

وسهلا



أهلا

يُمنع أخذ السلايدات بدون  
إذن المحرر واي اجراء  
يخالف ذلك يقع تحت طائلة  
المسؤولية القانونية  
جميع المعلومات للاستخدام  
التعليمي فقط

الأستاذ الدكتور يوسف حسين

كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

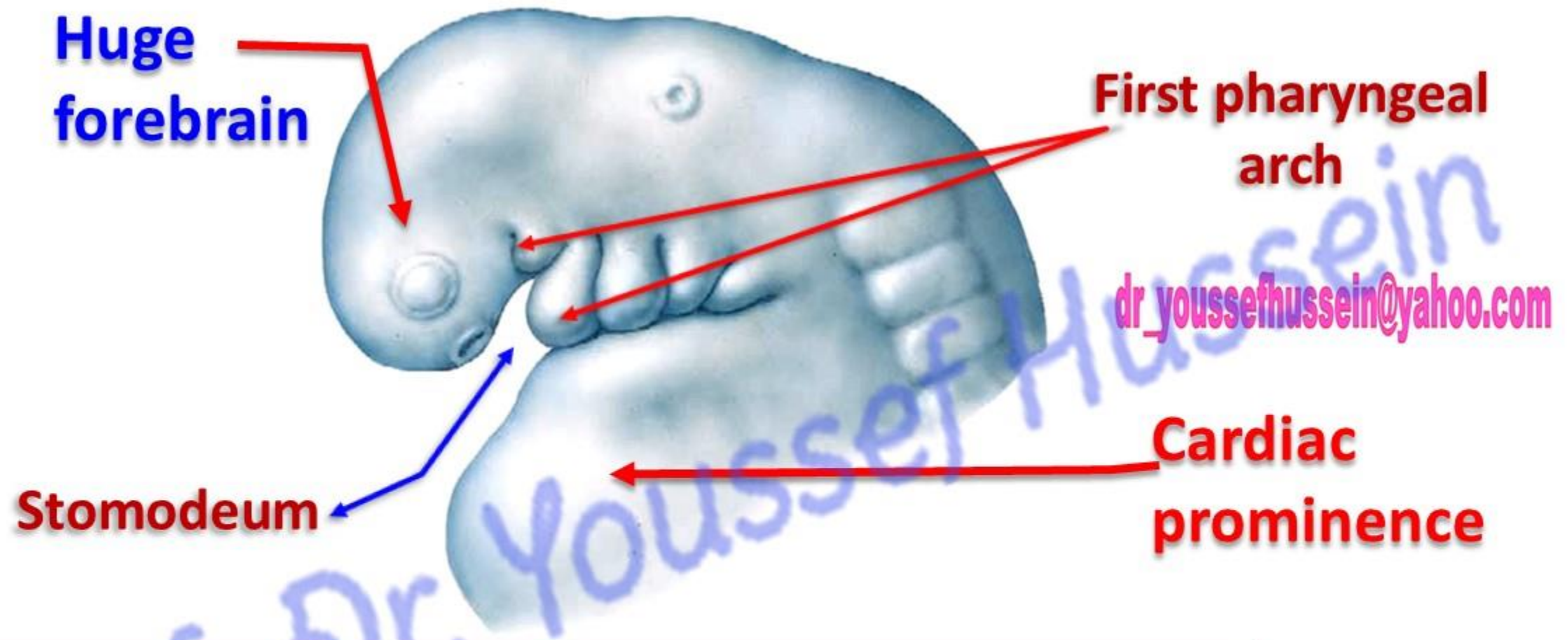
Prof. Dr. Youssef Hussein Anatomy - YouTube

