DEVELOPMENT OF THE FACE

BY

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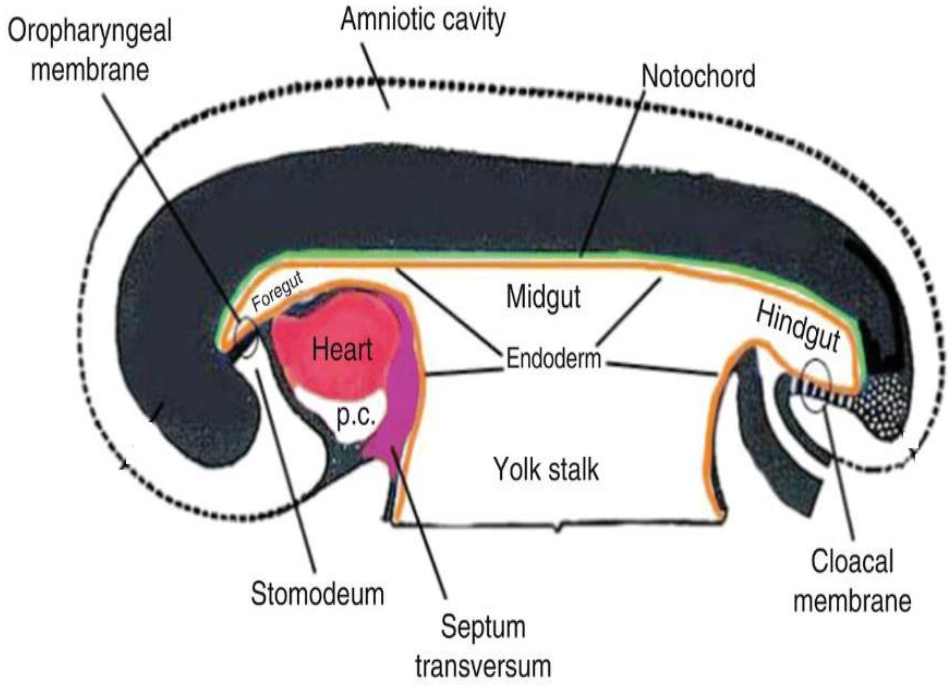
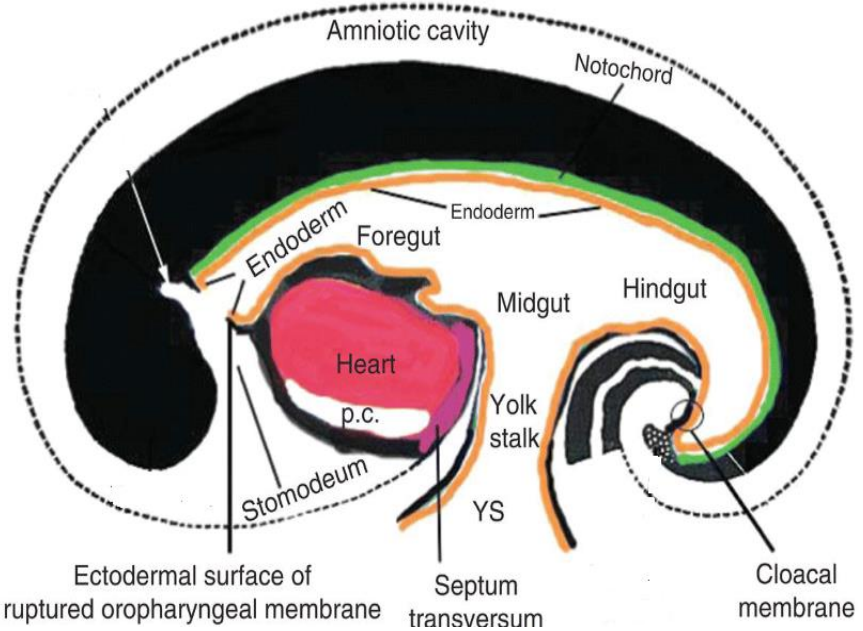
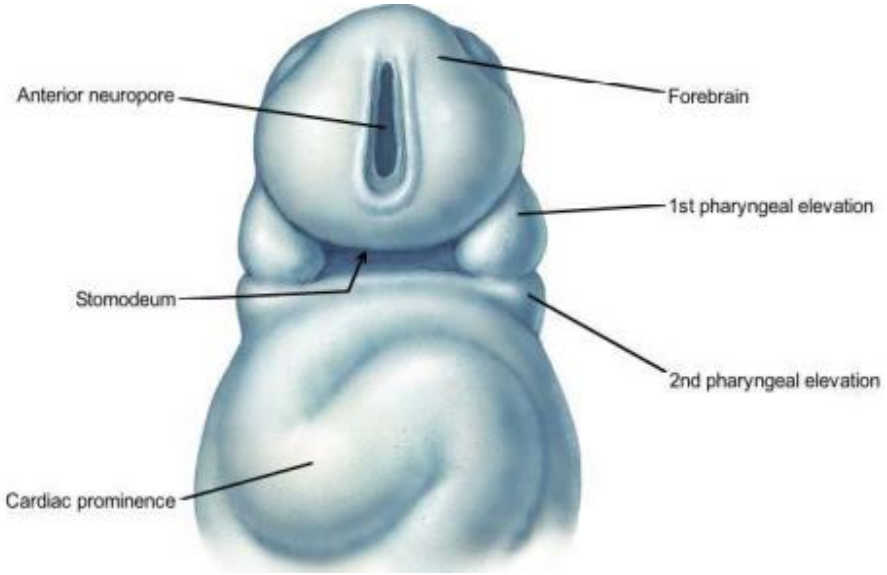
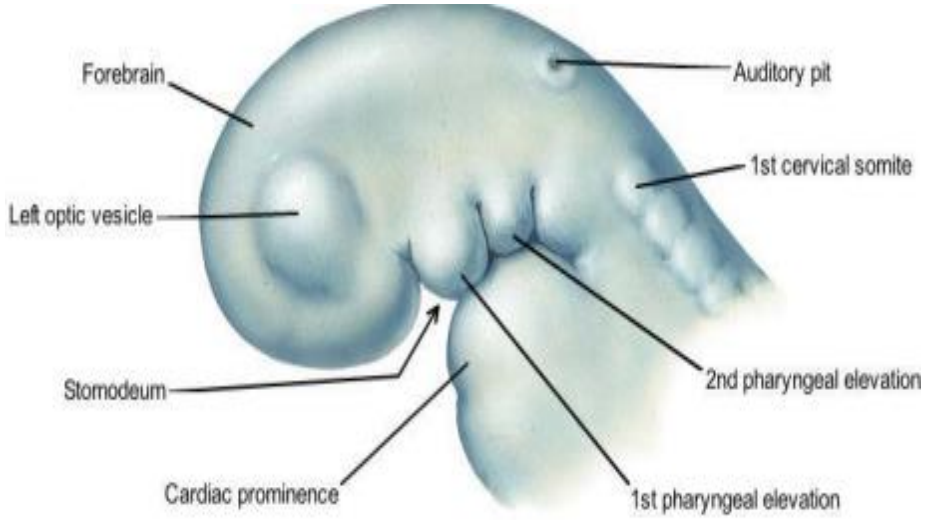
REV.


