



ANATOMIA DA ORELHA INTERNA

INTRODUÇÃO

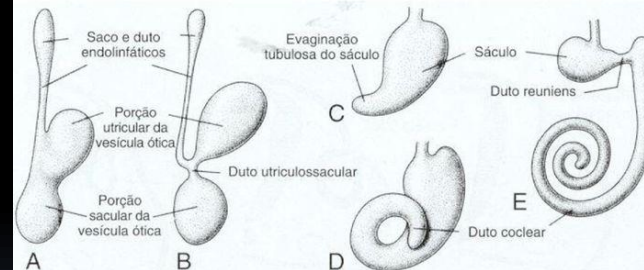
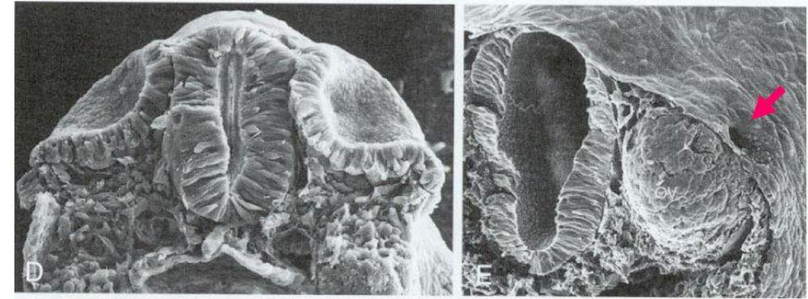
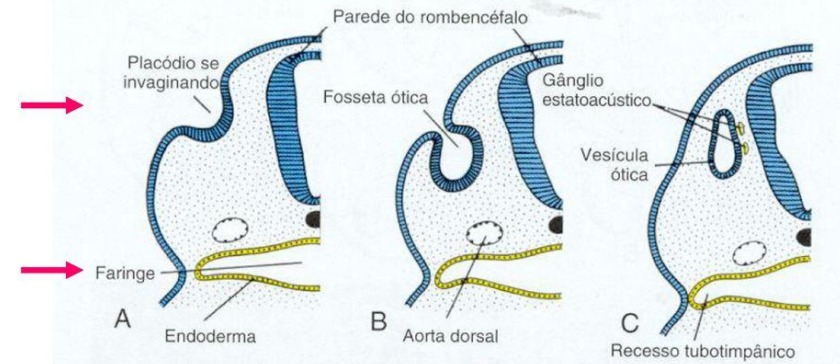
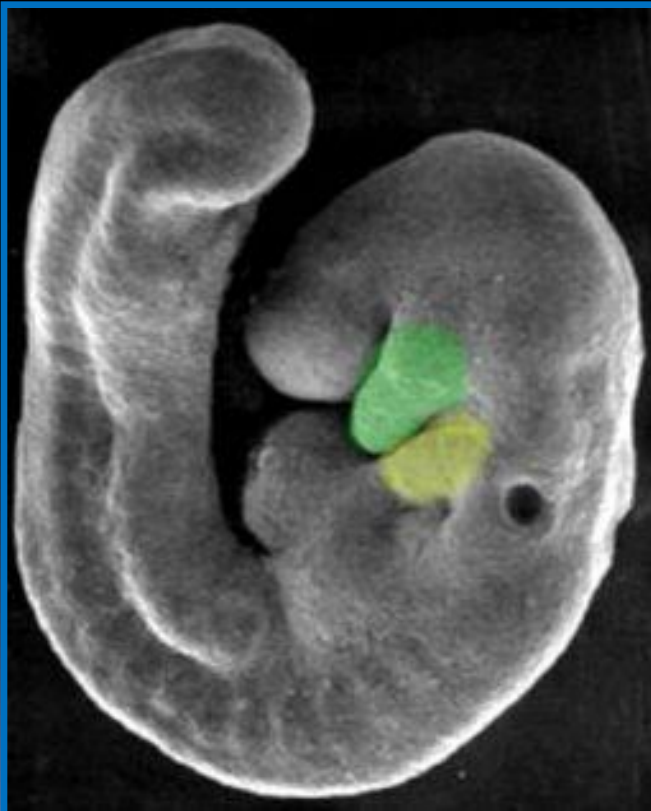
Embriologia
Filogenética
Anatomia

Imagens particulares e
de livros e artigos de
vários autores.

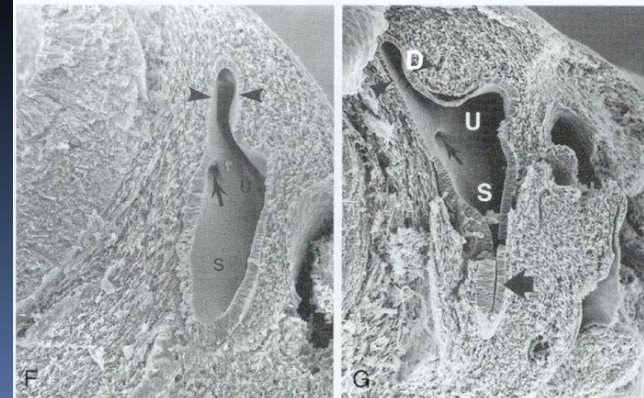
Décio Gomes de Souza
www.dgsotorrinolaringologia.med.br

EMBRIOLOGIA

- 1º arco branquial – martelo/bigorna
- 2º arco branquial - estribo
- Placódio ótico – labirinto membran.

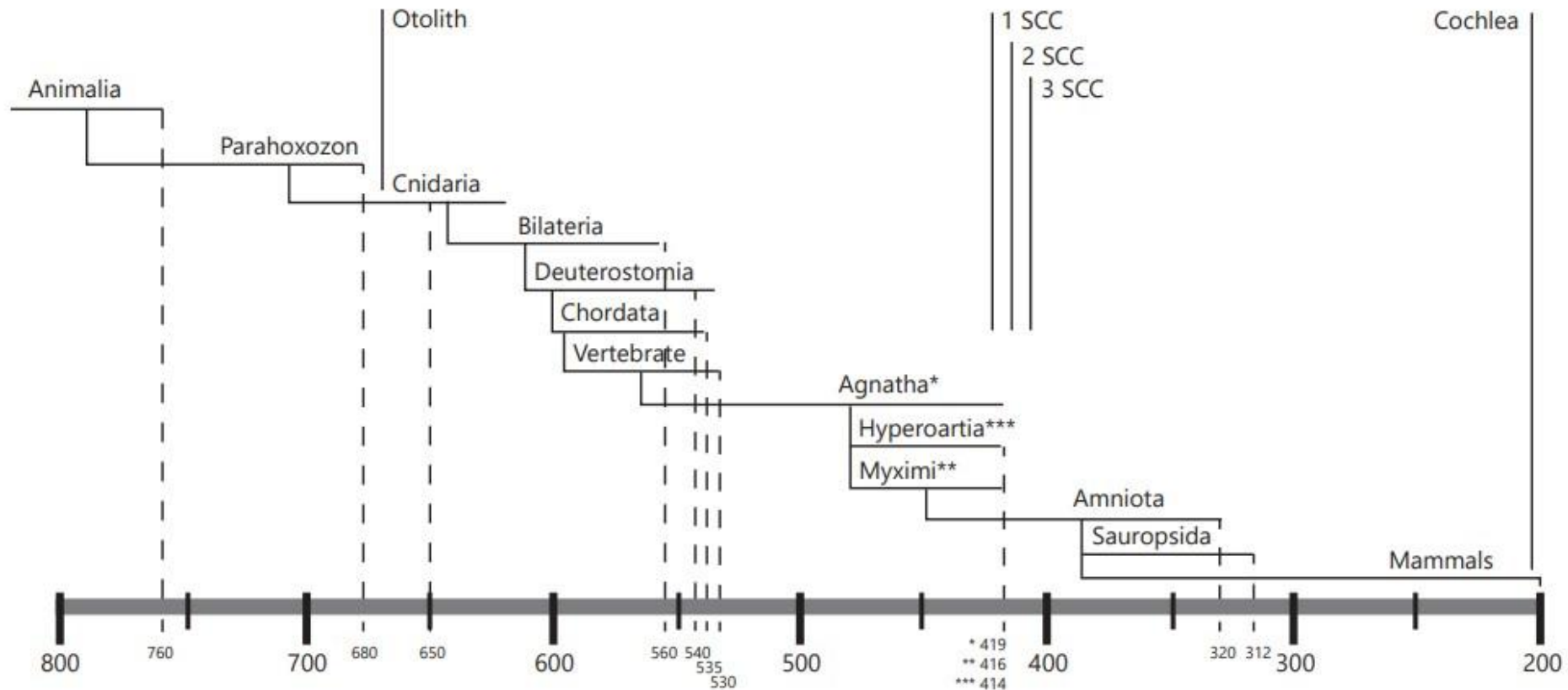


diferenciação da vesícula auditiva em ducto coclear, sistema de equilíbrio (sáculo e utrículo) e ducto endolinfático



