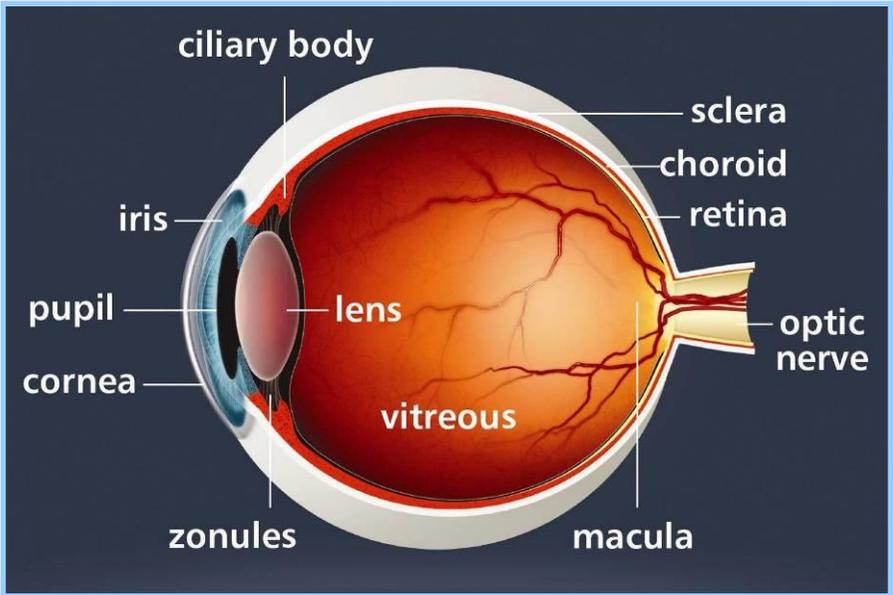
This booklet provides information for you to understand the condition and how it can be treated.

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

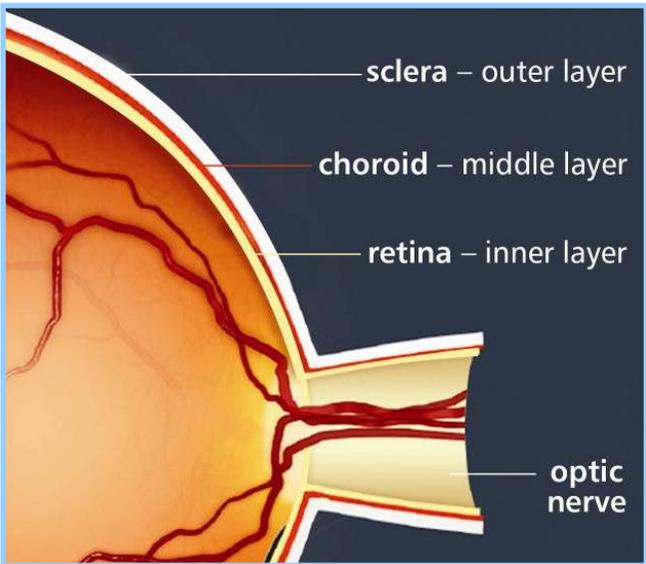
What is retinal detachment?

Retinal detachment is a separation of the light-sensitive retina from the eye wall. This usually starts towards the periphery of the retina and spreads centrally. Separation prevents normal retinal function, the patient becoming aware of worsening visual loss which, if not repaired promptly, will result in permanent visual impairment or even blindness in the affected eye.

It is helpful to know a little about the eye and how it works in order to understand what effect a retinal detachment has on your 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.

If a hole develops in the retina, fluid is able to seep beneath, causing the retinal layers to separate from the eye wall.

The **choroid** is the underlying vascular (blood vessel) layer of the eye from which the retina receives oxygen and nutrients. When a detachment occurs, the affected part of the retina is unable to function and if it is not re-attached promptly, permanent visual loss may ensue.

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. As the vitreous gel is attached to the retina more firmly in some places than others the retina may tear as the gel separates.

What causes the retina to detach?

Anyone can develop a retinal detachment at any time; it is unlikely that it has been caused by anything you have done. However, some people are at a greater risk than others of developing this condition.