Oropharyngeal membrane
Amniotic cavity
Notochord
Foregut
Heart
p.c.
Midgut
Endoderm
Hindgut
Yolk stalk
Stomodeum
Septum transversum
Cloacal membrane


Amniotic cavity
Notochord
Endoderm
Endoderm
Foregut
Midgut
Hindgut
Heart
p.c.
Yolk stalk
Stomodeum
YS
Ectodermal surface of ruptured oropharyngeal membrane
Septum transversum
Cloacal membrane


Anterior neuropore
Forebrain
1st pharyngeal elevation
Stomodeum
2nd pharyngeal elevation
Cardiac prominence


Forebrain
Auditory pit
1st cervical somite
Left optic vesicle
Stomodeum
2nd pharyngeal elevation
Cardiac prominence
1st pharyngeal elevation

DEVELOPMENTAL SOURCES OF THE FACE

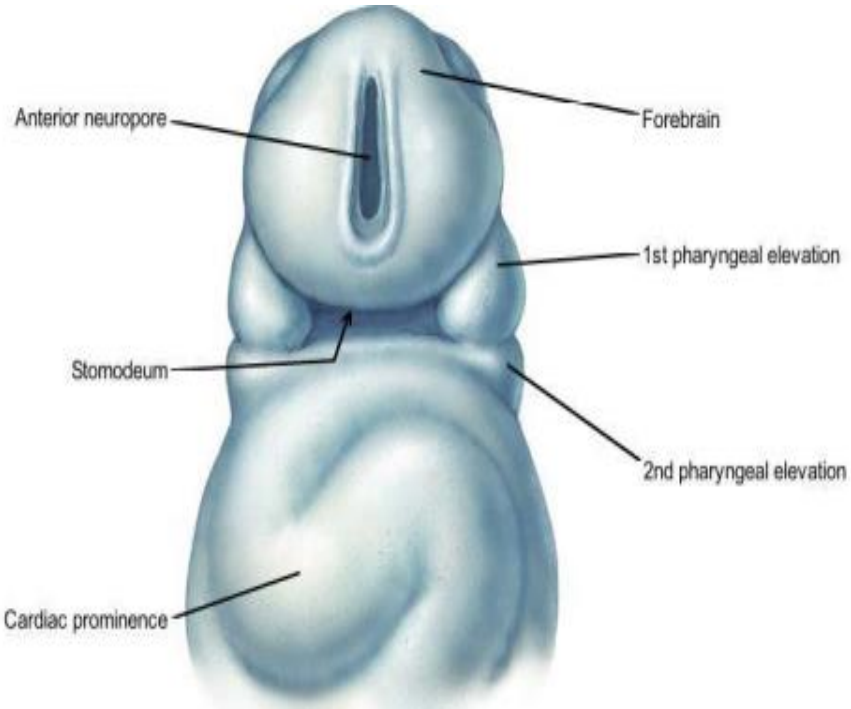
- Appearance of the Stomodeum(primitive mouth)

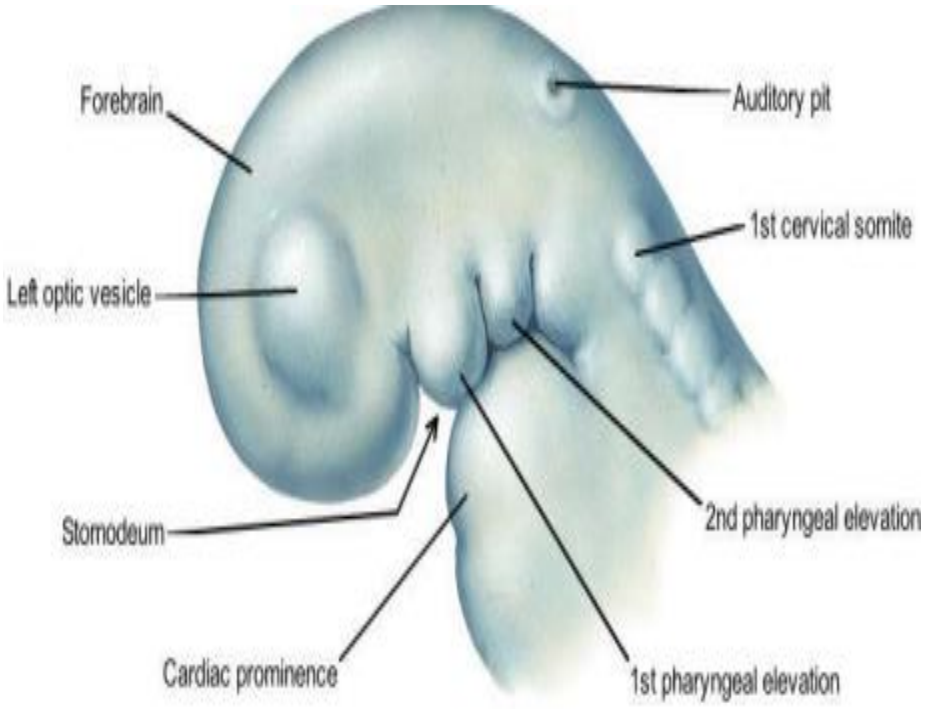
which is a depression between the forebrain bulge and cardiac bulge