ossificação em volta do ouvido interno

FILOGENÉTICA

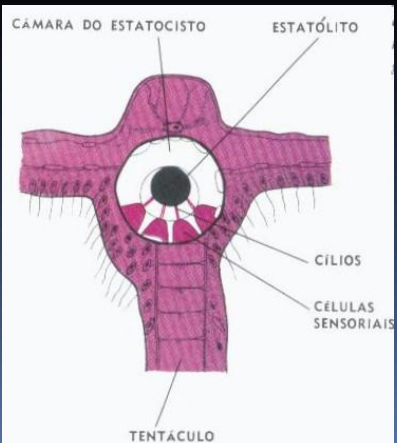


Milhões de anos

FILOGENÉTICA

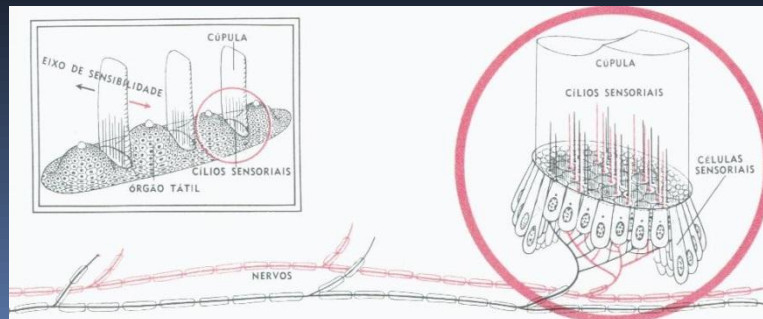
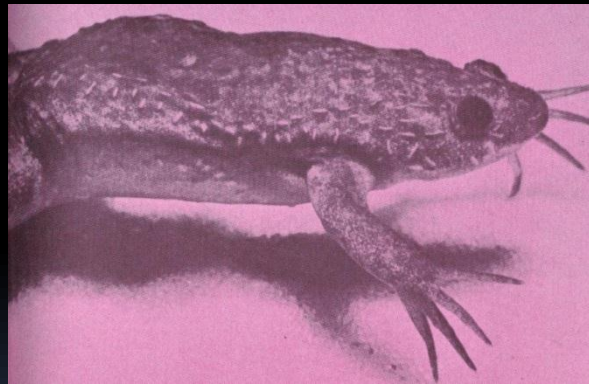
Água viva

- estatocisto



Linha lateral de peixes e alguns anfíbios

- crista ampolar



Insetos



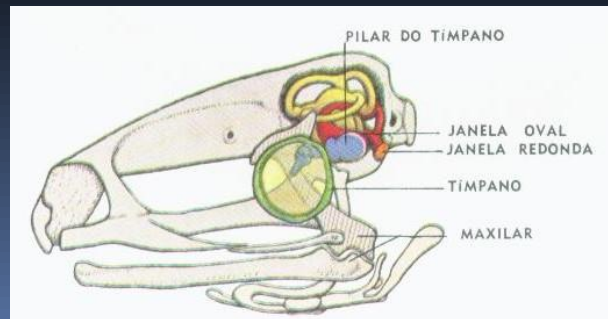
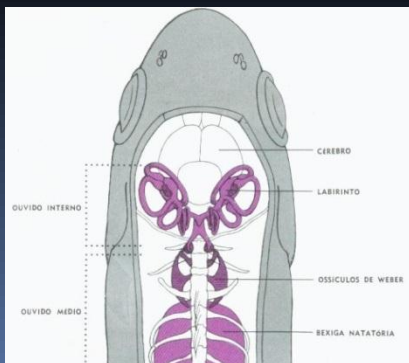
FILOGENÉTICA

Anfíbios

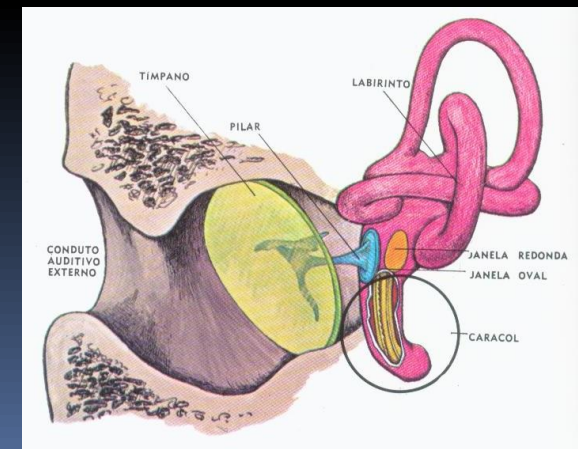
De girino para rã



Peixes

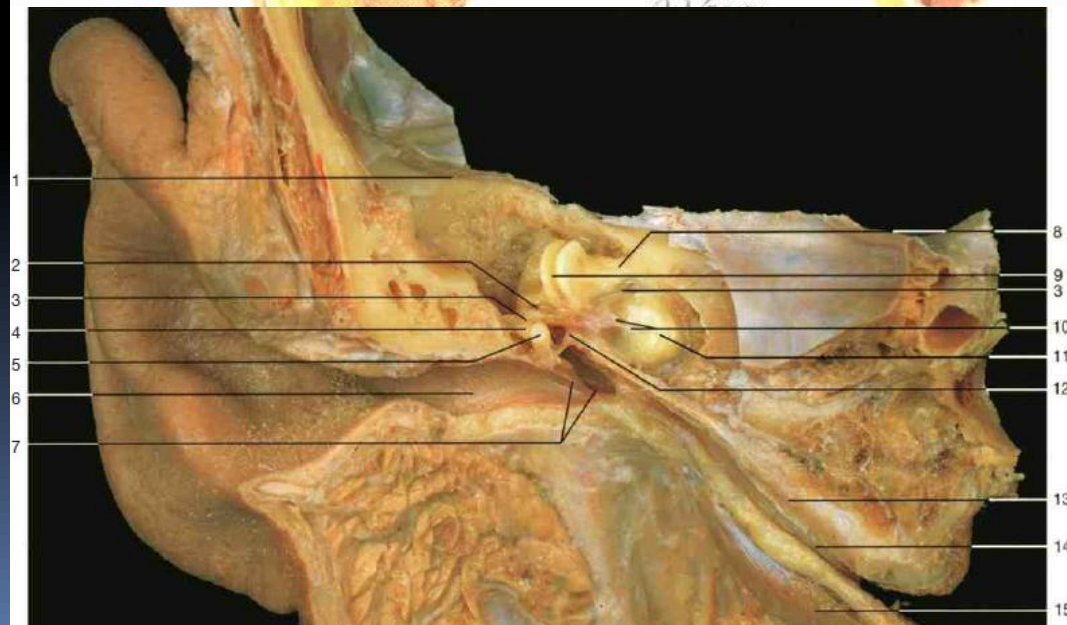
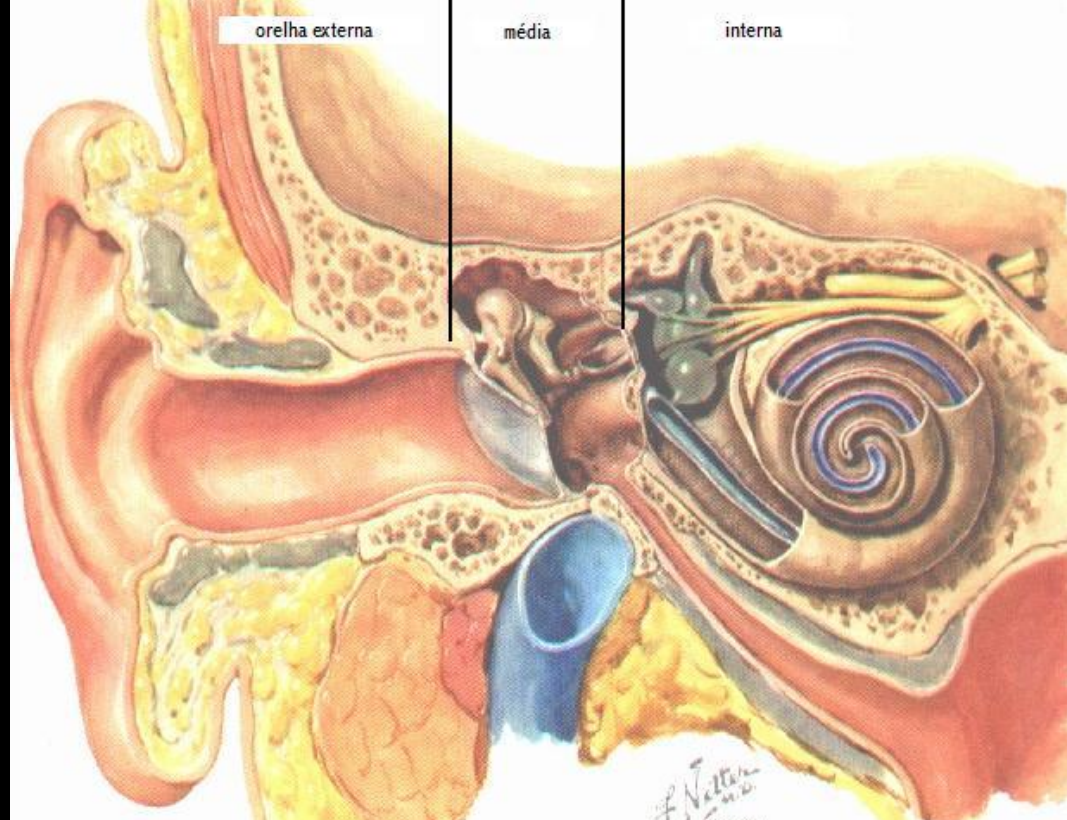


