

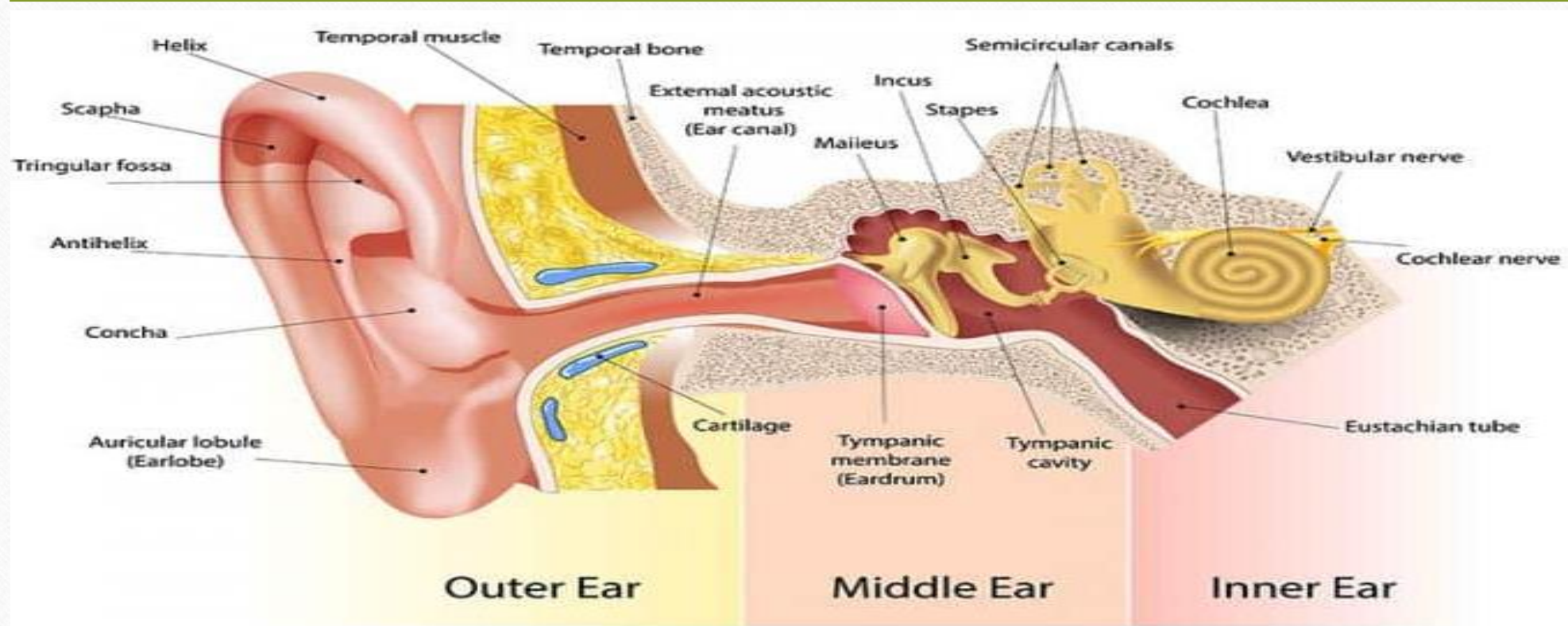
# EAR

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NURSING MANAGEMENT OF PATIENT WITH  
DISORDERS AND DISEASE OF EAR

# ANATOMY & PHYSIOLOGY OF EAR

- What is the ear?





# ANATOMY

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- The ear is the organ of hearing and balance.
- The parts of the ear include:
- **External or outer ear**, consisting of:
  - ✓ **Pinna or auricle**
  - ✓ **External auditory canal or tube**
  - ✓ **Tympanic membrane (eardrum)**

## Cont...

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- **Middle ear (tympanic cavity)** , consisting of:
  - **Ossicles** : Three small bones that are connected and transmit the sound waves to the inner ear. The bones are called:
    - Malleus
    - Incus
    - Stapes