Floored by buccopharyngeal membrane

- Appearance of the pharyngeal arches

on either side of the pharynx





DEVELOPMENTAL SOURCES OF THE FACE

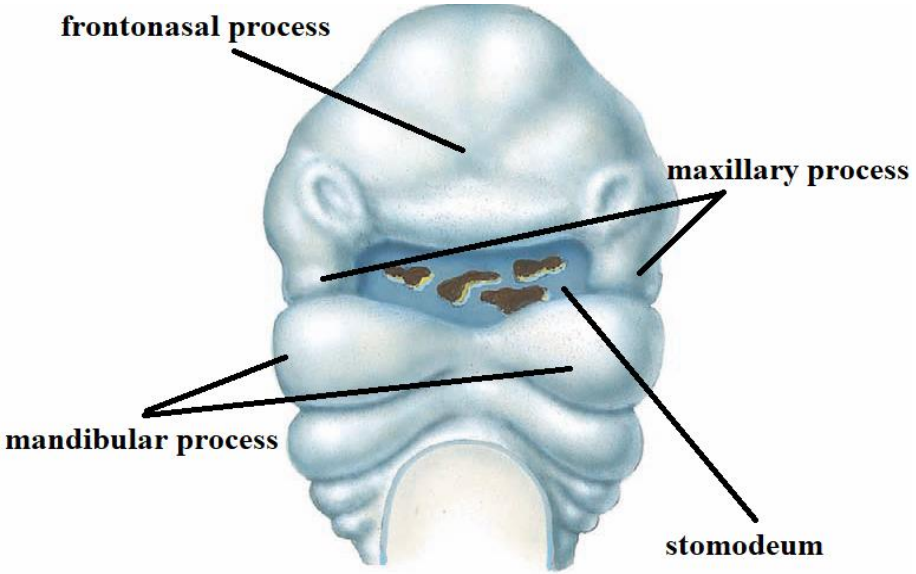
- The 1st pharyngeal arch develops 2 processes
  maxillary and mandibular process
- The stomodeum is surrounded by 5 swellings:- which are

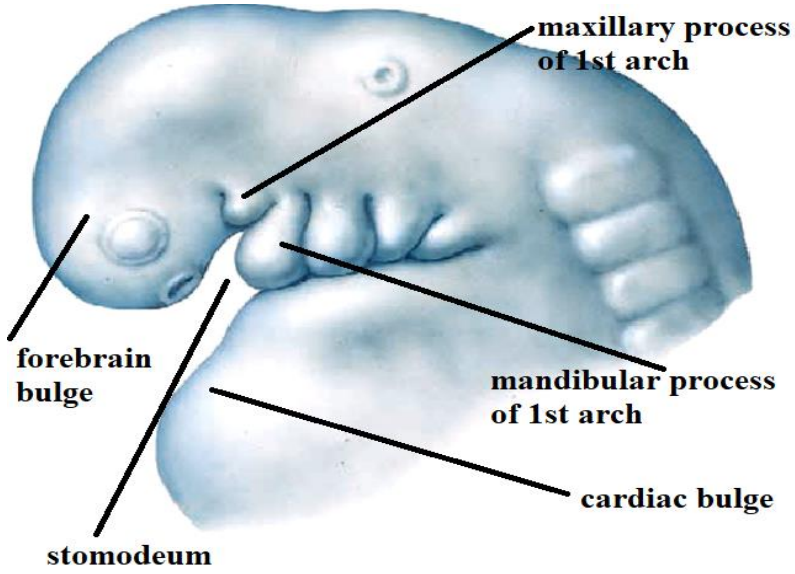
1Frontonasal process above the stomodeum.