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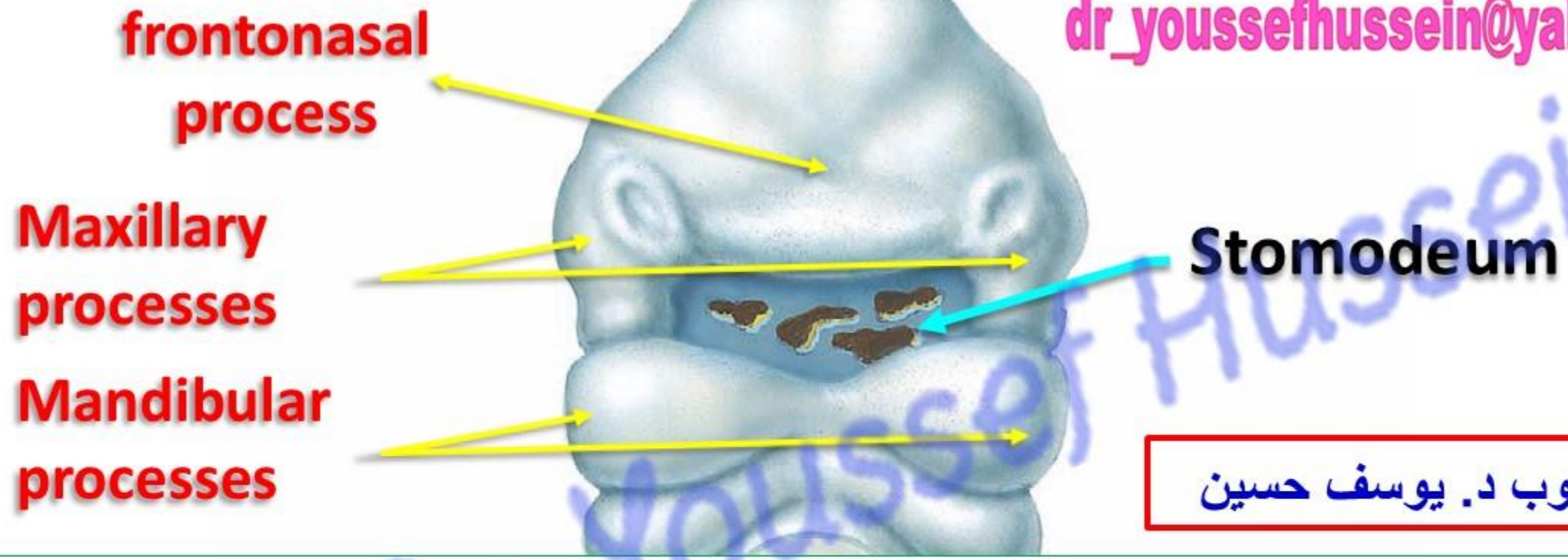
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# Development of the face

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- The **face** is dominated by the appearance of the pharyngeal arches
- **Stomodeum**, Primitive oral cavity that **closed by oral membrane** is **ectodermal recess** between the relatively huge forebrain and cardiac prominence .



