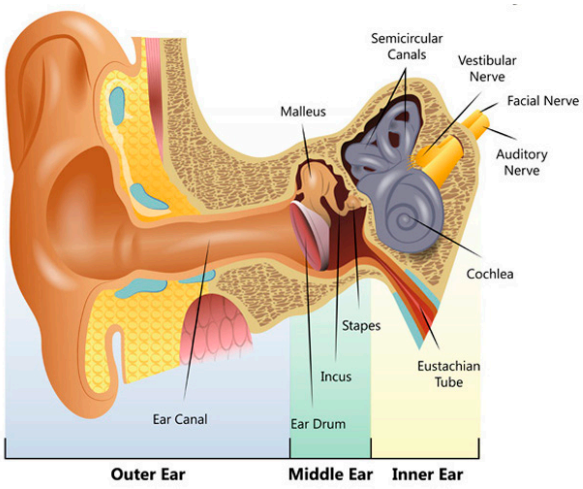


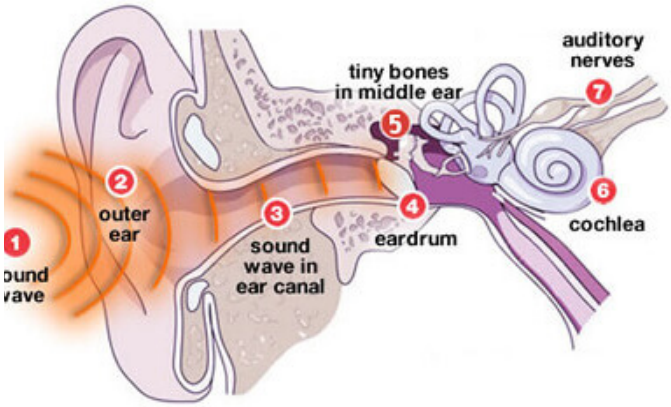
How The Ear Works

How The Ear Works

Our ears are divided into three main parts:

- The external (or outer) ear
- The middle ear
- The inner ear





The External (or Outer) Ear

The sound travels through the external (or outer) ear and causes the eardrum to vibrate.

The Middle Ear

The vibrations from the eardrum then pass along to the very tiny bones (called the ossicles) in the middle ear and cause them to vibrate.

The Inner Ear

The vibrations from the small bones in the middle ear causes small waves in the fluid inside the cochlear. The cochlear is shaped like a snail's shell, is very intricate and complex and has about 24,000 very tiny hair cells. In the cochlear, the hair cells are arranged so that high frequency sounds can be detected at one end of the spiral and low sounds at the other end. Each hair cell can detect one frequency. They are connected to a nerve fibre and the movements produce electrical activity in the auditory nerve. The electrical activity then travels along the auditory nerve to the brain. Once the brain receives the nerve impulse, it is interpreted as sound. What about balance? Balance is controlled by the semicircular canals in the inner ear. They are filled with fluid and the fluid moves when a person moves. The signal plus information from the other senses is sent to the brain to enable us to keep our balance.

Sound Transduction

As sound waves vibrate through the ear they create sound energy. The sound energy is converted to a neural signal that is sent to the brain and interpreted as sound perception. This process is known as sound transduction.

What about balance?

Balance is controlled by the semicircular canals in the inner ear. They are filled with fluid and the fluid moves when a person moves. The signal plus information from the other senses is sent to the brain to enable us to keep our balance.

Websites
Med-El video about hearing and how it works:
https://youtu.be/flIAxGsV1q0?list=PL0EBFE94039E19D0D

National Deaf Children's Society
www.ndcs.org.uk
This is a fantastic website with lots of information on childhood hearing loss. It has a wealth of topics for families to explore.

Ears Explained
www.betterhealth.vic.gov.au/conditionsandtreatments/ear-nose-and-throat
This site discusses how we hear.

For further information about Deaf Children Australia.

www.deafchildrenaustralia.org.au
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info@deafchildren.org.au
www.facebook.com/DeafChildrenAustralia

Deaf Children Australia uses the term 'deaf' to refer to all degrees and types of hearing loss.
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