Pre-disposing factors for detachment are:

- age; posterior vitreous detachment occurs more commonly as we age and it is at the time of PVD that there is the greatest risk of retinal detachment;
- myopia; short-sighted people (myopes) are much more susceptible because their eyes are larger than average, resulting in a thinner and more fragile retina. Myopes also develop PVD earlier and are more prone to weakness of peripheral retina;
- trauma; people who have sustained direct trauma to the eye or face may suffer a detachment;
- cataract surgery; any form of intra-ocular surgery will slightly increase the risk;
- familial retinal detachment; as a consequence of inherited retinal weakness, although this is rare.

If you have a retinal detachment in one eye you are at an increased risk of developing similar change in the other.

Your fellow eye will be examined to determine the need for preventative laser treatment.



How does retinal detachment affect your sight?

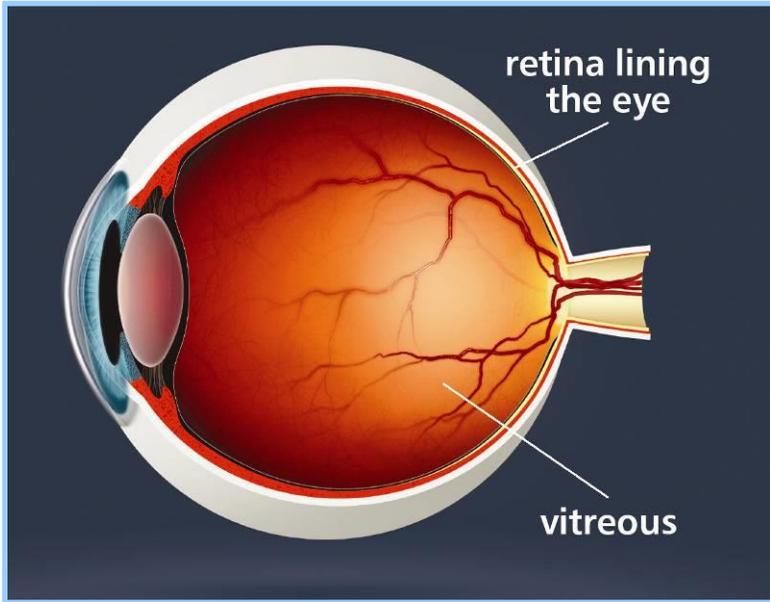
Common symptoms of posterior vitreous detachment are:

- flashes of light seen as arcs in the periphery of vision, more noticeable in dim illumination;
- new floaters which may vary from small spots or “cobwebs” to larger patches of mistiness which flick across the field of vision on eye movement.

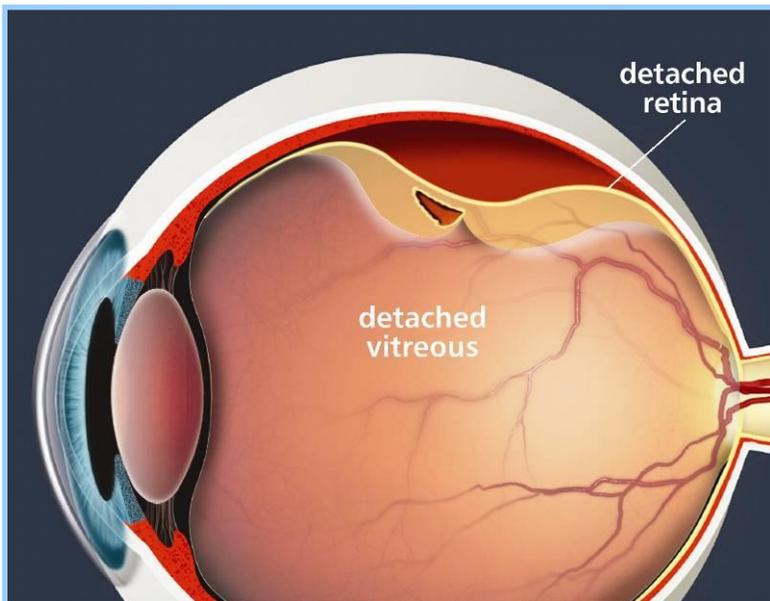
Common symptoms of retinal detachment are:

- a shadow spreading across the vision starting peripherally and moving centrally;
- blurred or distorted central vision implying involvement of the central macular retina.

Symptoms of retinal detachment or posterior vitreous detachment should be reported as a matter of urgency.



