

eyes, to judge depth and to see color accurately.

**Orbit:** The bony socket containing the eye, fat, extraocular muscles, nerves and blood vessels.

**Orthoptics:** A treatment of exercises designed to help the eye muscles work together to improve visual perception.

**Pachymetry:** A measurement of the thickness of the cornea.

**Photocoagulation:** The focusing of powerful light rays onto tiny spots on the back of the eye, producing heat which seals retinal tears and cauterizes small blood vessels.

**Photoreceptors:** The microscopic light-sensitive cells that are located in the retina called rods and cones. There are approximately 7 million cones and 130 million rods.

**Pupil:** The circular opening in the center of iris through which light passes into the lens of the eye. The iris muscles control the size of the pupil. The pupil appears as the black circle in the center of the eye.

**Retina:** The light sensitive inner lining of the eye that sends electrical impulses to the brain. The retina contains millions of photoreceptor cells that receives light rays, processes them, and sends signals to the brain via the optic nerve. The retina works like the film in a camera. The retina is composed of light sensitive cells known as rods and cones. The human eye contains about 130 million rods which are necessary for seeing in dim light; and seven million cones that are needed to see sharp accurate images and colors.

**Retinal Detachment:** This occurs when a part of the retina detaches from the choroid,

causing it to lose contact with one of its primary sources of nutrition - resulting in loss of vision.

**RK:** Radial Keratotomy is an older procedure to correct mild to moderate myopia, whereby making a series of spoke-like incisions around its periphery flattens the cornea.

**Rod Cells:** One of the two types of light-sensitive cells in the retina of the eye. There are about 130 million rods, which are necessary for seeing in dim light.

**Sclera:** The white part of the eye, a tough covering with which the cornea forms the external protective coat of the eye.

**Slit-Lamp:** An instrument producing a slender beam of light for illuminating the structures of the eye, used to examine the external and internal parts of the eye.

**Strabismus:** This condition occurs when the muscles of the eye are misaligned and binocular vision is not present.

**Uveal tract:** A group of similar eye structures including the choroid, ciliary body and iris. May be prone to inflammatory conditions.

**Ultrasonography:** Recordings of the echoes of ultra-sound waves sent into the eye and reflected from the structures inside the eye or orbit. It allows one to detect and localize tumors and retinal detachments.

**Vitreous Humor:** A jelly-like, colorless, transparent substance that fills the largest chamber of the eye between the lens and the retina.

**Vitreotomy:** The surgical removal of diseased vitreous humor, or vitreous that has lost its transparency and does not allow light to reach the retina.

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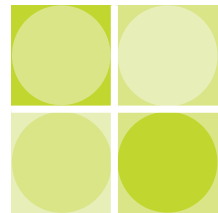
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# Terms in Ophthalmology



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# Terms in Ophthalmology

**Amblyopia:** Reduced visual acuity in a normal eye not correctable with glasses, sometimes called a "lazy eye" and often associated with strabismus.

**Anterior Chamber:** The space between the cornea and the lens, which contains aqueous humor.

**Astigmatism:** This condition occurs when the cornea is not perfectly spherical and has an irregularity. The visual image is distorted so the parts are more in focus in one plane than in another; it is correctable with glasses. Astigmatism is often combined with myopia or hyperopia.

**Cataract:** Crystalline lens that is no longer clear or transparent, but is partially or completely opaque.

**Choroid:** The very vascular middle layer of the eye between the retina and the sclera that nourishes the outer portions of the retina. The choroid contains a pigment that absorbs excess light to prevent blurring of vision. The choroid has one of the highest blood flows in the body.

**Ciliary Body:** The part of the eye that connects the choroid to the iris. It produces aqueous fluid that fills the front part of the eye and thus maintains the eye pressure. It also allows focusing of the lens.

**Cone Cells:** One of the two types of light-sensitive cells in the retina of the eye. The human retina contains six to seven million cones; they function best in bright light and are essential for acute vision.

**Conjunctiva:** A thin lining over the sclera, or white part of the eye. This also lines the inside of the eyelids. Cells in the conjunctiva produce mucous, which helps to lubricate the eye.

**Contact Lens:** A small, bowl-shaped removable plastic lens that rests directly on the eye, in contact with the cornea or the sclera or both; ordinarily used to correct refractive errors, either with or instead of eye glasses.

**Cornea:** The transparent circular part of the front of the eyeball, structurally continuous with the sclera. It refracts the light entering the eye onto the lens, which then focuses onto the retina. The cornea is responsible for focusing light rays to the back of the eye.

