

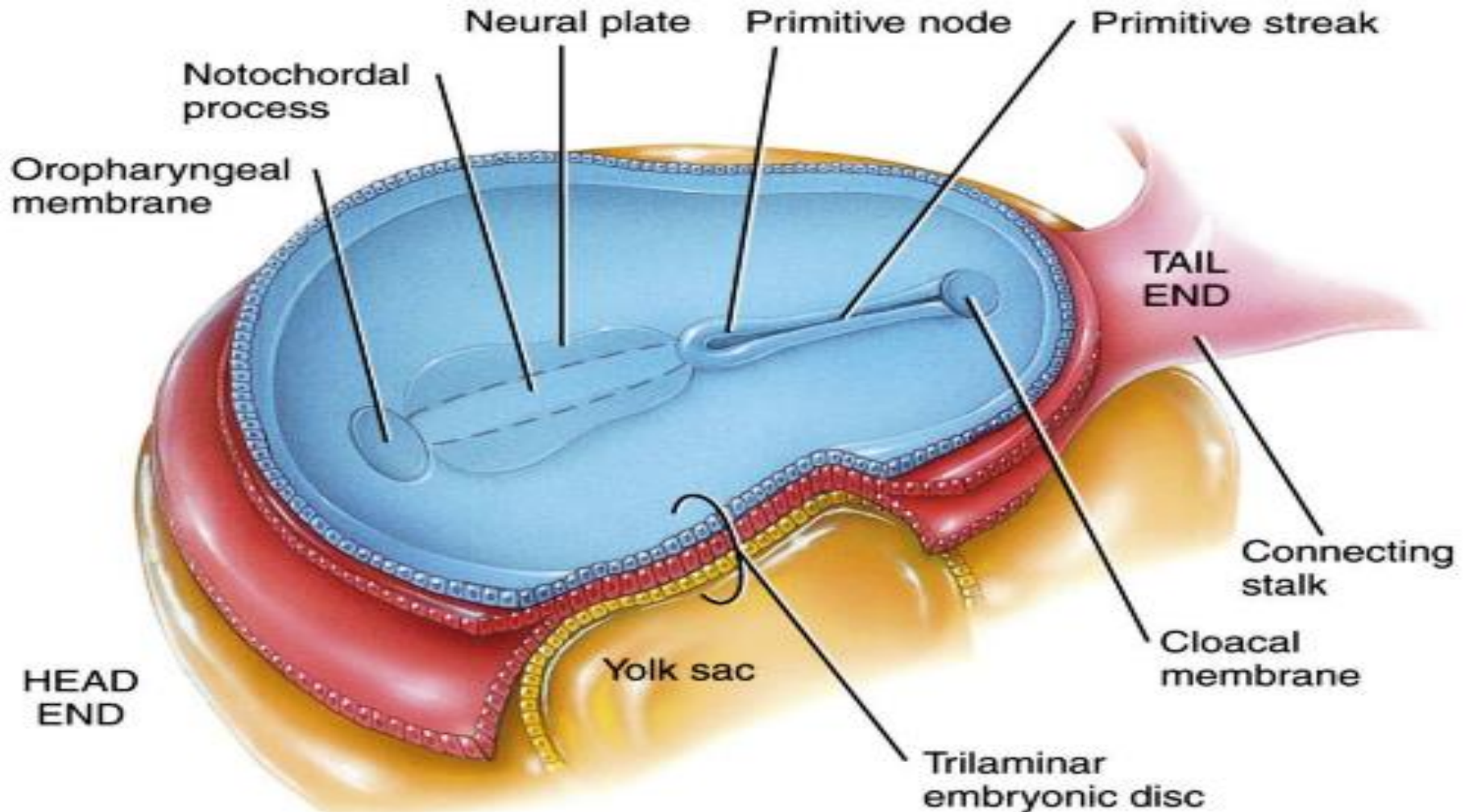
# PHARYNGEAL APPARATUS 1



BY

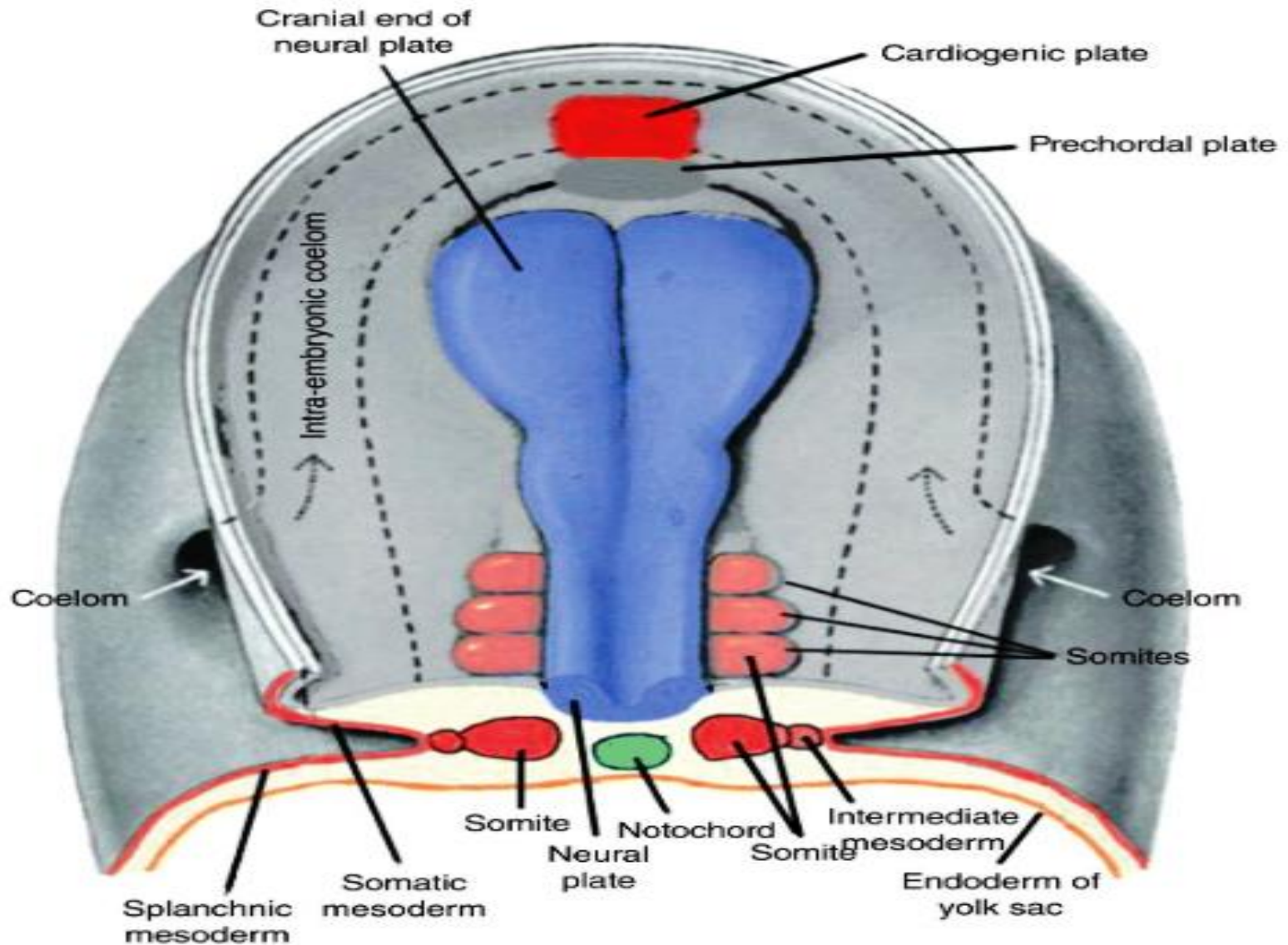
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REV.



