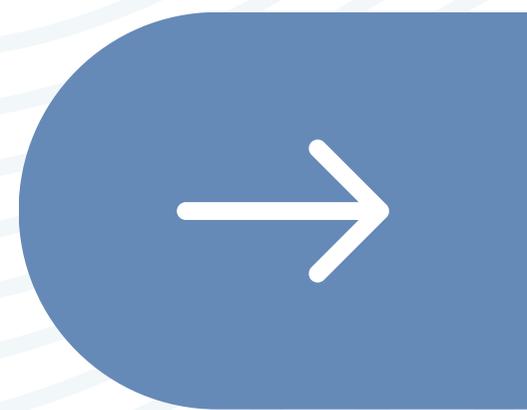
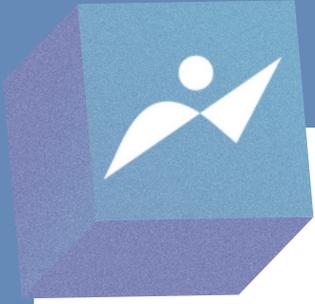


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MEASUREMENTS OF
EAC AND ET





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MEASUREMENTS OF EAC AND ET

External auditory canal (EAC) extends from the concha to the tympanic membrane.

S-shaped EAC has a cartilaginous lateral part (one third) and medial bony part (two thirds), the lengths of which are 8mm and 16mm, respectively.

Total length of EAC is around 2-3 cm.



EXTERNAL AUDITORY CANAL AND EUSTACHIAN TUBE

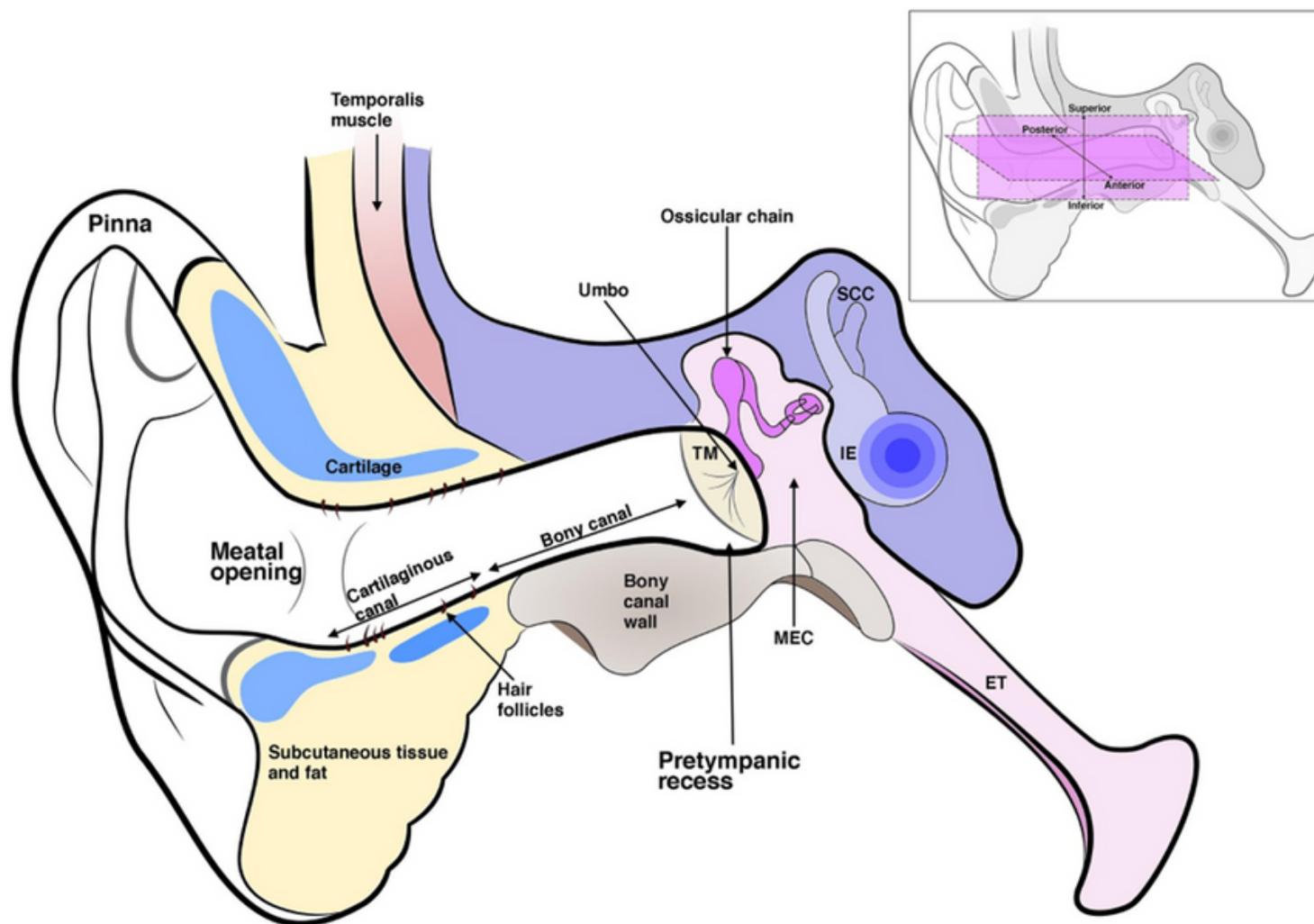
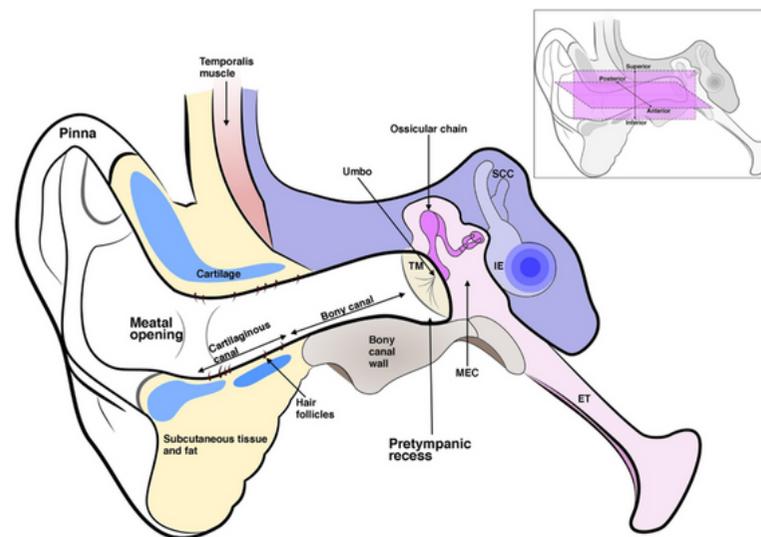




