Burton J. Wisotsky, M.D., Chief of Retina and Vitreous Surgery

Dr. Wisotsky provides state-of-the-art medical care to the patients of Omni Eye Services in Iselin, Parsippany, Rochelle Park, and Springfield. Omni Eye Services is the region's most comprehensive eye center and provides the highest-quality treatment for diseases of the eye. Along with the diagnosis, treatment, and management of complex eye diseases and disorders, Omni Eye Services emphasizes disease prevention, health promotion, and patient education.

Dr. Wisotsky is an honors graduate of Yale University, where he earned a bachelor of science degree in biology. He received his medical degree with high honors from Albert Einstein College of Medicine. He pursued his residency in ophthalmology at Montefiore Medical Center and furthered his education with a fellowship in vitreoretinal surgery at Kresge Eye Institute at Wayne State University.

A board-certified ophthalmologist, Dr. Wisotsky is also a diplomate of the National Board of Medical Examiners, a fellow in the American Academy of Ophthalmology, and a member of the New Jersey Retina Society. His research on vitreoretinal diseases has been published extensively in several prestigious medical journals, including the *American Journal of Ophthalmology* and the *Archives of Ophthalmology*.

Dr. Wisotsky is one of the region's most experienced retinal specialists and limits his practice to the care and treatment of patients with retinal and vitreous disorders. Patients who would like to see Dr. Wisotsky should speak with their primary optometric physician.

Retinal Disease

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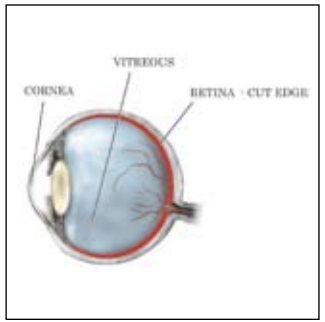
OMNI Eye Services



What Is the Retina?

The retina is a thin delicate tissue that lines the back wall of the eye. The retina is responsible for converting and decoding the light that is focused by the eye into tiny electrical impulses that can be transported to and interpreted by the brain. Without a functioning retina, vision is not possible.

What Is the Vitreous?

The vitreous is a jellylike material that fills the back compartment of the eye. It plays an important role in helping maintain the optical clarity of the eye.

Diagnosing Retinal Diseases

The retina and vitreous are subject to a wide range of degenerations and disease, most of which can be successfully treated, especially with early diagnosis. Retinal conditions can be diagnosed only by a thorough eye examination that includes dilation of the pupil. Trained and skilled in the health of the eye, your family optometrist can determine whether a retinal condition or other eye disorder may be affecting your vision. In an eye examination, the total health of your eyes, as well as the condition of your eyesight, is thoroughly examined. First and foremost, your visual acuity is checked to determine your current level of vision. Next, a slitlamp is used to look inside your eye. Following dilation of the pupil with eyedrops, various instruments are used that allow the doctor to closely examine the structures of the retina. Other testing devices may be used to help determine the extent to which retinal disease may be present.

What Are Some Common Conditions That Affect the Retina?

Diabetic Retinopathy

Diabetes mellitus (DM) is a disease that affects blood vessels throughout the body, particularly vessels in the kidney and in the eye. When the blood vessels of the eye are affected, the condition is called *diabetic retinopathy*. Diabetes mellitus causes these blood vessels to leak fluid and blood into the retina, disturbing the normal architecture of the retina.

Diabetic retinopathy is the leading cause of new blindness among adults in the United States. If untreated, there is a risk of becoming blind. The longer one has DM, the higher the incidence of developing diabetic retinopathy. Approximately 80% of people who have had DM for 15 years or longer have some damage to their retinal vessels. With today's treatment, only a small percentage have serious vision problems.

There are 2 stages of diabetic retinopathy. The first stage, called *background retinopathy*, is the early stage. Reading vision is typically not affected, but background retinopathy can advance and cause severe vision problems. There are usually no symptoms associated with background retinopathy. An eye examination is the only way to diagnose changes in the vessels of your eyes.