Pássaros



ORELHA INTERNA (Labirinto)

- 1 Roof of tympanic cavity
- 2 Lateral osseous semicircular canal
- 3 Facial nerve
- 4 Incus
- 5 Malleus
- 6 External acoustic meatus
- 7 Tympanic cavity and tympanic membrane
- 8 Vestibulocochlear nerve
- 9 Anterior osseous semicircular canal
- 10 Geniculate ganglion and greater petrosal nerve
- 11 Cochlea
- 12 Stapes
- 13 Tensor tympani muscle
- 14 Auditory tube
- 15 Levator veli palatini muscle



ORELHA INTERNA – Labirinto

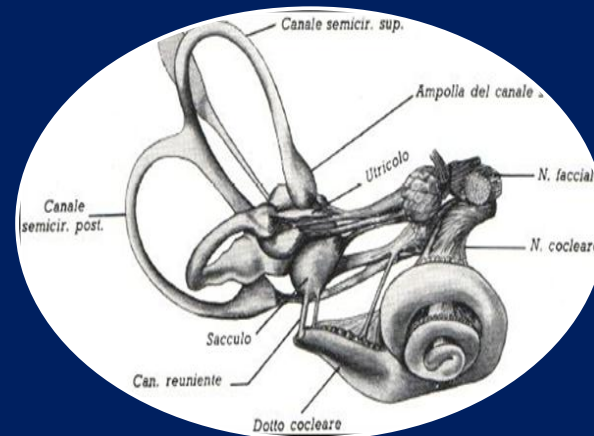
- funções auditiva e vestibular



Labirinto Ósseo

– cápsula ótica - perilinfa

- **Anterior** : Canal Coclear
- **Posterior** : Vestíbulo e Canais Semicirculares



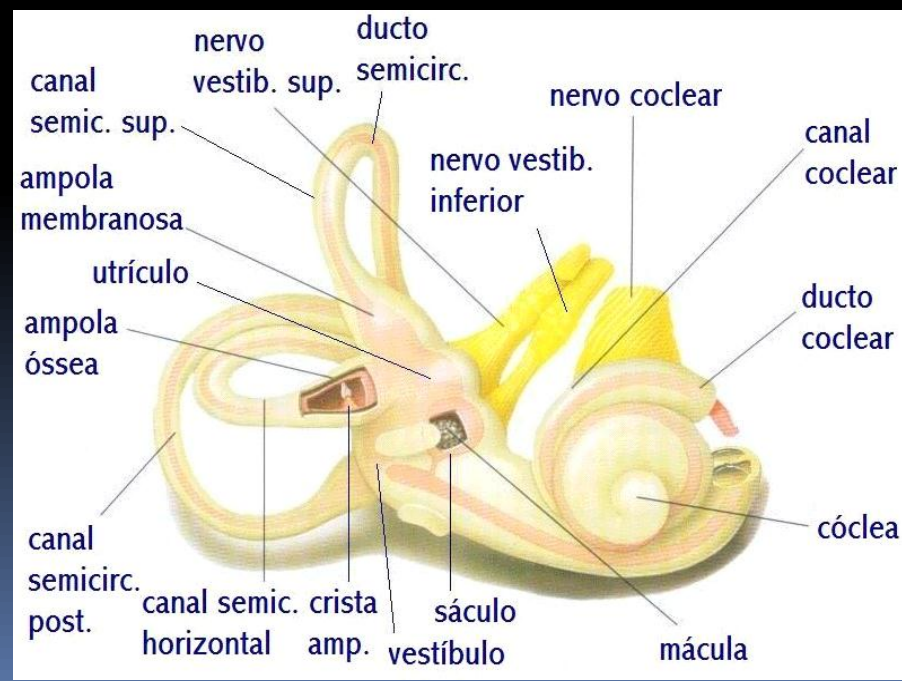
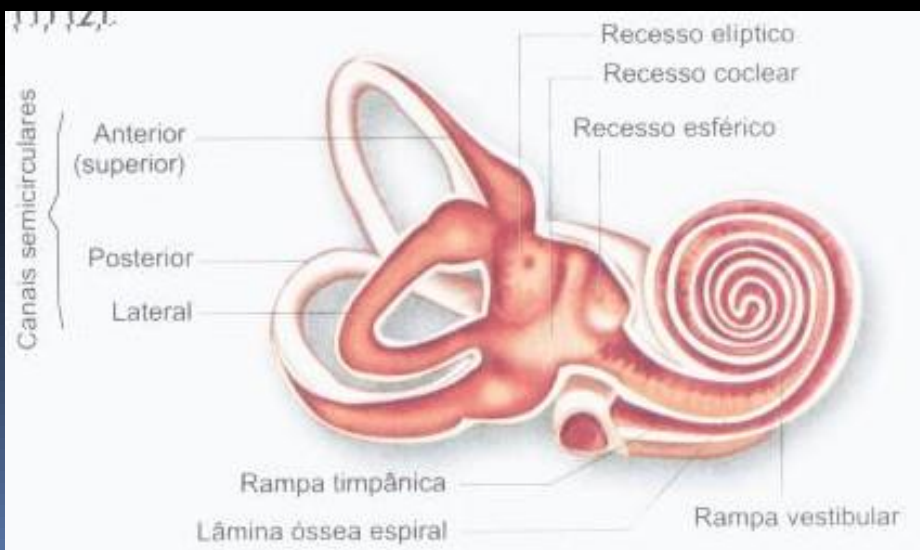
Labirinto Membranoso

