ANATOMY AND PHYSIOLOGY OF THE EAR

Better Hearing Philippines Inc.
PARTS OF THE EAR
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A. Pinna
B. External Ear Canal
C. Tympanic Membrane
D. Ossicular Chain
E. Eustachian Tube
F. Cochlea
G. Vestibular Organ
EXTERNAL EAR

1. Pinna
   • Sound Collector
   • Boosts acoustic pressure
EXTERNAL EAR

2. External Auditory Canal
   • Channel through which sound is directed
   • Protection against physical trauma and entry of foreign bodies
   • Protects the tympanic membrane and ossicles
   • Permit sound waves to reach the tympanic membrane
1. **Ear Drum or Tympanic Membrane**
   - Absorbs the sound waves and directs it to the ossicular chain

2. **Ossicular Chain**
   - Malleus (Hammer)
   - Incus (Anvil)
   - Stapes (Stirrup)
MIDDLE EAR

Cont. Ossicular Chain

- Vibrates as a unit
- Converts sound energy into mechanical energy

3. Eustachian Tube

- Occasional opening of the Eustachian tube is necessary to ventilate and equalize pressure in the middle ear.
INNER EAR

1. Cochlea
   • Where vibration is converted to nerve pulses or electrical impulses

2. Vestibular Apparatus
   • responsible for balance functions
MECHANISM

Sound → Pinna - Collects
- Converts sound vibration to electrical impulses
→ Cochlea
→ Ossicular Chain - Amplifies
- Sends sound to the inner ear
→ Ear Drum - Vibrates
→ External Auditory Canal
Cochlea → Auditory Nerve → Auditory Cortex
PATHWAYS

1. Air Conduction
   • Conduction of sound through the ear canal
   • Through head phones

2. Bone Conduction
   • Conduction of sound directly to the inner ear through the skull
   • Through bone vibrator