When the retinopathy becomes advanced, new vessels grow, or proliferate, in the retina. These new vessels are the body's attempt to overcome and replace the vessels that have been damaged by DM. Unfortunately, these new vessels are not normal. They may bleed, which causes vision to become hazy, and they sometimes result in a total loss of vision. These new vessels can also damage the retina by forming scar tissue and by pulling the retina away from its proper location. This second stage, called *proliferative retinopathy*, requires immediate attention. Treatment is necessary to prevent severe loss of vision. Regular eye examinations are crucial for all persons with DM. The progressive damage to the blood vessels in the eye can be slowed with treatment.

Macular Degeneration

Macular degeneration is the disease that affects the center of the retina, called the *macula*. The macula, which is about the size of the capital letter "O" in this sentence, is the part of the retina that is capable of our most detailed vision. We use the macula for reading, driving, recognizing faces, watching television, and performing fine work. Macular degeneration is the leading cause of legal blindness in people older than 55 (legal blindness means that a person has ≤20/200 visual acuity with eyeglasses). Even with a loss of central vision, color vision and peripheral vision may remain clear in persons with macular degeneration. There are 2 basic forms of the disease. The wet form usually affects 1 eye at a time and can result in sudden vision loss. The dry form usually affects both eyes and gradually affects central vision.

Some common symptoms of macular degeneration are distorted vision, gradual loss of color vision and the ability to see objects clearly, and the appearance of a dark or empty area in the center of vision. Central vision that is lost to macular degeneration cannot be restored.

Recent studies indicate that certain vitamins and minerals may help prevent or slow the progression of macular degeneration. Ask your doctor of optometry about preventive measures you can take to reduce your risk of developing macular degeneration. Scientists are undertaking the research necessary to determine the causes of macular degeneration. Finding the cause is the first important step toward prevention and cure. After age 50, an annual comprehensive eye examination is important to maintain eye health.

New advances have made treatment of macular degeneration possible. Laser treatment, photodynamic therapy, and novel medications contribute to successful treatment. In addition to medical and laser treatment, low-vision devices such as telescopic and microscopic lenses can be prescribed to maximize a person's remaining vision.

Floaters and Flashes

A floater is a small clump of gel that forms in the vitreous, the clear jellylike fluid that fills the cavity inside the eye. Floaters may be seen as dots, lines, cobwebs, or spiders and are most often noticed when reading, looking at a blank wall, or gazing at a clear sky. Although floaters seem to be in front of the eye, they are actually floating in the fluid inside the eye. Sometimes floaters do not interfere with vision at all. However, when a floater enters the line of vision, light is blocked, and a shadow is cast on the retina.

Flashes appear as flashing lights or as "lightning strikes" in the field of vision, although no light is actually flashing. Flashes are similar to the sensation of

"seeing stars" when one is hit on the head. Flashes are most often noticed at night or in a dark room.

The appearance of floaters may cause much concern, especially if they develop suddenly. However, floaters are usually a result of the aging process. As we mature, the vitreous shrinks and pulls away from the retina. Floaters are formed from the reorganization of the vitreous material and from fragments of the retina that have been pulled into the vitreous cavity. Flashes are caused by the vitreous pulling on the retina. If the gel separates from the retina (posterior vitreous detachment), flashes of light may appear periodically for several weeks. As with floaters, flashes are usually a result of the aging process and do not indicate a serious vision problem. However, flashes that appear along with a large number of floaters or with a loss of part of the field of vision may indicate retinal detachment, requiring an immediate eye examination.

Although annoying, floaters are usually not vision-threatening and do not require treatment. Floaters often diminish and become less bothersome with time. If a floater appears directly in the line of vision, moving the eye around will often help disperse it. Looking up and down or back and forth will cause the vitreous fluid to swirl around and frequently moves the floater out of the way. However, a complete eye examination will determine if the floaters are harmless or are the beginning of a more serious problem. Unless they represent the symptoms of a more serious condition, flashes do not require treatment. Flashes that are a result of the vitreous pulling away from the retina will eventually stop. However, flashes may indicate retinal detachment, which requires immediate medical attention.

