

Floater₁

Anatomy

When the eye was made there were blood vessels in the vitreous, these shrivel up, but they remain as strands which can lead to floaters. As we get older the vitreous becomes more of a liquid and pulls away from the retina leaving a membrane free in the eye to form floaters. These move around freely in the now liquid vitreous. Just occasionally this increased movement of the vitreous tugs on an adherent strand to the vitreous which can lead to a hole in the retina and a retinal detachment.

Symptoms:

Small floaters are common to us all and are especially visible when starring at a white ceiling or the sky. However as the vitreous becomes more fluid like, after the age of 50 years more prominent floaters can develop and are variously described as: "Spiders", "dots", "Tadpoles" or "a fly in the vision". These move around and wobble in the vision. Occasionally there is a limited flash of light or twinkle.

I am often asked why floaters form. One must remember that the jelly or vitreous of the eye which fills the centre of the eye. It acts like a sieve as fluid from the front of the eye is continually produced and flows through the vitreous to the back of the eye and into the bloodstream. Thus over time the jelly picks up bits and pieces leading to the formation of floaters.

Treatment:

Usually they settle, however persistent floaters especially large ones can be safely Lasered away. Very rarely if they are very extensive then surgical removal is recommend.

Nd:YAG Laser Vitreolysis is a safe laser procedure which vaporises the floaters.

More information is available at Mr. Moriarty's web site http://www.brendanmoriarty.com/?p=laser_floaters which includes a video of the procedure. Their study found 63% of patients had total relief from their floater, 27% partial relief and 9% none. They had no complications in their trial. My experience is very positive, we have had no complications and our success rate mirrors the studies.

What to do:

If you develop new prominent floaters it is a good idea to have an eye examination to exclude any retinal damage. Do be aware that being on Aspirin increases the risk of bleeding into the eye, and you should avoid aspirin during the 6 weeks in which the posterior vitreous detachment develops, if you are not this for medical reasons you need to discuss this with your Doctor.

What to look out for:

The only serious complication of floaters is where, usually at their onset, the degenerative vitreous causes a retinal detachment.

Signs of Retinal Detachment:

A Shower of floaters

Persistent Flashing lights

A shadow or curtain coming across the vision.

Should you suffer this triad of symptoms then an assessment by an eye doctor urgently is needed. The repair of a retinal detachment is much easier if it is caught early. It has to be said though that this complication is **Very rare** and only really likely at the onset of floaters.

Most of us I am afraid have to learn to live with our floaters and hope that one day they will float out of our vision.

Other Eye – It is quite likely that you may experience a similar episode in the other eye. If you do, it is important again to seek medical attention.



Figure 1 The dark spot in the middle is a Weiss ring which would be seen as a floater. It was the vitreous attachment around the white optic disc you can see in the lower part of the picture.

If you have any further complaints we would be happy to see you again and please feel free to contact our secretary.

Written by Nicholas Lee Consultant Ophthalmologist The Western Eye Hospital, London. 2006

Useful link NHS Direct Floater web sitge.

<http://www.nhsdirect.nhs.uk/articles/article.aspx?articleId=162§ionId=10675>

Seeing Things New Scientist Articles 11 January 1997 N0 2064

Q: When there is a light in a certain position, I see chromosome like structures about a metre from my eyes. They change shape and move where ever I look. What are they and does everyone see them?

A: These are known as entoptic images and they are produced by optical imperfections within your eye such as debris in the tear film cornea and lens opacities, vitreous opacities, white blood cells in the retinal capillaries and from the retina itself. To observe these entoptic phenomena requires skills of perception and the correct lighting arrangements .

The most common seen are those arising from the vitreous body the transparent gelatin like ball that fills the eye, and are more usually referred to as floaters . I expect it is these the reader is referring to. These are common to us all and are especially visible when staring at a white ceiling or at the sky. When the eye is first formed there are blood vessels in the eye's vitreous. These shrivel up into strands which can cause floaters. As we get older the vitreous becomes more of a liquid and pulls away from the retina leaving a membrane free in the eye to form floaters which are often described as "spiders", "dots", "tadpoles" or a "fly in my vision".

These floaters move around and wobble in the vision. Occasionally there is a limited flash of light or a twinkle, especially at night.

This increased movement of the vitreous in old age can tug on a strand which is adhering to the vitreous. This can lead to a hole in the retina and a retinal detachment, although this is

rare. The symptoms of retinal detachment are a shower of floaters, persistent flashing lights or a shadow or curtain coming across the vision. Should you suffer this triad of symptoms then an assessment by an eye doctor is needed urgently.

*Nicholas Lee
The Western Eye Hospital,*

A: If they tend to stay in one position when you keep your eye still, they are probably muscae volitantes—the shadows of small opacities in the vitreous body. Most people have muscae, and their number tends to increase with age.

However, if the spots move in a jerky fashion even when you keep your eyes still, and tend to follow fixed trajectories, you're seeing blood corpuscles that are being pushed by your pulse through the capillaries that supply the retinal receptors. These are fairly easy to sky against a bright blue sky, or when looking at an extended, evenly – lit bright surface through a blue filter. This implies that the capillaries are in front of the retina and, probable as it might seem, this is the case.

We don't see the capillaries themselves because any pattern that is stabilized on the retina fades within a few seconds as a result of the adaptation of the receptors and associated neural wiring. Normally, an object that we are looking at fixedly does not disappear because our eyes constantly make small movements. However, there are various optical methods to stabilise images on the retina, the most astounding of which is a large contact lens carrying a tiny slide projector.

You can see the larger blood vessels of your eye if you hold

the lens of a penlight close to the outer corner of one eye in a darkened room, keeping the eye open. (It may help to turn the eye towards your nose.) With a little experimentation you'll see a tree-like structure, the so-called Purkinje figure. In order to keep it visible, you need to move the light a bit. If you then hold the light as steady as possible, the "tree" will vanish, only to reappear when you move the light again.

*C. R. Cavonius
Dortmund, Germany*

A: The chromosome-like structures are semi-transparent forms called floaters which float around the eye's field of vision. Mostly they are shadows cast on the retina, made by microscopic debris in the eye's vitreous. Other structures can be attributed to the red blood cells that have been discharged from retinal blood vessels.

These cells form strings, and float around the retina. All people seem to experience this occurrence and it is just an optical illusion that makes them appear as if they are floating outside the eye.

John Billings (age 12) Chester

A: The structures you describe are the remnants of a blood vessel that supplied your eyes with blood when you were a fetus. During the eye's development, a blood vessel supplies blood to feed the developing eye tissue. Once the eye has developed, the blood vessel breaks down.

This leaves a few fragments floating loose in the eye fluid because there is no outlet for them. Everyone sees these left-over pieces to a varying degree, and usually only intermittently—it is quite normal and is not detrimental to sight in most people. *Trent Nickson*

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