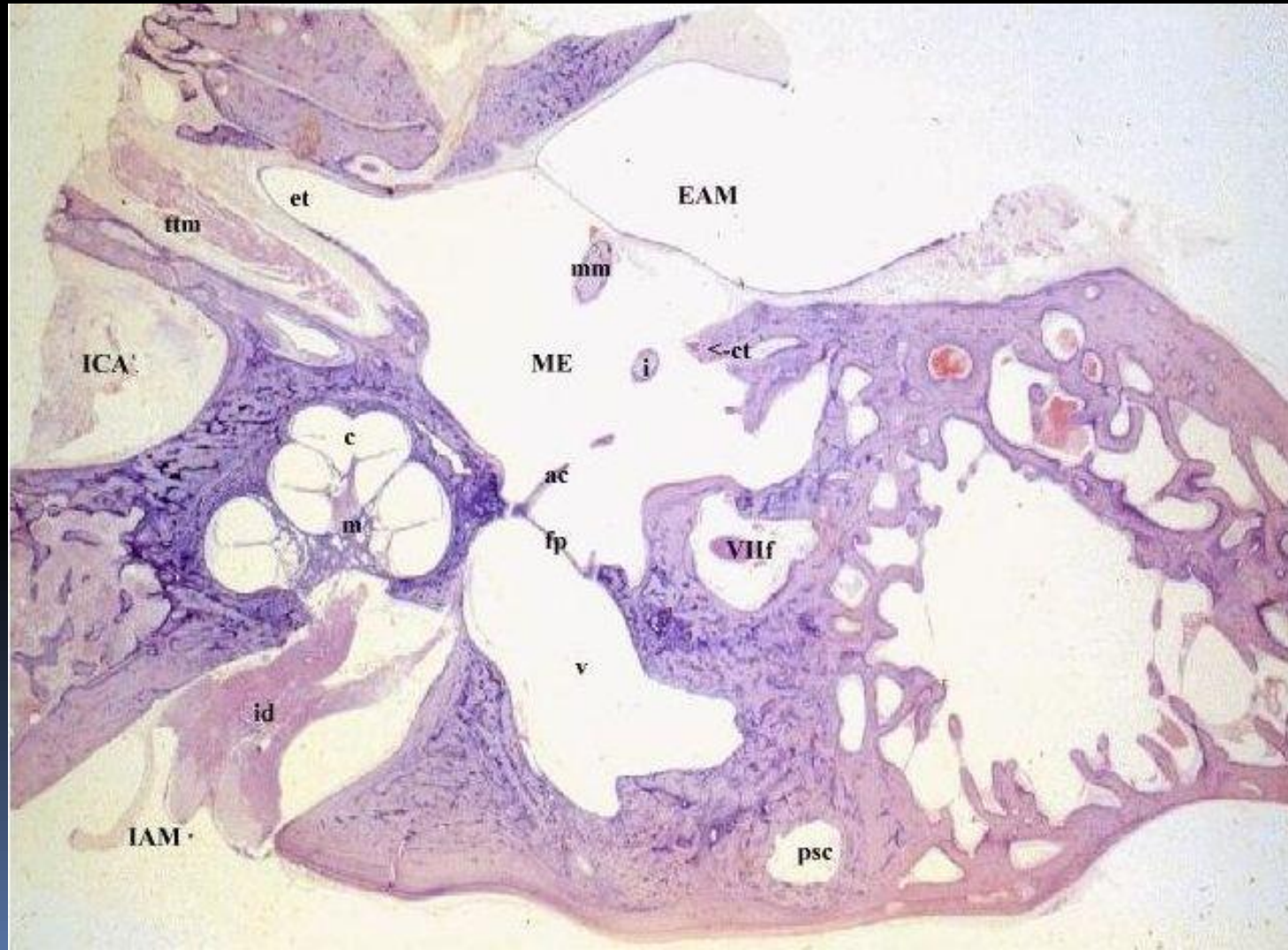
– endolinfa

- **Anterior** : Ducto Coclear
- **Posterior** : Sáculo, Utrículo e Ductos Semicirculares

ORELHA INTERNA - Labirintos ósseo e membranoso

Lâmina espiral da Cóclea





LABIRINTO

aquedutos e ductos comunicantes

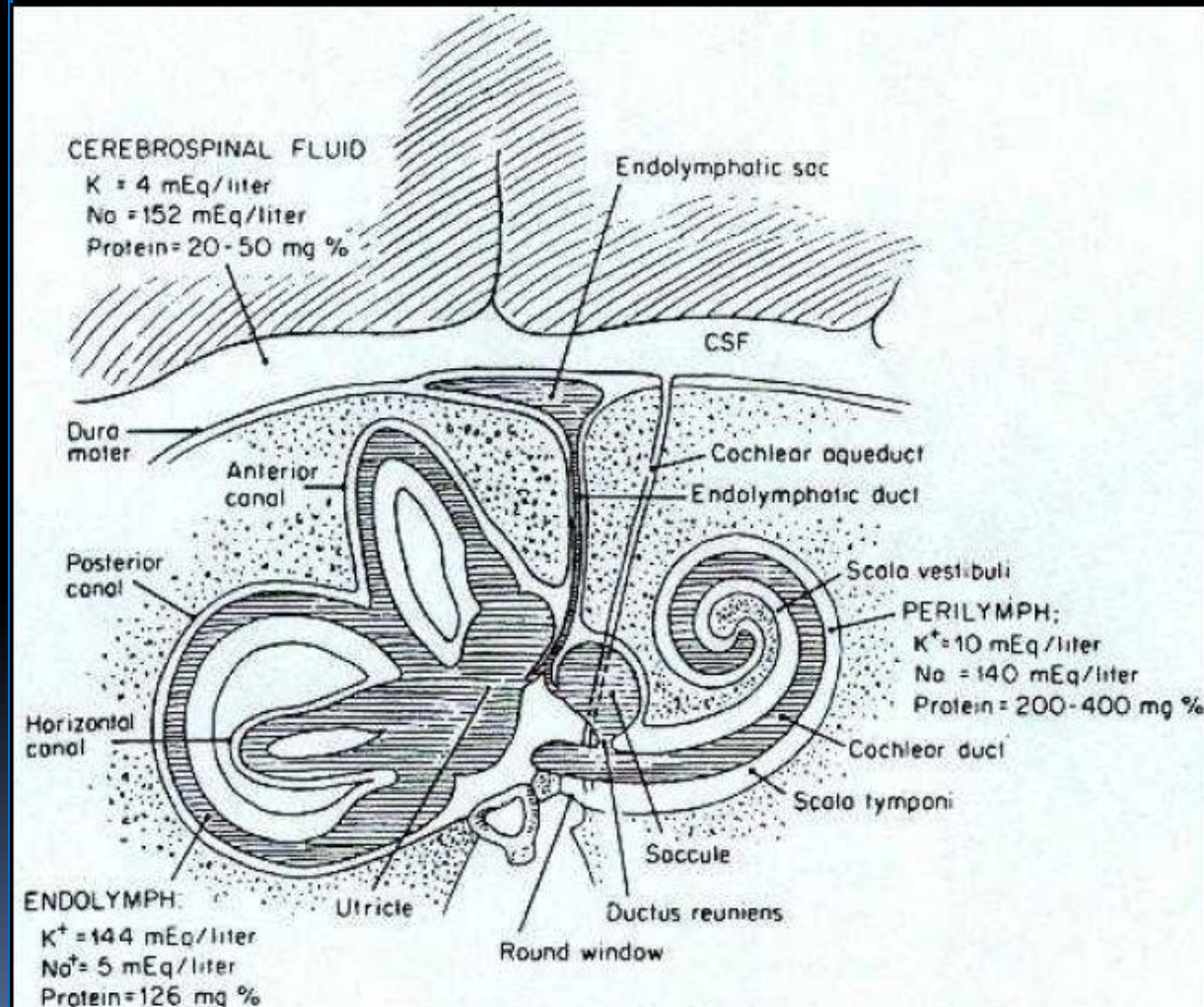
- Composição química
 - perilinfa > Na
 - endolinfa > K

Ósseo

- Aqueduto coclear (rampa timpânica - FCP)
- Aqueduto vestibular (vestíbulo - FCP)

Membranoso

- Ducto endolinfático
- Saco endolinfático (membranoso)
- Ducto utrículo-sacular (membranoso)
- Ducto reuniens



