



Epiretinal membrane

What is an epiretinal membrane (ERM)?

An epiretinal membrane (ERM) is scar tissue that has formed on the surface of the macula, located in the center of the eye's light-sensitive tissue called the retina. The macula provides the sharp, central vision we need for reading, driving, and seeing fine detail. A epiretinal membrane can contract and causes wrinkling of the macula, often referred to as a *macular pucker*. This can cause blurred and distorted central vision.

Most of the eye's interior is filled with vitreous, a gel-like substance that fills about 80 percent of the eye. The vitreous contains millions of fine fibers that are attached to the surface of the retina. As we age, the vitreous slowly shrinks and pulls away from the retinal surface. This is called a posterior vitreous detachment (or PVD), and is normal. In most cases, there are no adverse effects from a PVD, except for a small increase in floaters, which are little "cobwebs" or specks that seem to float about in your field of vision.

However, sometimes when the vitreous pulls away from the retina, there is microscopic damage to the retina's surface (Note: This is not a macular hole). When this happens, the retina begins a healing process to the damaged area and forms scar tissue, or an epiretinal membrane, on the surface of the retina. This scar tissue is firmly attached to the retina surface. When the scar tissue contracts, it causes the retina to wrinkle, or pucker, usually without any effect on central vision. However, if the scar tissue has formed over the macula, our sharp, central vision becomes blurred and distorted.

What is a macular pucker?

Most macular puckers are related to vitreous detachment, which usually occurs in people over age 50. As you age, you are at increased risk for macular pucker.

A macular pucker can also be triggered by certain eye diseases and disorders, such as a retinal tear, a detached retina and inflammation of the eye (uveitis). Also, people with diabetes sometimes develop an eye disease

called diabetic retinopathy, which can cause a macular pucker. A macular pucker can also be caused by trauma from either surgery or an eye injury.

What are the symptoms of a macular pucker?

Vision loss from a macular pucker can vary from no loss to severe loss, although severe vision loss is uncommon. People with a macular pucker may notice that their vision is blurry or mildly distorted, and straight lines can appear wavy. They may have difficulty in seeing fine detail and reading small print. There may be a gray area in the center of your vision, or perhaps even a blind spot.

Is a macular pucker the same as age-related macular degeneration?

No. A macular pucker and age-related macular degeneration are two separate and distinct conditions, although the symptoms for each are similar. An eye care professional will know the difference.

Can macular pucker get worse?

However, in 25-35% of patients, epiretinal membranes can get worse and lead to more vision loss. Usually macular pucker affects one eye, although it may affect the other eye later.

Is a macular pucker similar to a macular hole?

A macular pucker and a macular hole are different conditions, although they both result from the same reason: The pulling on the retina from a shrinking vitreous. When the “pulling” causes microscopic damage, the retina can heal itself; scar tissue, or a macular pucker, can be the result. If the shrinking vitreous pulls too hard, it can tear the retina, creating a macular hole, which is more serious. Both conditions have similar symptoms - distorted and blurred vision. Also, a macular pucker typically will not “develop” into a macular hole. An eye care professional will know the difference.

How is a macular pucker treated?

Neither eye drops, medications, nor nutritional supplements will improve vision distorted from macular pucker. Sometimes the scar tissue—which causes a macular pucker—separates from the retina, and the macular pucker clears up.

Rarely, vision deteriorates to the point where it affects daily routine activities. However, when this happens, surgery may be recommended. This procedure is called a vitrectomy, in which the vitreous gel is removed and replaced with a salt solution. (Because the vitreous is mostly water, you will notice no change between the salt solution and the normal vitreous). The ERM which causes the wrinkling is carefully removed. A vitrectomy is usually performed under local anesthesia and is an outpatient surgery.

After the operation, the eye will be patched for the first day to protect the eye. You will also need to use medicated eye drops to protect against infection. Normal activities can be resumed within a few days.

How successful is this surgery?

On average, about half of the vision lost from a macular pucker is restored; some people have significantly more vision restored, some less. In most cases, visual distortion is significantly reduced. Recovery of vision can take up to twelve months. Surgery to repair a macular pucker is very delicate, and while vision improves in most cases, it may not return to normal. Patients should talk with their eye care professional about whether treatment is appropriate.

What are the risks of surgery?

The most common complication of a vitrectomy is an increase in the rate of cataract development. Cataract surgery may be needed after a few years after the vitrectomy. Other, less common, and rare complications are retinal detachment either during or after surgery, and infection after surgery.