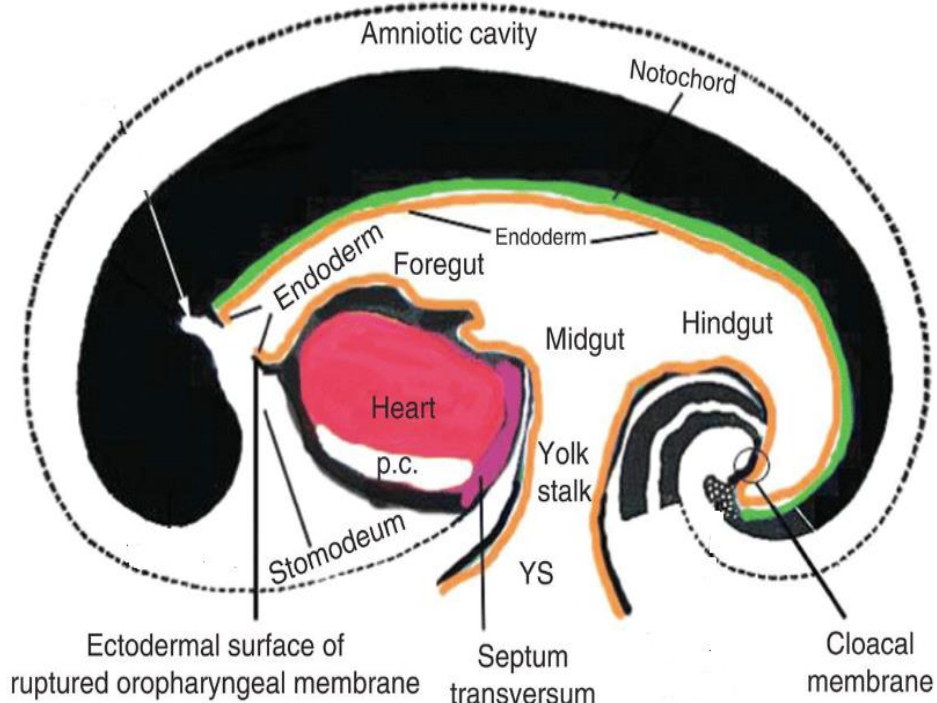
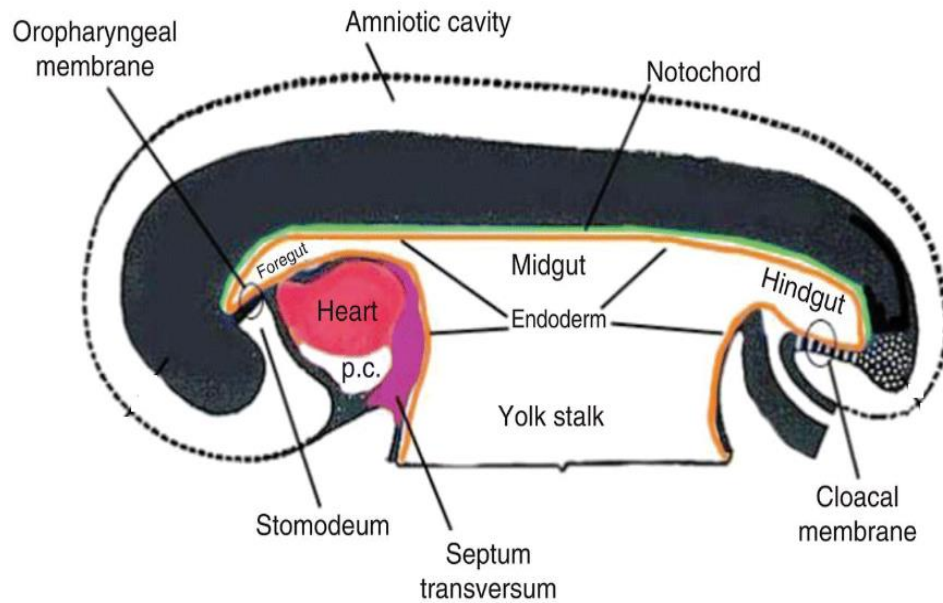
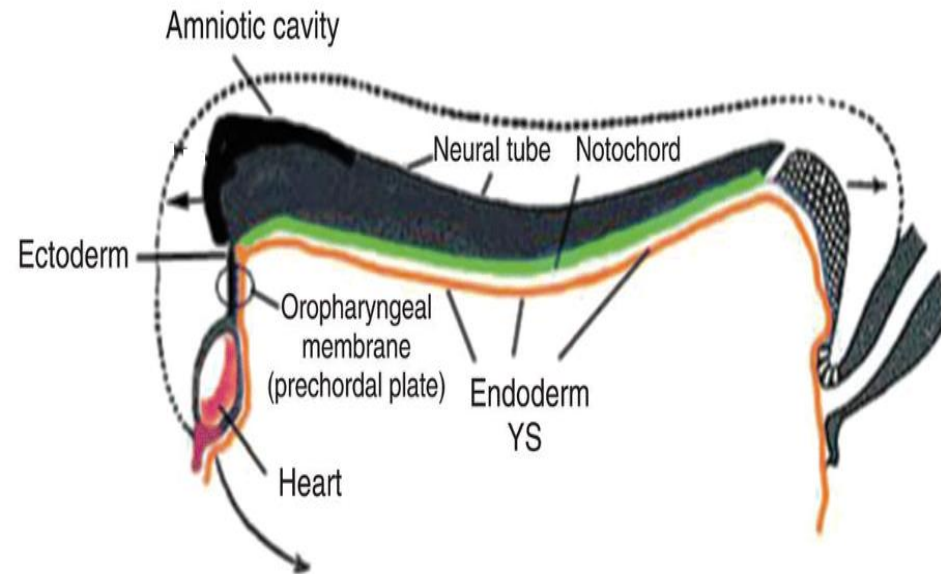
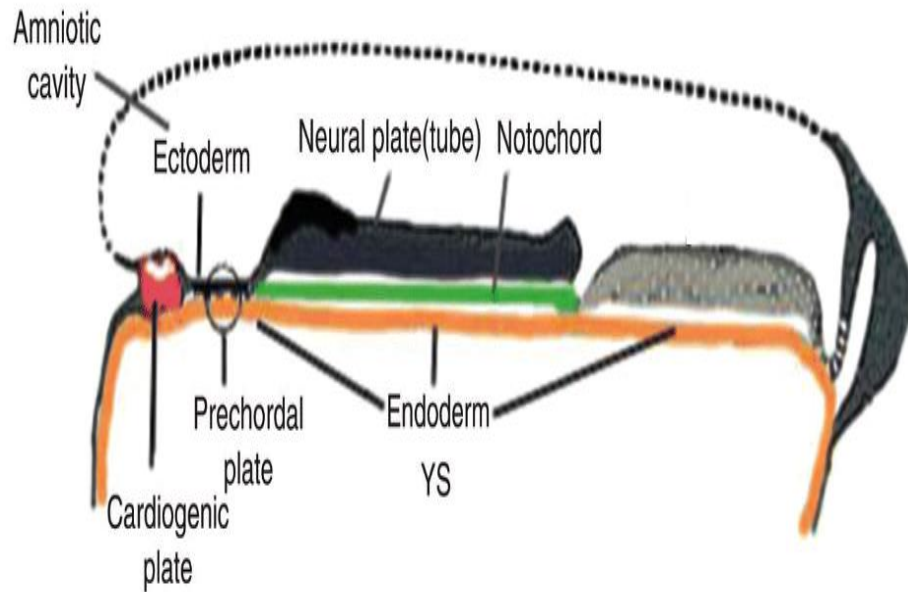
(a) Dorsal and partial sectional views of trilaminar embryonic disc, about 16 days after fertilization

