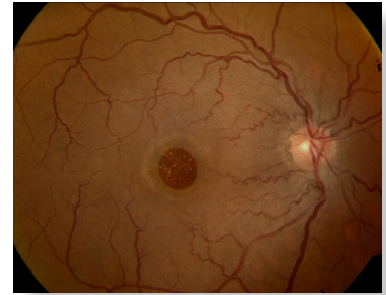


Macular Hole

A macular hole is a defect in the central retina (macula). Since the macula is responsible for reading vision, patients who develop a macular hole complain of distorted vision and loss of central vision in the affected eye.

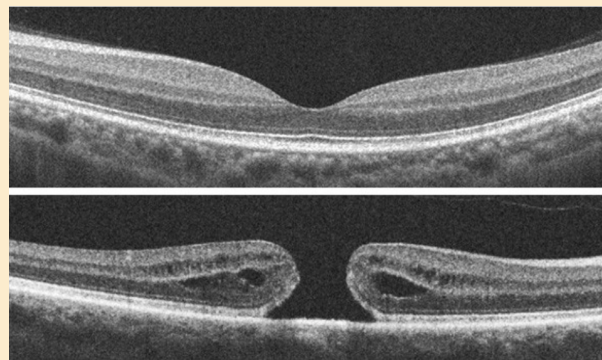


What causes a macular hole?

The incidence of macular hole is 3.3 cases per 1,000 in the population. The risk for developing a macular hole in the fellow eye is 10% - 15%. The *vitreous* is the gel that fills the eye. The majority of macular holes are caused by a spontaneous separation of the vitreous overlying the center of the retina (macula). The vitreous has a strong natural adhesion to the macula. Due to age-related changes in the vitreous gel, contraction of the vitreous overlying the macula may pull open a defect in the macula creating a macular hole. Less common causes of a macular hole include blunt trauma to the eye, contraction of a pre-existing epiretinal membrane (macular pucker), or extreme near-sightedness (high myopia).

Evaluation of a macular hole

Macular holes are frequently identified by an eye care professional using a slit lamp biomicroscope. Fluorescein angiography (a dye test to evaluate blood flow) is often performed to evaluate a macular hole and rule out other conditions. Optical coherent tomography (OCT) is a type of imaging test used to produce high resolution cross sectional images of the macula in order to confirm the diagnosis, exclude other conditions, and monitor the macular hole before and after surgical repair.



OCT images of a normal retina (top) and macular hole (bottom).

Treatment of a macular hole

Macular holes are treated with a type of retinal microsurgery called macular hole repair. Macular hole repair is a type of vitrectomy, in which the gel inside the eye is removed and a gas bubble is placed inside the eye. Please see the separate handout titled Macular Hole Repair for details about surgery.



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Macular Hole

▶ Different Types of Macular Holes

Macular holes are described as Stages 1 - 4. Stage one macular holes are not full thickness holes and are sometimes called "impending macular holes" for this reason. Stage one macular holes sometimes close without surgery, while stages 2 through 4 do not.

Lamellar macular holes are partial thickness defects, not full thickness holes. Lamellar holes can cause distortion and decreased vision but generally do not respond to surgery.

▶ Macular Hole Repair Surgery

Micro-incisional vitrectomy is the surgical removal of the gel in the eye, or vitreous. Macular hole repair is a type of vitrectomy surgery in which a gas bubble is placed in the eye after removal of the vitreous gel. Flying or altitude are prohibited until the gas bubble has been absorbed. In most cases, peeling of a superficial retinal layer is also performed to facilitate hole closure. In certain advanced cases of chronic or large macular holes, additional maneuvers may be performed improve the chances of hole closure. Macular hole repair is an outpatient procedure that usually takes less than an hour. Surgery is most often performed under local anesthesia, but can be done under general anesthesia as well.

Visual improvement after macular hole repair is gradual, since the return of retinal function requires significant healing time after hole closure. Hole closure can usually be confirmed by your BARA surgeon 3-8 weeks after surgery and vision can improve gradually up to 6 months after surgery.

Macular hole repair leads to improved vision in the vast majority of cases, with about 3/4 of eyes improving 3 or more lines on the eye chart. It is important to keep in mind that vision rarely returns to "normal" since the tissue architecture often shows residual abnormalities even after successful surgical closure. The prognosis for improved vision is worse in eyes that already have age-related tissue thinning or other macular disease prior to surgery.

Rare complications after vitrectomy surgery include bleeding, infection, retinal tear and retinal detachment. These complications occur in 1 out of several thousand patients. More commonly, cataract may advance at a faster pace following vitrectomy. Patients who have not previously undergone cataract surgery should expect to need cataract surgery within 1-2 years of vitrectomy surgery if not sooner.



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Bay Area Retina Associates is a group practice of retinal surgeons. All members of the group are board certified by the American Board of Ophthalmology and have completed fellowship training in the medical and surgical care of retinal diseases. All BARA surgeons have expertise in the treatment of common diseases such as AMD, diabetic retinopathy and retinal detachment, as well as rare diseases. BARA physicians see patients in eight offices around the East Bay, a community we have served for almost 40 years.