

CATARACT

The lens inside the eye is normally almost transparent. Its function is to help focus light onto the retina, the back lining of the eye. The term cataract refers to any loss of transparency. Cataracts occur in many forms and are due to a variety of causes. Most commonly, cataracts are associated with aging. They may also be caused by trauma, radiation, ultraviolet light, medications, and systemic diseases (such as diabetes) and some cataracts are congenital. Not all cataracts are progressive, but those that are cause a gradual, painless loss of vision.

In the early stages of cataracts, frequent changes in prescription can often help preserve vision. Cataract surgery is indicated when the decrease in vision starts to interfere with the patient's normal activities. Cataract removal, one of the most frequently performed surgeries in the United States, has very good results and low complication rates.

COLOR VISION

Color vision problems may be broken down into two general categories: congenital, existing prior to or at birth and acquired, developing later in life.

Total or true color blindness is extremely rare with an incidence of approximately 1:100,000. The term color blindness therefore is a misnomer usually referring to an individual who is color deficient. In color deficiencies there is no total lack of perception of color but a weakness. Protanopia (loss of red) and deuteranopia (loss of green) are the most common. Tritanopia (blue deficiency) is very rare. Approximately 8.0 percent of all men and 0.4 percent of women have some form of color deficiency.

Acquired color vision defects generally indicate an underlying eye health problem. Red-green color disturbances point to problems affecting the optic nerve of the eye while blue defects suggest problems of the retina.

Many occupations require normal color vision. The two most popular tests to determine normal color vision are the pseudoisochromatic plates (Ishihara Plates) and color matched discs (Farnsworth D-15). With the color plates the patient is asked to identify a number or figure of generally similar color concealed in a background of dots of another color. With the D-15 test the patient is required to match standardized colored paper discs mounted in plastic caps in order according to hue.

CONVERGENCE INSUFFICIENCY

The word converge means to move inward toward one point. In the vision system, convergence takes place when the eyes deviate inward so that the lines of sight meet. In order to read comfortably, use a computer or do cross stitch you must be able to turn your eyes in easily and sustain convergence and focusing.

Convergence insufficiency is the inability to move the eyes inward adequately. It is one of the most common muscle imbalance problems. Individuals with convergence insufficiency may exhibit symptoms including headaches, double vision and ocular fatigue.

Treatment of convergence insufficiency in young people involves home eye exercises. Individuals with more complicated muscle imbalance problems require more aggressive in-office (orthoptic) vision training or reading lenses with prisms to maintain clear single vision at near.

HYPEROPIA

Hyperopia is more commonly referred to as "Farsightedness". This terminology accurately describes this refractive error, in that objects in the distance are generally more clear than objects at near. Depending on the amount of hyperopia that exists, an individual patient may experience everything from no blur at distance or near, to blur at both distance and near. At lower levels hyperopia may be accommodated for by the focusing muscles in the eye. Higher levels of hyperopia left uncorrected may cause eyestrain, and headaches in addition to blurred vision.

MIGRAINE

Migraine headaches are a common problem that affect nearly 20% of the population. People of all ages are affected but the first episode of migraine usually occurs between the ages of 10 and 30, and rarely after 40. Women are affected more than males. After the age of 50, migraine sufferers may experience partial or total remission. Genetics plays an important role; greater than 50 percent of those affected may have a positive family history.

The word migraine means "half of the head." The headache usually starts in and about the eye, on one side of the forehead, and gradually radiates to the entire head, causing intense gripping pain and sometimes total incapacitation. Migraines may occur anywhere from daily to once in several months, and may last from a few hours to days.

Migraine is diagnosed by the pattern of symptoms (prodromata) that precede the headache. Mood swings, depression, irritability, vomiting, nausea, diarrhea and visual disturbances (zigzag distortion) are common. Less common symptoms include dizziness, ringing in the ears, and numbness or tingling on one side of the body (hemiparesis).

In classic migraine, the visual complaints are of special importance. Light sensitivity, holes in the vision, floaters, mysterious fireballs, blurred vision, or double vision have been described by sufferers.

Certain mechanisms appear to trigger migraines. Foods such as cheeses, chocolate, red wine, and coffee may initiate an attack. Menstruation, stress, psychological illness and the use of oral contraceptive are other trigger mechanisms.

Although the cause of migraine is not known, it is thought that arteries in the brain narrow, decreasing blood flow to the eye and other parts of the brain, resulting in the visual disturbances and wide variety of other symptoms. Keeping a diary of frequency and duration of the headaches, as well as relevant aspects of lifestyle (bedtime, meals, alcohol, caffeine, etc.) is useful in establishing triggers.

The most severe cases of migraine are best handled by a physician who is skilled in the treatment of migraines and aware of the potential side-effects of the medicines involved.

MYOPIA

Myopia is more commonly referred to as “Nearsightedness”. This terminology accurately describes this refractive error, in that objects at near are clear, and objects at a distance are blurred. Myopia tends to be somewhat progressive in nature. The bulk of myopic progression seems to occur in the growth and maturation phase of childhood and adolescence. Additionally, nearpoint work in significant amounts may also promote and increase myopic progression. The blurred vision that is associated with myopia is easily compensated for by glasses, contact lenses or refractive surgery.

PRESBYOPIA

Presbyopia is a condition that generally presents itself in the early to mid forties. The onset of presbyopia is characterized by a decrease in the comfort and clarity of near vision. This decrease of clarity is brought about by a change in the eyes ability to focus from distance to near. Reading glasses, bifocals, or progressive addition spectacle lenses easily compensate for the nearpoint blur. Contact lenses are also an alternative for the necessary nearpoint correction.

SPASM OF ACCOMMODATION

Accommodation is the ability to focus your eyes to increase their refractive power. A normally sighted person must accommodate in order to read. This is achieved when the ciliary muscle of the eye contracts causing a thickening in shape (more convex) of the crystalline lens. A clear image on the retina is formed.

The most common cause of accommodative spasm is failure of the ciliary muscles to completely relax after prolonged near work. This may result in fatigue, headaches or temporary blur of distance vision after prolonged close work.

Treatment includes exercises to relieve the accommodative spasm and/or reading glasses.

FLOURESCEIN ANGIOGRAPHY

Flourescein angiography is a diagnostic test used to help determine the underlying causes or extent of damage due to diseases of the inside back layers of the eye (retina and choroid) and colored part of the eye (iris). It is most valuable in determining if a laser treatment is necessary to decrease the damage to the retina from diseases which affect the blood vessels, such as diabetes or blood vessel occlusions secondary to hypertension.

For this procedure, a dye called flourescein is injected into a vein in the hand or arm which then circulates in the eye. This dye causes the blood vessels to be seen and abnormalities such as weak or leaking vessels are noted. Photographs of the vessels are taken and studied to decide the source of the eye disease and its treatment. The side effects of the test may be a yellowing of the skin or urine, occasional nausea or vomiting and rarely, fainting, severe allergic reaction or breathing or circulatory changes.

YAG LASER CAPSULOTOMY

When cataract surgery is performed, a thin transparent membrane called the lens capsule is left in place to support the intraocular lens. Thirty to fifty percent of the time this capsule turns cloudy following the surgery causing blurry vision and glare. When this occurs, and affects the person's functioning, the YAG laser is used to create an opening in the capsule to clear the vision.

The YAG laser capsulotomy is a short in-office procedure with minimal risk. The risks include elevated eye pressure, inflammation or swelling and retinal breaks or tears. There is no associated pain and most people go about normal activities following treatment.