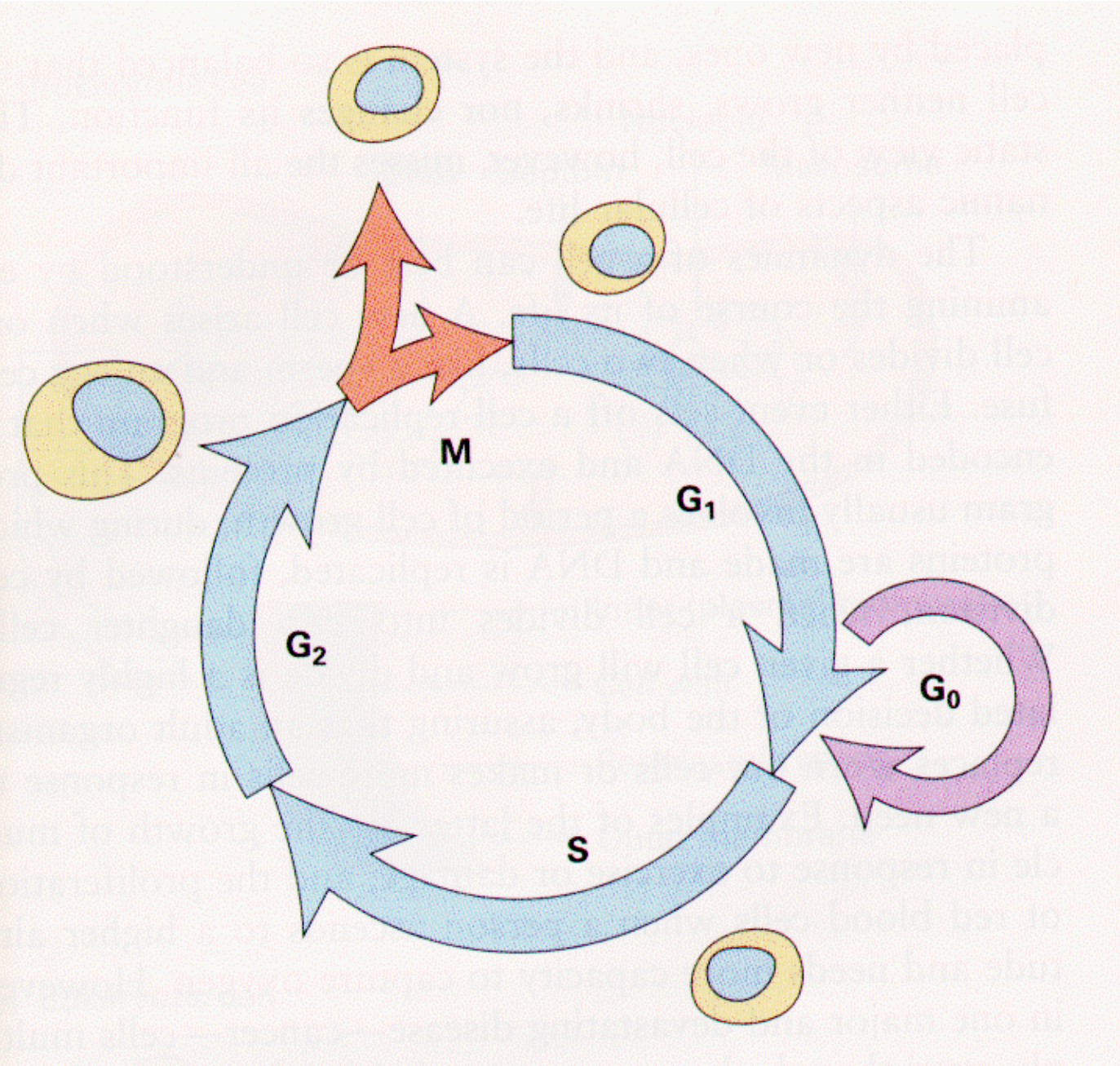
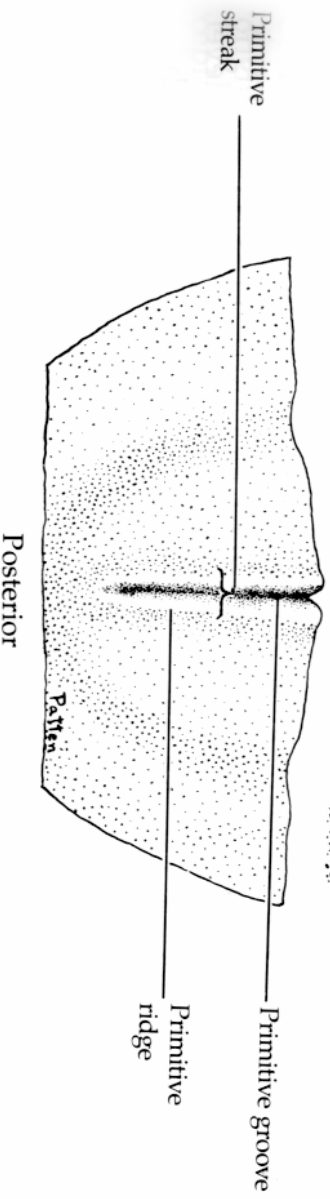
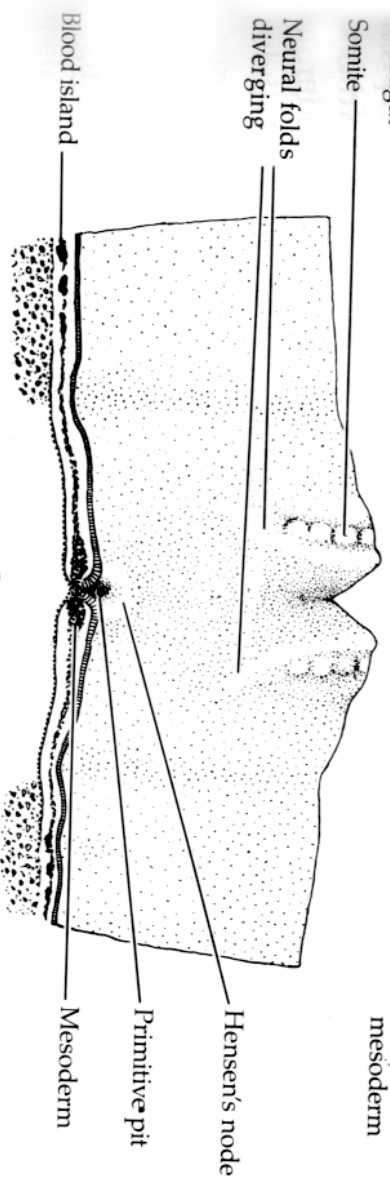