Comparison of a healthy eye and an eye with retinal detachment



When should you have retinal detachment surgery?

Many retinal detachments constitute a medical emergency. There is a limited window of opportunity to repair the detachment before permanent visual loss is suffered. The aim is to intervene before the detachment has progressed to involve the central macula, which would be perceived by you as a cloud or curtain coming across the centre of your vision.

Whilst peripheral vision will improve following a detachment repair your central vision, if affected, can never fully recover. When the loss of central vision is recent, urgent surgery with prompt re-attachment of the macular retina can achieve substantial central visual improvement.

Occasionally a detachment may be longstanding and its progress limited, such that central vision has been spared. Surgery in these cases is not urgent.

There are a number of ways to treat retinal detachment and the most appropriate treatment for you will be based on the type, location and extent of the detached retina.

The purpose of surgery is to reposition the retina on to the inside wall of the eye. In ninety per cent of cases this can be achieved with a single operation. The reason to proceed with surgery is to prevent blindness.

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 ophthalmic 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.

Repair of a retinal detachment involves filling the vitreous cavity (the hollow space behind the lens of the eye), with an inert gas, the purpose of which is to reattach the area of detached retina.

The day after surgery the eye will be almost completely full of gas, which makes vision so blurry that it is almost useless. Vision gradually returns as the gas bubble re-absorbs and the vitreous cavity refills with naturally produced aqueous fluid.

It is important to remember that many activities of daily living will be compromised by the poor vision in your operated eye and for the first couple of weeks it will be impossible to drive.

Your ability to cope with everyday tasks will at that point depend upon vision in the fellow eye. For those patients whose central vision in the fellow eye is compromised, it is important to think about planning meals and arranging some help about the house for the first couple of weeks.

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.

Surgery 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 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.

As retinal detachment is a serious problem that requires immediate attention you are advised to check with your health insurance company that you would be eligible for private treatment.

Some companies have a “six-week rule” whereby if you could receive treatment within six weeks as an NHS patient, you would not be covered to have the procedure carried out privately.

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 any 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** and gas tamponade.

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 either the retina or the vitreous itself. In your case vitrectomy allows the eye to be filled with a bubble of inert gas, pushing the retina back into 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 talk and breathe easily. Your eyelids will be gently held open, although your eye will feel closed.

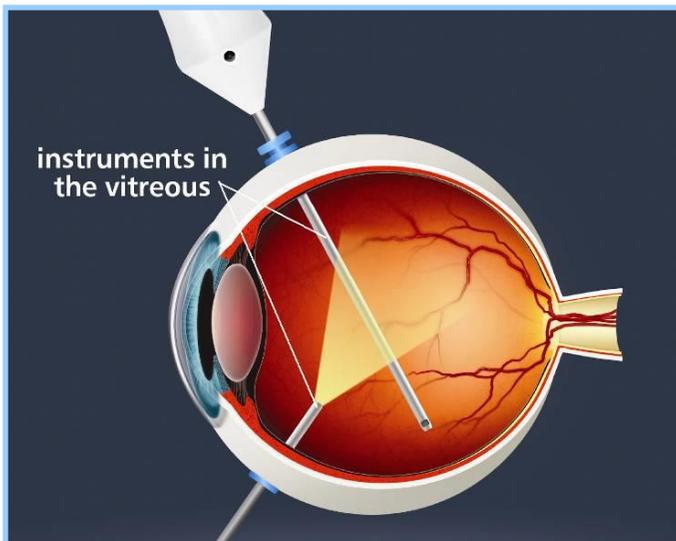
You will see little of what is happening during surgery but we will explain what we are doing as the operation goes along.

The theatre staff will make sure you are comfortable and help you relax. Someone will be there to hold your hand if you wish.