2 maxillary swellings from the 1st pharyngeal arch. On each side

2 mandibular swellings from the 1st pharyngeal arch. Below the stomodeum

THE FACE IS DEVELOPED FROM THESE 5 PROCESSES



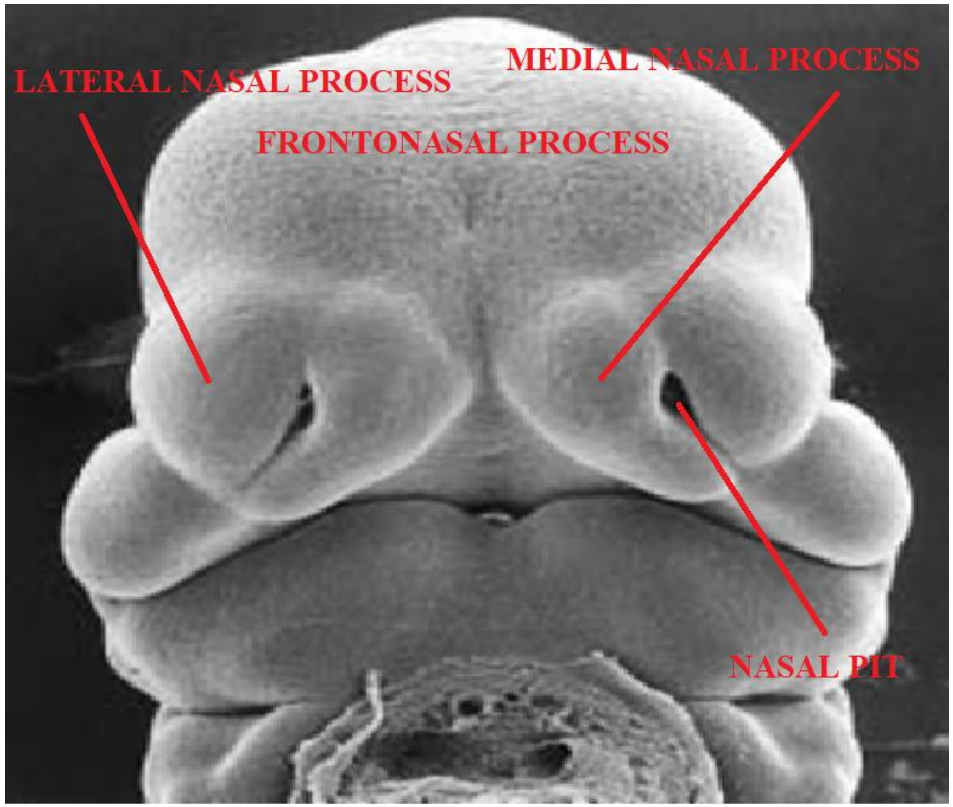


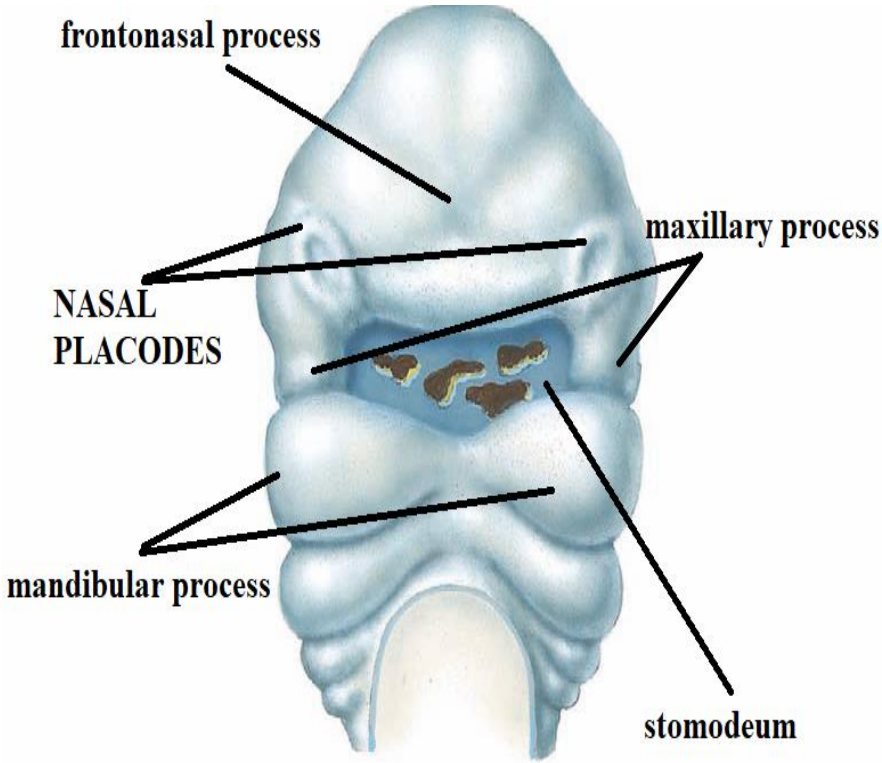
DEVELOPMENT OF THE FACE

- The ectoderm on either side of lower part of the frontonasal process is thickened to form **2 nasal placodes**
- Invagination of the nasal placodes leading to

A- formation of the **nasal pits**

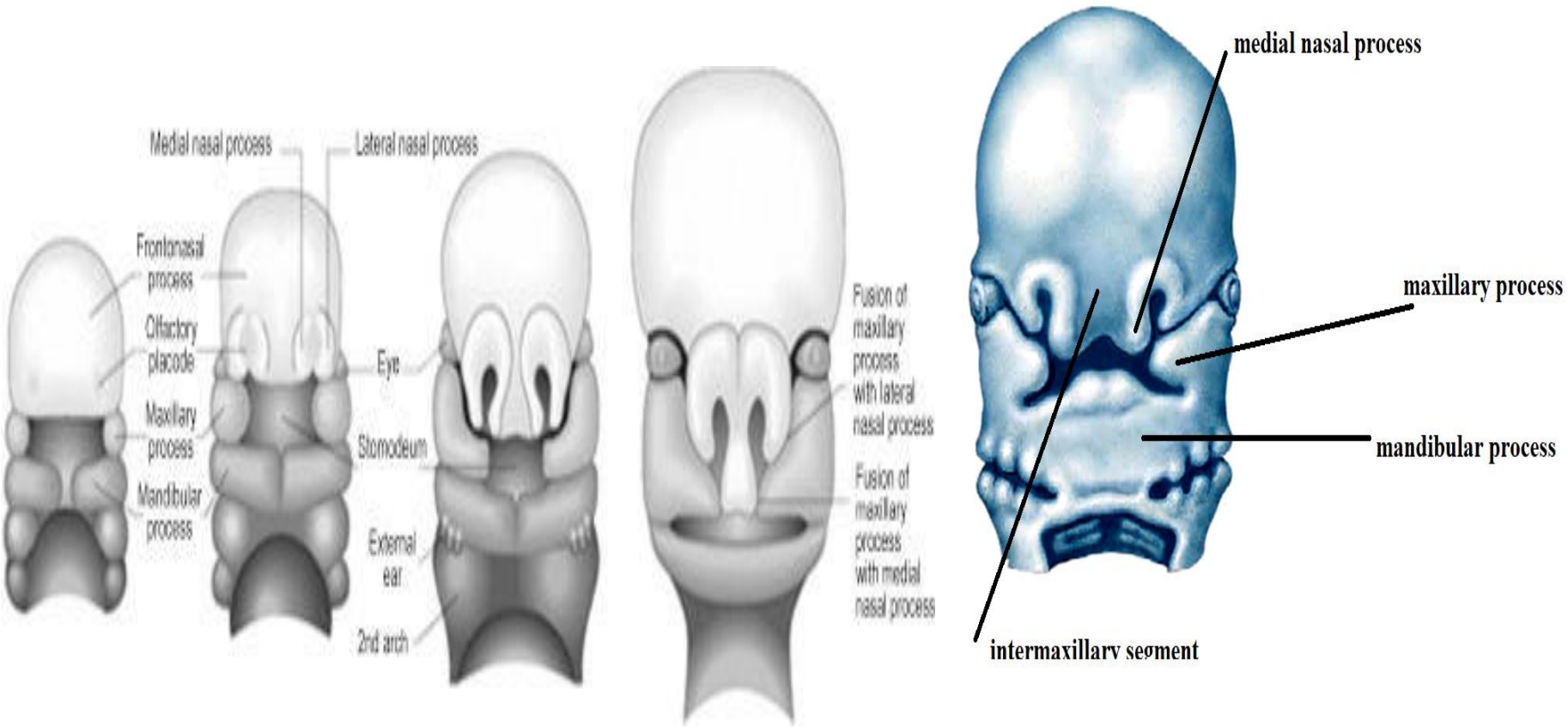
B- formation of the **medial and lateral nasal processes**





DEVELOPMENT OF THE FACE

- growth of mandibular processes to meet each other in the midline & growth of maxillary processes to meet tip of medial nasal processes compressing them towards the midline to form the **inter maxillary segment**.