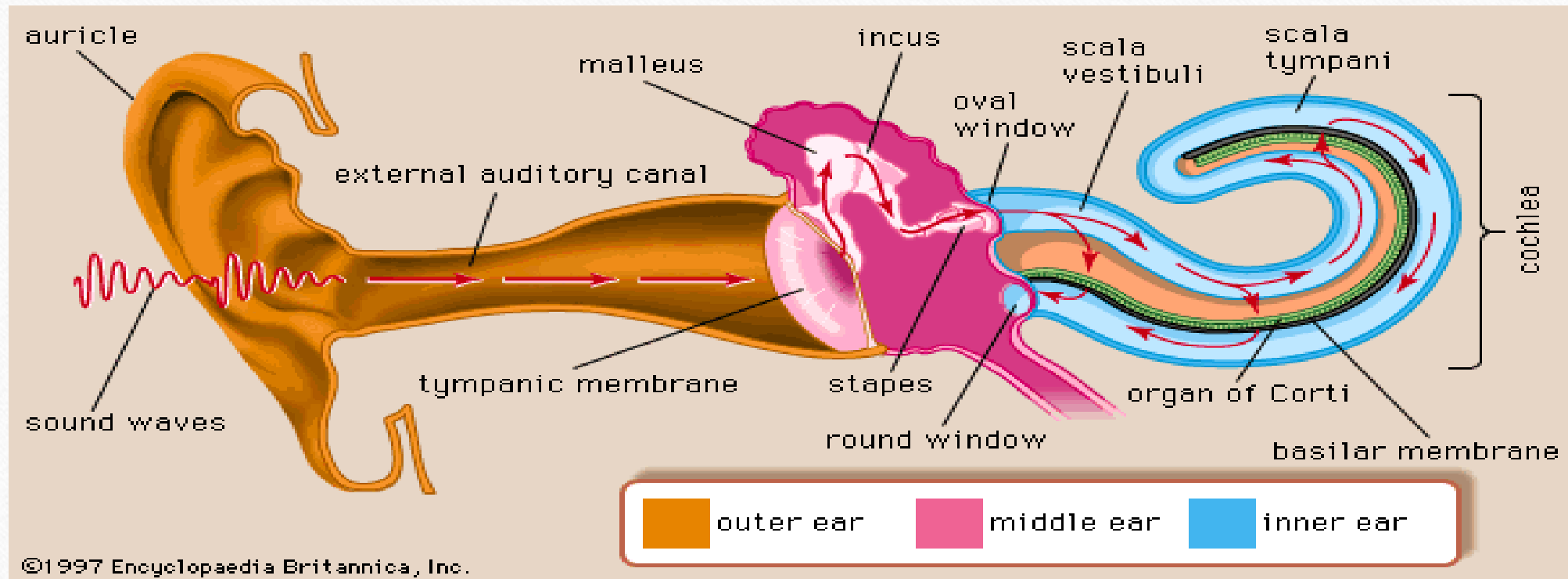
## Cont...

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- **Eustachian tube**
- **Inner ear** , consisting of:
  - ✓ **Cochlea**
  - ✓ **Vestibule**
  - ✓ **Semicircular canals**



# PHYSIOLOGY



# FUNCTION OF EAR:

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- Hearing
- Sound conduction and transmission
- Balance and equilibrium

# HISTORY

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The following issues should be included:

- Classic symptoms of ear disease: deafness, tinnitus, discharge (otorrhoea), pain (otalgia) and vertigo.
- Previous ear surgery, or head injury.
- Family history of deafness.