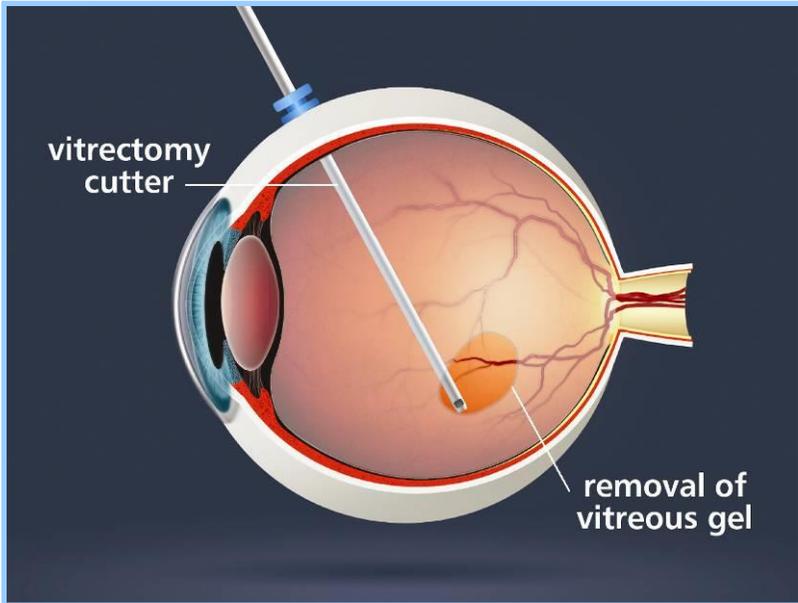


The operation usually takes about forty-five minutes, but in some cases may take longer.

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.



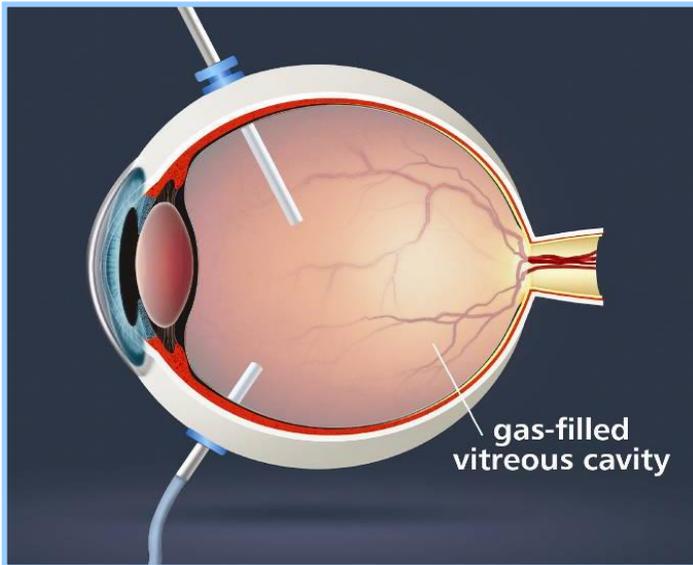
The first of these is a saline infusion (a “drip”) to replace fluid in the eye, maintaining the pressure and therefore the shape of the eye during surgery; the second is a fibre-optic light to illuminate inside the eye; and the third is for the operating instrument, starting with a vitrectomy cutter which enables safe removal of the vitreous gel from inside the eye.



Following removal of the gel, a series of steps is performed to re-attach the retina. The water inside the eye is first replaced with air to push the retina back into position.

Laser or cryotherapy (freezing) is used to treat the area of retina around the hole. This causes inflammation and as the eye heals permanent adherence – “welding” - of the retina to the eye wall occurs.

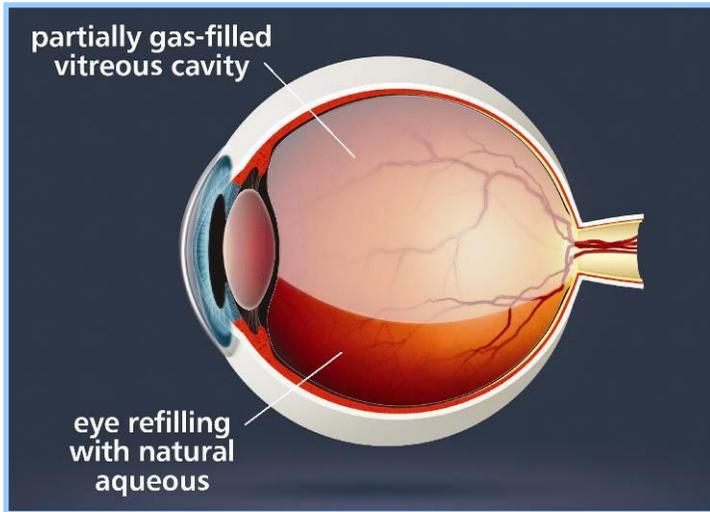
The air inside the eye is replaced by an inert gas to give a longer lasting gas-fill and a better chance of the retina re-attaching successfully to the eye wall.