DEVELOPMENT OF THE FACE

- mandibular processes give

part of the cheek

lower lip

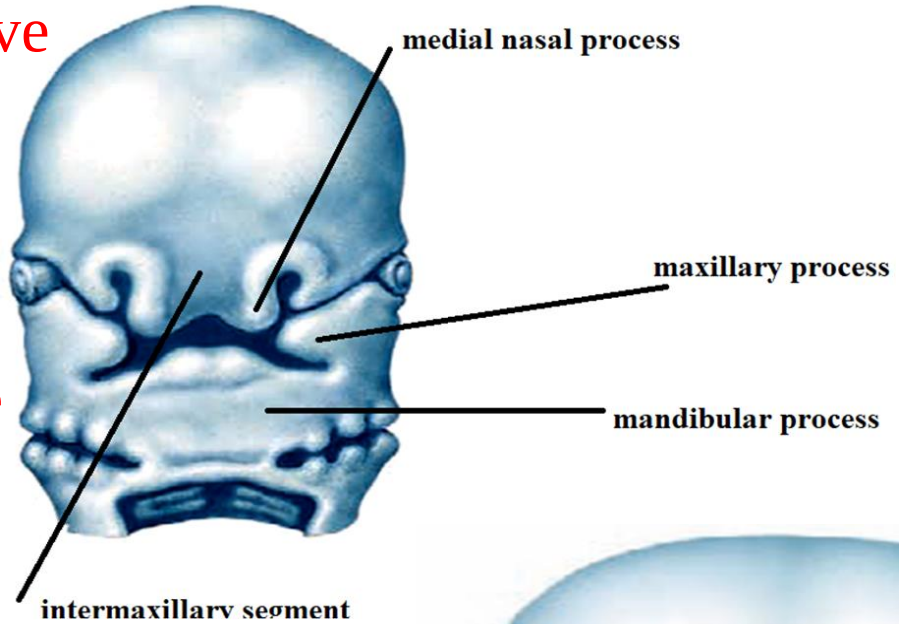
mandible

- maxillary processes give

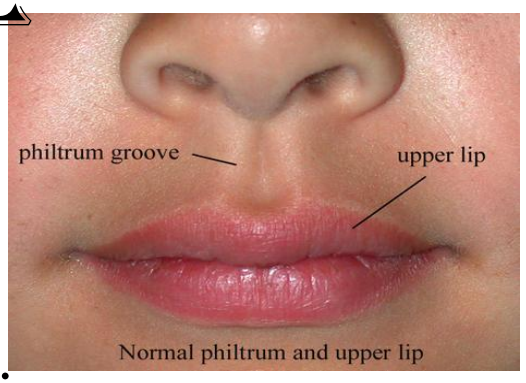
Part of the cheek

lateral part of the upper lip

lateral part of the upper jaw



DEVELOPMENT OF THE FACE



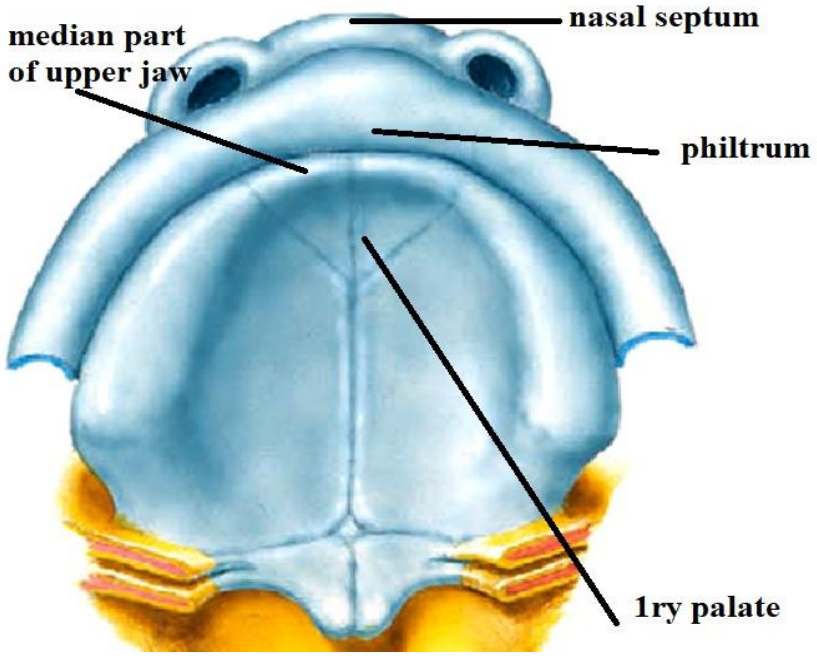
- inter maxillary segment gives

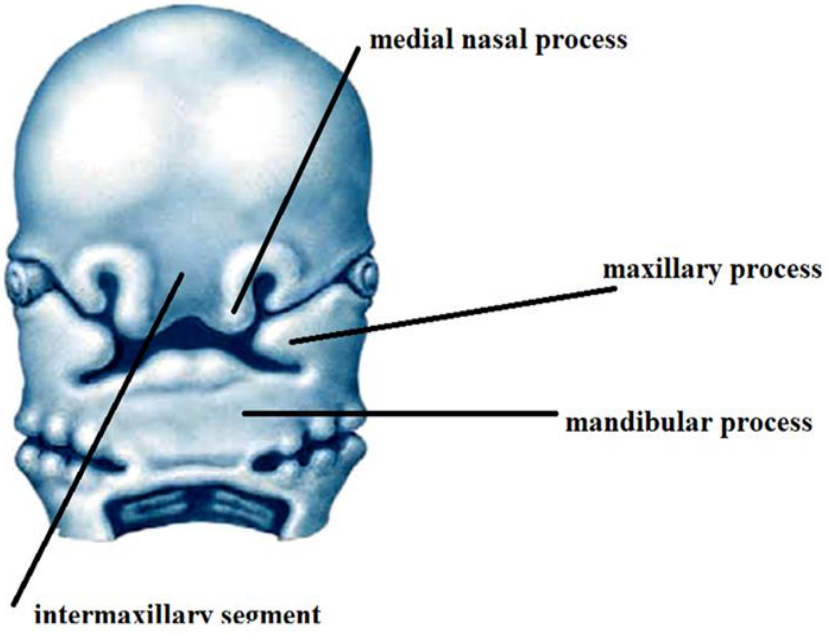
Part of the nasal septum.