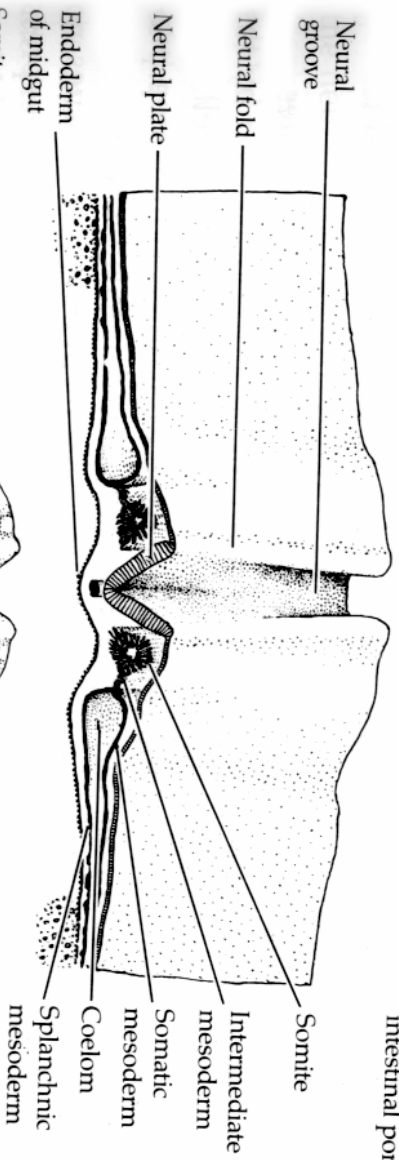
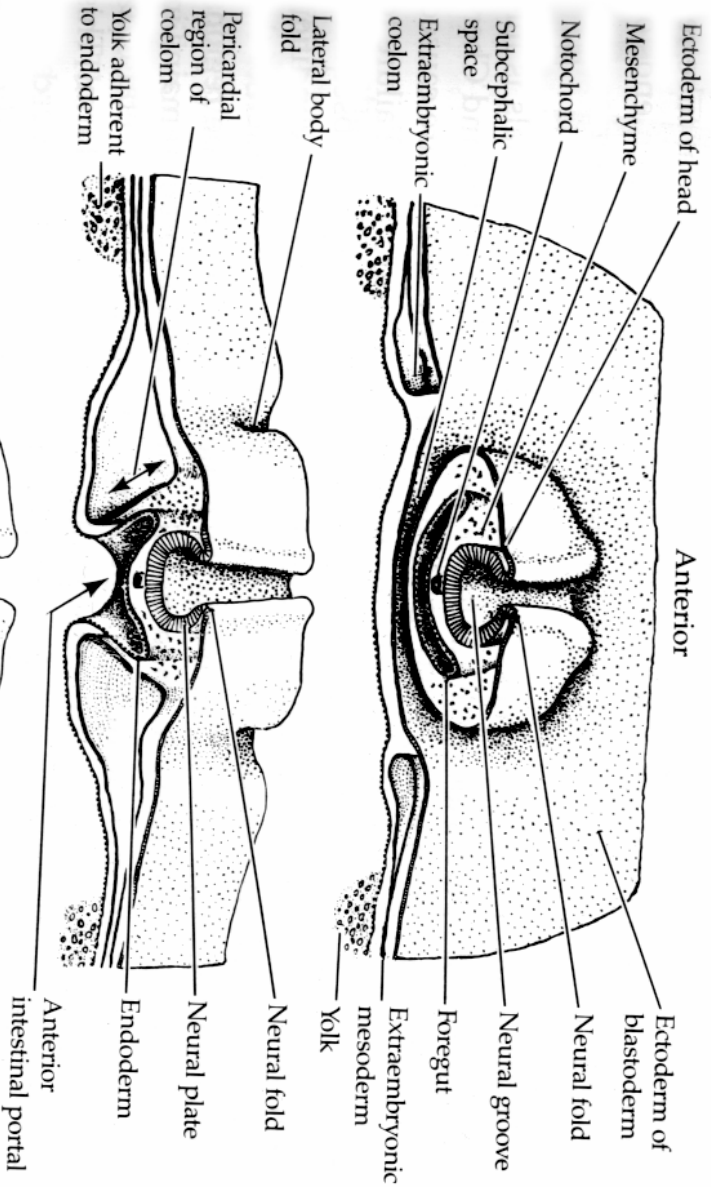