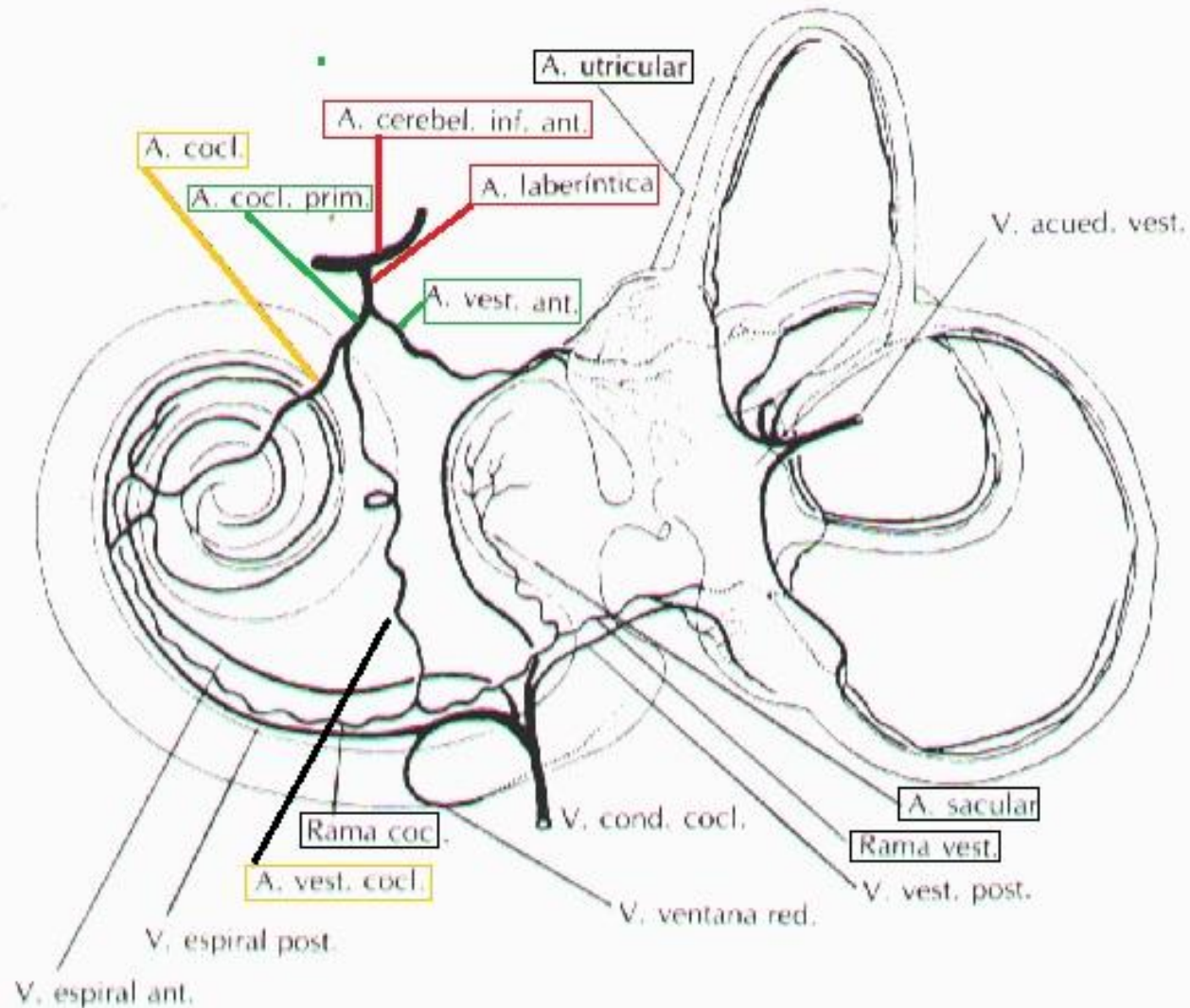
LABIRINTO

➤ Irrigação

* Variações Anatômicas

Vertebrais > Basilar >
AICA > Labiríntica

- Vestibular anterior
- utrículo, cscl, cscs
- Coclear primária
- ✓ Coclear
- $\frac{3}{4}$ sup. da cóclea
- ✓ Vest.-coclear
- sáculo, cp
- $\frac{1}{4}$ basal da cóclea

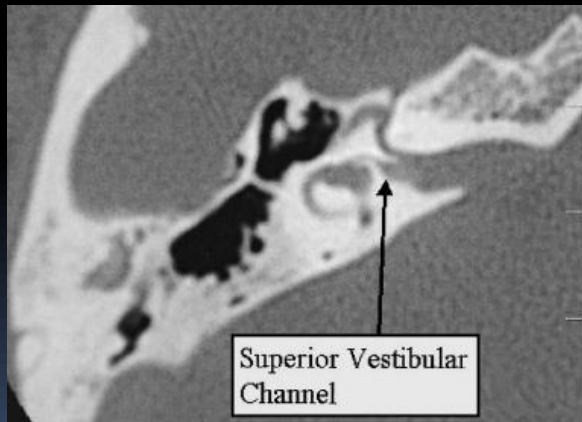


LABIRINTO

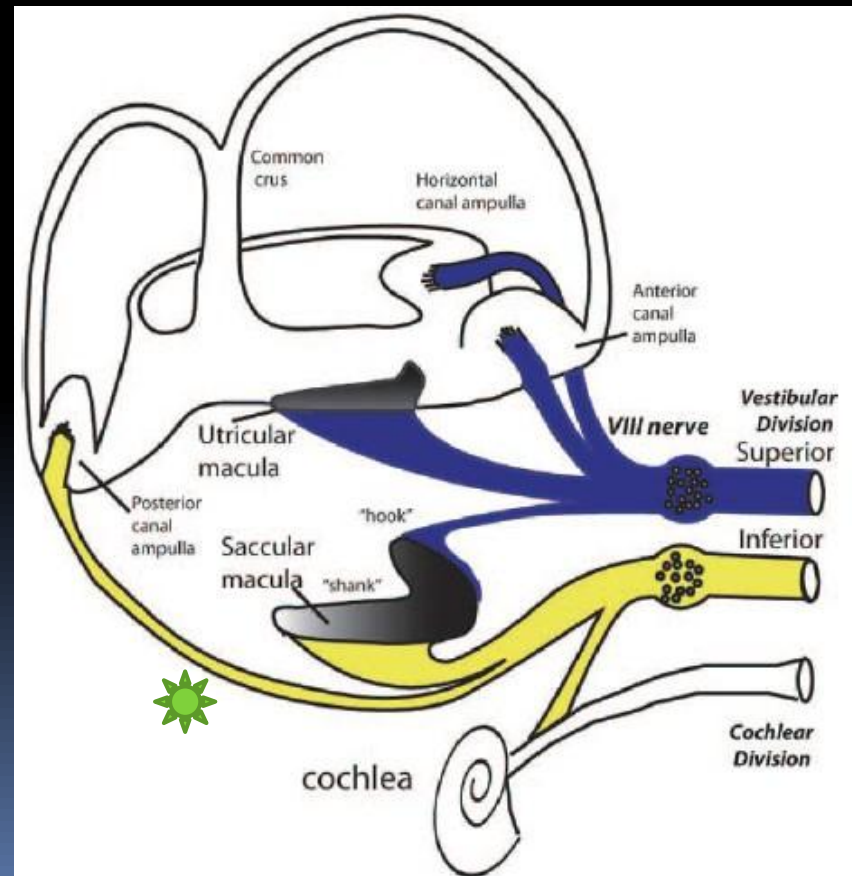
➤ VIII par – vestibulococlear ou estatoacústico

- N. Vest. sup. (CSCL, CSCA, utrículo e sáculo)
- N. Vest. inf. inferior (CSCP , sáculo e anastom. coclear)
-  N. singular
- N. Coclear – gânglio espiral)

Canal do superior
mais longo e com
mais espículas

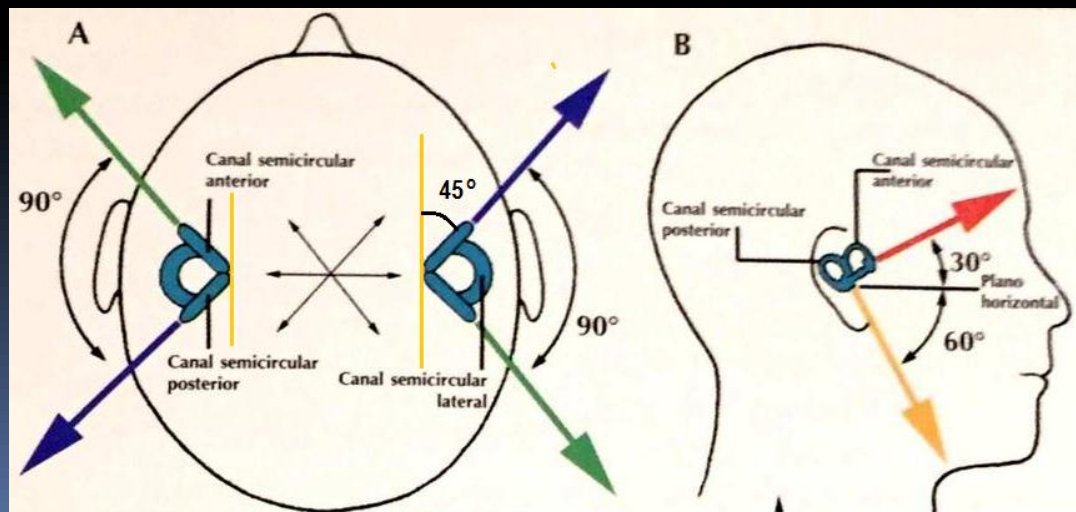
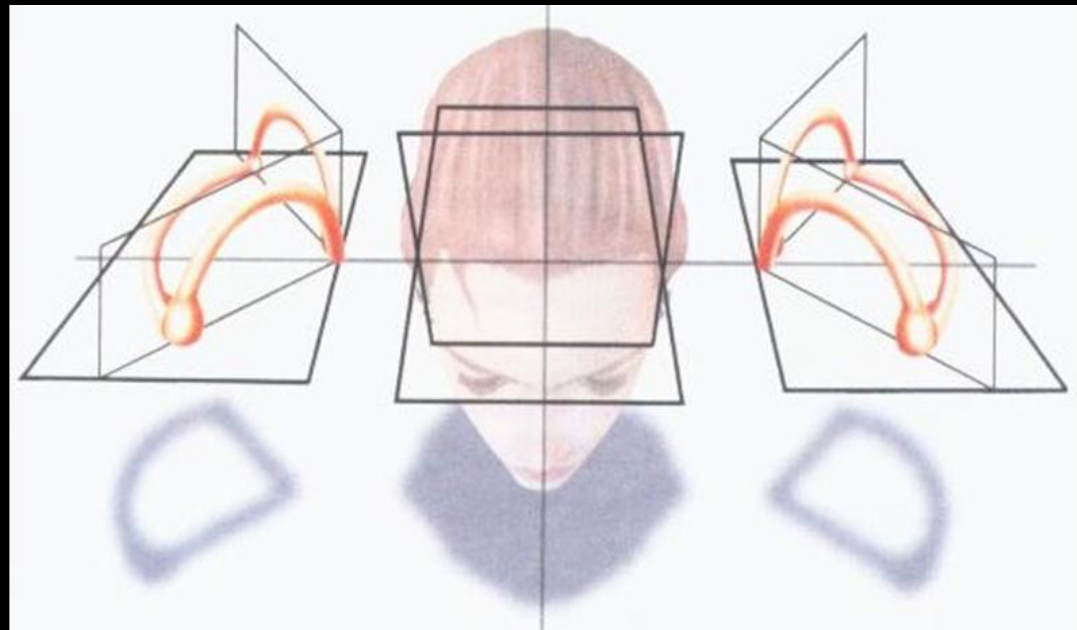


