

Understanding posterior vitreous detachment



supporting blind and
partially sighted people



RCOphth

RNIB's Understanding series

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About posterior vitreous detachment

Posterior vitreous detachment, also known as PVD, is a change in your eye which does not normally cause sight loss. It is very common and most of us will develop it at some point in our lives. Although it can cause some frustrating symptoms, it does not cause pain, harm the eye, or change the way the eye works. In the vast majority of cases, PVD will not lead to long term changes in your vision.

Posterior vitreous detachment and the eye

When we look at something, light passes through the front of the eye, and is focused by the lens onto the retina. The retina is a delicate tissue coating the inside of the eye. It converts the light into electrical signals that travel along the optic nerve to the brain. The brain interprets these signals to “see” the world around us.

The eye is filled with a clear jelly-like substance called the vitreous gel. Light passes through the vitreous gel to focus on the retina. When the vitreous jelly comes away from the retina this is called a vitreous detachment.

Causes

As you get older the various structures that make up your eye change; this includes the vitreous gel. The vitreous is made up mainly of water and collagen and it has a stiff, jelly-like consistency. As you age the vitreous becomes more watery, less jelly-like and isn't able to keep its usual shape. As a result, it begins to move away from the retina at the back of the eye towards the centre of the eye.

A PVD is a natural change that occurs in the eye. Over 75 per cent of the population over the age of 65 develop a PVD, and it is not uncommon for it to develop in someone's 40s or 50s. PVD is not a sign of a disease or eye health problem. For most of us a PVD happens naturally as we get older.

Symptoms and diagnosis

PVD can cause symptoms such as floaters, little flashes of light, or a cobweb effect across your vision. (See pages 9–11 for more information on these.) Some people get all three symptoms and others may only get one or two. Some people get a lot of each of these symptoms and others hardly any. Importantly, these same symptoms can be an indication of a more serious problem, such as a retinal tear, which needs urgent attention.

You will not be able to tell the difference between floaters and flashes caused by PVD or retinal detachment. The only way you can tell is to have your eyes examined by an ophthalmologist or optometrist. If you suddenly experience any of the following symptoms, make sure you have your eyes examined as soon as possible – preferably on the same day or within 24 hours:

- a sudden appearance of floaters or an increase in their size and number
- flashes of light and/or a change/increase in the flashing lights you experience
- blurring of vision
- a dark “curtain” moving up, down or across your vision, as this may mean that the retina has already partially detached.

It is important to remember that in most cases these symptoms are caused by vitreous detachment and this rarely causes any long term problems with your vision. However, because there is a small risk that these symptoms may be a sign of a retinal tear or detachment it is always best to have your eyes examined.

If you have been diagnosed with a PVD it is very unlikely that you will develop a retinal detachment.

Treating a retinal tear or detachment

Even though a retinal tear or detachment is a serious condition, it can be treated. Early treatment of a retinal tear may prevent it turning into a retinal detachment. Early treatment of a retinal detachment increases your chances of getting a good level of vision back.

It is important to realise that in nearly all cases a PVD does not cause a retinal detachment.

Investigation

At the hospital (or optometrist's practice) your vision will be checked and your pupils dilated to allow the ophthalmologist or optometrist to look at the retina. Your pupils are dilated with drops that take about 30 minutes

to work. They will make you sensitive to light and cause your vision to be blurry. The drops allow the ophthalmologist to see the inside of your eye more easily. The effects of the drop usually wear off in about six hours, although sometimes it will happen overnight. It is not safe to drive until the effects have worn off.

The ophthalmologist (or optometrist) looks at the inside of your eye using a special microscope called a slit lamp. You place your chin on a rest and the ophthalmologist sits opposite you. The ophthalmologist will ask you to look in particular directions and shines a light into your eye. Although very bright, the light cannot damage your eye. This allows them to see your retina and look for any signs of a retinal hole or tear.

Long-term PVD symptoms

If you've had your eyes checked and a PVD has been diagnosed then the symptoms will change over time. Even though the floaters and flashes of light can be frustrating in the short-term they usually settle down and do not cause permanent sight loss.

You may find the symptoms of your PVD only last for a few weeks, but more commonly they last around six

months, with the floaters and flashes of light gradually calming down over this period. For some people the floaters caused by PVD can last for up to a year, or longer, although this is more unusual. If PVD takes longer than six months to calm down it does not mean there is anything wrong, but if you have concerns about any ongoing symptoms you should speak to the eye clinic that checked your eyes.

PVD alone does not cause any permanent loss of vision. Once it has calmed down you should be able to see just as you could before it started because the brain usually learns to ignore any remaining floaters.

Small flashes of light

These can be visible when the vitreous pulls away from the back of the eye. The movement of the vitreous away from the retina at the back of the eye creates a tug on the retina. The retina reacts by sending a small electrical charge to your brain. You see this as short, small, flashes of light.

In the long-term, you are unlikely to see these flashes because, once the vitreous has fully come away it no longer pulls on the retina. This means that the retina is

no longer being stimulated to produce flashes of light. Some people may be more prone to seeing the occasional flash of light in the long-term but this is not usually anything to worry about.

Floater

Floater can take lots of different forms and shapes and can come in different sizes. You may see them as dots, circles, lines, clouds, or cobwebs. Sometimes, floaters can move around quickly. At other times it can feel like they hardly move at all. You may find floaters are more obvious in bright light or on a sunny day.