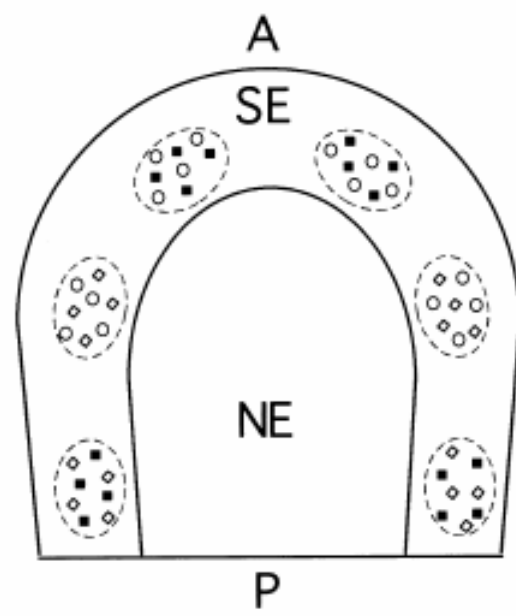
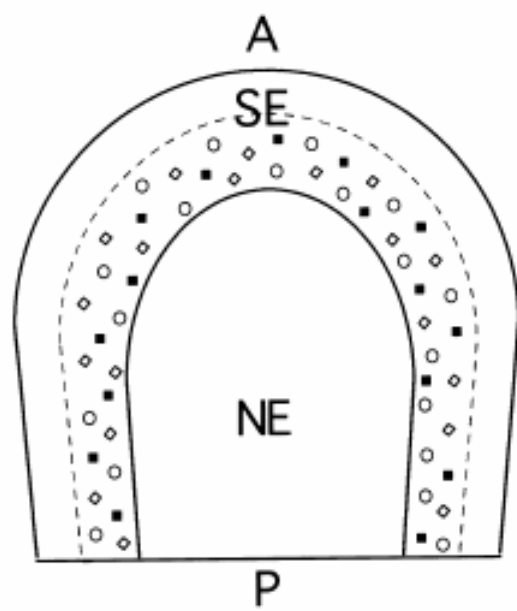
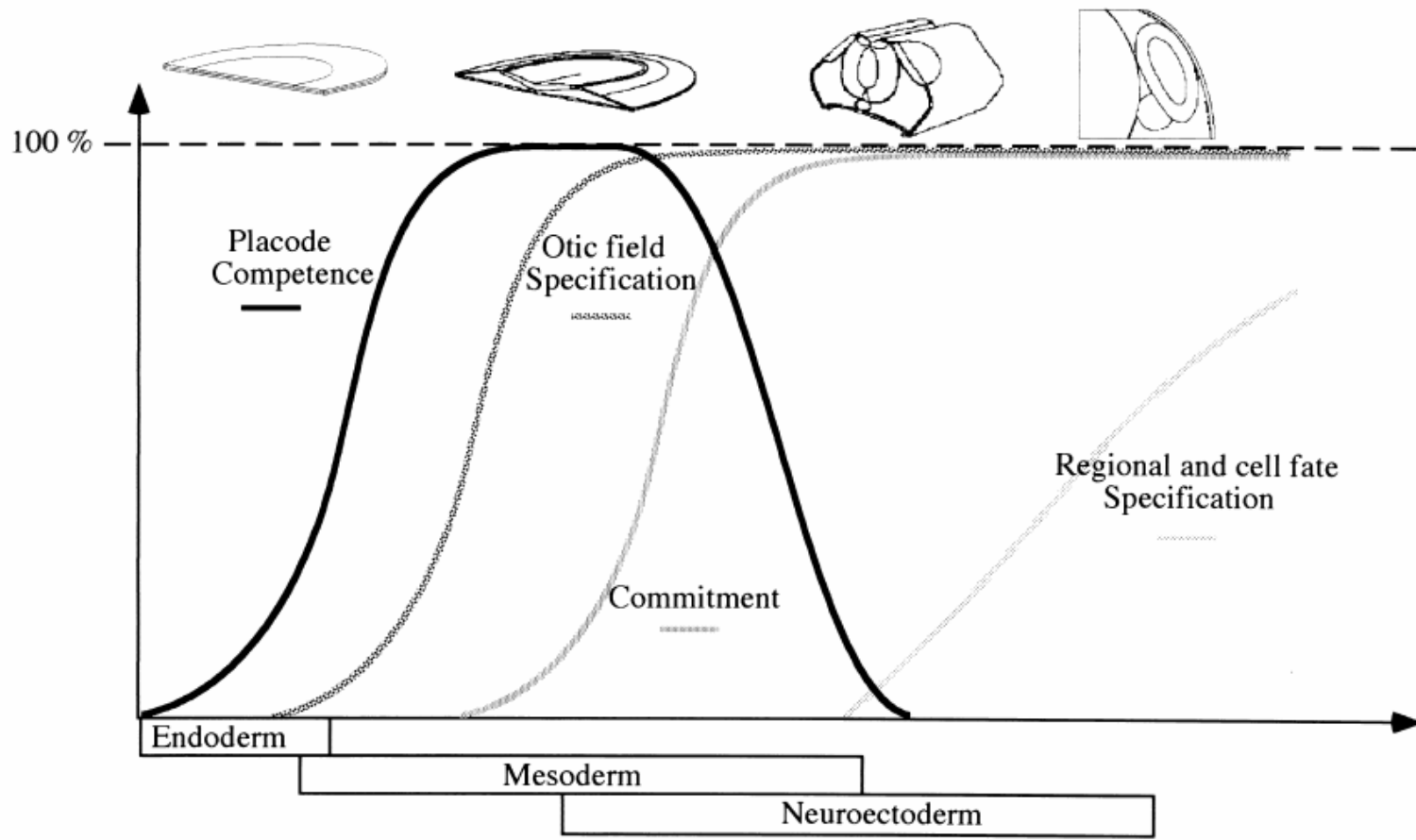