# REV.



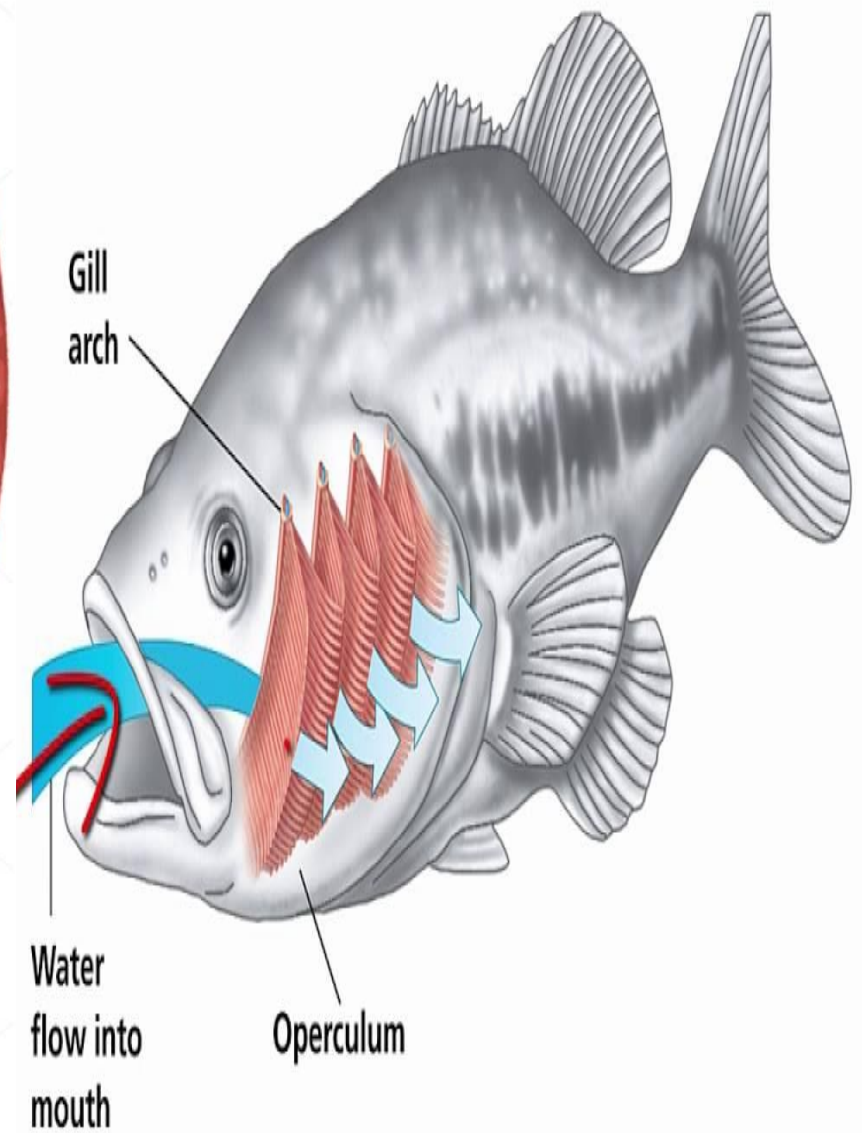
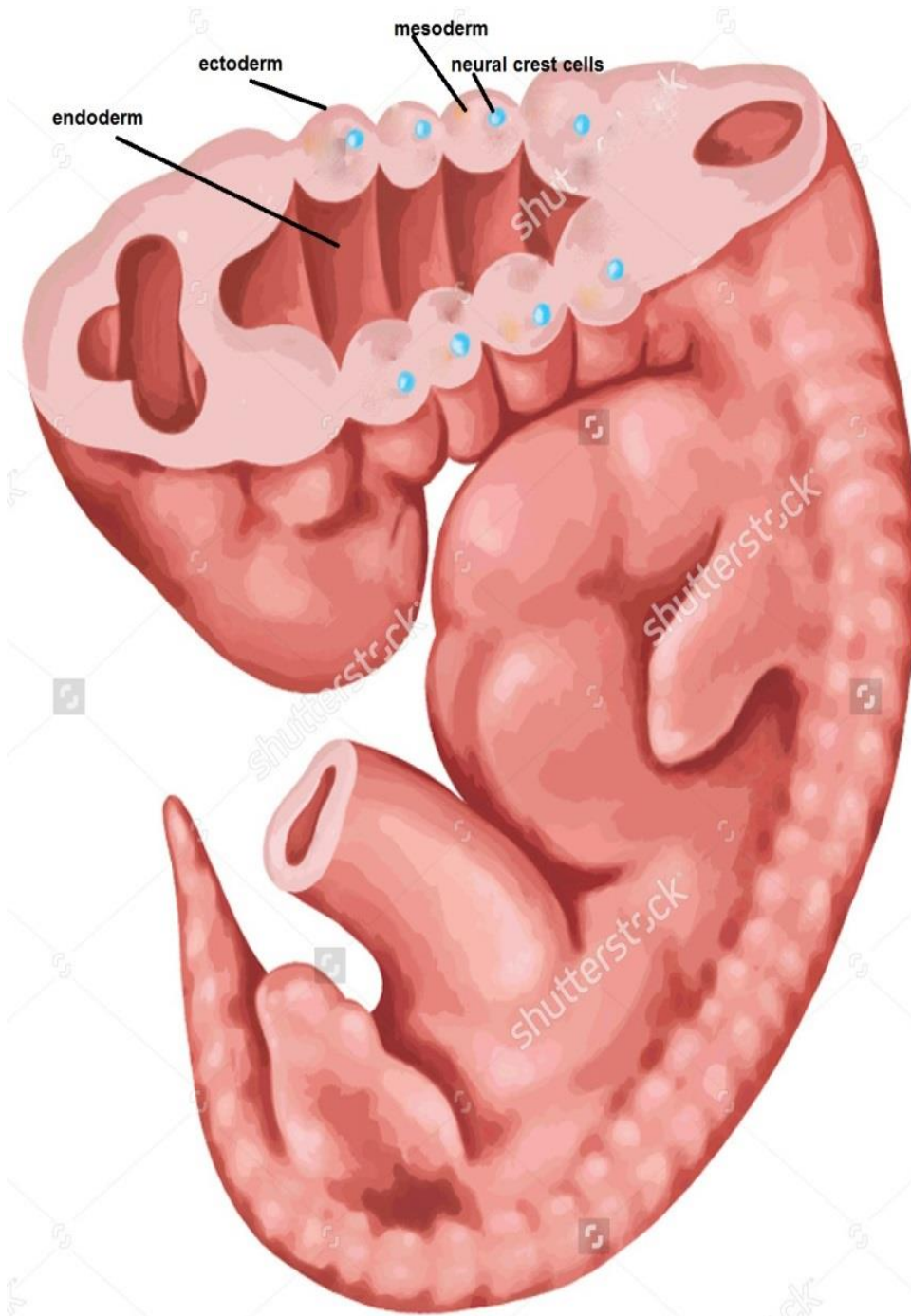


# REV.