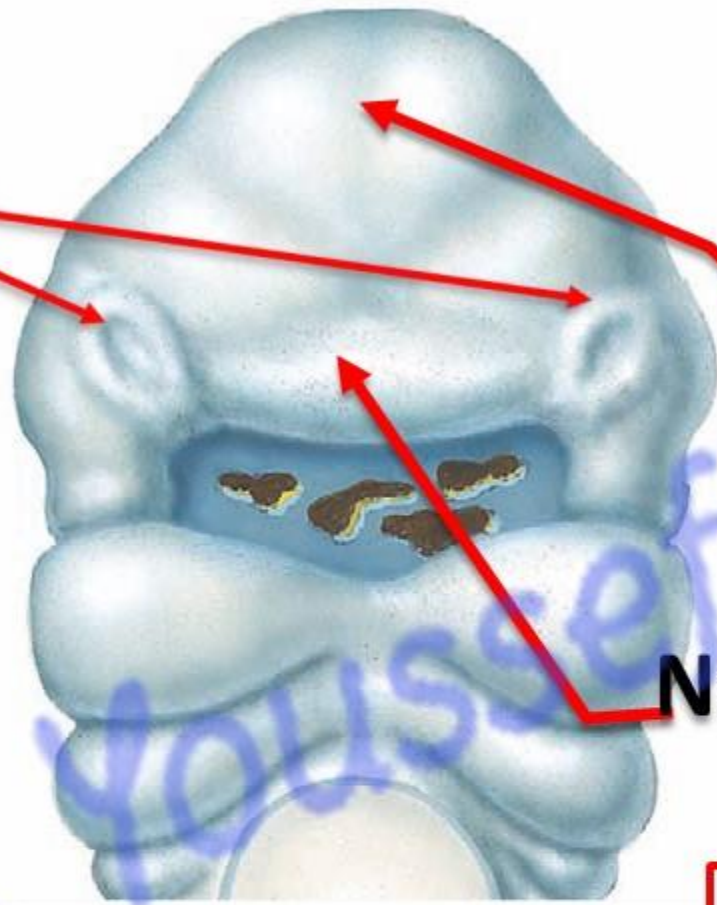
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- The face develops from **5 mesodermal swellings** which appear around **stomodeum**
  - I. **Frontonasal process** above the stomodeum.
  - II. **2 maxillary swellings** (above and lateral to the stomodeum) from the 1<sup>st</sup> pharyngeal arch.
  - III. **2 mandibular swellings** (below and lateral to the stomodeum) from the 1<sup>st</sup> pharyngeal arch.

Nasal placodes

Frontal bone

Nasal process



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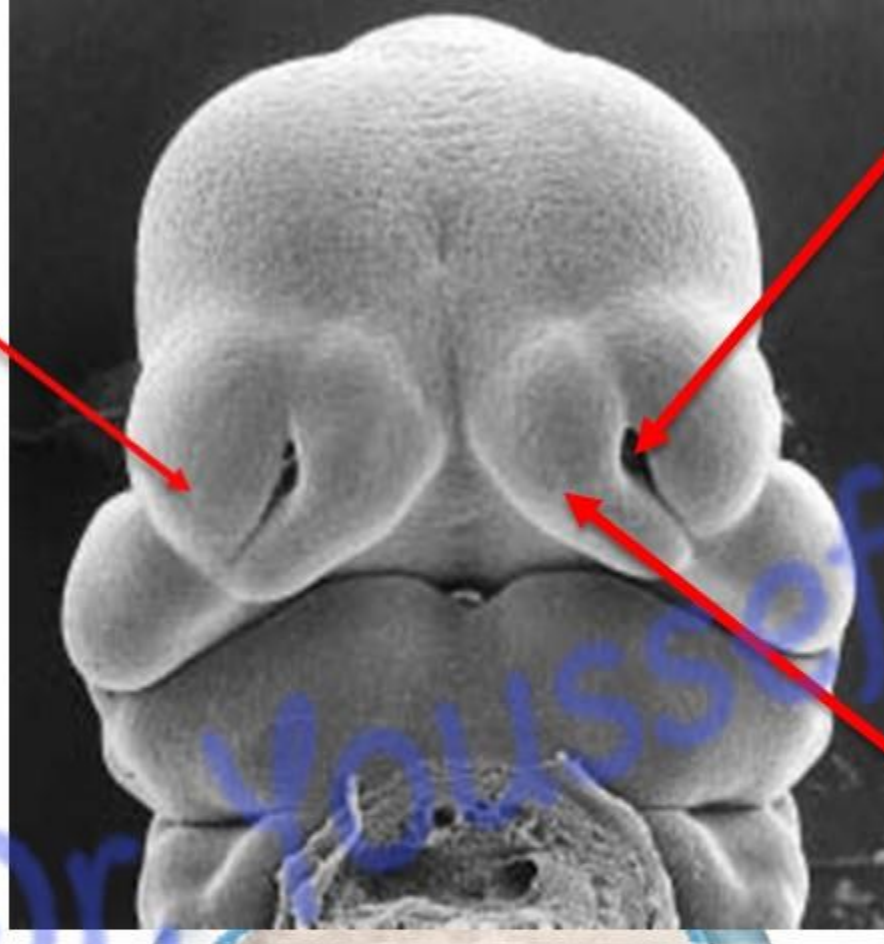
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**\*\* Development of the frontonasal process:**

- a- The upper part forms the **frontal bone**.
- b- The lower part forms the **nasal process**.