**Crystalline Lens:** The flexible structure behind the iris that focuses the light rays to form an image onto the retina. When the lens does not focus properly, another lens has to be worn to supplement the cornea-lens focusing system. When the lens loses its transparency, the resulting condition is called a cataract.

**Diabetic Retinopathy:** A deterioration of retinal blood vessels in diabetic patients that can lead to vision loss.

**Extraocular muscles:** Six muscles control eye movement. Five of these originate from the back of the orbit and wrap around the eye to attach within millimeters of the cornea. Four of these move the eye up, down, left and right. Two muscles, (one originating from the lower rim of the orbit), control the twisting motion of the eye when the head is tilted.

**Eyelid:** The skin-covered structure that protects the front of the eye; limits light entering the eye; and spreads tears over the cornea.

**Fluorescein Angiography:** A diagnostic test by which the veins deep inside the eye are examined. A dye is injected into a vein in the arm and circulated by the blood to the back of the eye, allowing for clearer examination.

**Fovea:** Center of the macula, providing the most acute vision.

**Fundus:** The concave interior of the eye, consisting of the retina, choroid, sclera, optic disc and blood vessels, seen by means of the ophthalmoscope.

**Glaucoma:** An ocular disease characterized by an unstable or sustained increase of the pressure inside the eye.

**Iris:** The colored part of the eye. The iris is elastic pigmented tissue in front of the lens that regulates the amount of light that enters the eye. The opening in the center of the iris is the pupil. The iris contains muscles that open or close the pupil in response to the brightness of surrounding light. The iris acts like a camera shutter and controls the amount of light that enters the eye.

**Keratoplasty:** (Corneal graft or transplant): Surgical replacement of an opaque or damaged cornea with a clear donor cornea, usually provided by eye banks, to allow a clear window through which a person can see again.

**Lacrimal Apparatus:** The part of the eye that produces tears to lubricate the eyes and continually wash out small particles of dirt and dust.

**Laser:** Focused high-energy light used for photocoagulation.

**LASIK:** Laser Assisted In-Situ Keratomileusis is a refractive procedure in which an excimer laser ablation is performed under a superficial flap on the cornea to correct refractive errors, including myopia and astigmatism.

**Lens:** The clear part of the eye behind the iris that helps to focus light on the retina. The lens sits behind the iris and in front of the vitreous humor. Normally clear, a cataract forms

when the lens becomes cloudy. (See also Crystalline lens.)

**Intraocular Lens:** A permanent lens surgically placed behind the pupillary opening to replace the crystalline lens following a cataract extraction.

**Macula:** An oval area in the retina on the back of the eye where the photoreceptors are most dense. The center of the macula is called the fovea. The macula is responsible for the central (or reading vision.) The macula has the greatest concentration of cone cells, and when the eye is directed at an object, the part of the image that is focused on the fovea is the image most accurately registered by the brain. It provides the best visual acuity in light, thus allowing one to also see in color.

**Macular Degeneration:** Degeneration of the macula which results in the loss of central vision, the type of vision necessary for driving, reading and recognizing faces. Can develop into a wet form or a dry form.

**Muscles, Extraocular:** The six muscles that move the eyeball: four rectus muscles produce vertical and horizontal motion; two oblique muscles keep the eyes vertical when the head tilts.

**Myopia:** This condition occurs when an object is focused by the crystalline lens in front of the retina rather than on the retina.

Distant objects are not seen as clearly as nearby objects; therefore, it is also called near-sightedness.

**Neuro-Ophthalmology:** The sub-specialty that treats the nervous and vascular systems that involve the eye.

**Ophthalmologist:** A medical doctor who surgically and medically treats the structures, the functions, and the diseases of the eye and its appendages.

**Optic Disc:** The portion of the optic nerve also found on the retina of the eye. The optic disc identifies the start of the optic nerve where messages from cone and rod cells leave the eye via nerve fibers to the optic center of the brain. This area is also known as the "blind spot."

**Optic Nerve:** Located on the back of the eye and attached to the retina, this nerve receives impulses from the retina and relays them to the brain. The optic nerve leaves the eye at the optic disc and transfers all the visual information to the brain.

**Optician:** One who designs or manufactures optical instruments and/or ophthalmic prescriptions, or one who fits and adapts glasses or contact lenses.

**Optometrist:** An optometric doctor who provides primary eye care; diagnoses, treats and manages eye diseases and disorders; determines the ability to focus and coordinate the