# PHARYNGEAL ARCHES

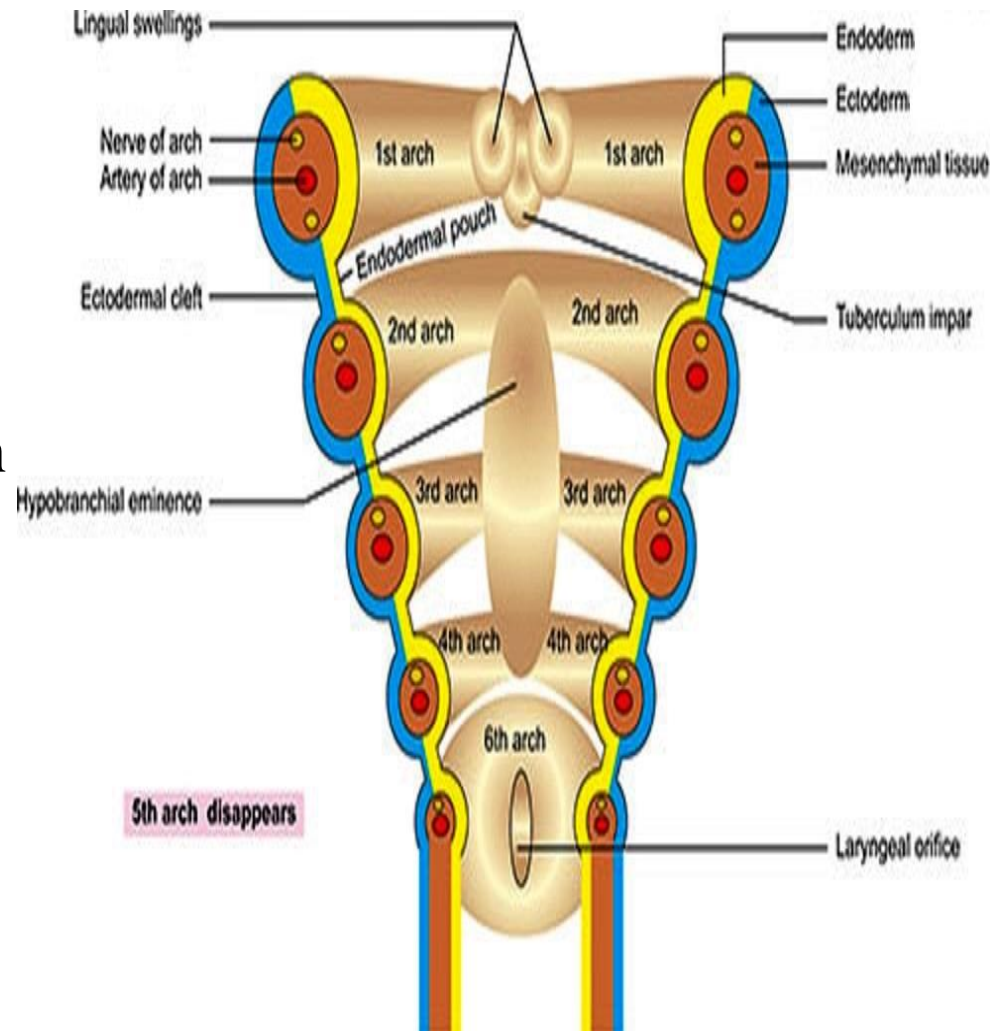
**Def.:** 6 pairs of cylindrical thickenings in side wall of primitive pharynx

