

# Retinal Detachment

The eye is like a camera: it has a lens in the front that focuses light, and film in the back that captures light. The retina is the “film” inside the human eye and contains over a million neurons as well as a network of blood vessels that keep the tissue healthy. Between the lens in the front and the retina in the back of the eye lies a clear gel called the *vitreous*.

## What is a retinal detachment?

A retinal detachment occurs when the retina pulls away from the wall of the eye. The retina cannot function normally when it is detached from the wall of the eye, which is why a retinal detachment can limit the vision to varying degrees depending on how much of the retina is detached.

There are different kinds of retinal detachments: *rhegmatogenous*, *tractional*, and *exudative*. The most common kind, a rhegmatogenous retinal detachment, occurs when fluid moves through a retinal hole or tear into the space under the retina, causing the retina to detach. The remainder of this handout deals specifically with rhegmatogenous retinal detachment.

## Treatment of rhegmatogenous retinal detachment

The goals of treatment are to get the fluid out from under the retina and to seal the tears or holes that caused the problem in the first place. Removing the fluid allows the retina to reposition itself (reattach) against the wall of the eye and thereby regain its nourishing blood supply and restore vision. Sealing the tears or holes in the retina helps make sure that the retina does not re-detach in the future. Fortunately, over eighty to ninety percent of retinal detachments can be repaired with only one procedure. The following are the most commonly used methods to repair a retinal detachment.

### ***Scleral Buckle***

Scleral buckling entails sewing a piece of silicone to the outside wall of the eye. The silicone material indents (buckles) the wall of the eye and pushes the wall of the eye closer to the retinal tear. The tear is treated with freezing therapy which causes local tissue damage and controlled scarring which seals the tear. The fluid already under the retina is either absorbed by the body or actively drained from under the retina and the retina is thereby reattached.

### ***Micro-incisional /sutureless vitrectomy surgery***

Micro-incisional/sutureless vitrectomy surgery takes place through three very small openings in the white part of the eye. The surgeon uses fine instruments and an operating microscope to remove the vitreous gel

**BayAreaRetinaAssociates**

*Diseases and Surgery of the Retina and Vitreous*



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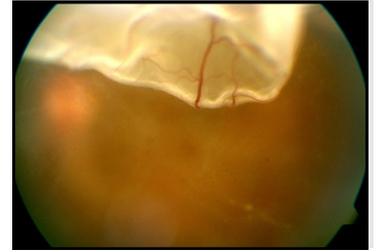
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inside the eye and drain the fluid out from under the retina. The surgeon may use a laser to seal the retinal tears or holes. A bubble of gas is commonly placed inside the eye in order to hold the retina in place while it heals. The patient may be asked to maintain a specific head position for several days after surgery.



▲ Retinal detachment

### ***Pneumatic Retinopexy***

Unlike scleral buckling and vitrectomy, which are performed in the operating room, pneumatic retinopexy is performed in the office with only local anesthesia. The surgeon will determine whether this is a reasonable option based on the characteristics of the retinal detachment. Pneumatic retinopexy consists of at least three parts. 1) The tear in the retina needs to be sealed to the eye wall. This is usually done with cryotherapy, a freezing treatment applied to the outside of the eye after numbing medications are given. 2) Gas is injected into the back part of the eye (vitreous cavity). When the head is then positioned appropriately, this bubble pushes the fluid out from under the retina and pushes the retinal tear closed. Proper positioning by the patient immediately after this procedure is critical. 3) Fluid is removed from the eye in order to make place for the gas. This can be done before the gas is injected, after the gas is injected, or both before and after.

### ***Laser Surgery***

In certain selected cases it may be advisable to "wall off" the detachment to prevent the detachment from spreading. Laser (or freezing treatment) creates a controlled scar which serves as a barrier, and the detachment remains fixed in its position. This technique is most often used when the area of detachment is very small. This technique is also sometimes used for patients who cannot safely undergo any other procedure due to severe medical illness.

### ***Surgical and Visual Results***

The overall anatomic success rate of retinal detachment repair is greater than 90%. This means that the surgeon can successfully put the retina back into place 9 out of 10 times. Sometimes more than one procedure is required to achieve anatomic success.

The visual result depends on the patient's pre-operative vision as well as the body's ability to heal. If the center of the retina is attached prior to the surgery, then post-operative vision tends to be similar to pre-operative vision. However, if the central retina is detached prior to the surgery, there may be some degree of permanent vision loss even after successful reattachment. Some procedures will accelerate cataract formation, in which case cataract surgery is needed later in order to achieve the best possible vision.

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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 Academy of Ophthalmology and have completed fellowship training in vitreoretinal surgery. BARA surgeons have expertise in the treatment of retinal detachment, diabetic retinopathy, age-related macular degeneration, macular hole, epiretinal membrane, and retinal vascular disease. BARA physicians see patients in eight offices and perform surgery at several hospitals and surgery centers around the East Bay.