A floater is created when the vitreous becomes more watery and small, harmless clumps of cells develop and float in the more watery vitreous. The light rays, which normally travel from the front of the eye, meet a clump in the vitreous and it casts a shadow on the retina at the back of the eye. We see this shadow as a floater.

When the floaters are at their most intense it can be hard to imagine that they will become less obvious or go away with time, but for most people they do. Sometimes new floaters can develop or it can take longer for the floaters

to calm down and for your brain to learn to ignore them. This may be because the vitreous is still becoming more watery even when it has detached from the retina.

Many people have floaters even if they do not have PVD or an eye condition. Floaters are very common and your brain usually learns to ignore them over time.

Cobweb affect

As the vitreous pulls away from the retina you may see the thicker, outer edge of the vitreous. This slightly changes the way light passes through the eye, which can make it feel like you are looking through a cobweb. This visual effect soon disappears once the vitreous has come away from the retina.

Treatment

At the moment there is no medical treatment for PVD. There is no evidence to show that eye exercises, diet changes or vitamins can help a PVD. Because PVD floaters, in most cases, clear up on their own, the possible benefits of surgery do not outweigh the risks involved.

A minority of ophthalmologists offer laser treatment for floaters. However, this is not recognised as a standard treatment for floaters in the UK and it is not widely practised. Some studies have reported that this treatment only helps to partially reduce floaters in a third of cases. It may make the large floaters smaller but it does not seem to improve vision in the long run. There is concern that the possible risks of laser surgery outweigh the benefits you may gain.

There is a surgical procedure called “vitrectomy” which removes the vitreous jelly from the middle of the eye and it can reduce floaters. It is a major operation and it is not usually offered to patients in the UK with PVD due to the risks involved.

PVD and other eye conditions

In a small number of cases an acute PVD can lead to a retinal tear. This happens when your vitreous, which is firmly attached to the surface of the retina, tugs quite strongly on the retina as it pulls away. In a few people this may lead to a retinal tear which in turn could lead to a retinal detachment. A retinal detachment can cause sight loss. Retinal tears and detachments are much rarer conditions and only a very few people with PVD go on to develop either of these.

When you have your PVD examined the eye specialist (ophthalmologist) will look for any complications and will advise you of symptoms to look out for.

For more information about retinal detachment, you can order our booklet, "Understanding retinal detachment" by calling our Helpline on 0303 123 9999.

Coping

You may find floaters frustrating as they get in the way of seeing things which can make activities, such as reading, difficult. This is particularly true if you have one large, distracting floater. If this is the case, you might find the following technique helps:

Move your eyes around in a gentle circular motion so you create currents in the vitreous within your eyes. This can sometimes move the floater out of your direct field of vision. It works best if you have one large floater rather than lots of small ones.

Making things bigger can also help while you have floaters so that you are able to see things around the blank spots the floaters cause. Our publication, "See for yourself: make the most of your sight" will help you make the most of your sight while you experience floaters, and it is free to individuals. For more information or to order a copy, call our Helpline on 0303 123 9999.

Sunglasses or UV eye shields limit the amount of light coming into your eye, which may help the floaters be less obvious, especially in bright conditions. However, most people find that over time the floaters become less of a problem and they don't need any special adaptation.

Activities

Most people with a PVD have no restrictions on their activities. This is because there is no evidence to suggest stopping certain activities will prevent your PVD turning into a retinal tear. There is no evidence that any of these activities will cause any problems with your PVD:

- very heavy lifting, strenuous exercise or jarring exercises
- playing contact sports, such as rugby, martial arts or boxing
- extreme sports, such as bungee jumping
- inverted positions in activities such as yoga or pilates.

You may find that some of these activities make your floaters more noticeable. This is due to the movement of the activity rather than a change in your eye, so you may want to wait until your floaters have calmed down. You can carry on with daily activities such as walking, gentle exercising, reading, watching TV and using your computer. There is no evidence to suggest that flying in an aeroplane will harm your PVD or make it worse.

This advice might change if you have another condition. Your ophthalmologist is the best person to tell you if you need to avoid any activities.

Useful contacts

At the moment, RNIB is not aware of any organisation which specifically deals with this condition. RNIB has over 60 services and you may find some of these useful, for more information contact:

Royal National Institute of Blind People

105 Judd Street, London WC1H 9NE

t: 0303 123 9999

helpline@rnib.org.uk

www.rnib.org.uk

Royal College of Ophthalmologists

17 Cornwall Terrace, London NW1 4QW

t: 020 7935 0702

www.rcophth.ac.uk



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We do all we can to ensure that the information we supply is accurate, up to date and in line with the latest research and expertise.

The information used in RNIB's Understanding series of leaflets uses:

- Royal College of Ophthalmologists guidelines for treatment
- clinical research and studies obtained through literature reviews
- information published by specific support groups for individual conditions
- information from text books
- information from RNIB publications and research.

For a full list of references and information sources used in the compilation of this leaflet email publishing@rnib.org.uk or call 020 7391 2006.

RNIB Helpline

0303 123 9999

helpline@rnib.org.uk

If you, or someone you know, is living with sight loss, we're here to help.

This leaflet has been produced jointly by the Royal College of Ophthalmologists and Royal National Institute of Blind People.

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