For descriptive purpose the ear anatomy is divided into External, middle and inner ears.
EXTERNAL EAR

Auricle

External Canal
THE AURICLE

- superior crus
- scaphoid fossa
- helix
- antihelix
- crus helicis
- fossa triangularis
- inferior crus
- conchae cymba
- conchae cavum
- tragus
- antitragus
- cauda helicis
- lobule
- helix
- antihelix
- tragus
- lobule of ear
Anatomy of the Pinna
The External Auditory Canal

Lateral Third:
- Cartilagenous
- Hair follicles
- Ceruminous glands
- Sebacous glands

Medial Two Thirds:
- Bony
- Develops after birth
The Eustachian Tube
ROOf OF TYMPANIC CAVITY

Tegmen
LATERAL WALL OF TYMPANIC CAVITY

Membrana flaccida

Membrana Tensa
Normal tympanic membrane
TYMPANIC CAVITY

Epitympanum (attic)

Mesotympanum

Hypotympanum
MEDIAL WALL OF TYMPANIC CAVITY

The ear assists and associated structures within the tympanic cavity: (a) the stapedius muscle arises from a bony projection called the pyramoid.
MEDIAL WALL OF TYMPANIC CAVITY

Medial wall of tympanic cavity: lateral view

- Prominence of lateral semicircular canal
- Prominence of facial canal
- Geniculum of facial nerve
- Greater petrosal nerve
- Tensor tympani muscle (tendon cut)
- Auditory (Eustachian) tube
- Levator veli palatini muscle
- Promontory with tympanic nerve (of Jacobson) and plexus under mucosa
- Internal carotid artery
- Tympanic cells
- Facial nerve (VII) in stylomastoid foramen
- Fossa of round (cochlear) window
- Mastoid cells
- Chorda tympani nerve (cut)
- Crura of stapes
- Pyramidal eminence
- Footplate of stapes in fossa of oval (vestibular) window
- Tympanic (mastoid) antrum
Mastoid Antrum & Air cells
The ossicles
The ossicles

malleus  incus  stapes
Chorda tympani
Osseous Labyrinth
CONTENTS OF THE BONY LABYRINTH

- Perilymph

- Membranous labyrinth
  - Cochlear duct
  - Saccule and utricle
  - Membranous semicircular ducts
FIG. 9.22. Membranous labyrinth.

- Superior SCC
- Endolymphatic Duct
- Lateral SCC
- Posterior SCC
- Saccule
- Cochlear Duct
- Ductus Reuniens
- Utricle
- Saccular Duct
- Ampulla
- Cecum
- Endolymphatic Sac

SCC = Semicircular Canal
CONTENTS OF MEMBRANOUS LABYRINTH

- **Endolymph**
- **Sensory epithelium**
  - **Cochlea**: *organ of Corti*
  - **Utricle & saccule**: *maculae*
  - **Semicircular canals**: *cristae*
Membranous labyrinth
INNER EAR SENSORY EPITHELIUM

- **Cochlea:** *organ of Corti*

- **Utricle & saccule:** *maculae*

- **Semicircular canals:** *cristae*
THE VESTIBULOCOCHLEAR NERVE

INTERNAL EAR AND VESTIBULOCOCHLEAR (VIII) NERVE

- Anterior semicircular duct
- Vestibular ganglion
- Vestibular n.
- Cochlear n.
- Ampulae
- Cochlear (sensory) ganglion
- Utricle
- Hensen's duct
- Sacculus
- Lateral semicircular duct
- Posterior semicircular duct
- Vestibule
CENTRAL CONNECTIONS OF COCHLEAR NERVE
CENTRAL CONNECTIONS OF VESTIBULAR NERVE

PATHWAYS OF VESTIBULAR NERVE

- Connection to cerebellum
- Vestibular nuclei
- Semicircular ducts
- Cochlear duct
- Vestibular nerve
- Longitudinal fasciculus (connection with oculomotor and neck inn. nuclei)
Development of the ear