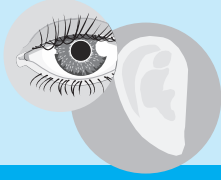


VISION



Open Your Eyes and Listen

by Deborah Zelinsky, O.D., F.C.O.V.D.

No, not a mistake! Your eyes help you listen. Let me explain.

A Short Course in Brain Function

The environment constantly and simultaneously bombards the brain with information through the senses. Pressure signals travel through receptors in the joints via the spine, light via the eyes, sound via the ears, and balance signals via the inner ear. Ideally, the midbrain synchronizes those visual, auditory, proprioceptive and vestibular signals. Even newborn babies turn their necks and point their eyes toward sudden unexpected sounds, indicating that reflex synchronization among ears, eyes and neck is present at birth. While eyes and ears synchronize, the intact baby gains the ability to maintain balance, and to look and listen effortlessly.

Some signals from the eyes travel along fibers activating parts of the brain that appear unrelated to eyesight. These signals affect such important functions as emotions, balance, posture and sleep. While non-visual fibers outnumber those used for peripheral eyesight by four to one, they are rarely checked during routine eye exams.

Central versus Peripheral Awareness

Vision and audition each have central and peripheral components. Central visual awareness enables focusing on details, while peripheral awareness gives us concepts. A child more adept at central auditory processing prefers songs with lyrics, while one who favors peripheral auditory processing may choose instrumentals. Consider a student focusing, listening and looking during a lecture. Suddenly, peripheral vision catches something moving, sending the brain messages about speed, location, size and shape of this object. An efficient learner can maintain central attention on the lecturer, while a child whose peripheral vision takes precedence over central vision, may be labeled ADD.

Reflexes Connect Vision and Audition

Starting at birth, babies move unconsciously, at the mercy of reflexes, without coordinated control over their muscles. Their necks are floppy and weak. At first, reflexes join all the parts, from eyes to head to neck to lower back and hips.

By moving, babies slowly learn to isolate muscles, so that by three to four months, they gain neck control. Then as the nervous system matures, one by one, early primitive reflexes integrate and postural reflexes emerge allowing for automatic body control to occur. Once the body is under subconscious control, the mind is available for learning.

In many children with developmental delays, early primitive reflexes integrate early, late or not at all. (See 6:4). With the neck and hips neurologically connected, movement of either one alters the position of head and eyes. A moving teacher complicates visual and auditory processing, especially for a child whose control of the neck and body are not isolated.

Screening for Connections

- Stand on one foot, and wiggle your eyes from side to side. Are your ankles also moving? Your eyes are connected not only to your ankles, but to hips, shoulders and neck, as well.
- By 5 1/2, a child should be able to converse AND isolate his eyes to follow a moving target without head or body movement. One gauge for reading readiness is to ask a standing child to follow your finger moving across his midline. Expect only slight head movement, not visible hip or ankle rotation in the child who is reading ready.

Vision and Audition Must Become a Team

Both eyes and ears must coordinate with each other, AND combine central and peripheral components of auditory and visual input. Simultaneously, the brain integrates information from the right and left eyes and ears, in addition to signals from non-visually related, inner ear, and neck fibers.

If these signals are mismatched, the nervous system makes the body fidget searching for a posture where eyes and ears can work together. Constant fidgeting, often diagnosed as ADD, is often the child's search for body/eye/ear integration. To learn more about how dysfunction of the eye/eye/ear linkage may be misdiagnosed as ADD, attend "Insights into ADD." in Chicago, March 4th. (See Upcoming Events.)

High level academics, social skills and athletics require effortless head control, as well as vision and audition combining as a team. Spelling is a great example. The person who can integrate both hearing and seeing, and effortlessly switch back and forth between central and peripheral awareness, will be able to maximize his/her potential.

Remediating Problems

Several interventions address visual-auditory integration problems. Specialized developmental optometrists use lenses, prisms and other visual learning tools. The sponsor of this newsletter, The Davis Center, offers auditory therapies. Founder, Dorinne Davis can test a child to determine which treatment is appropriate. A Brain Gym practitioner can diagnose and address visual-auditory integration in the Laterality Dimension and peripheral/central vision/audition in the Focus Dimension. Finally, a primitive reflex integration program by an optometrist, occupational therapist or other trained professional can enhance nervous system development, automate body control, and thus produce more sensory/motor efficiency. Contact DDR for referrals near you.

*Deborah Zelinsky, O.D., F.C.O.V.D. is a neuro-developmental optometrist in Northfield, IL. Her book, **Open Your Eyes and Listen** is available from DDR. (See Booklist.) Contact her at 888.975.2020 or go to <www.mindeyeconnection.com>.*