Fish Salamander Tortoise Chick Hog Calf Rabbit Human









Hair Cell formation

BDNF
Brn3c
Math1

Neurogenesis

TrkB/TrkC
Brn3a
NeuroD1
Ngn-1

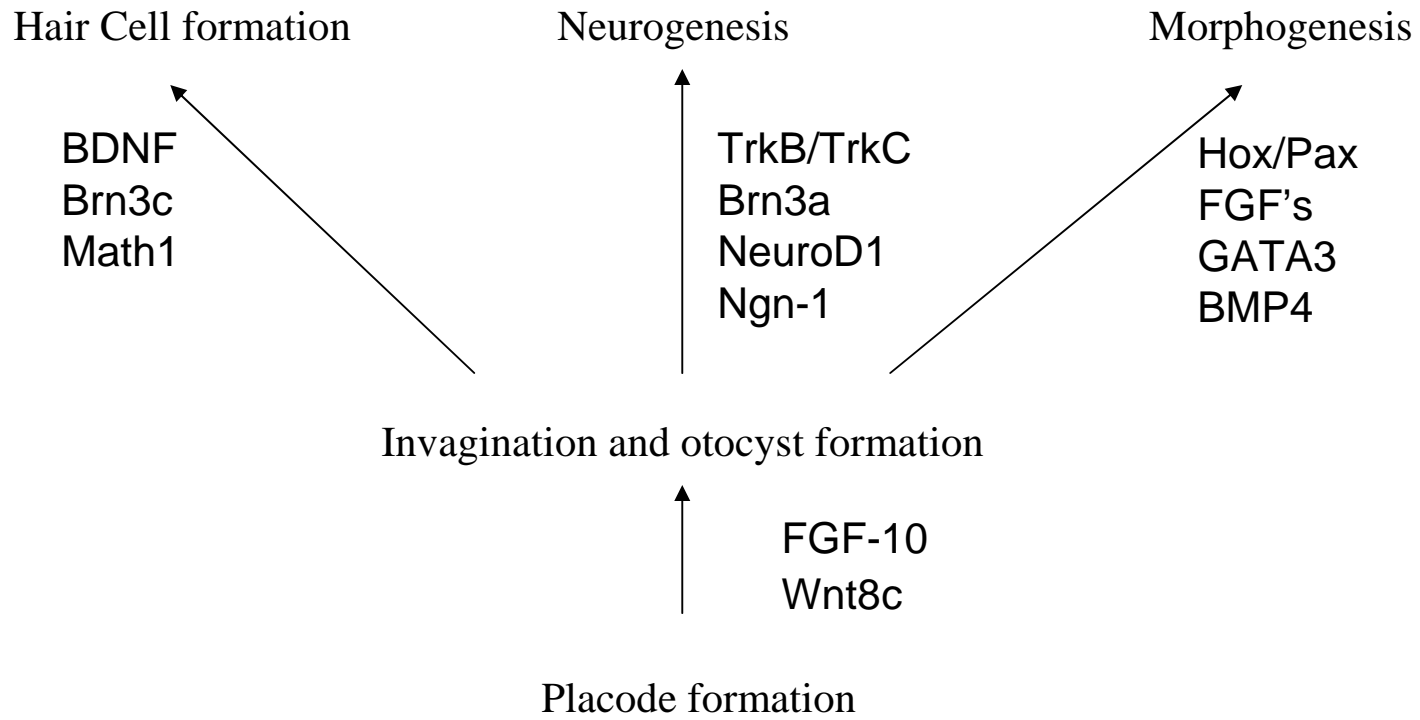
Morphogenesis

Hox/Pax
FGF's
GATA3
BMP4

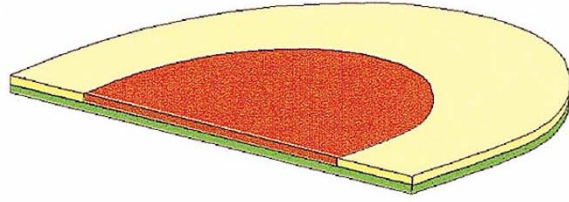
Invagination and otocyst formation

FGF-10
Wnt8c

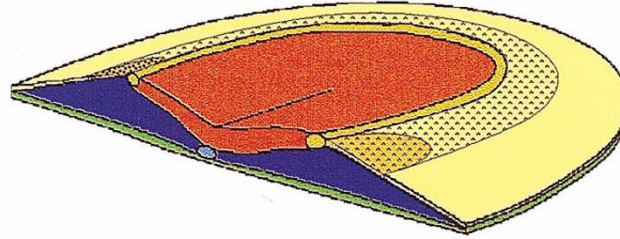
Placode formation



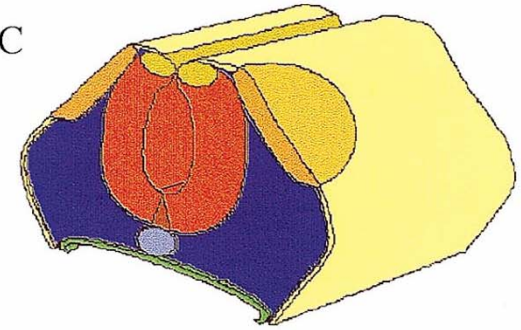
2
A



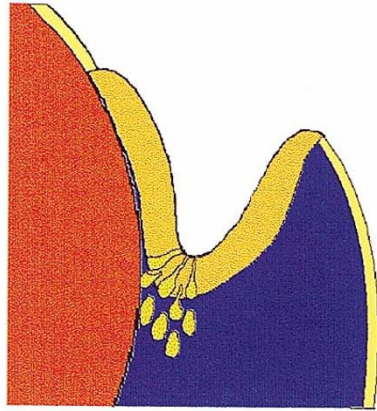