IMAGE DESCRIPTION



- An anatomical diagram showcases the External Auditory Canal and Eustachian Tube, highlighting lengths, junctions, and structural intricacies. Key points are emphasized, offering a concise visual guide to auditory anatomy.
- EAC Flexibility: Cartilaginous EAC allows movement for optimal sound resonance and transmission.
- Bony-EAC Junction: Structural transition impacts acoustic properties and ear protection mechanisms.
- ET Pressure Regulation: Balancing 36mm length for optimal middle ear pressure maintenance.
- Isthmus Significance: Bony EAC's narrow isthmus crucial for sound transmission efficiency and protection.
- Clinical Awareness: EAC and ET measurements aids in diagnosis and treatment.



MEASUREMENTS OF EAC AND ET

Total Length: The EAC has a total length of **24mm**, comprising both bony and cartilaginous portions.

Bony Section (2/3 of Total Length): Predominantly in the middle ear region, the bony part measures **16mm**, contributing to two-thirds of the EAC length.

Cartilaginous Section (1/3 of Total Length): Comprising the remaining one-third, the cartilaginous segment measures **8mm** and is crucial for maintaining flexibility and resonance.

Isthmus (Narrowest Part): Located in the **bony section**, the isthmus is a critical region with a narrower diameter, facilitating sound transmission and protection of the ear canal.

Junction with Middle Ear: The junction between the bony and cartilaginous sections marks a crucial point where structural transitions occur, influencing acoustic properties and ear protection.



EUSTACHIAN TUBE (ET) MEASUREMENTS

Total Length: The Eustachian tube has a length of 36 mm, connecting the middle ear to the nasopharynx.

Proximal Section (1/3 of Total Length): The initial 12 mm of the Eustachian tube, closer to the middle ear, plays a vital role in regulating pressure and preventing fluid accumulation.

Distal Section (2/3 of Total Length): The remaining 24 mm extends toward the nasopharynx, facilitating the exchange of air, equalizing pressure, and contributing to middle ear health.

Functional Importance: Serving as a **pathway for gas exchange**, the Eustachian tube's dimensions are crucial for maintaining optimal pressure within the middle ear.

Junction with Nasopharynx: The point where the Eustachian tube connects to the nasopharynx is significant for proper ventilation and drainage, preventing issues like ear infections.



HIGH-LEVEL INSIGHTS

Balance of Lengths: *The EAC and ET exhibit a harmonious balance of lengths, emphasizing the intricate design for optimal auditory function and ear health.*

Structural Significance: *The division between bony and cartilaginous parts in the EAC and the proximal-distal segments in the ET provides insights into the structural importance of each region.*

Acoustic Implications: *The isthmus in the EAC and the junction with the middle ear influence acoustic properties, highlighting the delicate balance required for effective sound transmission.*

Pressure Regulation: *The lengths and proportions of the ET are tailored to ensure effective pressure regulation, preventing issues like barotrauma and enhancing middle ear function.*



MEASUREMENTS OF EAC AND ET

Question:

What is the primary function of the isthmus in the External Auditory Canal (EAC)?

- A) *Sound resonance*
- B) *Protection against infections*
- C) *Structural transition*
- D) *Flexibility in movement*

Answer: C) Structural transition