

وسهلا

أهلا

يُمنع أخذ السلايدات بدون  
إذن المحرر واي اجراء  
يخالف ذلك يقع تحت  
طائلة المسؤولية القانونية



# الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

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دكتورة من جامعة كولونيا المانيا

جروب الفيس د. يوسف حسين (استاذ التشريح)

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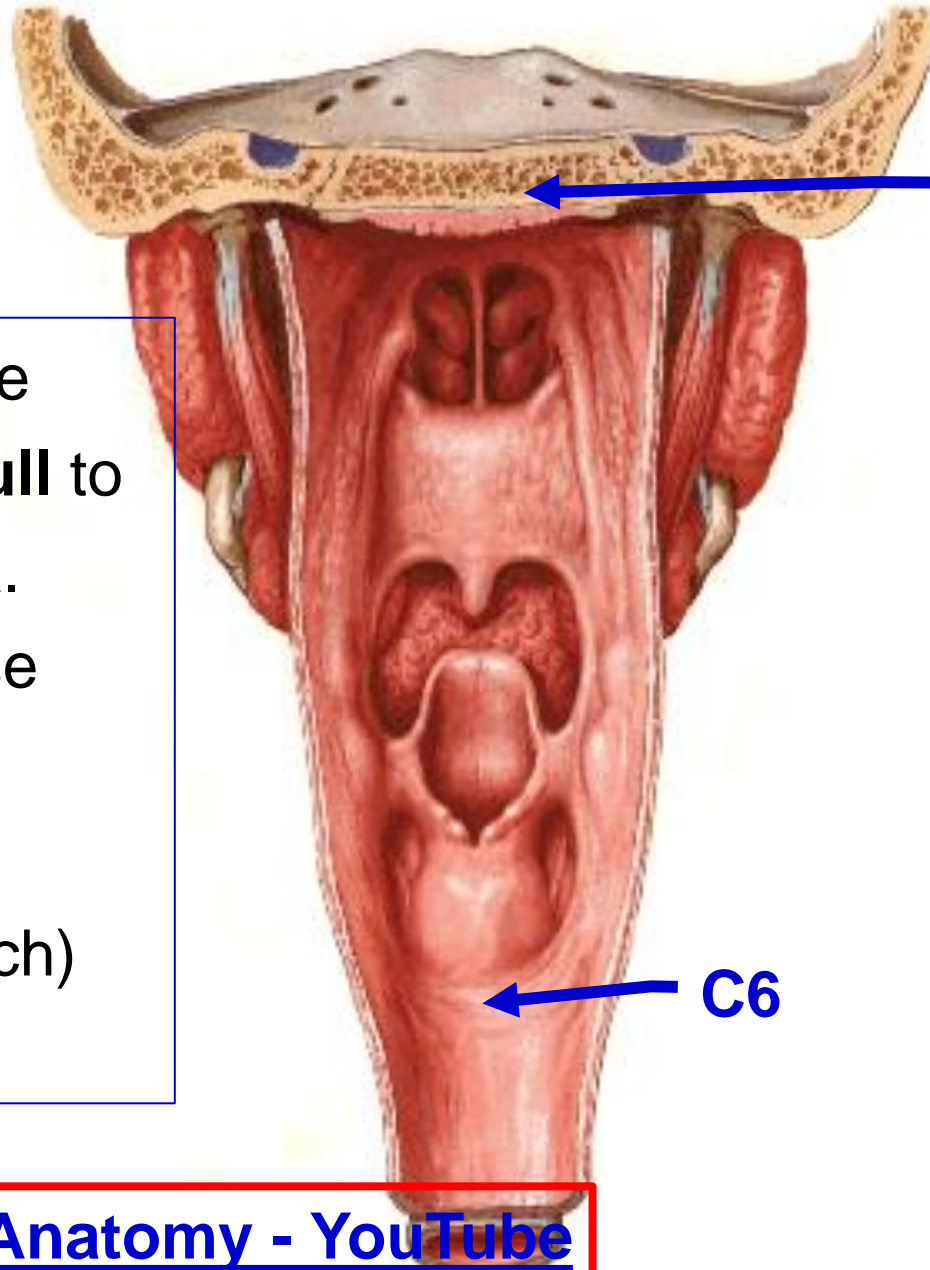
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# Pharynx