- **Nasal placodes**, **ectodermal swellings** develop in lower border of nasal process.

**Lateral nasal process**



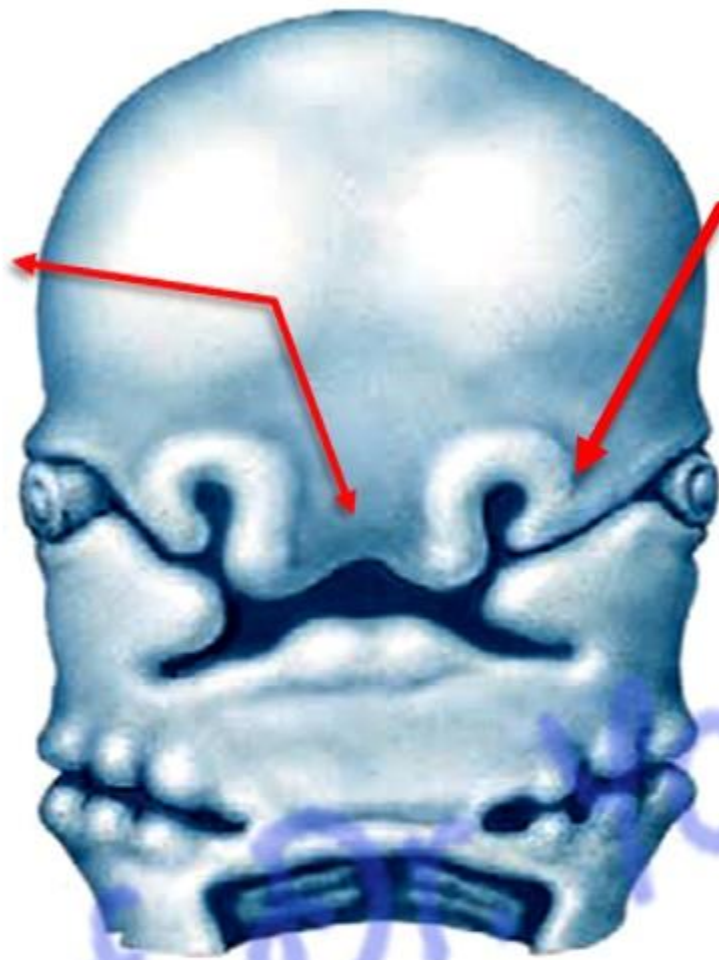
**Nasal pit**

**Medial nasal process**

- **Two nasal pits** (nostril) appear in the nasal placode divide the nasal process:
  - a- Two lateral nasal processes form the ala of the nose.
  - b- Two medial nasal processes

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**Median  
nasal  
process**



**Lateral nasal  
process**

- Two medial nasal processes unit with each other forming **median nasal process (Intermaxillary segment)**