## Cont...

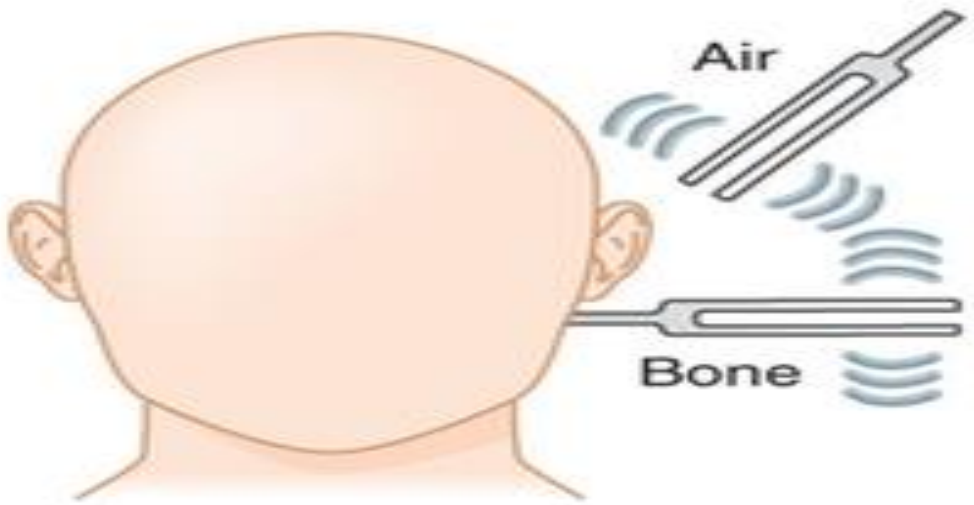
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- Systemic disease (eg, stroke, multiple sclerosis, cardiovascular disease).
- Ototoxic drugs (antibiotics (eg, gentamicin), diuretics, cytotoxics).
- Exposure to noise (eg, pneumatic drill or shooting).
- History of atopy and allergy in children.

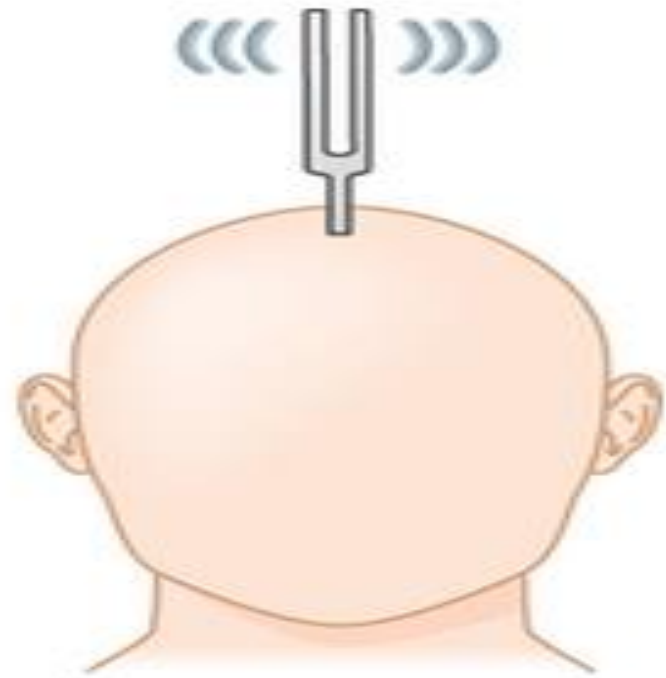
# EAR EXAMINATION

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- Wipe
- Inspection
- Palpate
- Otoscope
- Hearing test / Tuning fork test



