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Medicolegal Specialists

The Human Eye

The eye is a sense organ which allows us to obtain more information from our surroundings than each of the other four sense organs. The eye allows us to see and interpret the shapes, colours and dimensions of objects in the world by processing the light they reflect or emit. The eye is able to detect bright light or dim light, however it cannot sense objects when light is absent.
The human eye has non image forming photosensitive ganglion cells in the retina that receive the light signals which affect adjustment of the size of the pupil, regulation and suppression of the hormone melatonin and entrainment of the body clock.

Amazing Eye Facts

- The human eye can distinguish approximately ten million different colours.

- The average person blinks twelve times a minute.

- Bats are not blind, they just use soundwaves rather than vision to locate objects.

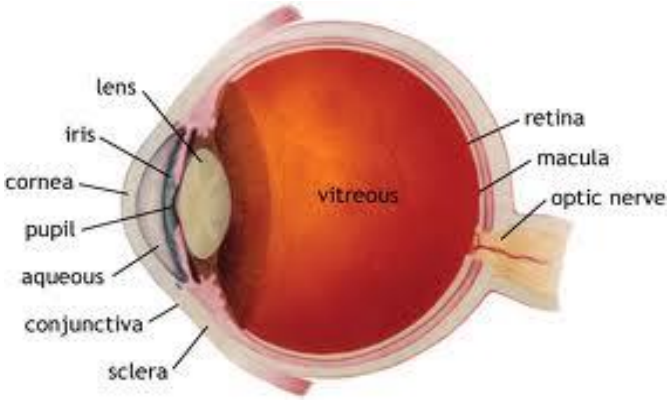
- People generally read 25% slower from a computer screen than from paper.

- Under the right conditions, the human eye can see the light of a candle at a distance of fourteen miles.

Eye Anatomy

The eye is actually not a sphere, it is more of a two piece unit, anterior and posterior, made up of several components.

The eye consists of three layers, enclosing three transparent structures. The outermost layer is made up of the cornea and sclera. The middle layer consists of the choroid, ciliary body, and iris. The innermost layer is the retina.



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Lens	The lens of the eye is a flexible unit that consists of layers of tissue enclosed in a tough capsule. It is suspended from the ciliary muscles by the zonule fibres. The lens helps to refract light that is to be focused on the retina.
Iris	The iris helps control the amount of light that reaches the retina.
Cornea	The cornea is a strong clear bulge located at the front of the eye. The cornea contributes to the image forming process by refracting light entering the eye. It also provides protection.
Pupil	The pupil is the aperture through which light enters the eye. Hence these are the images we see and perceive.
Aqueous	The aqueous humour is a jelly like substance located in the anterior chamber of the eye. It helps maintain the shape of the eye.
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.
Sclera	The tough opaque layer that provides attachment for intrinsic muscles of eye.
Retina	The membrane lining the back of the eye that contains photoreceptor cells. These photoreceptor nerve cells react to the presence and intensity of light by sending an impulse to the brain via the optic nerve. In the brain, the multitude of nerve impulses received from the photoreceptor cells in the retina are assimilated into an image.
Macula	The macula is a small area in the centre of the retina at the back of the eye which is responsible for sharp, clear central vision and the ability to perceive colour.
Optic Nerve	The optic nerve transmits visual information from the retina of the eye to the visual system of the brain.