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**Philtrum**

**Nasal septum**

**Premaxilla carries  
four incisor teeth**

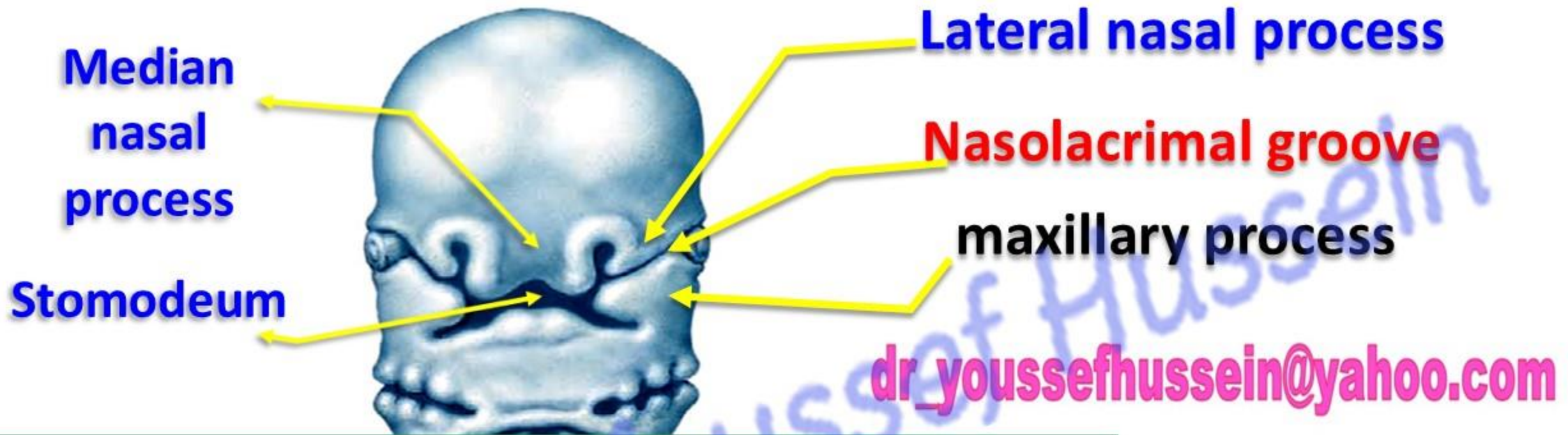
**Triangular primary  
palate**



• **Median nasal process gives rise to:**

- 1- Part of the nasal septum.
- 2- Philtrum (middle) of the upper lip.
- 3- Premaxilla (upper jaw that carries 4 incisor teeth).
- 4- Primary palate.

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### Development of the maxillary process

- The 2 maxillary processes grow medially above the stomodeum towards the **lateral nasal processes** but **separated from** them by a well developed ectodermal groove called **nasolacrimal groove**.
- The edges of **nasolacrimal groove** fused forming a **solid cord**. Later on; canalized and forms the **nasolacrimal canal**.

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- The maxillary processes continue to grow medially and **fused with the lateral nasal processes**. Later on; they fused with the margins of the **median nasal process to form the upper jaw**.

- A horseshoe **labiokingival groove** divides upper jaw into  
**a) Outer part forms upper lip. b) Inner part forms gum.**

**\*\* Development of the mandibular process**

- They grow medially below the stomodeum and fused with each other in the midline forming the **primitive lower jaw**.

- A horseshoe **labiokingival groove** divides lower jaw into  
**a) Outer part forms lower lip. b) Inner part forms gum.**

**\*\* Development of the muscles of the face**

- They developed from the mesoderm of the **2<sup>nd</sup> pharyngeal arch** (supplied by the facial nerve).



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# Congenital anomalies of the face

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- **Oblique facial cleft**: due to failure of fusion of the maxillary processes with the **lateral nasal processes** along the line of the **nasolacrimal canal**.
- **Atresia of the nasolacrimal canal**



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- **Harelip (cleft):** in the upper lip
- It may be in the lip only or may be associated with the cleft palate.
- **Median harelip (cleft)**
- **Due to** failure of fusion of the 2 medial nasal processes (No philtrum).



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## Hare (cleft) lip

- **Unilateral harelip:** due to failure of fusion between the **maxillary process** and the **median nasal process** (fissure between philtrum and lateral part of the upper lip) **in one side.**
- **Bilateral harelip:** due to failure of fusion between the maxillary processes with the median nasal processes, **on both side.**



**Unilateral**



**Bilateral**

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**Cleft lower lip** due to failure of fusion of **mandibular processes** in the midline.



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- **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.



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[https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd\\_cn0PQ](https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ)

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