

Macular Hole

The retina is a light-sensitive layer of tissue lining the back of the eye. The macula is a small area at the centre of the retina responsible for all of our central vision, most of our colour vision and the fine detail we see.

A macular hole is a small defect in the retinal layer that develops at the centre of the macula. If the macula is damaged it is difficult to drive, watch TV, read or recognise faces. Macular holes occur in about 3 in 1,000 people over the age of 55. They are more common in women than men.

The cause of macular hole formation is thought to be due to abnormal adhesion and traction on the surface of the retina by the jelly or vitreous humour that normally fills the cavity of the eyeball. The jelly usually fills the eye fully and is in contact with the retina surface but as we get older, it becomes weaker and shrinks and becomes detached from the surface of the retina.

This process, called posterior vitreous detachment or PVD normally occurs in most people as we get older. However in certain cases, the vitreous humour is abnormally adherent to the surface of the retina and abnormal traction or pulling can occur as the jelly becomes detached and pulls off a bit of the retina with it, leaving a circular defect in the retina layer.

This defect, unfortunately, is usually located at the centre of the macula which is responsible for the detailed visual function, where even a small abnormality can have a large impact on the vision.

Symptoms

In the early stage there may be a slight distortion or blurred vision, straight lines may appear wavy and reading becomes difficult. Late symptoms include gaps or the loss of the most central vision.

Sudden appearance of flashing lights, floaters (specks or flecks that float across your vision) or fading vision could indicate a retinal detachment - seek urgent medical help.

How is vision affected?

A macular hole affects central vision. Peripheral vision is unaffected and it **doesn't lead to complete blindness**. If left untreated vision usually deteriorates so that you may only be able to read the top letter of an eye chart or worse.

The longer it is left the less likely treatment will succeed so it is important to detect macular holes early. It is advisable to have eye tests with your optometrist at least every two years.

The condition usually occurs in just one eye. There is a small risk (10%) of it occurring in both. Using Optical Coherence Tomography (OCT) scans, the ophthalmologist can advise on the risk. A macular hole is more likely to develop if the vitreous gel is pulling on the retina. If the gel has separated from the retina, it is unlikely that a macular hole will develop.

Treatment

Some early macular holes may close themselves and need no treatment. **A drug known as 'Jetrea'** (also known as Ocriplasmin), is available for patients who have vitreomacular traction, including those who have a macular hole providing the hole is smaller than 400 microns.

Jetrea is injected into the eye in a one-off treatment and can close some small holes without the need for surgery. In most cases however an operation is needed to improve vision or halt further deterioration. The likelihood of recovering full vision is small but recovering some vision is possible in over 90% of cases.

Vitrectomy

A vitrectomy is surgery that removes the gel from the eye under local anaesthetic. A gas bubble is then put into the eye to block the hole allowing the retina to become flat again, and the hole closes.

Post-operative care

Following surgery, the eye may be sensitive, swollen and red. You will be prescribed eye drops to prevent infection and reduce inflammation. If you have gas in the eye you will not be able to see for a while. Over time the gas bubble gets smaller and rounder until it looks like a golf ball bobbing around at the bottom of your vision. The bubble sometimes splits into several bubbles but this is nothing to worry about.

You cannot fly with gas in the eye; it would expand and increase the pressure in the eye causing pain and loss of vision. Gas is absorbed slowly by the eye and does not require another operation to remove it. Once the bubble has cleared, vision will return quickly, although improvements can take up to 12 months.

Posturing

'Posturing' is a form of recovery that involves keeping the head face-down for up to two weeks after surgery to ensure the gas or oil puts pressure in the right place to help close the macular hole. If posturing is advised, equipment is available to make you more comfortable. If not loaned by the hospital,

you can hire equipment from: Face Down Support Hire: Tel: 0845 017 0533 www.facedownsupporthire.com

Posturing tips:

- stock up on entertainment
- clothes without buttons are more comfortable to lie on
- **keep things you'll need** during the day close-by (tissues, snacks, water, drinking straws)

You will need to attend the eye clinic out-patients department 1–2 weeks after surgery for assessment. It is common to review progress after three months. Following a vitrectomy you may need new glasses. If you are given a new lens prescription, do not get new glasses until the gas bubble has been absorbed. Ask your ophthalmologist for advice.

Complications and side effects

Cataracts occur in nearly all cases within 12 months of surgery so simultaneous cataract and vitrectomy surgery may be offered. The retina may detach from the back of the eye during surgery. Retinal tears which can lead to detachment occur in up to 6% of cases. If this happens you will notice a shadow across your vision. This needs to be repaired urgently.

The surgeon will repair any weak areas of the retina to try to prevent retinal detachment. Raised pressure may also be a side effect which can cause glaucoma. Most cases will settle without treatment (which would be eye drops).

Infection may occur in about 1 in 1,000 patients a few days after surgery. Infection needs to be treated urgently with injections of antibiotics and possibly further surgery. Another side effect may be bleeding in the eye. You will receive post-operative care that will detect and advise on any side effects.

Success rates

Vision will improve gradually over several months. An average improvement is being able to read two or three more lines on the eye chart. Success depends upon the age of the hole.

Macular holes younger than 6 months have a success rate of over 90%. For holes older than 12 months the success rate is less. If the hole does not close after the first operation, further operations may be done but the chances of visual recovery in these situations are often not very good.

Self help

If you have a macular hole in one eye, you may be at a higher risk of developing a macular hole in your other eye. It is important to monitor for any of the symptoms described above and report any changes in the vision in **your 'at risk' eye** to your optometrist who will assess you and may refer you to an ophthalmologist.