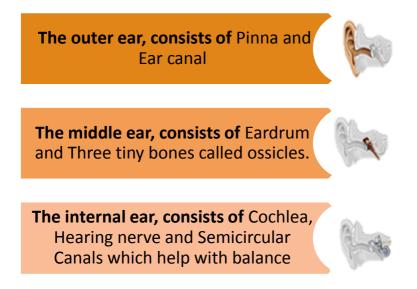


## **Hearing Loss**



#### Parts of the Ear:

The ear can be divided into three main parts



#### How Normal Hearing Works:

Sound travels through the outer, middle, and internal ear. All parts of the hearing system need to work properly in order for us to hear:

**1.** The pinna picks up sound waves and sends them through the ear canal to the eardrum.

- **2.** The sound waves cause the eardrum to vibrate, which sets the ossicles in motion.
- **3.** The vibrations are transferred to the fluid-filled cochlea.
- 4. The movement of the fluids in the cochlea cause the tiny sensory cells to bend, creating neural signals which are picked up by the hearing nerve.
- **5.** The hearing nerve send these signals to the brain, which interprets them as sound.

## **Types of Hearing Loss:**

Hearing loss happens when any part of the hearing system is not working properly. <u>There are</u> generally **three** types of hearing loss, depending on where the problem occurs.

## a) Conductive Hearing Loss

- Occurs when there is a problem in the outer ear and/or middle ear.

- This prevents sounds from being properly conducted to the internal ear.
- This type of hearing loss is <u>usually temporary</u>, but may be permanent in some cases.
  Depending on the cause, it may be treated with medicine or surgery. If that is not an option, amplification may be used.

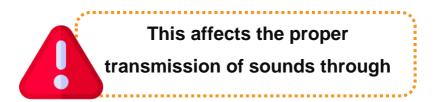
#### **Causes for Conductive Hearing Loss include:**

- Malformation of the outer ear or middle ear structures
- Otitis media (i.e. middle ear infection)
- Fluid in the middle ear (e.g. from colds or allergies)
- Perforated eardrum
- Wax build-up in the ear canal
- Foreign body in the ear canal

- Otosclerosis (overgrowth of bone in the internal ear).
- Eustachian tube dysfunction

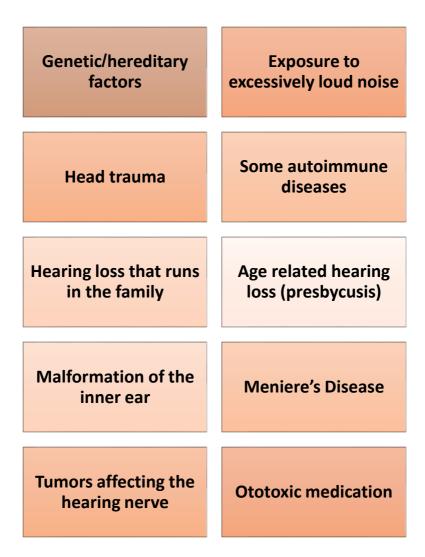
#### b) Sensorineural Hearing Loss:

- Occurs when there is a problem in the internal ear (cochlea and/or hearing nerve).



This type of hearing loss is <u>usually permanent</u>.
In most cases, it can be managed with hearing aids, cochlear implants, or other hearing devices depending on the degree of loss.

# Causes for Sensorineural Hearing Loss include:



#### c) Mixed Hearing Loss:

- Occurs when there is a problem in the outer and/or middle ear as well as in the internal ear. It is a combination of both conductive and sensorineural hearing loss.
- The sensorineural component is usually permanent, while the conductive component may be temporary.

#### For example:

a mixed hearing loss can occur if someone has sensorineural hearing loss (e.g. age-related) as well as a conduction hearing loss (e.g. due to a middle ear infection). In this case, the age-related hearing loss is permanent, but the effect of the ear infection may resolve with treatment.

# لأن الوعي وقاية . .

إدارة التثقيف الصحي

Communication and Swallowing Disorders Dept.

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