## Formation:

- thickening of the mesoderm in side wall of primitive pharynx at 6 sites
- neural crest cells migrate to the core of mesoderm of the arch

**Structure:** from inside to outside

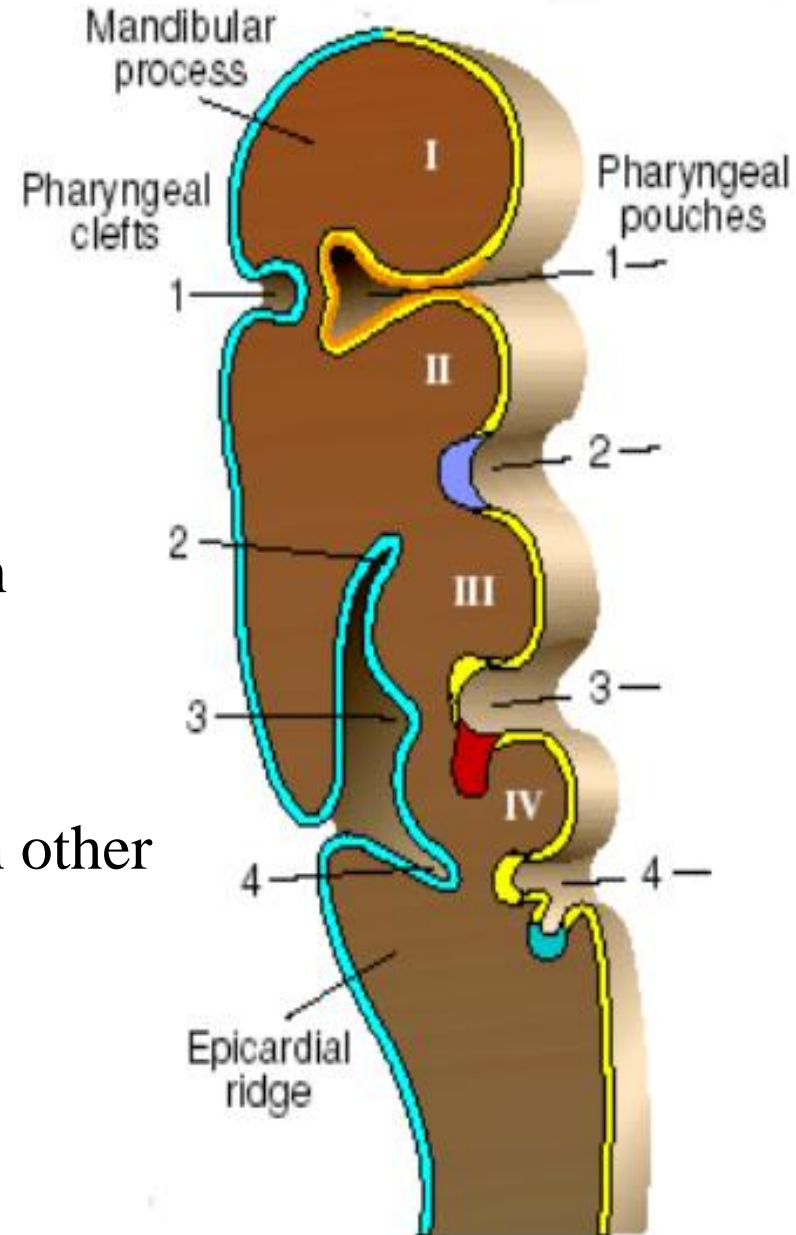
- endoderm of primitive pharynx
- mesoderm
- core of neural crest cells
- ectoderm of side of neck



# PHARYNGEAL ARCHES

## Features:

- They appear in craniocaudal order as the 1<sup>st</sup> arch is the most cranial and the 6<sup>th</sup> arch is the most caudal  
**N.B.** 1<sup>st</sup> arch is called mandibular arch  
2<sup>nd</sup> arch is called hyoid arch
- Internally They are separated from each other by grooves called pharyngeal pouches that are lined by endoderm
- Externally they are separated from each other by grooves called pharyngeal clefts that are lined by ectoderm