Anatomic Differences in the Lateral Vestibular Nerve Channels and their Implications in Vestibular Neuritis.
Otology & Neurotology, Issue:
Volume 26(3), May 2005, pp 489-494



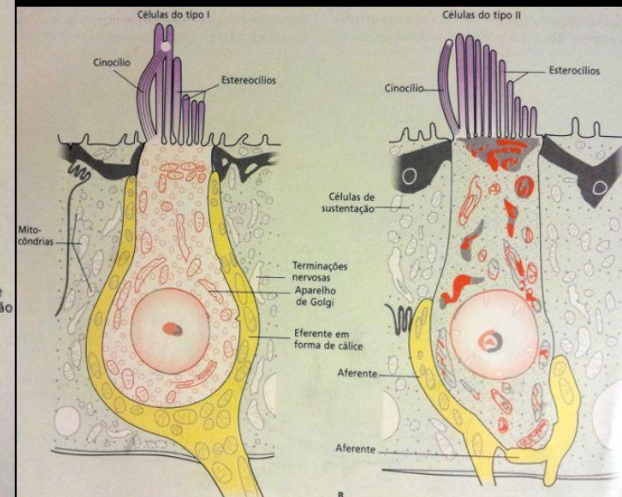
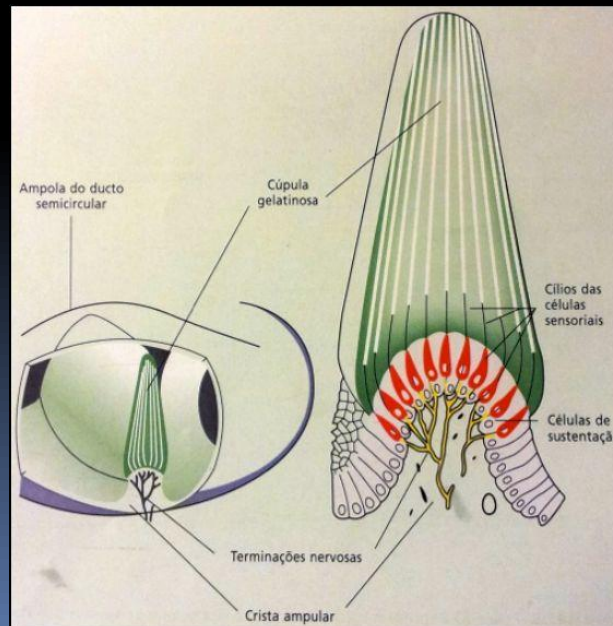
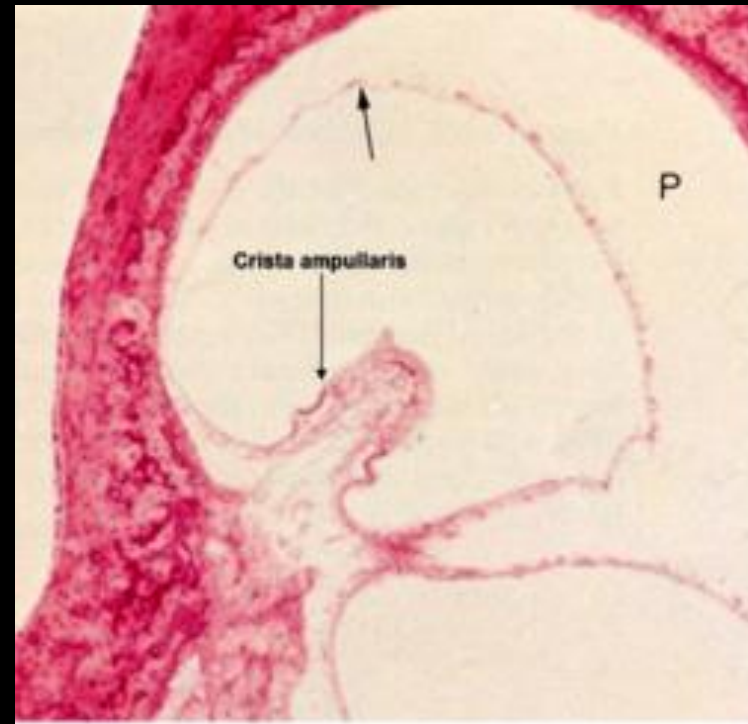
CANAIS SEMICIRCULARES RELAÇÃO COM OS PLANOS

- Lateral ou Horizontal
- Anterior ou Superior
- Posterior
- Ampolas ósseas
- Extremidade
ampolar
- Extremidade não
ampolar



DUCTOS SEMICIRCULARES

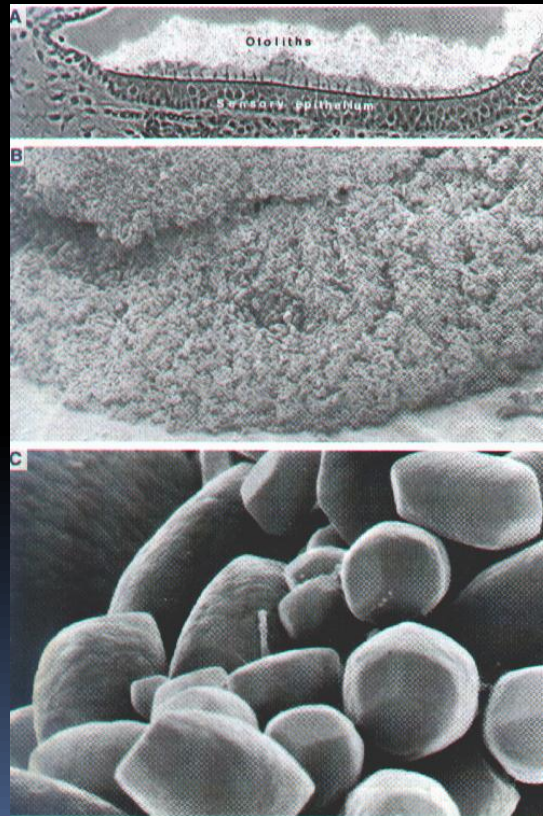
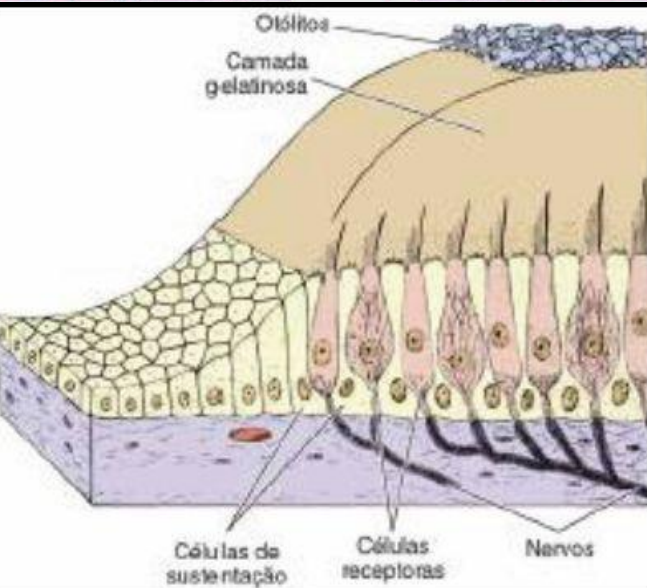
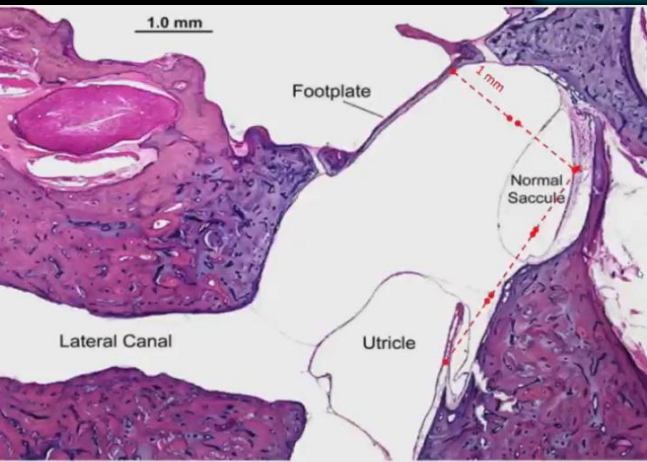
- Lateral, Anterior e Posterior
- Ampolas membranas
 - **CRISTA AMPOLAR**
 - células ciliadas tipo I e II (cinocílio e estereocílios - posição)
 - cúpula (densidade = endolinfa)