median part of the upper lip "philtrum"

median part of the upper jaw that carrying the 4 incisors

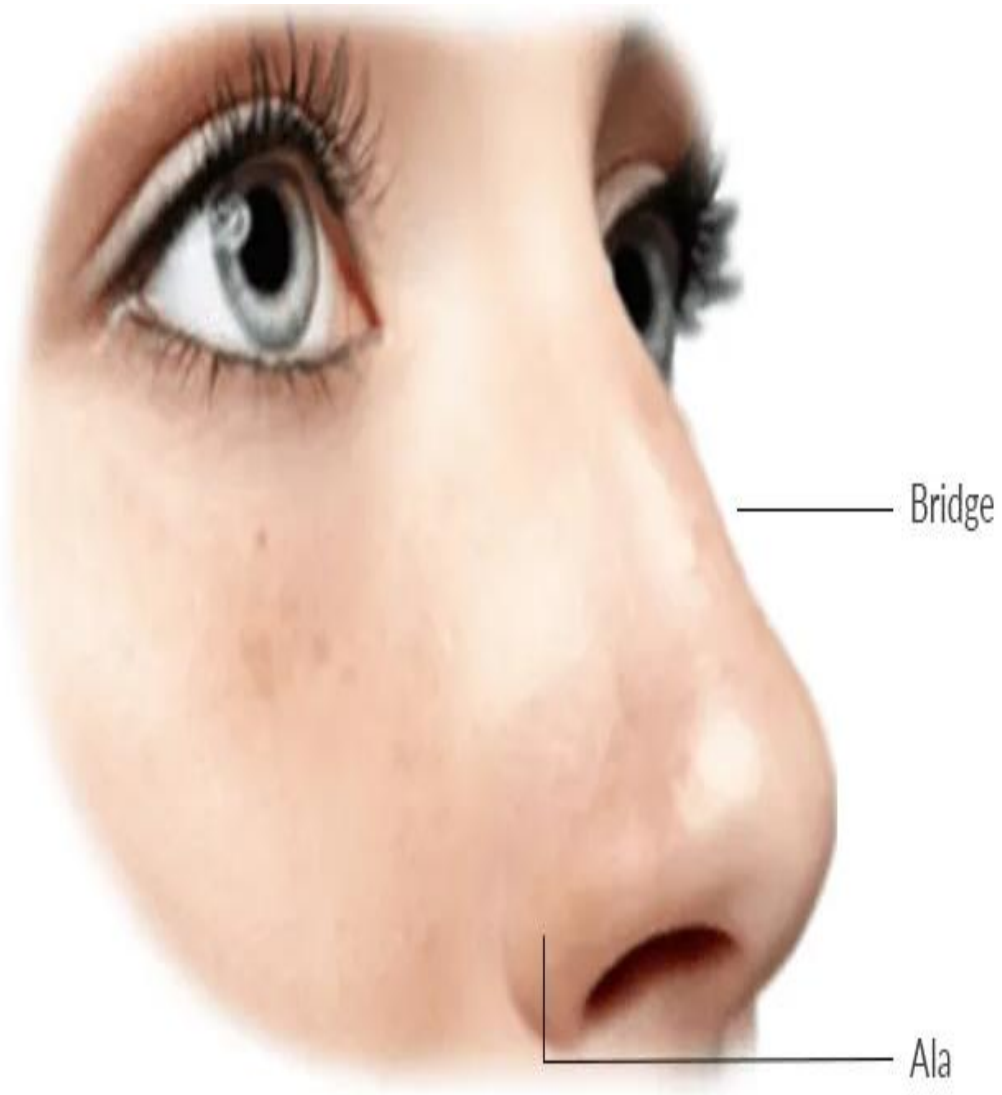
The Primary palate :- the anterior triangular part of the palate that lies behind the 4 incisors





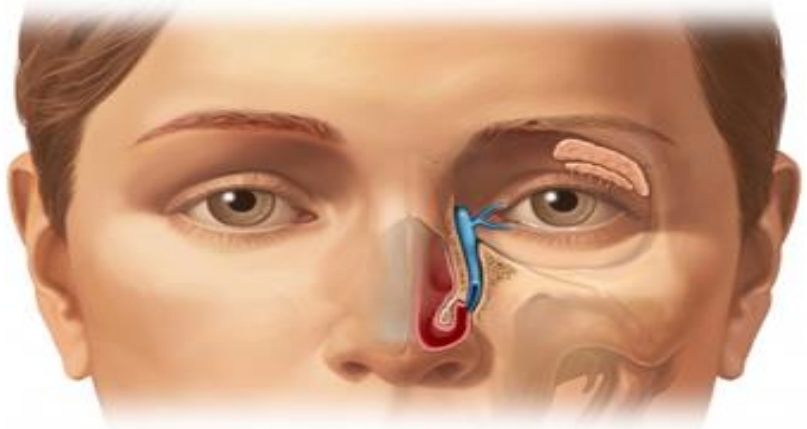
DEVELOPMENT OF THE FACE

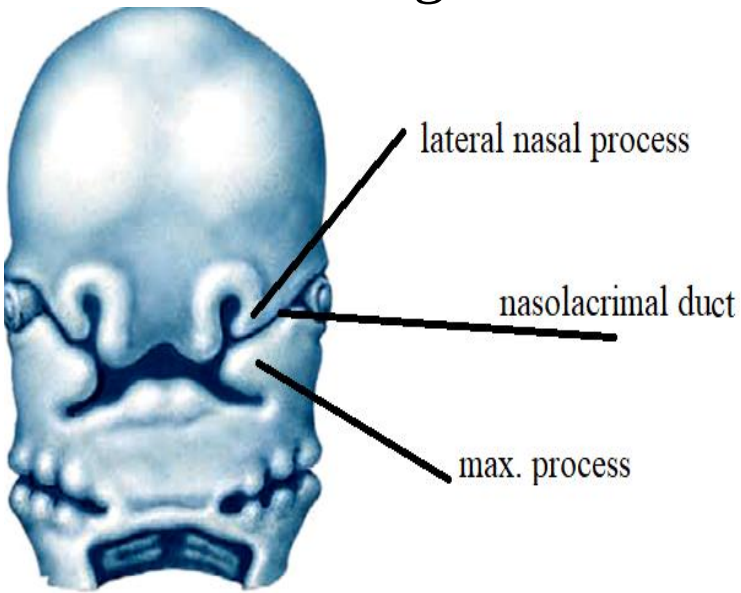
- lateral nasal processes give
  the ala of the nose
- frontonasal process gives
  the nasal bridge & forehead
- Nasal pit
  gives the nasal cavity