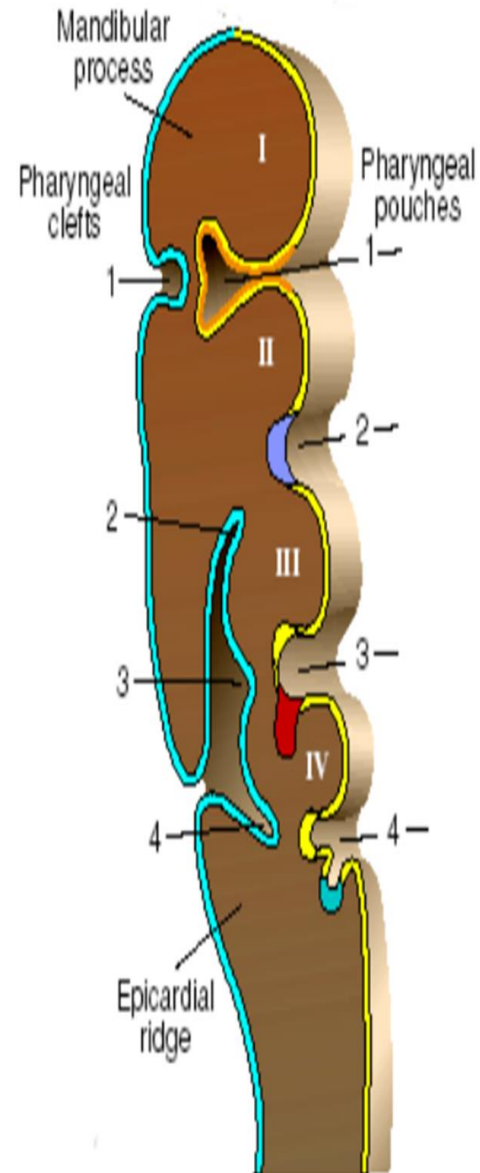
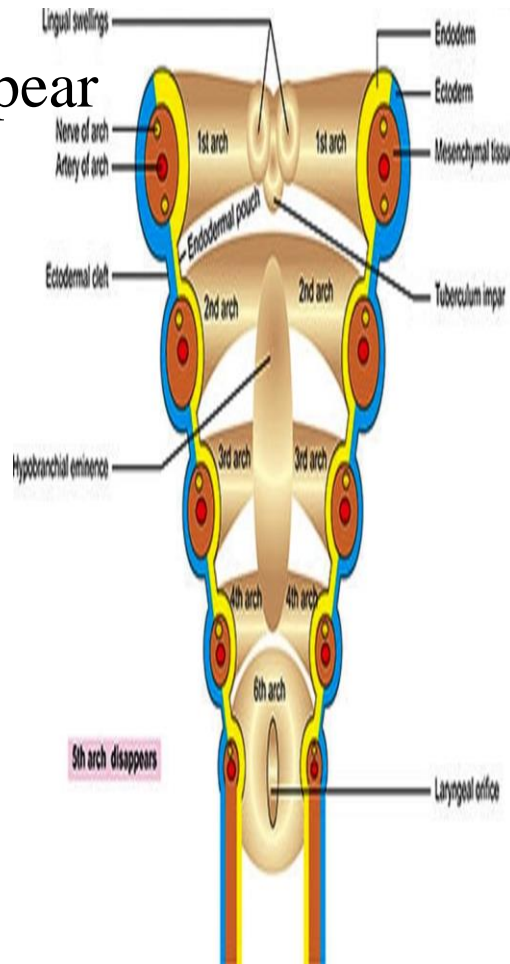




# PHARYNGEAL ARCHES

## Features:

- 5th arch is rudimentary & disappear
- 6<sup>th</sup> arch is not prominent
- 1<sup>st</sup> arch is the most prominent
- The 2<sup>nd</sup> arch grow caudally over the other arches forming cervical sinus on side of neck



# PHARYNGEAL ARCHES

## Fate:

- The neural crest cells:-

forms the skeletal component of neck & face

- The mesoderm:-

form the muscular component of neck & face

- The Ectoderm:-

forms the skin of side of neck & face

N.B: muscular component of each arch has its own

- blood supply: one of aortic arches

- nerve // : cranial nerves

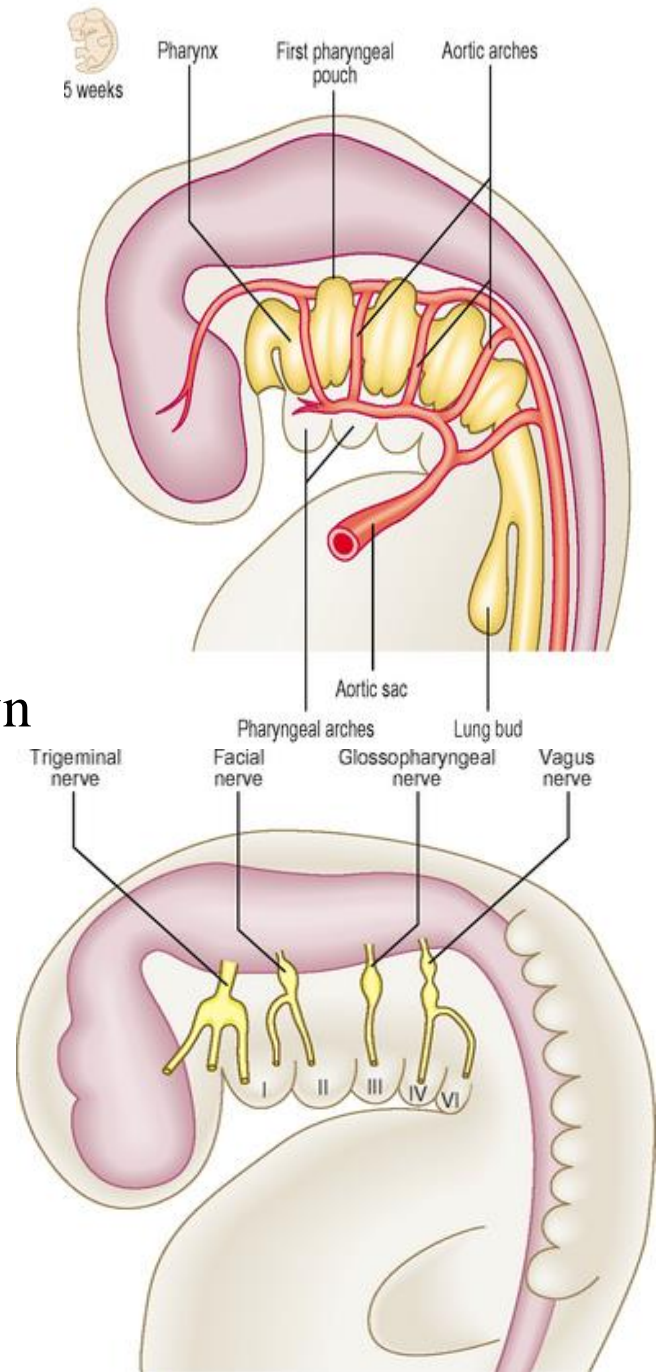
1st supplied by mandibular of trigeminal n.

2nd // // facial n.

3rd // // glossopharyngeal n.

4th // // superior laryngeal of vagus n.

6th // // recurrent laryngeal of vagus n.



# PHARYNGEAL ARCHES

## Derivatives

1st pharyngeal arch:

skeletal component:

arise from (Meckel's cartilage)

incus, malleus

ant. lig. of malleus

sphenomandibular lig.