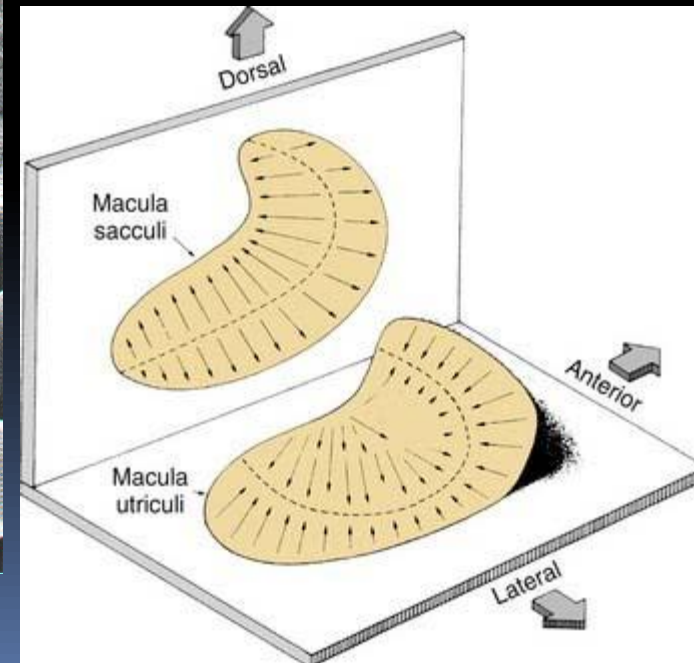
ORGÃOS OTOLÍTICOS - SÁCULO E UTRÍCULO

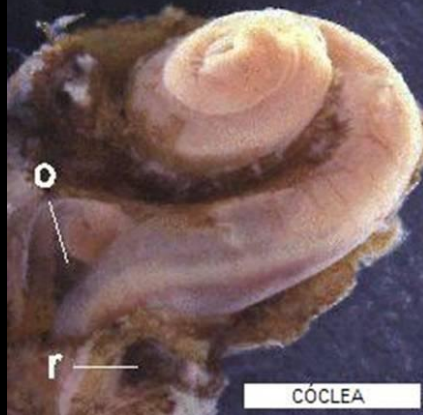
➤ MÁCULAS (sagitta e lapillus)

- células ciliadas (tipo 1 e 2)
- Membrana dos otólitos (ou estatocônios)
- Otólitos (**densidade > endolinfa** – $F = M \times A$)



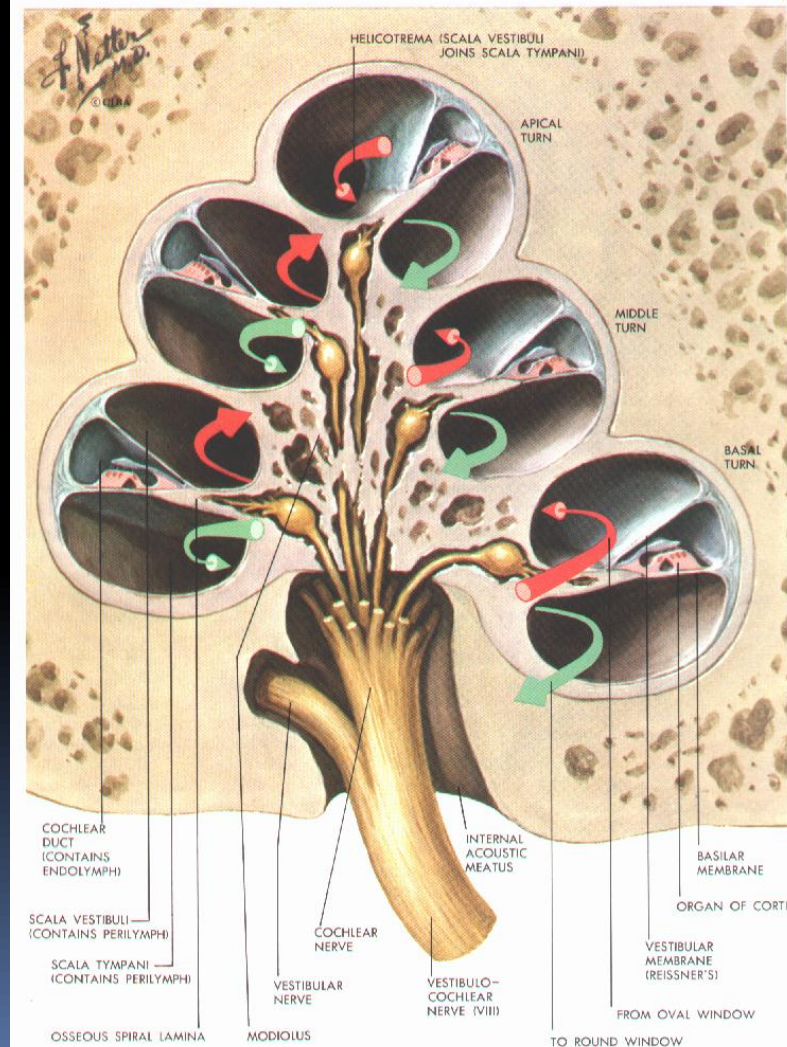
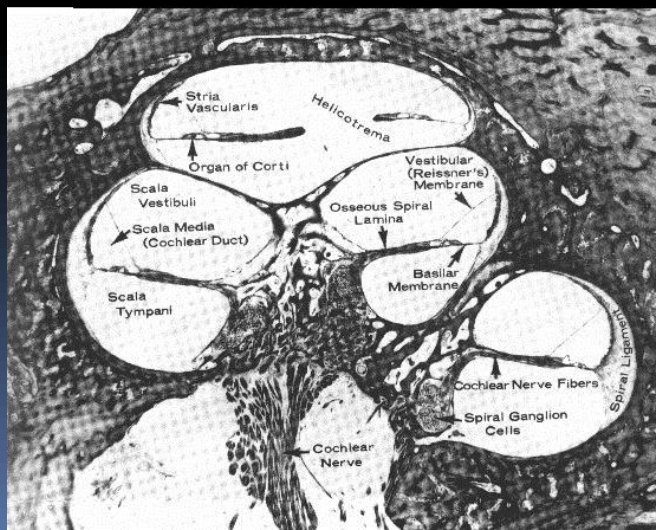
Relação espacial (OD)
Relação dos cinocílios
com a estríola