B



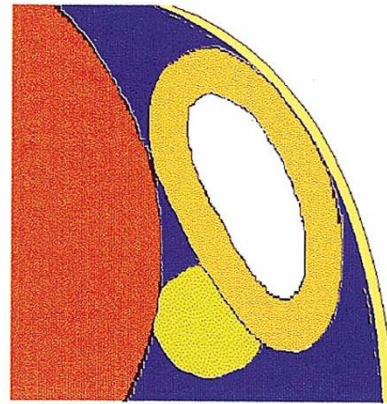
C



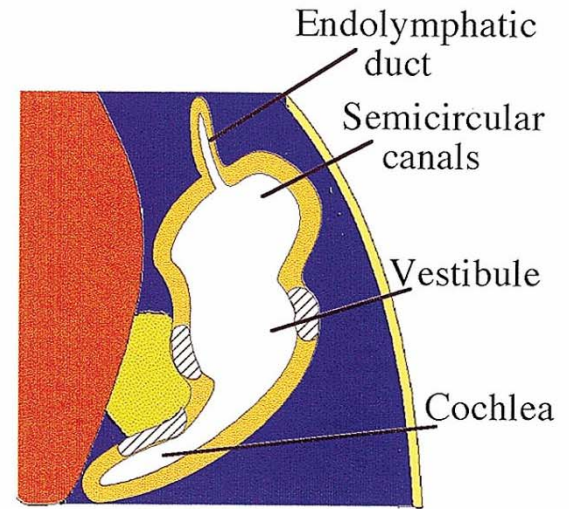
D



E



F



Neural plate or tube

Neural folds

Ectoderm

Placodal competence region

Otic primordium

Head mesenchyme

Notochord

Vestibulo-acoustic ganglion

Endoderm

Prospective sensory patches

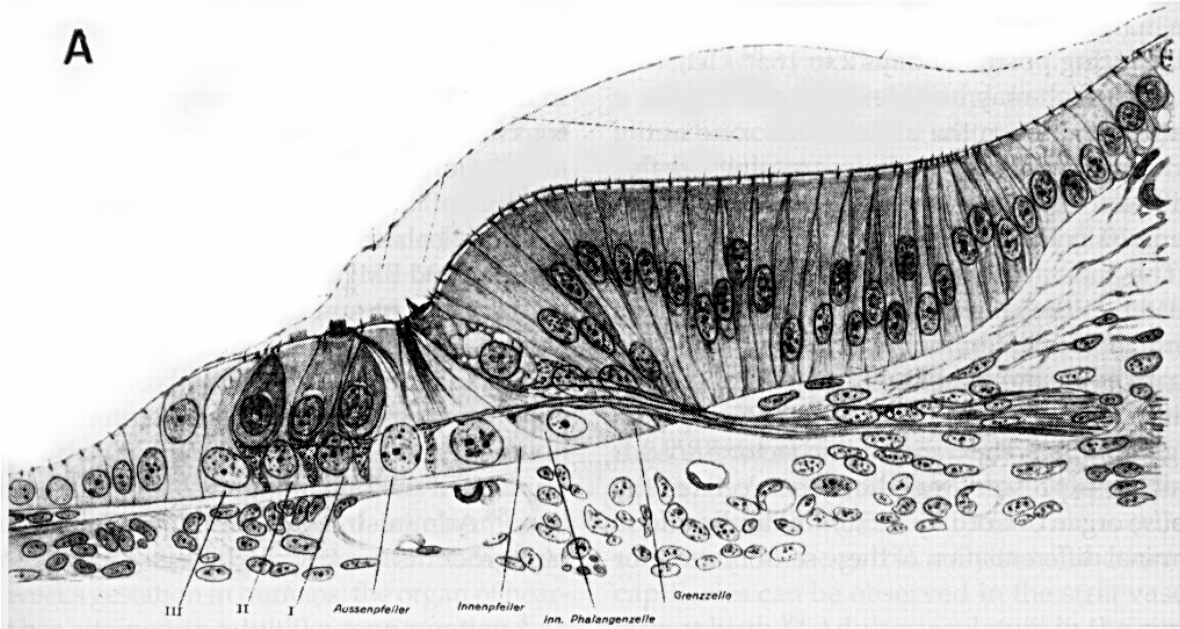
Endolymphatic duct

Semicircular canals

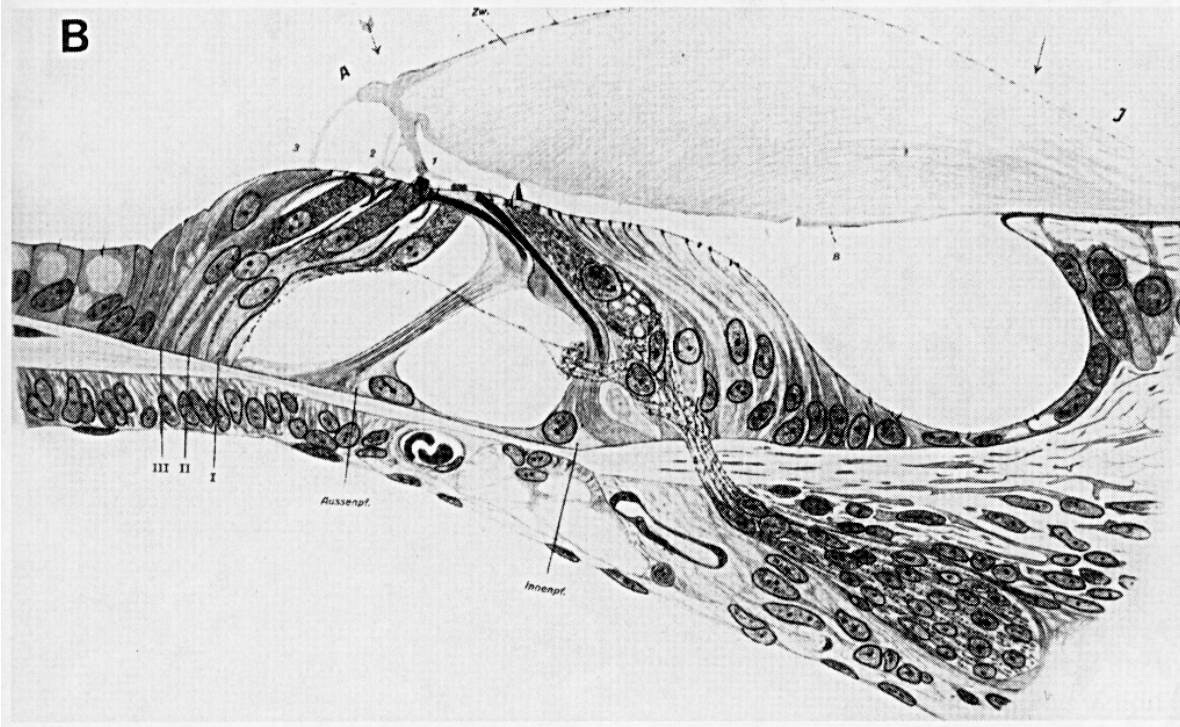
Vestibule

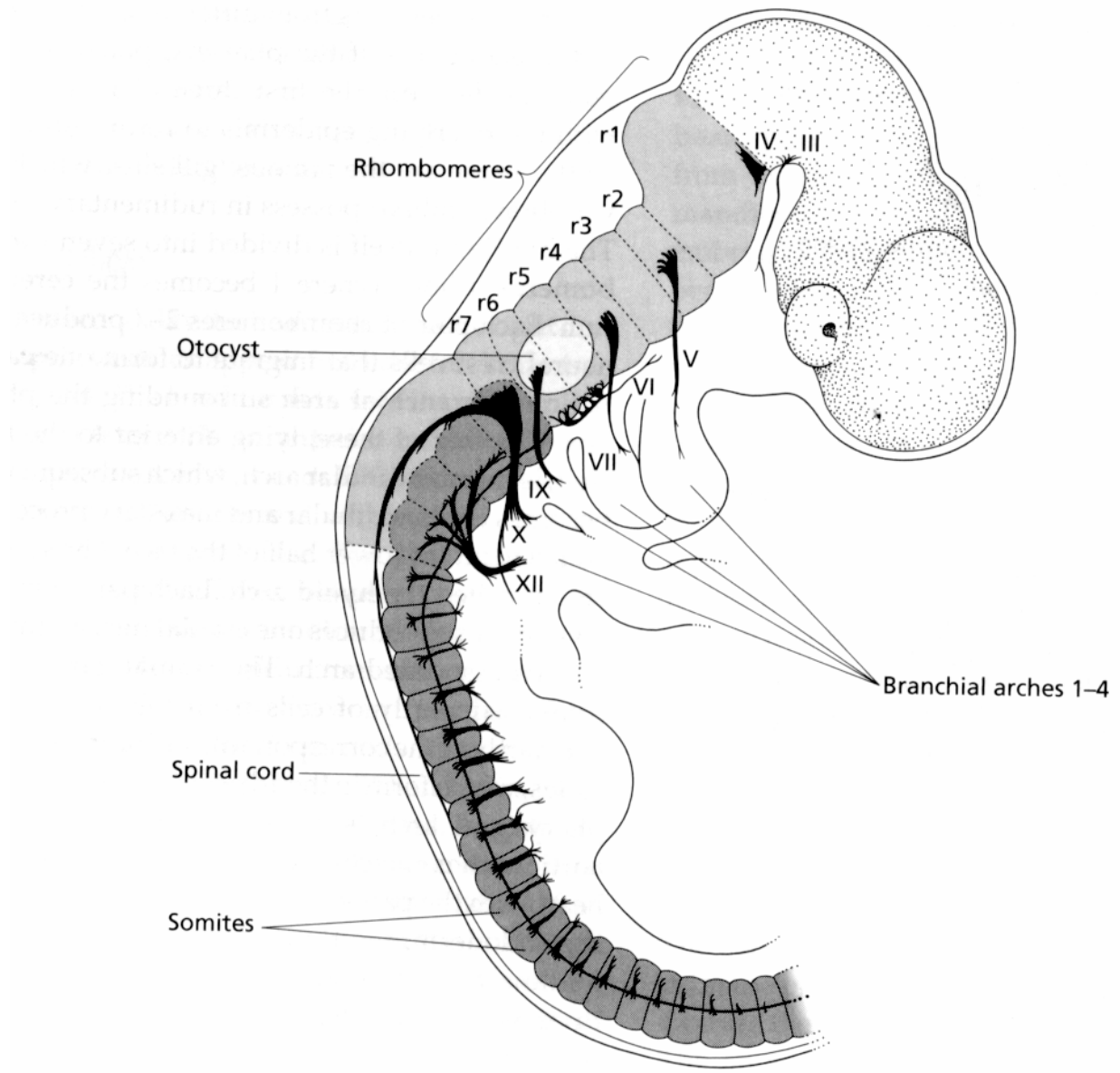