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د. يـوسـفـ حـسـيـن

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## الويوتيوب د. يوسف حسين



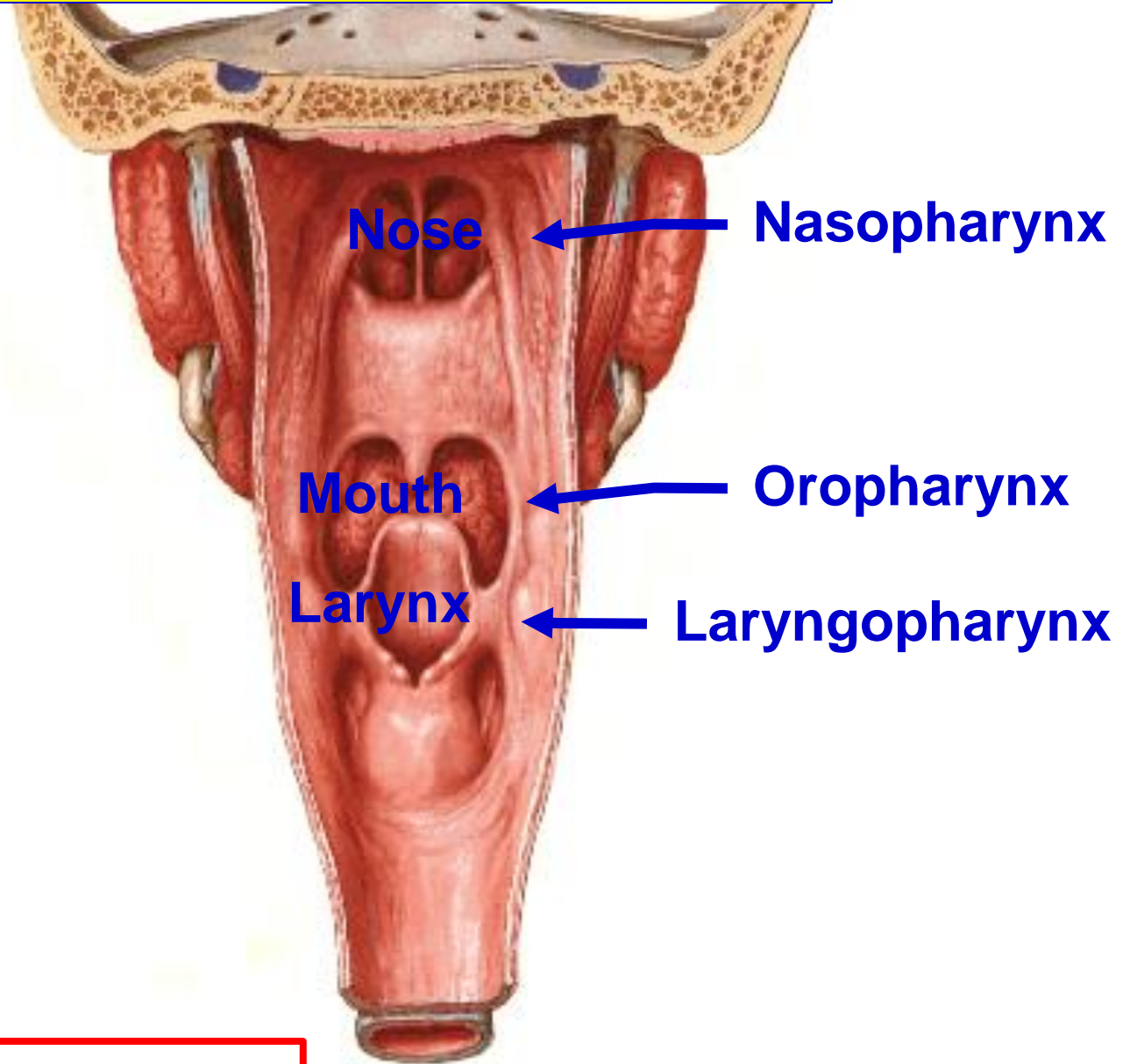
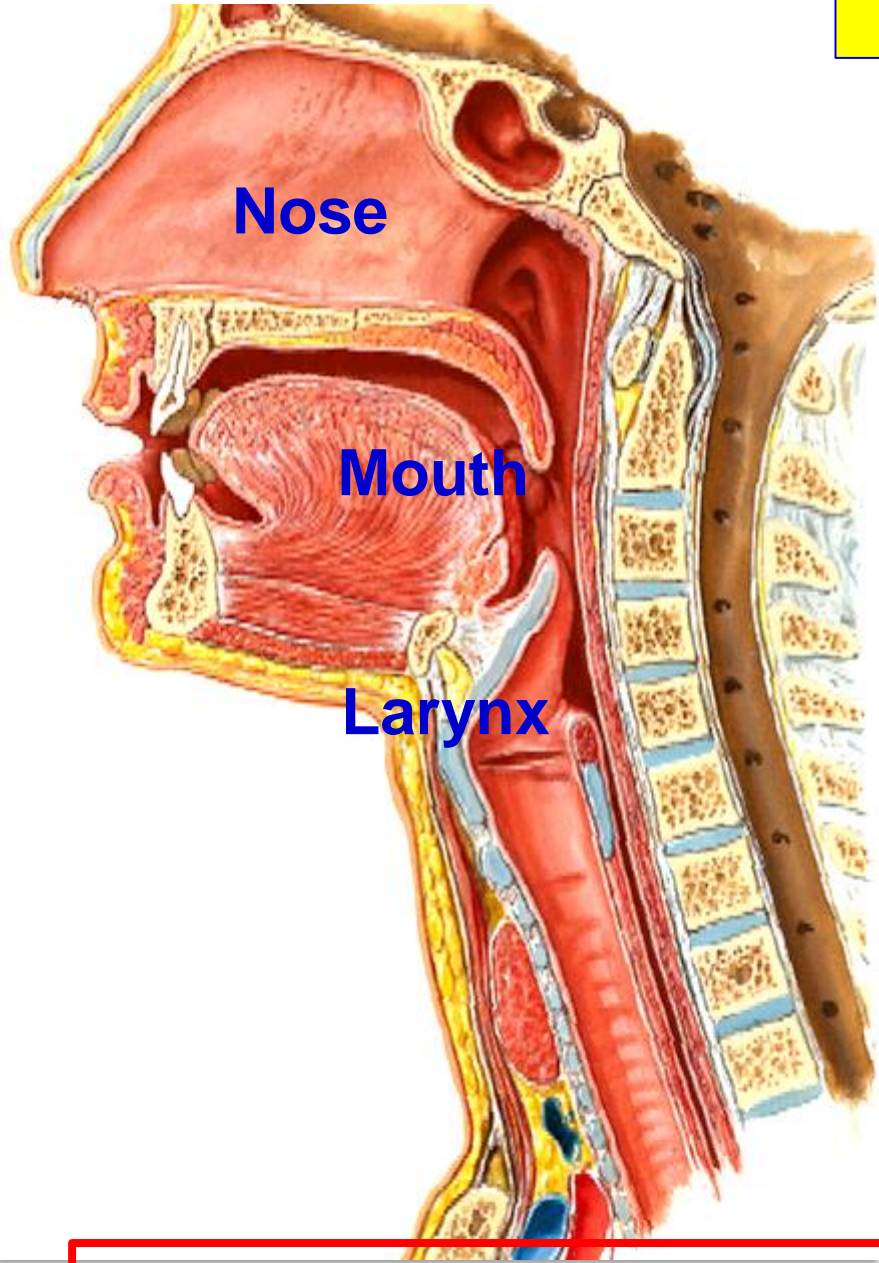
Base of skull