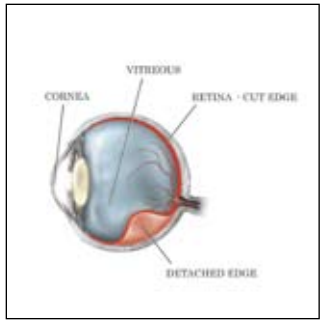
The retina sometimes may be torn as the vitreous shrinks and pulls away from the retina. A tear through a small blood vessel in the retina may cause bleeding. Clotted blood and vitreous material may appear as a new set of floaters. Retinal tears require immediate medical attention to prevent retinal detachments. If the retina detaches from the back of the eye, partial or total loss of vision may occur.

Although floaters and flashes are usually not considered serious vision problems, one should have a complete eye examination to determine their significance. In most cases, treatment is not necessary. However, early detection and treatment of serious problems such as retinal tears may prevent permanent vision loss.

Retinal Detachment

Retinal detachment occurs when the retina becomes separated from the back wall of the eye. When the retina becomes detached, the blood supply is reduced, and its ability to process light rays is impaired. If total detachment occurs, the retina becomes useless, as it can no longer transmit information to the brain, and the eye becomes blind.

As part of the normal aging process, the clear fluid that fills the inner cavity of the eye (the vitreous) begins to shrink and pull away from the retina. Most of this



shrinking causes no damage to the eye. However, the vitreous sometimes remains attached to the retina, and then the shrinking of the vitreous causes the retina to tear. These tears usually occur in the peripheral retina, where there is little effect on visual acuity.

Left untreated, however, retinal tears can lead to retinal detachment. Once a retinal tear is present, fluid from the vitreous may seep through the tear into the space between the retina and the wall of the eye. The fluid causes the retina to separate from the back of the eye, or detach. The part of the retina that becomes detached will not function properly, resulting in vision loss.

Retinal tears and retinal detachment are serious problems that require immediate treatment. Persons who are severely nearsighted or who have a family history of retinal detachment should have regular eye examinations to detect any changes in the vitreous or in the retina. Persons who have experienced a serious eye injury should be examined for retinal damage. With early diagnosis, retinal tears can be treated before retinal detachment and loss of vision occur.

Retinal tears require immediate treatment to prevent retinal detachment and vision loss. Treatment of retinal tears is designed to create a scar that welds the retina to the back of the eye to prevent further tearing. The scar seals the tear and blocks fluid from passing under the retina. Retinal tears can be sealed using laser light or a freezing probe (cryopexy). During laser treatment, heat from the laser is used to place small scars around the edge of the tear to seal the break. With cryopexy, extreme cold is applied to the surface of the eye at the point of the tear to form a scar. Laser treatment and cryopexy are usually performed on an outpatient basis.

Retinal detachment must be repaired surgically. During surgery, the liquid under the retina is removed, and the retina is reattached to the back wall of the eye. Cryopexy or the laser technique is used to produce a scar at the point of the tear or the detachment. Scar tissue then forms to reattach the layers. A silicone band, held in place by nylon sutures, is usually wrapped around the outside of the eye to push the back of the wall of the eye against the retina to aid healing.

More than 90% of all retinal detachments can be surgically repaired, although more than 1 operation is occasionally required. Retinal surgery is performed in a hospital under local or general anesthesia. Although the healing process takes 4 to 6 weeks, most patients are able to walk the day after surgery and are discharged from the hospital within a week. Successful reattachment of the retina will restore vision or prevent further vision loss. The degree of vision present 6 months after surgery will depend on several factors, including the time from detachment to treatment, the severity of the detachment, and the portion of the retina that was affected.