Cochlea

A

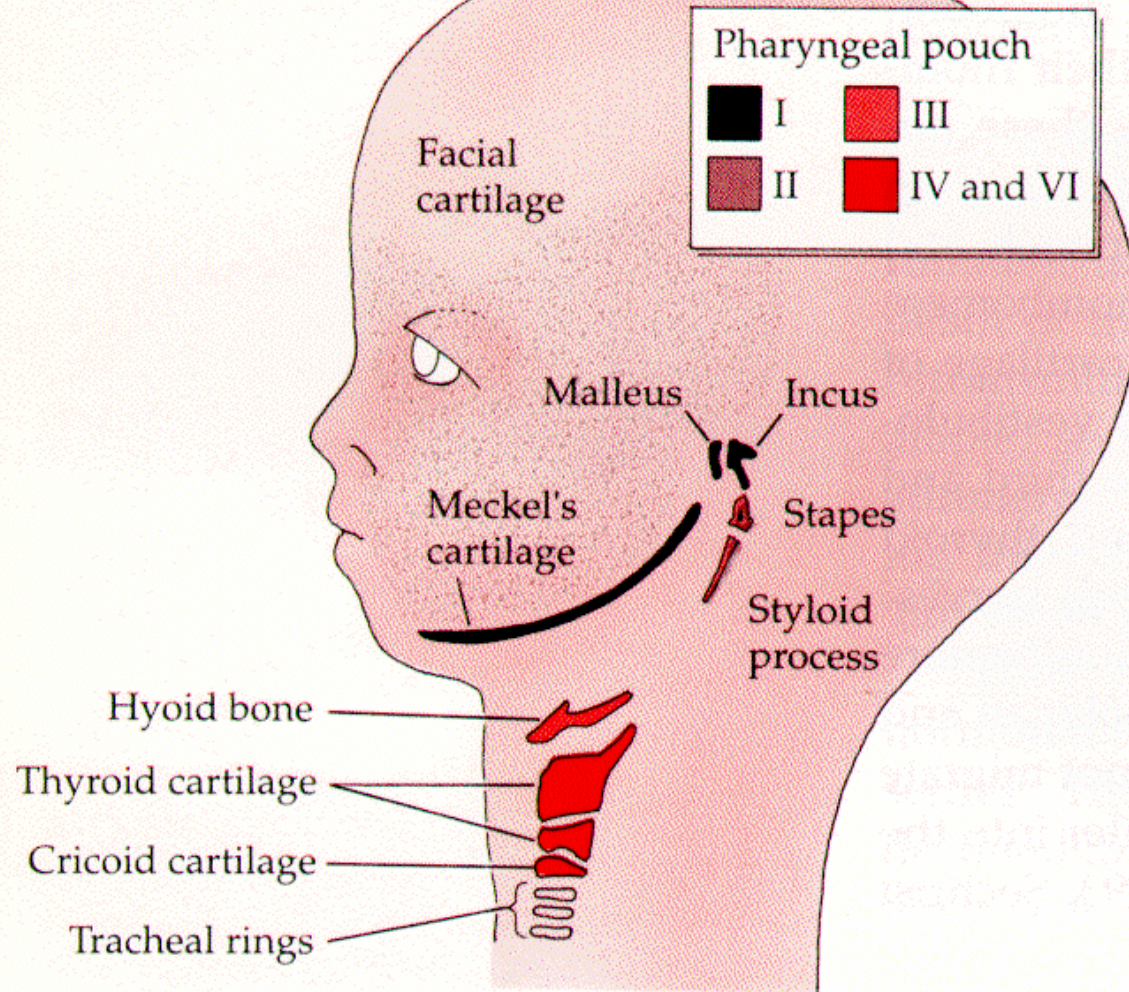


B





(C)



Pharyngeal arch	Skeletal elements (neural crest plus mesoderm)	Arches, arteries (mesoderm)	Muscles (mesoderm)	Cranial nerves (neural tube)
1	Incus and malleus (from neural crest); mandible, maxilla, and temporal bone regions (from crest dermal mesenchyme)	Maxillary branch of the carotid artery (to the ear, nose, and jaw)	Jaw muscles; floor of mouth; muscles of the ear and soft palate	Maxillary and mandibular divisions of trigeminal nerve (V)
2	Stapes bone of the middle ear; styloid process of temporal bone; part of hyoid bone of neck (all from neural crest cartilage)	Arteries to the ear region: cortico-tympanic artery (adult); stapedia artery (embryo)	Muscles of facial expression; jaw and upper neck muscles	Facial nerve (VII)
3	Lower rim and greater horns of hyoid bone (from neural crest)	Common carotid artery; root of internal carotid	Stylopharyngeus (to elevate the pharynx)	Glossopharyngeal nerve (IX)
4	Laryngeal cartilages (from lateral plate mesoderm)	Arch of aorta; right subclavian artery; original spouts of pulmonary arteries	Constrictors of pharynx and vocal cords	Superior laryngeal branch of vagus nerve (X)
6	Laryngeal cartilages (from lateral plate mesoderm)	Ductus arteriosus; roots of definitive pulmonary arteries	Intrinsic muscles of larynx	Recurrent laryngeal branch of vagus nerve (X)