

REM AUDIOLOGY

Hearing News



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Seeing and Hearing: A Complete, Balanced View of Your World

In so many subtle ways, our eyes and ears work in tandem as a team.

For example, when you close your eyes, what do you see? What passes before your shut eyes likely depends on the sounds you hear. Research from the Institute of Neuroscience and Psychology at the University of Glasgow has measured how your brain's visual cortex uses information gleaned from your ears, as well as your eyes, in order to see the world.

Located in the occipital lobe at the back of the brain, your visual cortex is part of the cerebral cortex, which is the outermost layer of your brain. To study the ears/eyes relationship, researchers blindfolded volunteers and then observed/measured activity in the visual cortex as they were given various stimuli.

Sounds help create visual imagery, mental images, and automatic projections. For example, if you are in a street and you hear the sound of an approaching motorbike, you expect to see a motorbike coming around the corner. The visual cortex uses information gleaned from the ears to better predict what might be seen. In turn, the visual cortex can better see and focus on surprising events, which may be a survival mechanism.

Just as your ears and eyes work together to help you create a complete view of your world, they also work hand-in-hand to keep you balanced.

Balance and equilibrium help us stay upright when standing and know where we are in relation to gravity. Our balance system, also known as the vestibular system, helps us walk, run, and move without falling. Balance is controlled through signals to the brain from your eyes, the inner ear, and the sensory systems of the body (such as the skin, muscles, and joints).

In the inner ear, the balance system consists of three semicircular canals that contain fluid and sensory hair cells that detect rotational movement of the head. As the head moves, hair cells send nerve impulses to the brain by way of the acoustic nerve. The nerve impulses are processed in the brain to help us know where we are in space or if we are moving.

If the vestibular system is not functioning properly, your eye muscles cannot adjust as they should because the feedback indicators from the ear are damaged, resulting in blurred vision, nausea, or dizziness. This means that you cannot accurately determine where the floor is in relation to where you are, and the risk of tripping increases vastly.

Human intuition tells us that our senses are all separate streams of information, but we now know that isn't the case. Ensure you are hearing your best and helping the rest of your senses with a regular hearing screening.

Contact REM Audiology today or visit www.remaudiology.com.

Source: MedicalDaily.com, Current Biology, ASHA.org, GeneralHearing.com.