

VISION SKILLS

Vision skills are a group of neuro-muscular activities which are learned and developed. These skills involve moving, focusing and teaming the eyes so they may function efficiently. Vision skills include several components.

Fixation is the ability to direct and maintain steady, central visual attention on a target. This basic skill is developed in infancy and refined through the early years. Ocular motor skills are the neuro-muscular control skills developed to point the visual system on target and move it to either follow a moving target (pursuit eye movements), or jump from one object to another (saccadic eye movements). The infant reflexively turns the entire upper torso toward the direction of a noise, and then gradually learns to turn only the head to guide the visual system. Through the toddler years the individual refines this movement system by learning to use eye muscles to replace head movement - an achievement important in visual readiness for school. Eventually vision becomes the dominant sense.

Accommodation (eye focusing) is another vision skill involving focusing the light entering the eyes. This combined lens neuro-muscular system is a network integrating the eyes and the brain. Accommodation is developed rather well by age three and further accuracy is achieved throughout the early years of development. This function deteriorates with age, causing the need for bifocals and/or reading glasses beginning at about age forty.

Binocularity (eye teaming) allows for coordinated eye movements as targets move from distance to near. This skill has a sensory and motor aspect. The sensory aspect is the brain's ability to put what each eye sees together. This gives information on location (depth perception). The motor aspect involves convergence, where the eyes are turning in together and divergence, where the eyes are turning out together. This component allows both eyes to remain on the target as it moves closer and further from the eyes.

Optometrists evaluate the development, function, and efficiency of these vision skills. Poorly developed or abnormal function of vision skills results in inefficient visual performance and/or symptoms of fatigue or discomfort. This may have a negative impact on performance in school, the work place, sports, and activities of daily living. When properly diagnosed these visual inefficiencies can be effectively remediated with prescription lenses, prisms and/or vision therapy.

The symptoms typically caused by vision skill deficiencies include seeing double, losing one's place with reading, poor or slow reading ability, discomfort (eye strain or headaches) with sustained use of the eyes, clumsiness, and poor performance in sports.

Difficulty processing visual information when reading, using computers or performing any sustained visual activity might also be attributable to vision skill problems.

Members of the College of Optometrists in Vision Development (COVD) are optometrists with a special interest in vision skills and the remediation of vision skill inefficiencies. Fellows of the College have certified their competency in this area. For more information contact COVD or consult with a COVD member optometrist.

This informational paper was produced by the College of Optometrists in Vision Development, which board certifies qualified optometric physicians in vision therapy. For further information, see our website, www.covd.org. WP2 Rev 1/2/08 ©2008