

Retinal Detachment and Retinal Tears.



Vision that
needs Attention!



Retinal detachment affects about one out of every 10,000 people each year in the United States. It is a serious eye problem that may occur at any age although it usually occurs in the middle-aged or older individuals. It is more likely to develop in people who are nearsighted or in those whose relatives have had retinal detachments. An injury with a hard, solid blow to the eye may cause the retina to detach as well. More rarely, this condition is hereditary and may even occur in infants and children. If not treated early, retinal detachment may lead to reduced vision or even loss of vision.

The retina is a thin, transparent tissue of light sensitive nerve fibers and cells. It covers the inside wall of the eye like wallpaper covers the wall of a room. The retina functions like the film in a camera: light passes through the lens of the eye and is focused onto the retina. The light sensitive retinal fibers are responsible for "taking the picture" and transmitting the light image via the optic nerve to the brain.

Causes and Symptoms

Most retinal detachments are caused by the presence of one or more small tears or holes in the retina. Normal aging can sometimes cause the retina to become thin and deteriorated, but more often shrinkage of the vitreous body, the clear gel-like substance which fills the center of the eye, is responsible for deterioration and retinal tears.

The vitreous is firmly attached to the retina in several places around the back wall of the eye. As the vitreous liquefies and shrinks, it may pull a piece of the retina away with it, leaving a tear or hole in the retina. Though some shrinkage of the vitreous body occurs naturally with aging and usually causes no damage to the retina, abnormal enlargement of the eye (resulting in nearsightedness), inflammation or injury may also cause the vitreous to shrink. In most cases, a significant change in the structure of the vitreous body occurs before the development of the retinal detachment. Once a retinal tear is present, watery fluid from the vitreous space may pass through the hole and flow between the retina and the back wall of the eye.

This separates the retina from the back of the eye and causes it to “detach”. The part of the retina that is detached will not work properly and there will be a blur or a blind spot in the visual field. It should be noted that there are some retinal detachments that are caused by other diseases in the eye such as tumors, severe inflammations, or complications of diabetes. These so-called secondary detachments do not have tears or holes in the retina and treatment of the disease which caused the retinal detachment is the only treatment which may allow the retina to return to its normal position.

Middle-aged and older persons may see floating black spots, called **floaters**, and flashes of light in their visual field. (These are usually less common in children or young adults.) In most cases, these symptoms do not indicate serious problems. However, in some eyes, the sudden appearance of spots or flashes of light may indicate substantial shrinkage of the vitreous with tears in the retina. A comprehensive medical eye examination by an ophthalmologist is necessary to check the inside of the eye to determine if retinal tears are present. Such an examination is desirable as soon as symptoms develop because fresh retinal tears may be treatable without prolonged surgery before they lead to a more severe retinal detachment.

Some retinal detachments may begin without noticeable floaters or light flashes. In these instances, patients may notice a wavy quality in their overall visual field or the appearance of a dark shadow in some part of their peripheral vision. Further development of the retinal detachment will blur central vision and create significant sight loss in the eye unless the detachment is repaired.

A few detachments may occur suddenly and the patient may experience a total loss of vision in one eye. Similar rapid loss of vision may also be caused by bleeding into the vitreous area of the eye which may happen when the retina is torn.

Detection and Diagnosis

A detached retina cannot be viewed from the outside of the eye. Therefore, if symptoms are noticed, an ophthalmologist should be consulted as soon as possible. The ophthalmologist thoroughly examines the retina and the interior parts of the eye with an instrument called an *ophthalmoscope*. The instrument's bright light and magnification allows the ophthalmologist to locate areas of retinal tears or weakness which need to be corrected during treatment. Other special diagnostic instruments including special contact lenses, slit lamp, and ultrasound may also be used during the examination.

Treatment

If the retina is torn and retinal detachment has not yet occurred, a retinal detachment may be prevented by prompt treatment. Once the retina becomes detached, it must be repaired surgically by an ophthalmologist. Successful reattachment of the retina consists of sealing the retinal tear and preventing the retina from pulling away from the back of the eye again. There are several surgical procedures that may be used. The choice depends on the severity of the retinal detachment and the judgment of the ophthalmologist.