For the gas bubble to be effective, “posturing” may be required. Posturing means positioning the eye so that the bubble, which will always float vertically upwards, presses against the site of the repair. The bubble in the eye behaves like the bubble in a spirit level, always finding the uppermost point. It is important to remember it is the position of the eye, (which way the eye is looking) rather than the position of the head, which really matters.

The gas re-absorbs over a period of time (between one and eight weeks depending upon the type of gas used) and the eye refills with the natural aqueous fluid which is produced by your eye.

Before leaving hospital you will be given clear instructions on precisely how to posture.



Occasionally, if it is felt that a gas bubble will be inadequate to re-attach the retina, silicone oil is used instead. This can remain within the eye indefinitely, but whenever possible will be removed two or three months after surgery.

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 surgery

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 and a pressure-lowering drop to take home, with written instructions on how to instil these and the frequency with which they should be used. We will make sure you know how to care for your eye when you get home.



You will be given information on caring for your eye and any particular instructions regarding posturing. This is an important part of the treatment and your co-operation is vital to give your retina the best chance of re-attachment.

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. For the first three days we may ask you to take a Diamox tablet morning and night to help control the pressure within the eye.

If 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. Occasionally the area surrounding the eye can become slightly bruised and you may notice puffiness of the eyelids if you have been asked to posture in certain positions. This is nothing to worry about and will settle over the first 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 booklet.

How quickly will your vision improve?

The success of the operation depends on how much of the retina had detached and for how long prior to surgery. If you had noticed a shadow or curtain blocking out part of your vision, this will usually improve when the retina has been put back in place.

If your ability to see fine detail had been damaged before the operation (implying detachment of the central macular retina) this will not fully recover following the procedure. Your final visual result will not be known for several months following surgery.

The gas bubble will obscure your vision whilst it re-absorbs over the next few weeks. As the bubble re-absorbs your view of the world re-appears from above, the upper “edge” of the bubble gradually lowering in your visual field. The world viewed through the bubble will be fuzzy or blurred. The bubble will become smaller and may break up before disappearing completely, at which time you should have a full field of vision.

If silicone oil has been used this will result in poor vision whilst the oil is present. Oil produces a long-sighted change, for which a temporary spectacle prescription may help. We will advise whether new spectacles are appropriate. In most cases, once the retina has re-attached to the back of eye, surgery will be performed to remove the oil. Laser is sometimes applied prior to oil removal, to minimise the risk of re-detachment.

When can you resume normal activities?

It is vitally important that you **do not fly** until the gas bubble has re-absorbed, as altitude will cause a pressure rise within the eye and irreparable damage.

If for any reason you are admitted to hospital whilst the gas bubble is present, you must mention this to your surgeon and anaesthetist as certain anaesthetic agents can be absorbed into the eye causing a dangerous pressure rise. Alternative anaesthetics are available.

You may return to your normal daily activities as soon as you feel ready to do so, although the need for posturing may initially be limiting. As a guide however, for the first two weeks you should refrain from swimming, strenuous activities, high impact sports, heavy lifting and wearing eye make-up.

You will be unable to drive for the first two or three weeks. The field of vision will be impaired and the movement of the gas bubble very distracting. Following this, 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.

Please also remember that you will need to continue putting drops in the eye for approximately three to four weeks after surgery.

What can you do to help make the operation a success?

Following your retinal detachment repair 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.

If you have been asked to posture during the day or sleep in a particular position at night, this is an important part of your treatment and will give your retina the best chance of remaining attached.

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.

What are the risks and complications?

The aim and potential outcome of vitrectomy surgery for retinal detachment 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.** It is not possible to see clearly through a gas bubble and vision will be compromised until spontaneous re-absorption occurs.
- **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.
- **A temporary increase in the intra-ocular pressure in the eye.** This necessitates an additional course of eye drops or tablets.

- **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. 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.
- **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:

- **Re-detachment of the retina.** Vitrectomy surgery involves the insertion of instruments into the vitreous cavity of the eye which carries a small risk of additional tears in 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.

- **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.
- **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.

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