Temporal Bone Anatomy

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Organization

“Functional anatomic” segments:
- External ear
- Mastoid and middle ear
- Intratemporal facial nerve
- Inner ear
- Internal auditory canal
- Petrous apex

Imaging checklist

“Functional anatomic” segments:
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CT

“outside in”

MR

“inside out”
Imaging checklist

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CT  MR
Foramen tympanicum (foramen of Huschke)

Right tympanic membrane otoscopic view

Mastoid and Middle Ear

Epitympanum:
- AKA “attic” & “epitympanic recess”
- Scutum → tympanic facial nerve
- Contains:
  - Head of malleus
  - Body and short process of incus
- Anterior epitympanic recess

Mastoid and Middle Ear

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Mastoid and **Middle Ear**

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Mastoid and **Middle Ear**

Mesotympanum:
- Contains:
  - Manubrium of malleus
  - Long and lenticular processes of incus
  - Stapes
- Medial wall:
  - Tympanic CN7
  - Oval and round windows
  - Cochlear promontory
- Posterior wall:
  - Sinus tympani
  - Pyramidal eminence
  - Facial nerve recess

**Middle Ear - ossicles**

- Ice cream cone
- Two dots
- Dash
- Dash
Always make sure you can see the long process at least one slice below the IS joint
Mastoid and Middle Ear

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Mastoid and Middle Ear

Hypotympanum:
• Variable
• Caudal to the level of the TM → base of cochlear promontory

Intratemporal facial nerve

• labyrinthine
• anterior genu (greater superficial petrosal nerve)
• tympanic
• posterior genu
• mastoid (chorda tympani)
Inner Ear

cochlear aqueduct

Internal auditory canal
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"outside in" "inside out"

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Thank you!