C6

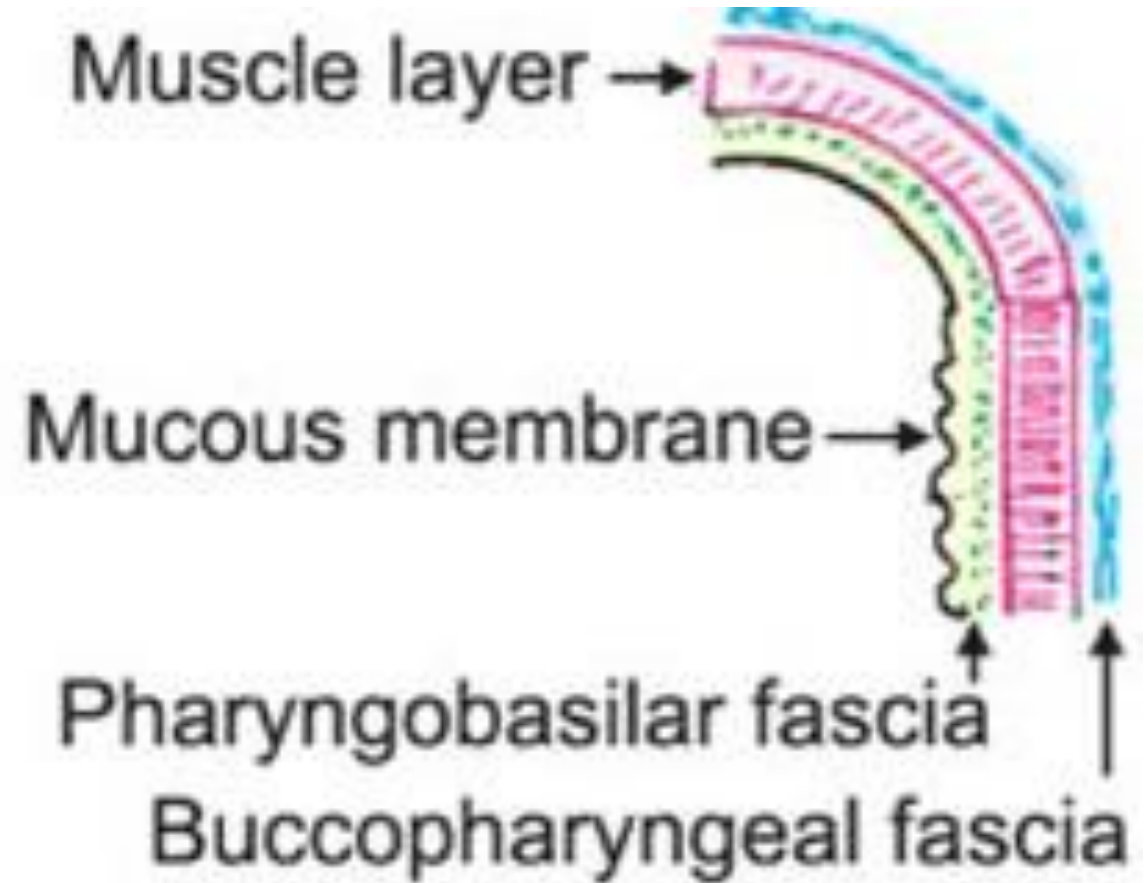
- **Extension:** It is a muscular tube extending from the **base of skull** to the lower border of **C6** vertebra.
- **Shape:** funnel-shaped with base upwards.
- **Length:** 12-14 cm long,
  - Its diameter, upper part (one inch)
  - Lower part (1/2 inch).

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# Subdivision of the pharynx



- The wall arranged from inside outward
  1. Mucous membrane
  2. Pharyngobasilar fascia.
  3. Pharyngeal muscles.
  4. Buccopharyngeal fascia.



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# Muscles of Pharynx

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# MUSCLES OF THE PHARYNX

## External (outer) circular muscles

- Superior constrictor
- Middle constrictor
- Inferior constrictor

## Internal (inner) longitudinal Muscles

- Palatopharyngeus
- **Stylopharyngeus**
- Salpingopharyngeus

- All the muscles of the pharynx supplied by pharyngeal nerve plexus except stylopharyngeus muscle supplied by the glossopharyngeal nerve.