Laser Photocoagulation. When new small retinal tears are found, with little or no nearby retinal detachment, the tears are sometimes sealed with a laser light. The laser places small burns around the edge of the tear. These produce scars that seal down the edges of the tear and prevent fluid from passing through and collecting under the retina. Ophthalmic laser surgery is frequently done as an outpatient treatment and requires no surgical incision.

Freezing (Cryopexy): Freezing the back wall of the eye behind a retinal tear will stimulate scar formation and seal down the edges, similar to the reaction from ophthalmic laser surgery. Freezing is often an outpatient procedure but requires local anesthesia to numb the eye.

Surgical Repair: Once a significant amount of fluid has collected under the retina and separates it from the back of the eye, a more complicated operation is necessary to treat the detachment. Such operations vary depending on the extent of the detachment and resulting damage, but each is designed to press the wall of the eye against the retinal holes, holding both tissues together until scarring seals the tears. Sometimes fluid must be drained from under the retina to allow it to settle back onto the eye wall. Often a silicone band or pressure pad is placed on the outside of the eye to gently push the back wall of the eye against the retina.

During such operations, either freezing or a laser, or the heat of diathermy (an electric current applied through a needle), is used to produce a scar to seal the retinal tear.

More complex retinal detachments may necessitate a technique called vitrectomy. This operation cuts the connected bands of vitreous away from the retina and removes the shrunken vitreous body from the eye. In some cases, when the detached retina itself is severely shrunken and puckered, it may have to be pushed back to the wall of the eye by temporarily replacing the vitreous cavity with air or gas. Eventually, clear fluid from the blood seeps into this space to fill it permanently.

Over 90% of all retinal detachments can be reattached by modern surgical techniques. Occasionally, more than one operation may be necessary.

If the retina is successfully reattached, the eye will retain some degree of sight, and blindness will have been prevented. However, the degree of vision which finally returns about six months after successful surgery depends upon a number of factors. In general, there is less visual recovery when the retina has been detached for a long time, or there is a fibrous growth on the surface of the retina. Approximately 40% of successfully treated retinal detachments achieve excellent vision. The remainder attain varying amounts of reading and/or traveling vision. Unfortunately, due to continuous shrinkage of the vitreous and the development of fibrous growths on the retina, not all retinas can be successfully reattached. If the retina cannot be reattached, then the eye will continue to lose sight and ultimately become blind.

Depending on the patient's health and the length of time needed to reattach the retina, these operations may be performed under local or general anesthesia. It is seldom necessary to keep patients with retinal detachments immobile for prolonged periods of time before or after surgery. Patients who require air/gas injection, however, must maintain fixed head positions as much as possible for several days after the operation. Those patients with uncomplicated retinal detachments are usually allowed to walk the day after surgery and are discharged from the hospital within a week. Generally, eye drops and ointments are the only medications required after discharge.

Occasionally, glasses or contact lenses may be prescribed after retinal surgery if vision needs correction.

Who Can Treat Retinal Tears And Retinal Detachment?

An ophthalmologist is the medical doctor who is educated, trained, and licensed to provide total care of the eyes including the diagnosis and treatment of retinal tears and detachment. Total eye care includes performing comprehensive medical eye examinations, prescribing corrective lenses, diagnosing diseases and disorders of the eye, and using the appropriate medical and surgical procedures necessary for their treatment. In addition, some ophthalmologists have further special training in the care and treatment of diseases of the vitreous and retina, such as retinal detachment. Only an ophthalmologist can provide total eye care. Patients with symptoms of retinal detachments require prompt attention by an ophthalmologist who will thoroughly examine the interior of the eye and advise about the need for treatment. It is important for persons with significant myopia (nearsightedness) or with family histories of retinal detachments to have periodic eye examinations by an ophthalmologist so that early detection of changes in the vitreous or retina may be diagnosed and potential retinal detachments prevented.



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