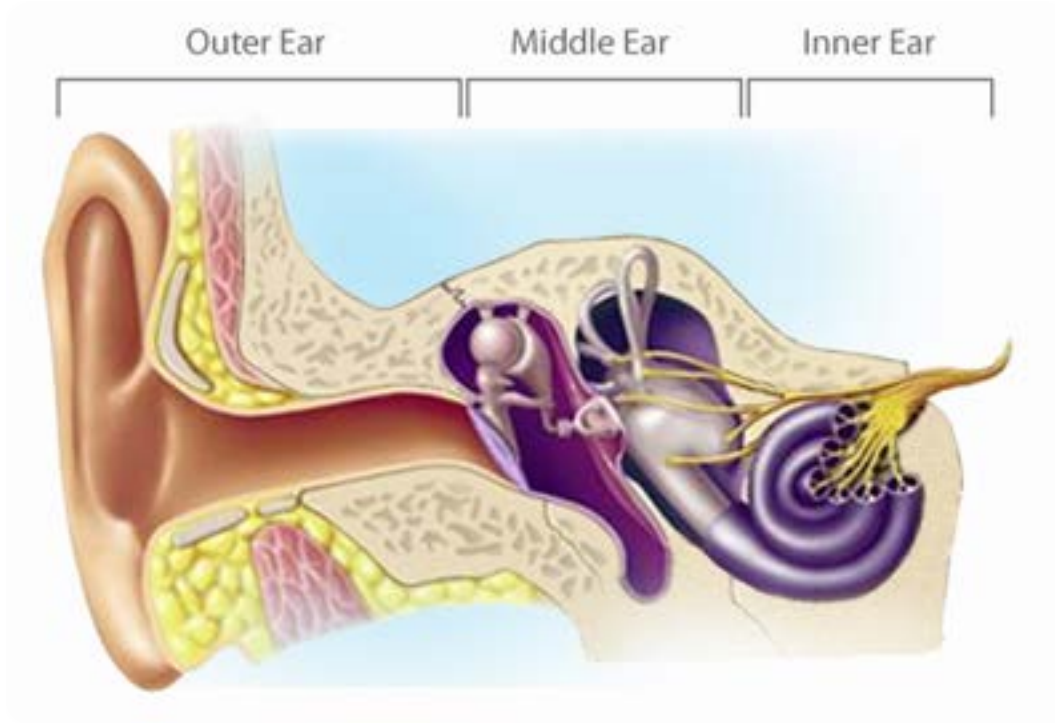


How Hearing Works

The process of hearing includes both the ear and the brain. The ear changes the sound vibrations into a signal that can be understood by the brain. The brain is the most important part of hearing since that is where sounds are converted into meaningful information. The ear has three parts. These are the middle, inner and outer ear. Each part of the ear has a different job.



Outer Ear

The outer portion of the ear is cupped so it can capture the sound vibrations in the air. The vibrations travel through the outer ear canal and collide with the eardrum. This causes the eardrum to vibrate.

Middle Ear

The vibration of the eardrum moves the three small bones (called ossicles) in the middle ear. Common names for the bones are the hammer, anvil and stirrup. They are also known as the malleus, incus and stapes. These bones amplify the vibration and transfer the sound waves to the cochlea in the inner ear.

Inner Ear

The cochlea is a small snail-shaped channel through the temporal bone. The three cochlear channels are filled with fluid. The vibrations from the ossicles are absorbed into the fluid channels like waves in a pond. The middle channel contains the organ

of Corti and sensory hair cells. Movement of the fluid starts a chain reaction that causes the cilia to bend. Bending of the hair cells sends electrical impulses to the eighth nerve which carries the signal to the brain.

Brain

The auditory cortex in the brain interprets the neural impulses into a meaningful message. We interpret the message according to our experiences in life.