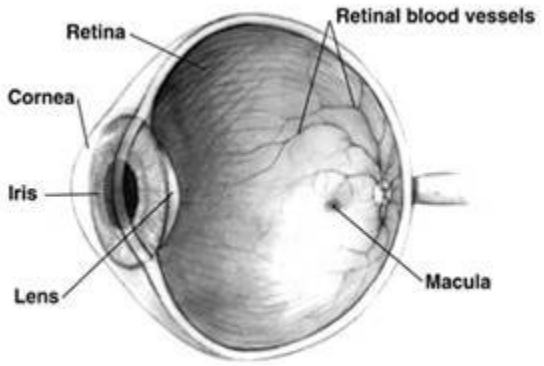
Macular Hole

The macula is located in the center of the layer at the back of the eye that contains the light sensitive nerves for vision. The macula is the part of the retina that allows for sharp vision, reading and seeing detail. When a break happens in the macular surface, it is known as a macular hole.



CAUSES

Most of the inside of the eye is filled with a jelly-like fluid called the vitreous. The vitreous is attached to the retina by millions of tiny fibers. With age, the vitreous begins to shrink and the fibers can pull on the surface of the retina. This type of change is most common in people over 50, especially if they are very near-sighted (*myopia*). If the fibers pull hard enough, they can cause a hole or break in the surface of the retina. This can also happen at the macula.

The retina must be flat in order for vision to occur. Retinal holes can cause problems because fluid can go through the hole and cause wrinkles in the retina. If enough fluid is present to lift up the retina, a retinal detachment can occur.

Causes of macular holes include:

- Age-related shrinking of the vitreous.
- Extreme near-sightedness (*high myopia*).
- Diabetes.
- Trauma.
- Hereditary macular diseases (e.g. Best's Disease).

SYMPTOMS

- Objects may look distorted or wavy.
- You have problems reading or seeing detail.

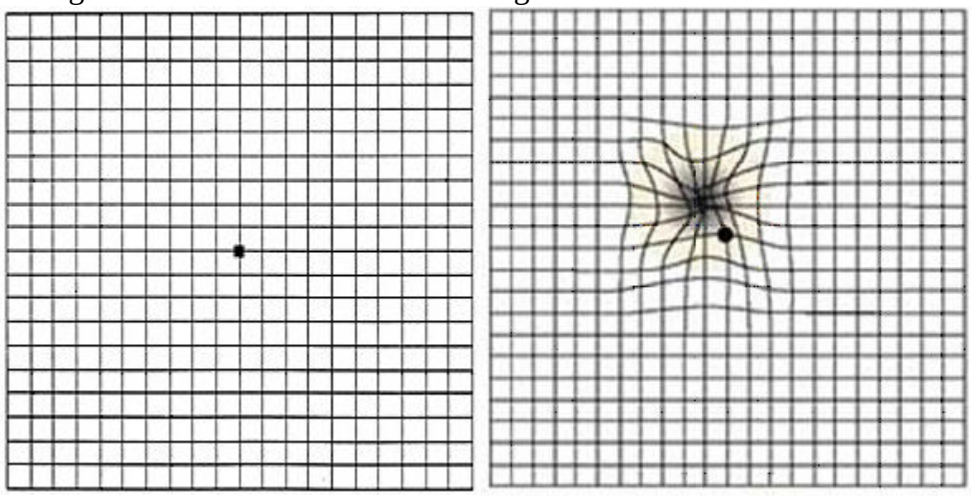
Although people who get macular holes in one eye, they have a small chance of having the problem in the other eye as well.

Normal vision

The same scene as it might be viewed by a person with a macular hole.

DIAGNOSIS

- Your eye care professional may suspect a macular hole if you are over age 60 and have had recent changes in your central vision.
- To look for signs of the disease, he or she will use eye drops to enlarge (*dilate*) your pupils. Dilating the pupils allows your ophthalmologist to view the back of the eye better. They may be able to see the changes in appearance of the macula.
- You may be given a test called a Fluorescein Angiogram. This is a painless test that is safe for most people. The doctor will inject a small amount of dye into a vein in the arm. Seconds later, a special camera is used to take a picture of the dye as it travels through the blood vessels of the retina of one eye. This test allows the doctor to tell if there is any fluid collecting in the retina, around the area of the hole.
- You may also be asked to view an Amsler grid. This is a series of crossed lines that form a pattern that looks like a checkerboard. Early changes in your central vision will cause the grid to appear distorted. This is a sign of a macular hole or macular degeneration.



While covering one eye, look at dot in center of grid. If the macula is normal, the lines around the dot should appear straight in your side vision. If the lines around dot are wavy or distorted, you should see your eye care professional

TREATMENT

Some macular holes may seal themselves and go away. Others may persist and even become permanent. For this reason, surgery is often needed to help the hole in the macula heal.

The surgery, which is known as a vitrectomy, is done under local anesthesia. This surgery involves removing some of the vitreous to reduce the pulling on the retina. The vitreous that is removed is replaced with a bubble containing air and gas. After the surgery, the patient must lie in a face-down position to allow the air to float up

and hold the macula in place. Sometimes, the patient must stay in this position for as long as 2 to three weeks. It is also important not to travel by air for several months. This is because there is lower air pressure in a plane. The low pressure could cause the bubble to expand and increase the pressure inside the eye.

With time, the bubble will absorb and be replaced by the natural fluids of the eye.

SEEK MEDICAL CARE IF:

- You seem to need more light in order to read.
- Colors seem less intense.
- You have a hard time making out faces or details with one or both eyes.
- You have trouble seeing print with one eye when trying to read, even with reading glasses on.

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