Posterior border of  
Medial pterygoid plate

**Pterygoid Hamulus**

Pterygomandibular  
ligament

**Posterior end of  
mylohyoid line**

Stylohyoid ligament

**Lesser horn of hyoid bone**

Greater horn of hyoid bone

**Oblique line of thyroid cartilage**

**Side of cricoid cartilage**

Pharyngeal tubercle

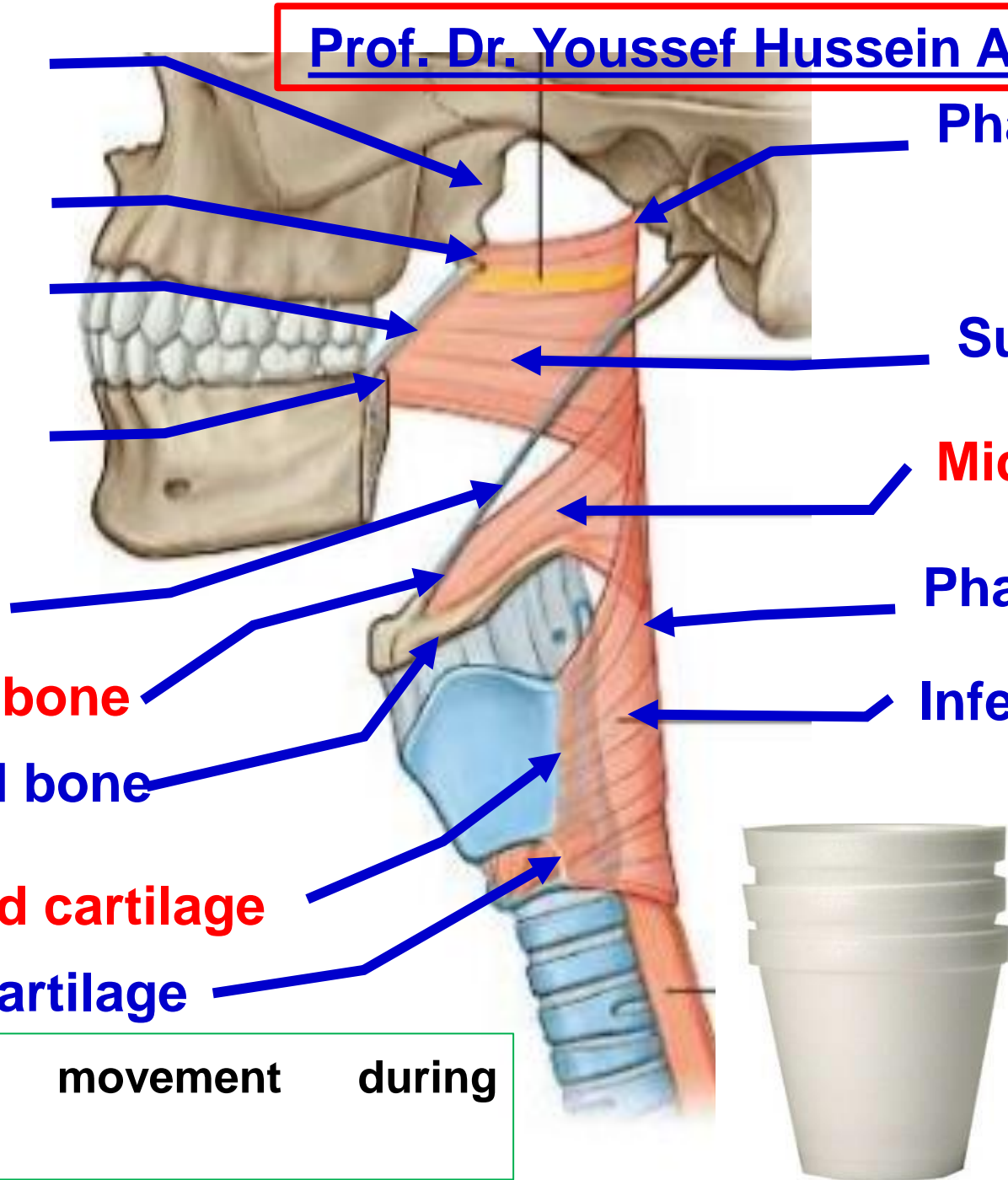
Superior constrictor

**Middle constrictor**

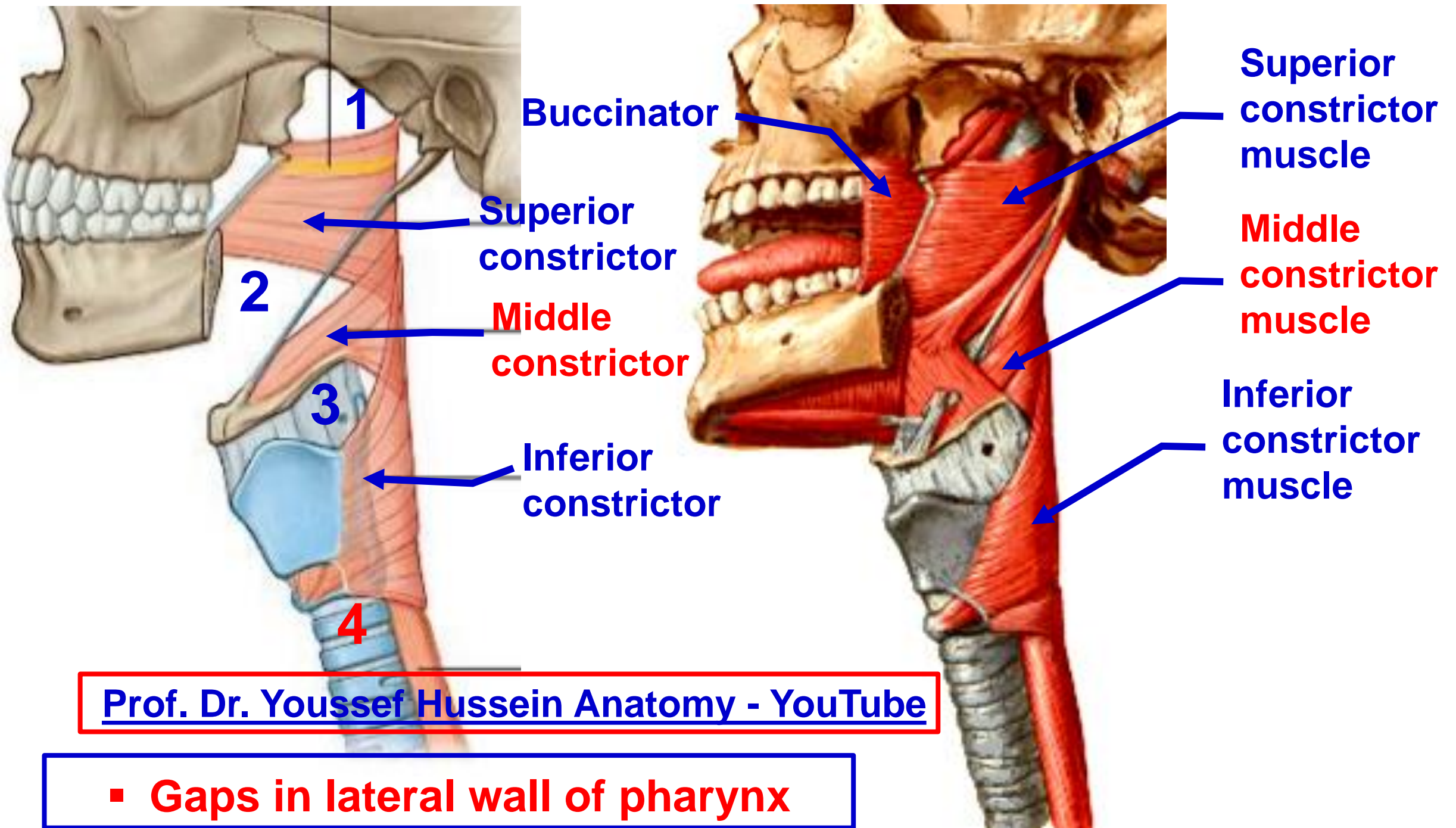
Pharyngeal Raphe

Inferior constrictor

- Actions, peristaltic movement during swallowing.