DEVELOPMENT OF THE NASOLACRIMAL DUCT

- The 2maxillary processes are separated from the lateral nasal processes by a well developed ectodermal groove called nasolacrimal groove.
- The ectoderm in the floor of the nasolacrimal groove proliferate forming a solid cord that detach and deepens in the groove
- Later on this cord is canalized and forms the nasolacrimal canal.
- The upper end of the duct dilates to form the lacrimal sac
- The maxillary and lateral nasal processes fuse obliterating the nasolacrimal groove





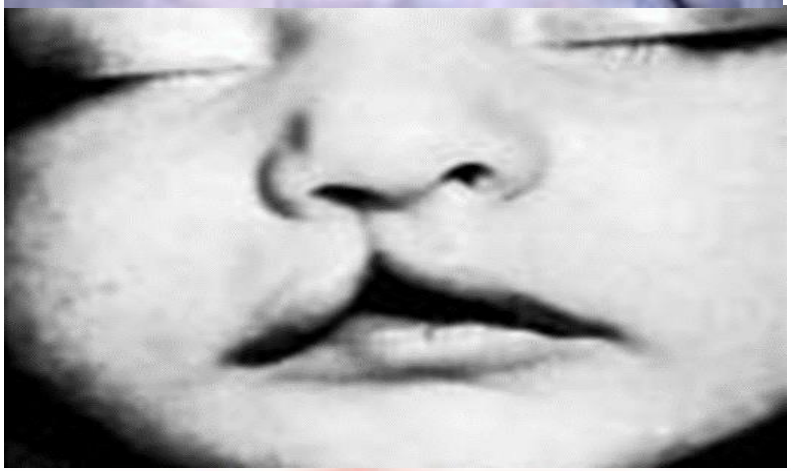
CONGENITAL ANOMALIES OF THE FACE

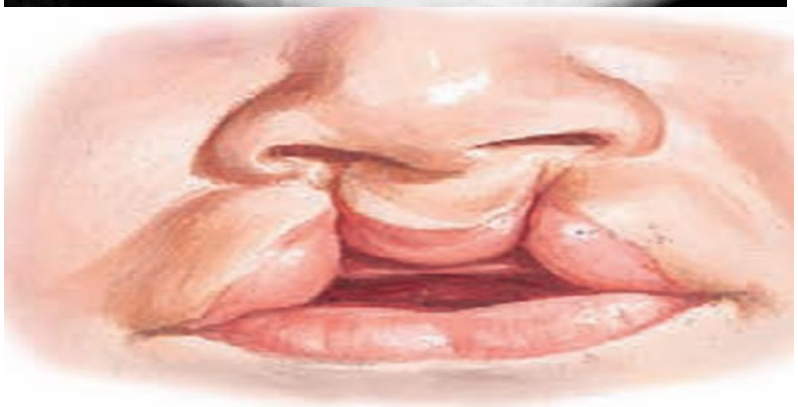
- Microstomia (narrow mouth opening): due to excessive fusion of the maxillary and mandibular processes on each side
- Macrostomia (wide mouth opening): due to incomplete fusion of the maxillary and mandibular processes on each side

CONGENITAL ANOMALIES OF THE FACE

- Median harelip (cleft)

  Due to failure of fusion of the 2 medial nasal processes (No philtrum).
- Unilateral harelip: due to failure of fusion between the maxillary process and the medial nasal process (fissure between philtrum and lateral part of the upper lib) in one side.
- Bilateral harelip: due to failure of fusion between the maxillary processes with the medial nasal processes, on both side.





CONGENITAL ANOMALIES OF THE FACE

- Oblique facial cleft:

due to failure of fusion of the maxillary processes with the lateral nasal processes along the line of the nasolacrimal duct.

- Atresia of the nasolacrimal duct

DEVELOPMENT OF THE PALATE

- **The Primary palate**

is a triangular bone developed from the intermaxillary segment .