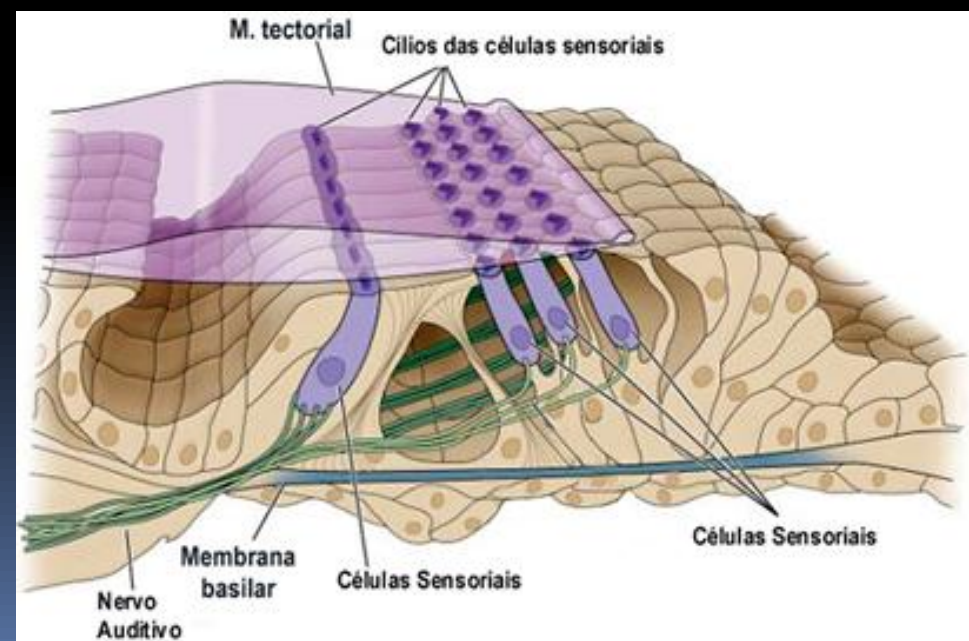
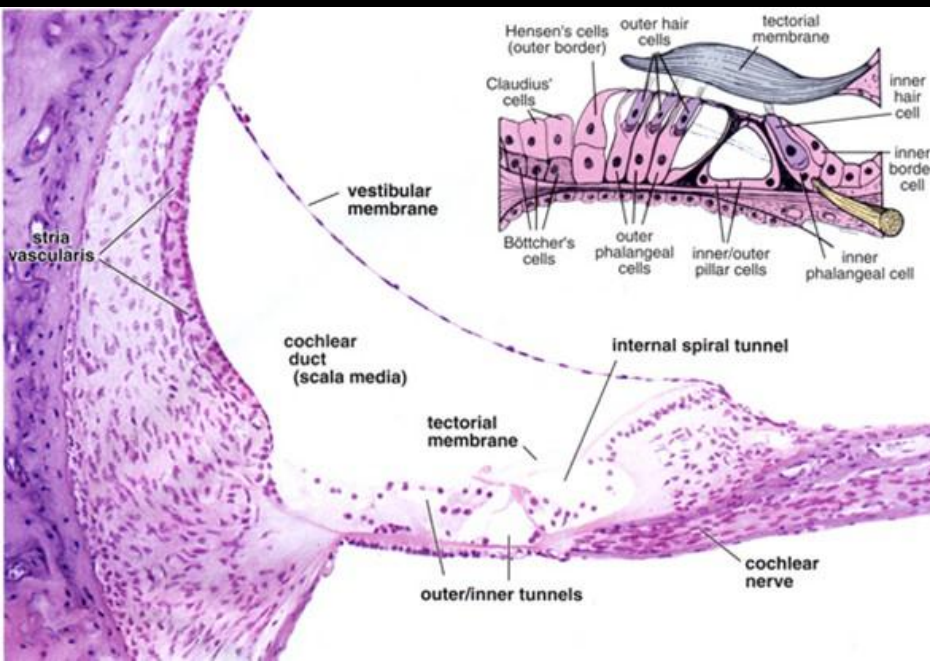
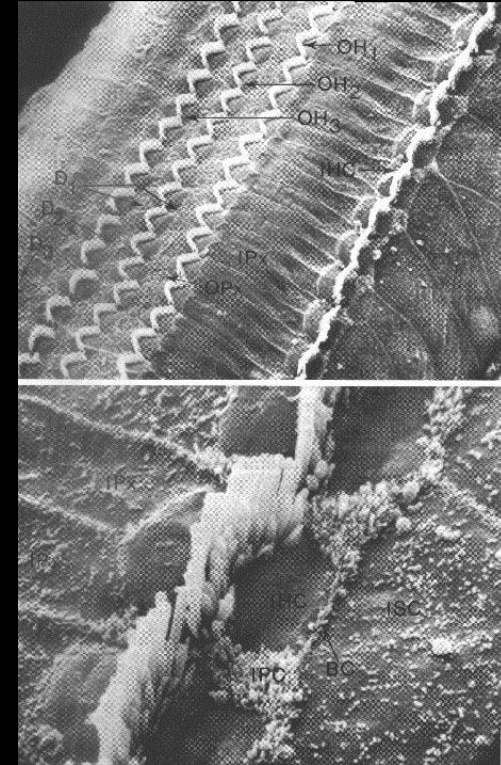
ANATOMIA DA CÓCLEA

- **Modíolo**
 - fibras do n. coclear/gânglio espiral
 - lâmina espiral
- **Canal coclear** - 2,5 voltas
 - membrana de Reissner/membrana basilar
 - **rampa vestibular**/helicotrema/**rampa timpânica**
 - ducto coclear: órgão de Corti/estria vascular

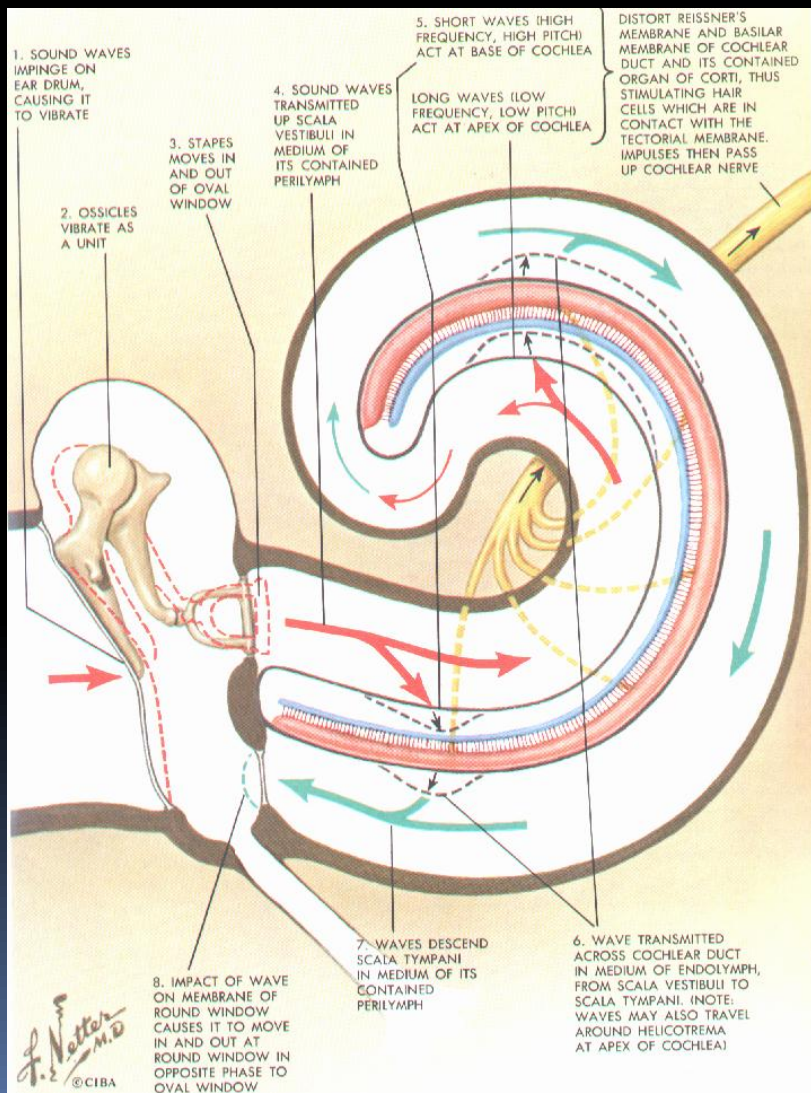


ANATOMIA DO ORGÃO DE CORTI

- Células ciliadas externas e internas
- Túnel de Corti
- Células de sustentação
- Membrana tectória



ANATOMO-FISIOLOGIA DA CÓCLEA



- Condução interna (fenômenos hidro-mecânicos)
- onda viajante de Von Békésy