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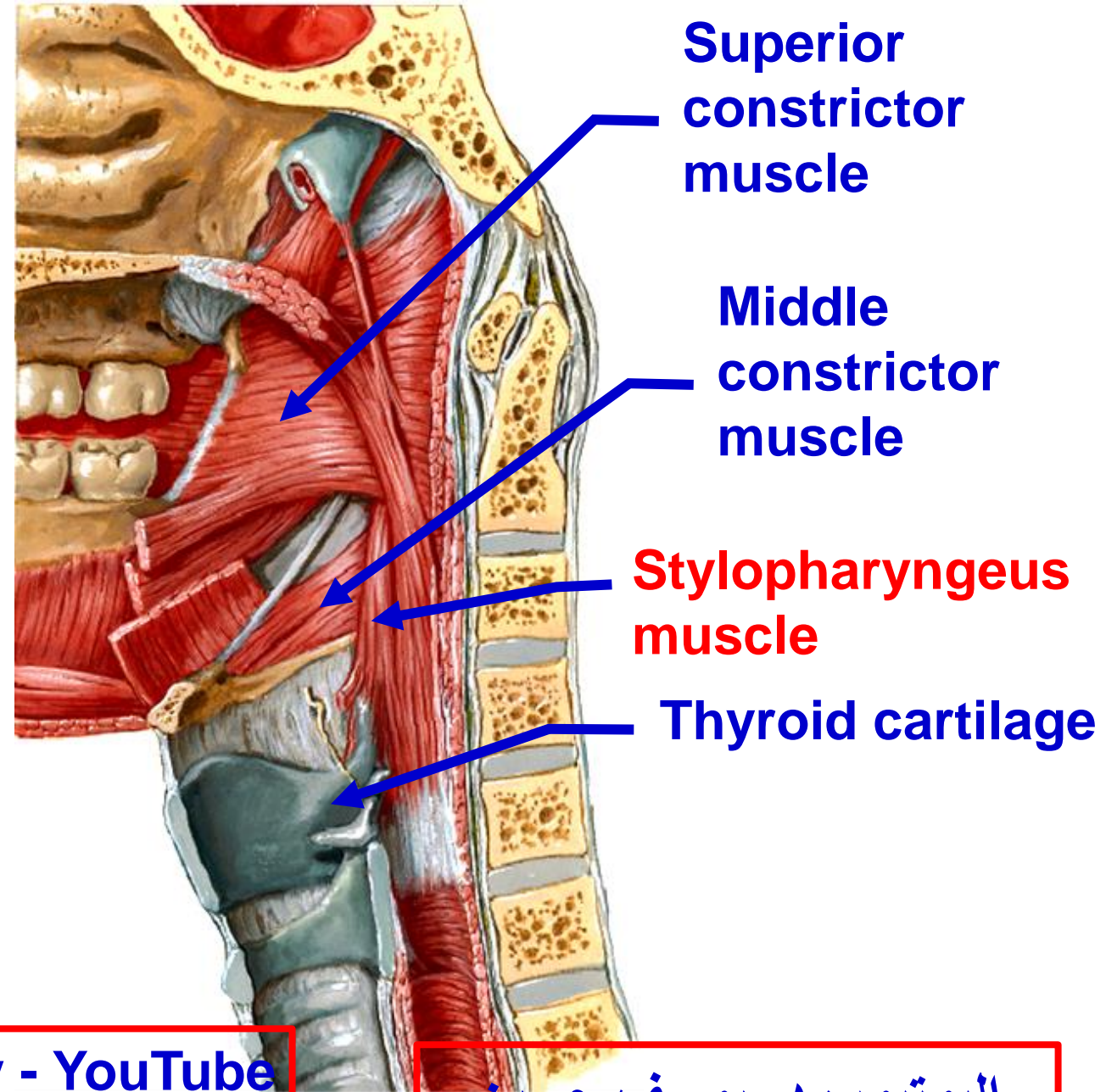
▪ Gaps in lateral wall of pharynx

## ▪ Gaps in the lateral wall of the pharynx

- **1) First gap:** between base of skull and upper border of superior constrictor muscle. - **It contains:**
  - 1) **2 Palati muscles;** Tensor **palati** muscle, and **levator** palati muscle.
  - 2) **2 ascending arteries;** **ascending** palatine (facial artery) and **ascending** pharyngeal arteries (ECA).
  - 3) **Eustachian tube.**
- 2) Second gap:** between superior and middle constrictor muscles.  
- **It contains:** 1) stylopharyngeus muscle. 2) glossopharyngeal nerve.
- 3) Third gap:** between middle and inferior constrictor muscles.  
- **It contains** 1) Superior laryngeal vessels. 2) Internal laryngeal nerve.
- 4) The fourth gap:** below lower border of inferior constrictor muscle,  
- **It contains** 1) Inferior laryngeal vessels. 2) Recurrent laryngeal nerve.

- **Stylopharyngeus muscle**

- **Origin;** styloid process near its base.
- **Course,** descends obliquely downwards and forwards **between** internal and external carotid arteries with the glossopharyngeal nerve.
- Then, it passes **between** superior and middle constrictors muscles of pharynx.
- **Insertion:** *wall of the pharynx and posterior border of thyroid cartilage.*
- **Action:** elevates the pharynx and larynx during swallowing.