Mandible, maxilla,  
zygomatic bone , temporal bone

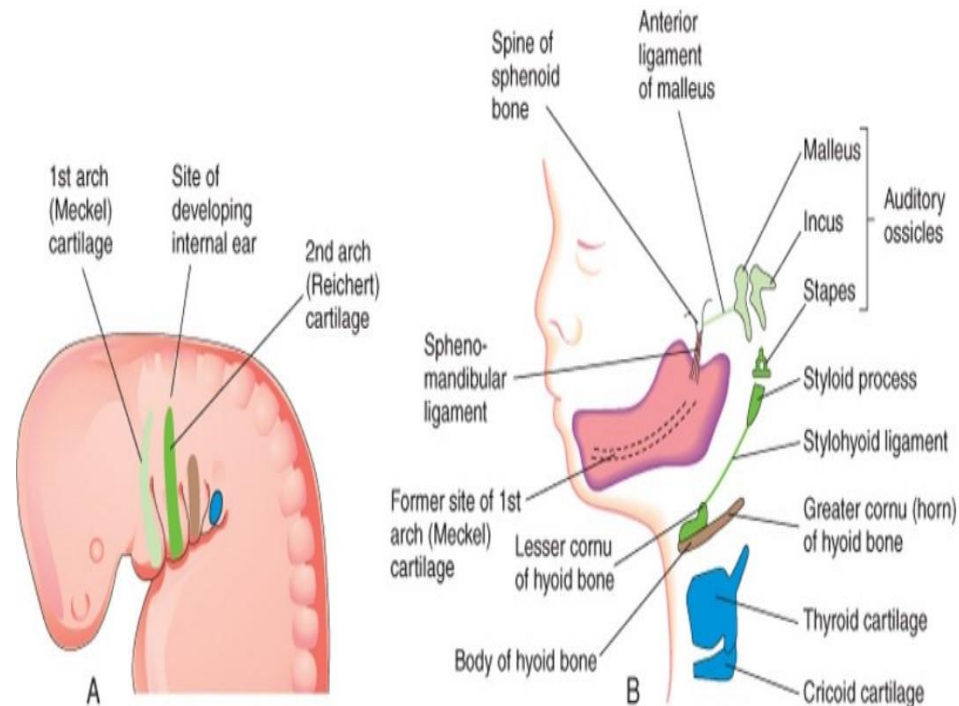
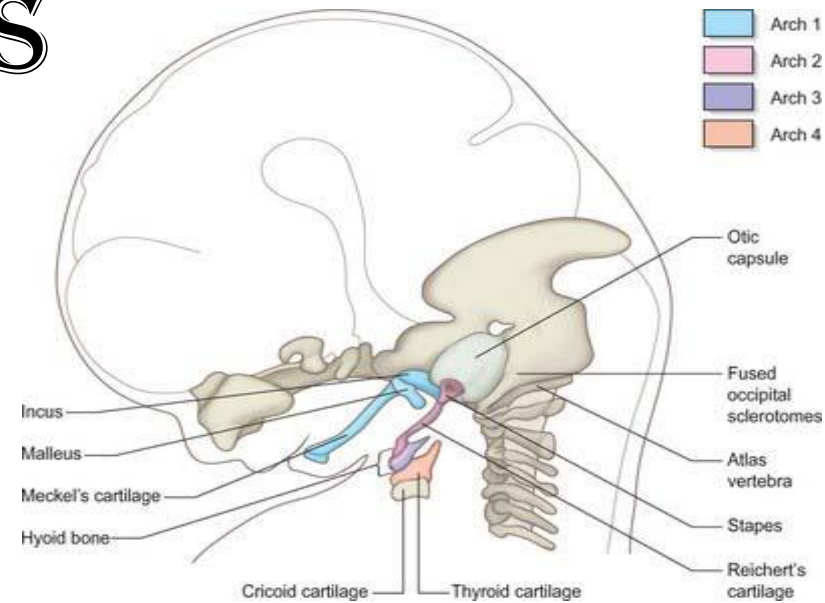
muscular component