- **The secondary palate**

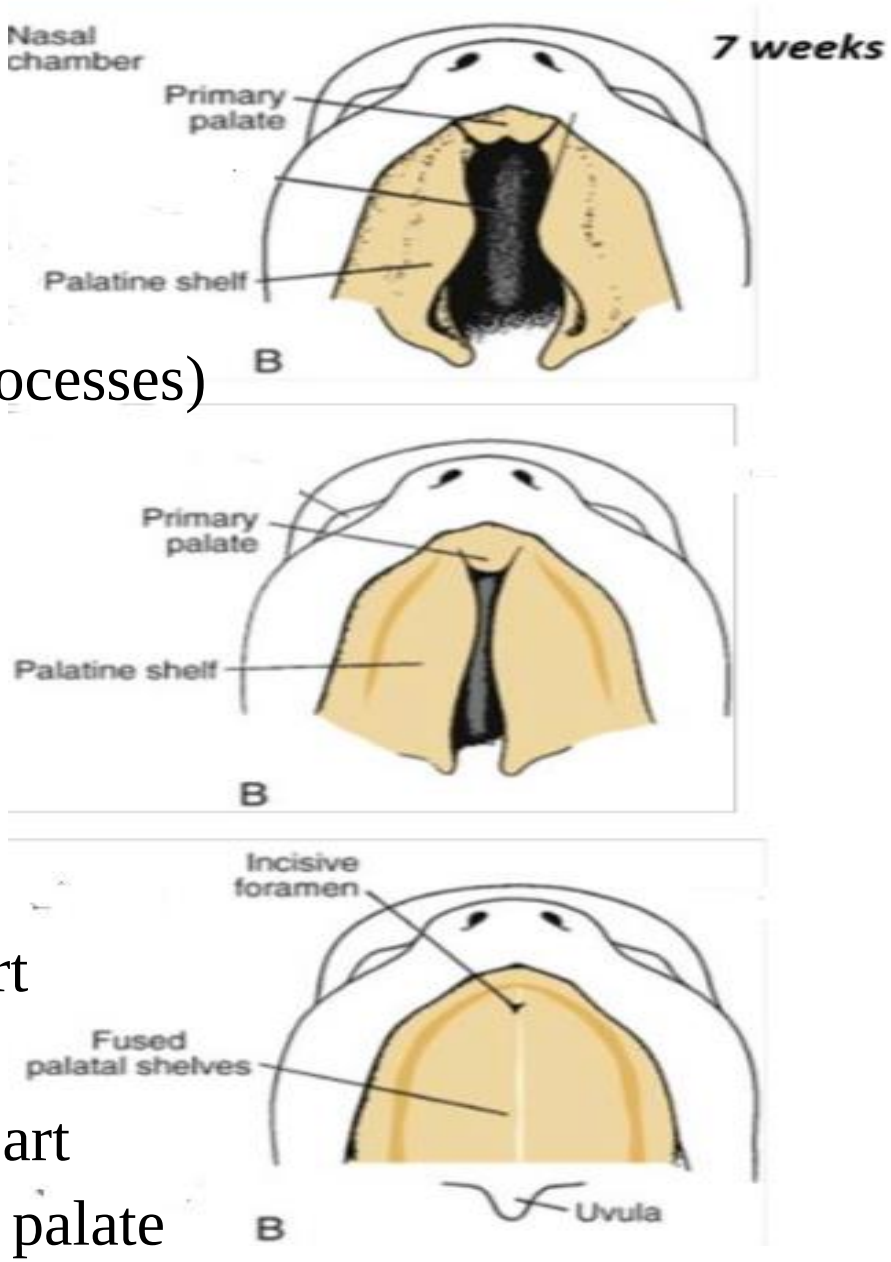
-arises as 2 bony shelves (palatine processes) arise from maxillary processes and grow horizontally and medially.

-The palatine shelves fuse with

a- Each other in the midline.

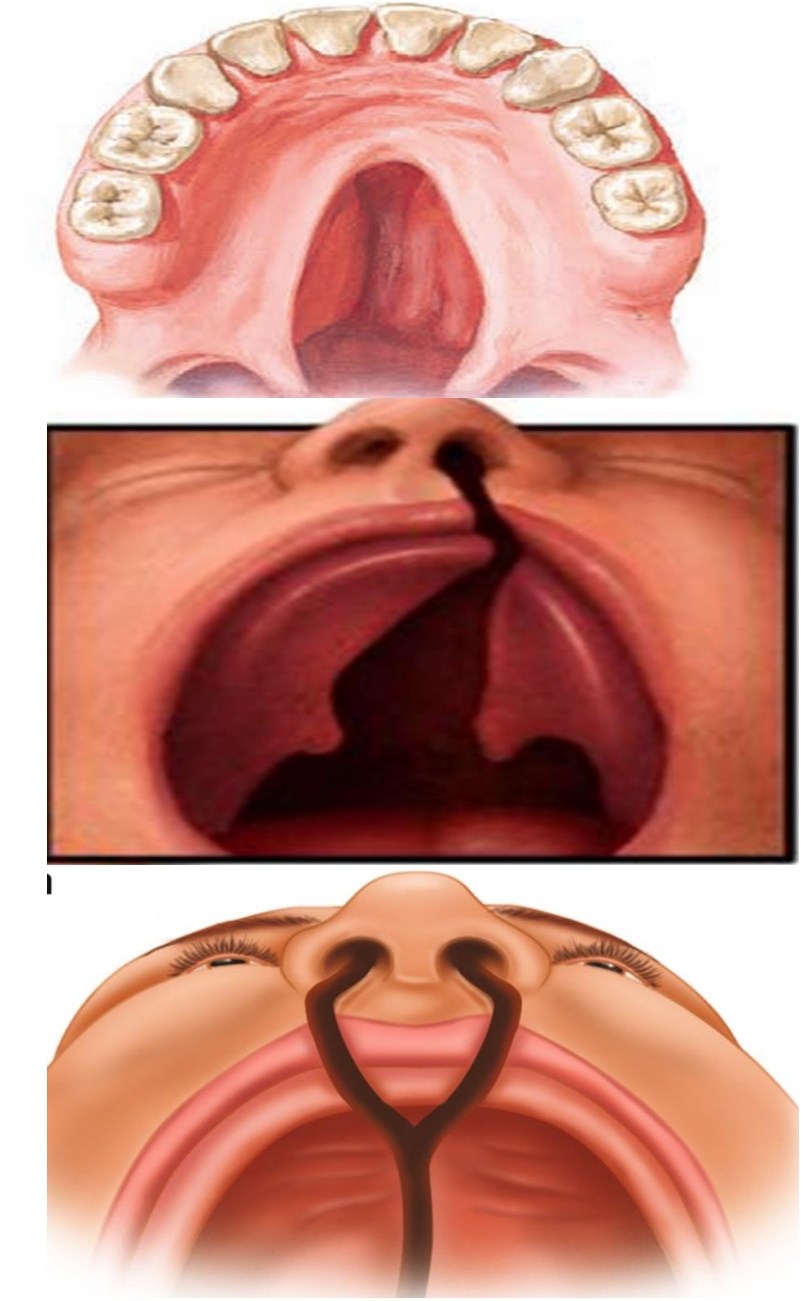
b- both fuse with the Primary palate at a V- shaped line

- After development the anterior part of the palate ossify forming the hard palate while the posterior part is invaded by muscles forming soft palate



CONGENITAL ANOMALIES OF THE PALATE

- partial cleft palate: due to failure of fusion of the two palatine processes of the maxilla with each other in the midline.
- Unilateral complete cleft palate: due to failure of fusion of the two palatine processes of the maxilla with each other in the midline and with the primary palate on one side, associate with cleft upper lib.
- Bilateral complete cleft palate: due to failure of fusion of the two palatine processes of the maxilla with each other in the midline and with the primary palate on both sides, associate with cleft upper lib.

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