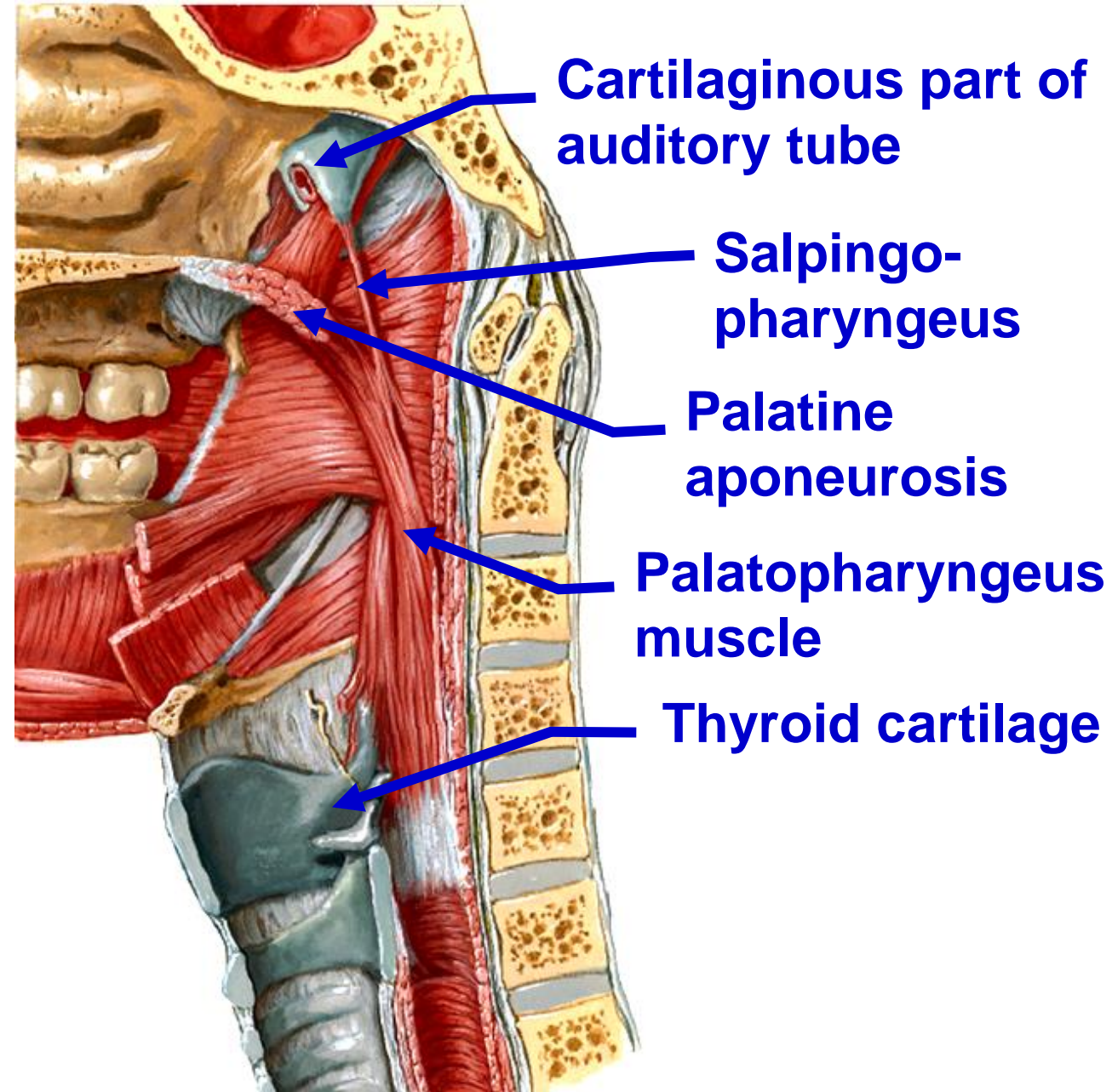
- **Salpingopharyngeus muscle**

- **Origin**, from cartilaginous part of auditory tube.
- **Insertion**: *wall of the pharynx and posterior border of thyroid cartilage.*
- **Action**: 1) elevates pharynx and larynx during swallowing.  
2) Keep Eustachian tube patent.

- **Palatopharyngeus muscle**

- **Origin**: upper surface of the palatine aponeurosis.
- **Insertion**: *wall of the pharynx and posterior border of thyroid cartilage*
- **Action**: 1- Elevates pharynx and larynx during swallowing.  
2- Contraction of both muscles closes the

pharyngeal isthmus.



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# Nasopharynx

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# Nasopharynx

Nasal cavity

Opening of  
auditory tube

Pharyngeal tonsil

Tubal elevation

Pharyngeal recess

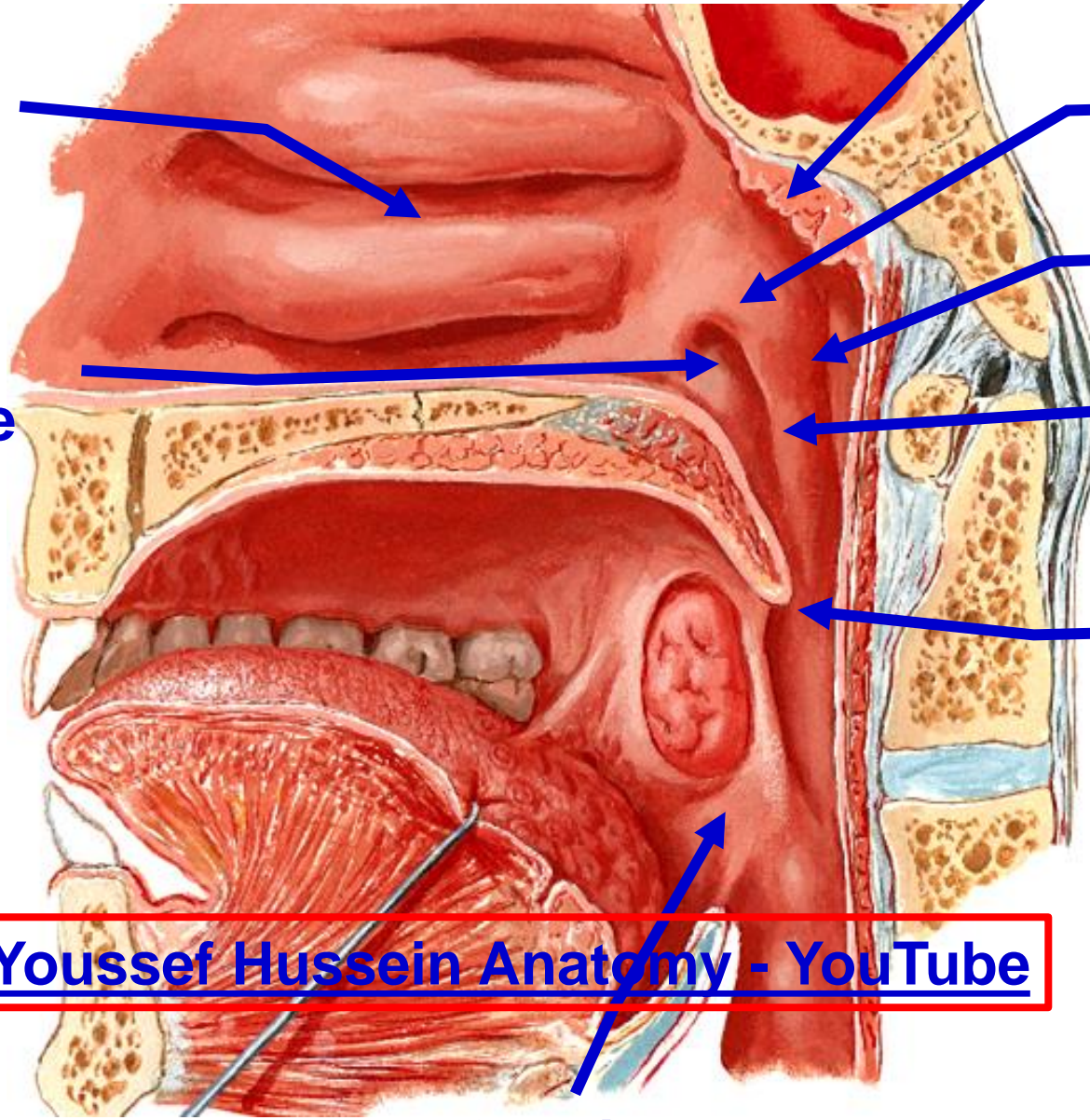
Salpingopharyngeal  
fold

Pharyngeal isthmus

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Oropharynx

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- **Nasopharynx:**

- It is the upper part of the pharynx (behind nasal cavity)