**Rinne test**



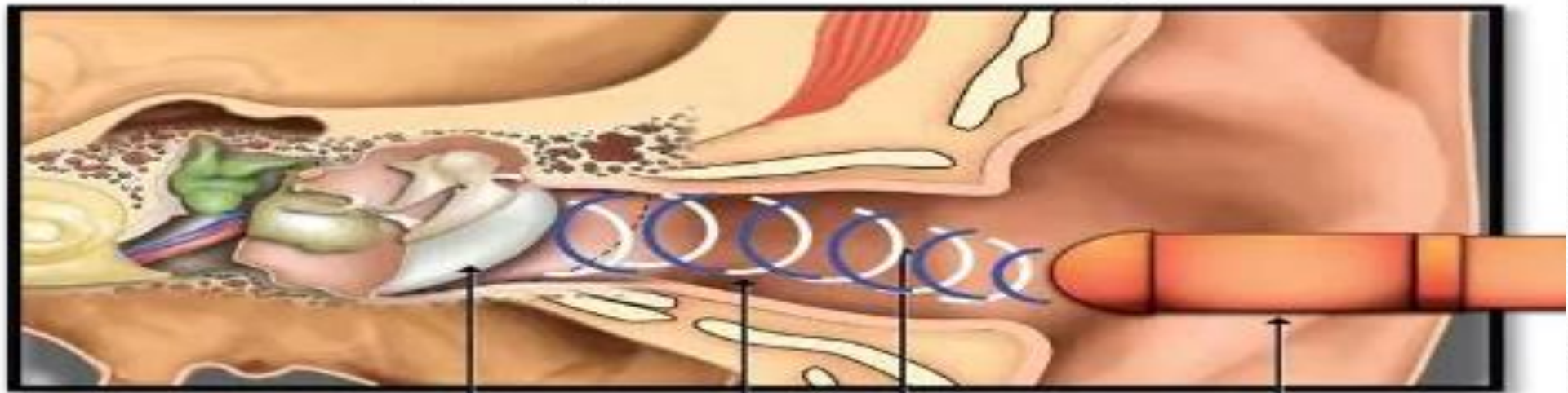
**Weber test**

Hearing loss	Rinne test (Conduction)	Weber test (Localization)
None	Air > bone	Midline
Sensorineural	Air > bone	Normal ear
Conductive	Bone > air	Affected ear



# DIGNOSTIC TEST

## Tympanometry



Eardrum

Sound waves

Ear canal

Probe



# AUDITORY BRAIN STEM RESPONSE

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## ABR TESTING





# AUDIOMETRY

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# ELECTRONYSTAGMOGRAPHY

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# MIDDLE EAR ENDOSCOPY

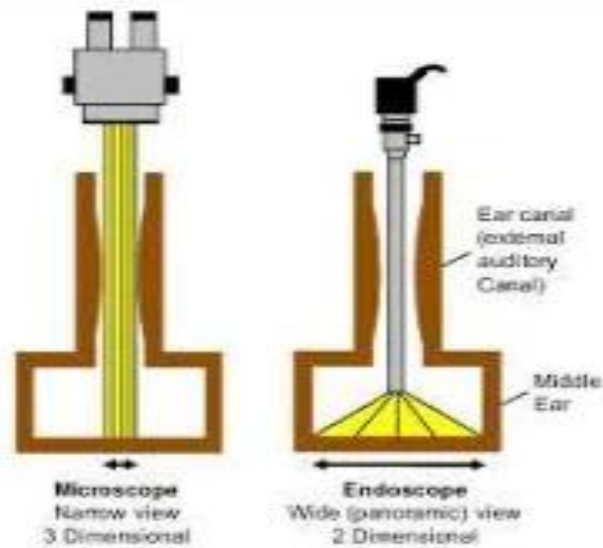
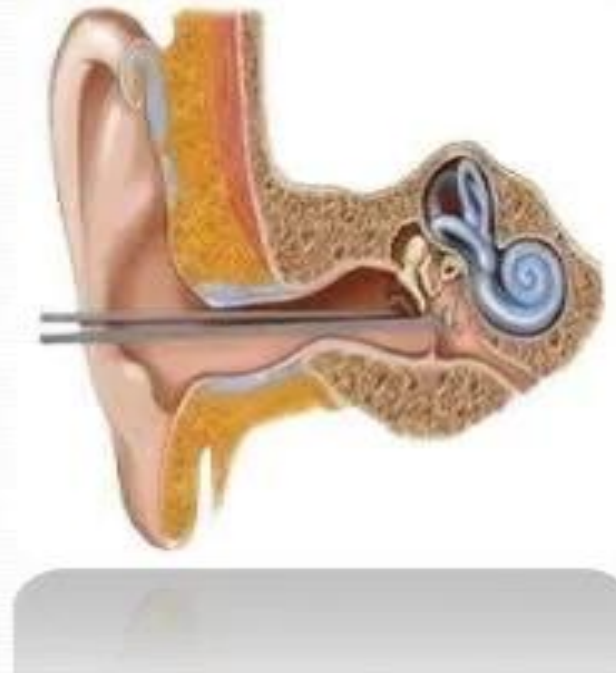


Figure. Microscope versus endoscope during middle ear surgery. The yellow beam is the path of light.





# PLATFORM POSTUROGRAPHY

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# SINUSODAL HARMONIC ACCELERATION

## Rotary Chair Testing



*Thank You*

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