

# Hearing loss: What is hearing?

## NID Training Disability Diary

- Compiled by Dr Jean Mitchell



### Introduction

Hearing is one of the traditional five senses. It is the ability to distinguish sounds through vibrations that travel through the air or other substances when they reach the ears (or other hearing instruments) of a person or an animal. Sound can be distinguished through solids, liquids, or even gases, at various pitches and volumes (Fink, 2020). Auditory science is the academic field that studies hearing and hearing loss.

Before one can discuss human hearing and hearing loss, it is important to understand the mechanisms of the ear. The ear is described as one of the most complex and compact parts of the body, and audition (the sense of hearing) as a complex process that is not entirely understood (Balkany & Brown, 2017).

### The functions of the ear

The main functions of the ear are to gather stimuli from the environment, and to translate these into sound, and to maintain balance. The ear has three main parts: external ear, middle ear and inner ear. They all have different, but important, features and without each of these components, effective hearing would be impossible.

### Anatomy of the ear

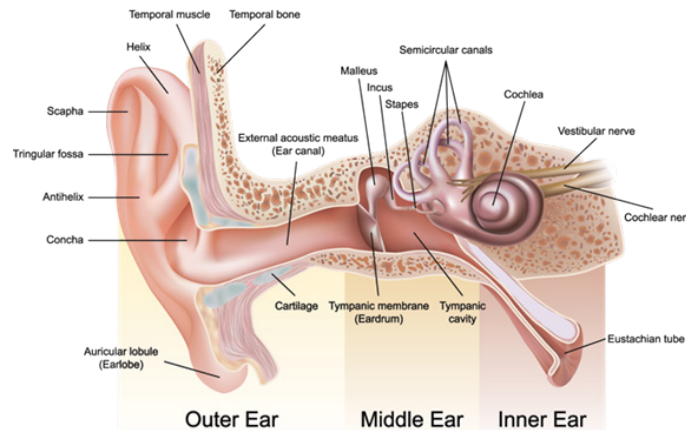


Diagram of the ear. Open Learn <https://www.listen-2-life.com/how-hearing-works/> (An Open Education Resource)

### The auditory system

The outer (external) ear consists of the pinna: the cartilage that is visible on the side of the head and attached by means of muscles and ligaments. The pinna is followed by the auditory (ear) canal and the tympanic membrane (ear drum) that separates the outer ear from the middle ear. Behind the tympanic membrane, in the air-filled middle ear, are three tiny

interlocking bones called ossicles. The ossicles are named according to their shapes, namely the hammer (malleus), anvil (incus), and stirrup (stapes). The eustachian tube that links the middle ear with the back of the nose and the throat leads off from the middle ear. The inner ear is filled with fluid and consists of the cochlea (a hollow spiral-shaped tube), vestibule and semi-circular canals, as well as the auditory nerve (Bradford, 2021).

### Conclusion

The ear is an intricate organ with many parts. The main function of the ear is to gather stimuli from the environment and translate it into sound, it is also essential to maintaining balance. While much is known about the structure of the ear, there is still much to learn about how hearing occurs. Much research is still necessary.

### References

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