- **Features of the nasopharynx:**

**(1) Opening of the auditory tube** (one on each side) connects the nasopharynx with the middle ear cavity.

**(2) Tubal elevation:** upper and posterior lips of opening of auditory tube.

**(3) Salpingopharyngeal fold:** by the salpingopharyngeus muscle.

**(4) Pharyngeal recess:** a narrow space behind the salpingopharyngeal fold.

**(5) Pharyngeal tonsil** collection of lymphoid tissue in in the posterior wall.

- **Adenoid** enlargement of pharyngeal tonsil

- It causes **snoring** during sleep

- Difficult in nasal breathing and phonation

- It may block auditory tube causing otitis media

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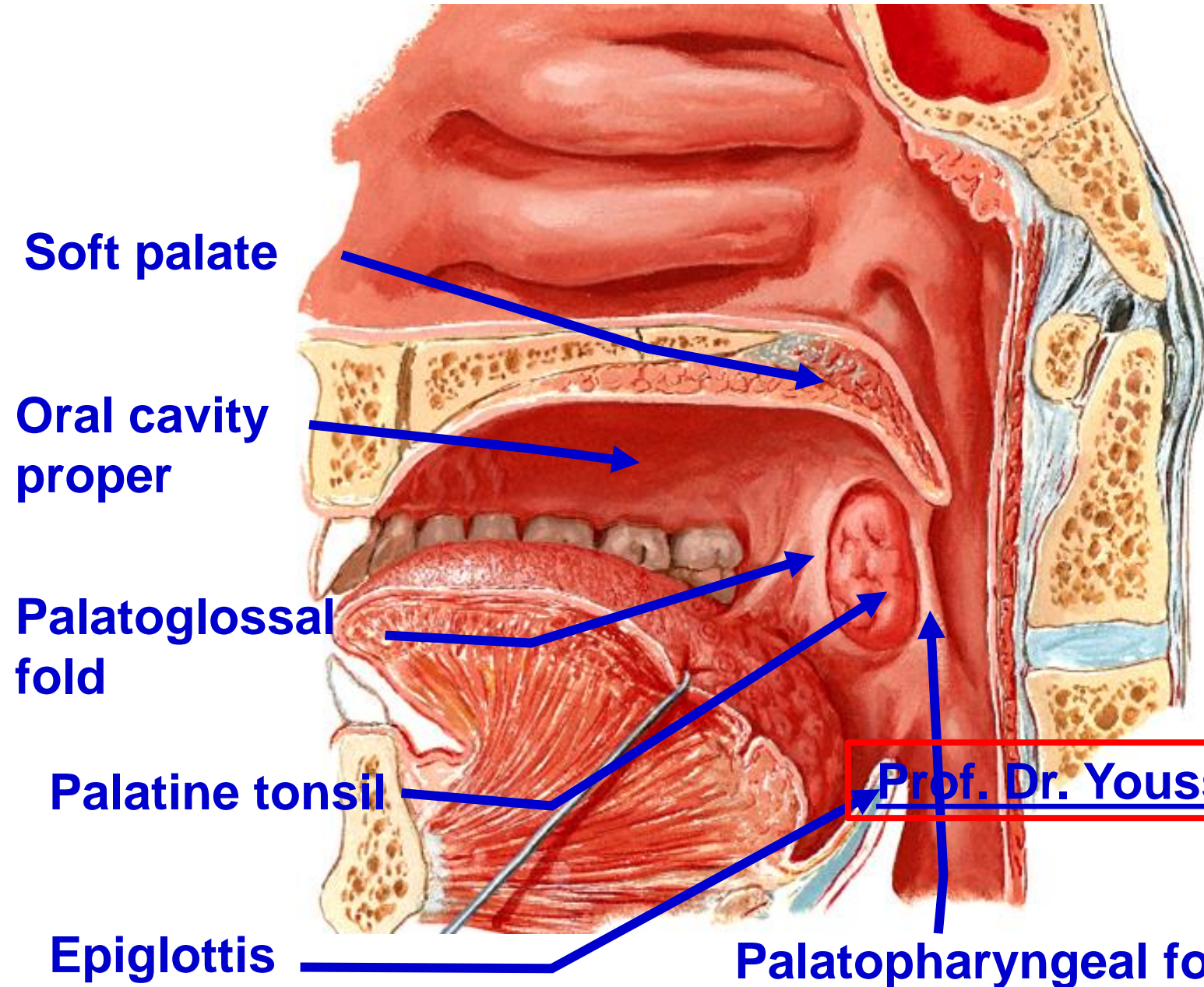
# Oropharynx Palatine tonsil

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# Oropharynx



- **Boundaries of tonsillar fossa;**
  - 1- **Anteriorly**, palatoglossal arch.
  - 2- **Posteriorly**, palatopharyngeal arch.
  - 3- **Laterally (floor)**, superior constrictor muscle which separates it from the external carotid and facial artery..

