

THE WORKINGS OF THE EYE

By Dr. Derek Conte

The human eye is a beautiful and masterful piece of engineering specifically designed for its remarkable function: to see. The eye is a tough, medicine-ball of connective tissue (*sclera*) on the outside and filled by *aqueous* and *vitreous humor* (water) within. We can automatically or voluntarily direct and focus our eyes, quickly and in unison, as easily as one can point a laser. Three cranial nerves - *occulomotor*, *trochlear* and *abducens* - control six muscles attached to the top, bottom and sides of each eye, exerting a coordinated, pivoting action - giving the eye an almost infinite set of directional movements and control.

Images pass through the cornea and through a hole in the front called the *pupil*. The *iris*, which forms this opening, dilates or constricts in response to light by way of tiny *pupillary muscles* to regulate the size of the pupil. The *lens* floats just behind the iris, suspended by fine ligaments in the manner of a trampoline, to a hoop-like, muscular anchor called the *ciliary muscle*. The ciliary muscle, under the control of the oculomotor nerve, dilates and constricts in concert with the pupillary muscles, changing the tension and thickness of the lens for near

or far vision: closer the object, the thicker the lens must be to refract (invert) and focus the image at the exact distance to the *retina*.

The retina lines the inside rear wall of the eyeball like a delicate curtain, densely dotted with sequins of black, white, blue, red and green. These sequins represent the *rods* and *cones* embedded in the retina which are sensitive to light/dark and color stimulus. When activated, the rods and cones fire messages along the *optic nerve* to the *occipital lobe* (rear of the brain) where the image is corrected, identified, remembered and compared to other

things we've seen and even felt in association throughout our lifetimes as part of the learning process. As a result of the cross-referencing the brain does, we may be happy, sad, afraid or even confounded by what we see and take appropriate action.

The beautiful lesson here is the interconnectedness between the parts of the body, the parts of the brain, our emotions, our learning and the ongoing conversation created between all of the parts to ensure our survival.

Dr. Derek Conte is co-founder of the new Chiropractic Specialists on Concord Rd. and is available to speak to your group. Questions? Call: 404-784-6008



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