medial pterygoid, lateral pterygoid

masseter, temporalis

tensor palate & tympani

mylohyoid & ant. belly of digastric





# PHARYNGEAL ARCHES

## Derivatives

2nd pharyngeal arch

skeletal component: Reichert's cartilage

stapes

styloid process

stylohyoid lig

lesser horn & upper part of body of hyoid

muscular component

occipito frontalis

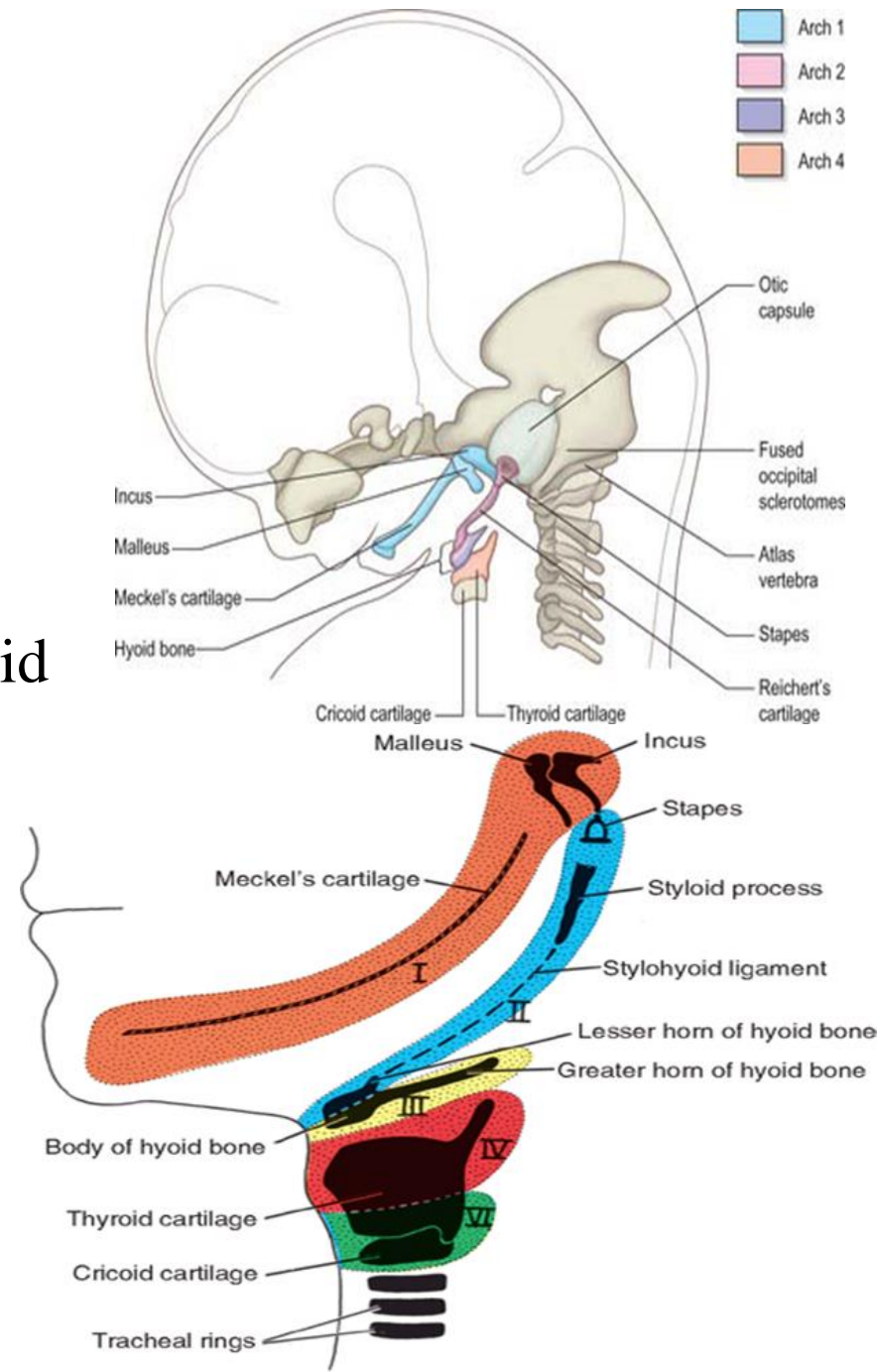
muscle of face

stapedius

stylohyoid

post. belly of digastric

platysma



# PHARYNGEAL ARCHES

## Derivatives

3rd pharyngeal arch

skeletal component:

greater horn & lower part of body of hyoid bone

muscular component :- stylopharyngeus

4<sup>th</sup> & 6<sup>th</sup> pharyngeal arch

skeletal component :- cartilage of larynx except epiglottis

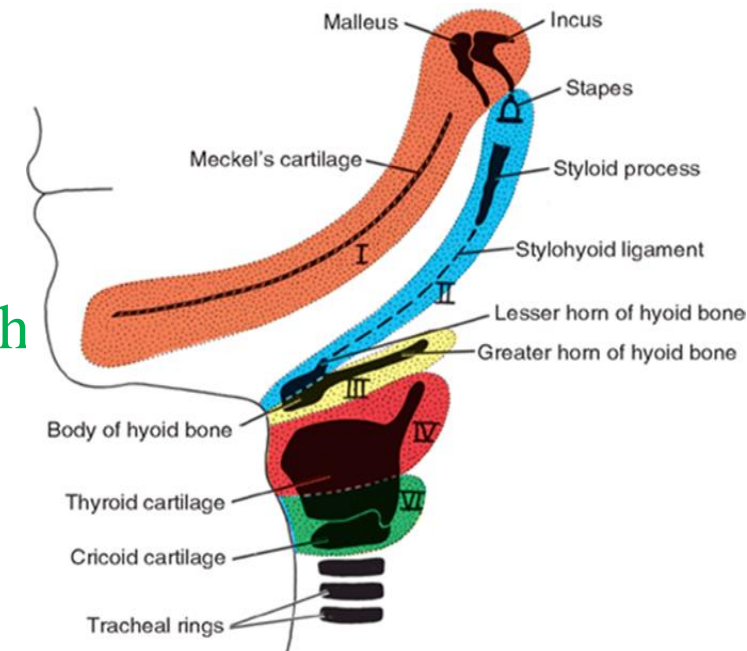
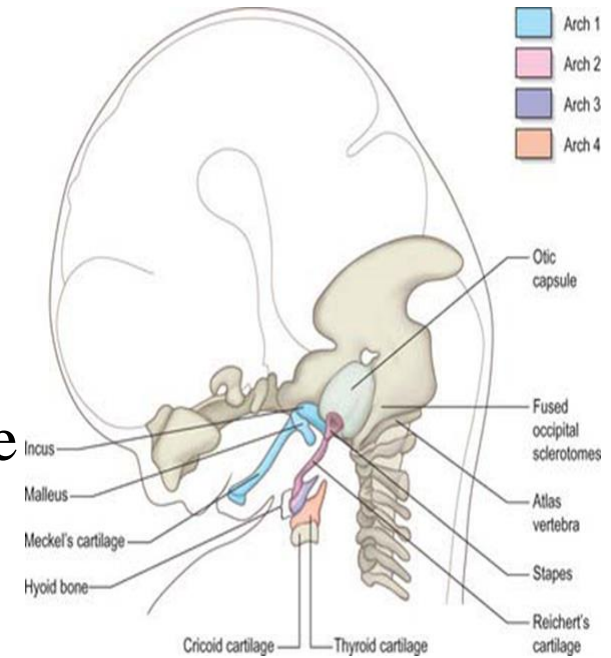
muscular component of the 4<sup>th</sup> arch

cricothyroid muscle of larynx

constrictor muscles of pharynx

muscular components of 6<sup>th</sup> pharyngeal arch

All muscles of larynx except cricothyroid



# PHARYNGEAL ARCHES

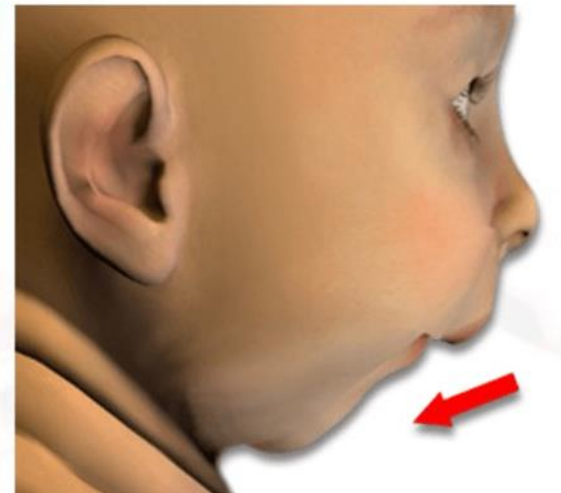
## Congenital anomalies of 1<sup>st</sup> pharyngeal arch

### Treacher-Collins syndrome

- Deformed ear.
- Hypoplasia of the zygomatic bone.
- Defect of the lower eye lid.

### Pierre Robin syndrome

- Abnormalities of the ear and eye.
- Hypoplasia of the mandible.
- Cleft palate.
- a tongue that falls back in the throat, and difficulty breathing





THANK