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**Medial**

**Lateral**

**Intratonsillar cleft**

**Tonsillar crypts**

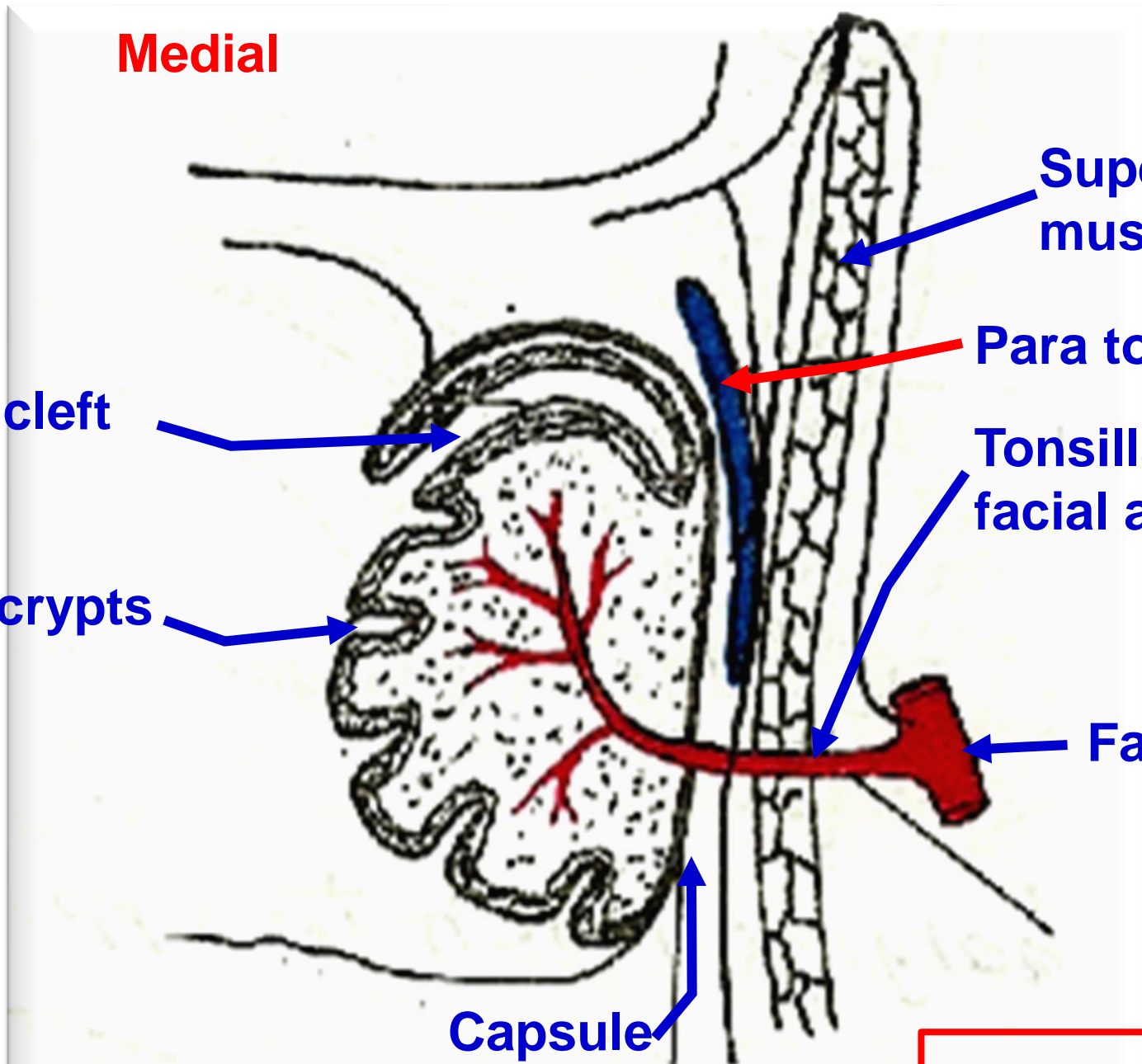
**Capsule**

**Superior constrictor muscle**

**Para tonsillar vein**

**Tonsillar branch of facial artery**

**Facial artery**



- **Palatine tonsil**

- **Structure:** it is a mass of lymphoid tissue surrounded by capsule.
- **Shape:** almond-shaped.
- **Site:** it lies in the **tonsillar fossa** on the lateral wall of oropharynx.

- **Surfaces of the tonsil (Features)** : it has 2 surfaces:

**1. Medial** (free) surface: presenting 12-15 tonsillar **crypts**.

- The upper part of the tonsil shows a deep cleft called **intratonsillar cleft** (within the substance of the tonsil).

**2. Lateral** (deep) surface is covered by capsule which separates the tonsil from the superior constrictor muscle of the pharynx.

- This surface is related to

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1- Tonsillar artery (branch of facial artery).

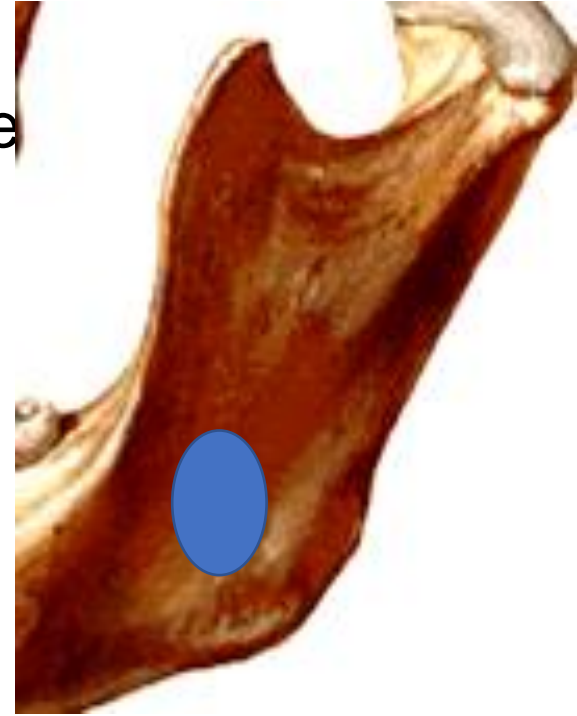
2- Paratonsillar vein.

3- Glossopharyngeal nerve

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- **Tonsil**

- **Nerve supply:** Glossopharyngeal nerve and lesser palatine nerve
- **Arterial supply:** tonsillar branch of
  - 1- Tonsillar artery (branch of Facial artery, main blood supply).
  - 2- Ascending palatine artery (facial artery).
  - 3- Ascending pharyngeal artery (external carotid artery).
  - 4- Greater palatine artery (the 3<sup>rd</sup> part of maxillary artery).



- **Venous drainage:** Paratonsillar vein to the pharyngeal plexus of veins or facial vein.

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- **Lymphatic drainage,** to upper deep cervical lymph nodes.

- **Surface anatomy,** it represents by an oval fossa

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over ramus of mandible, a little above and in front angle of mandible.

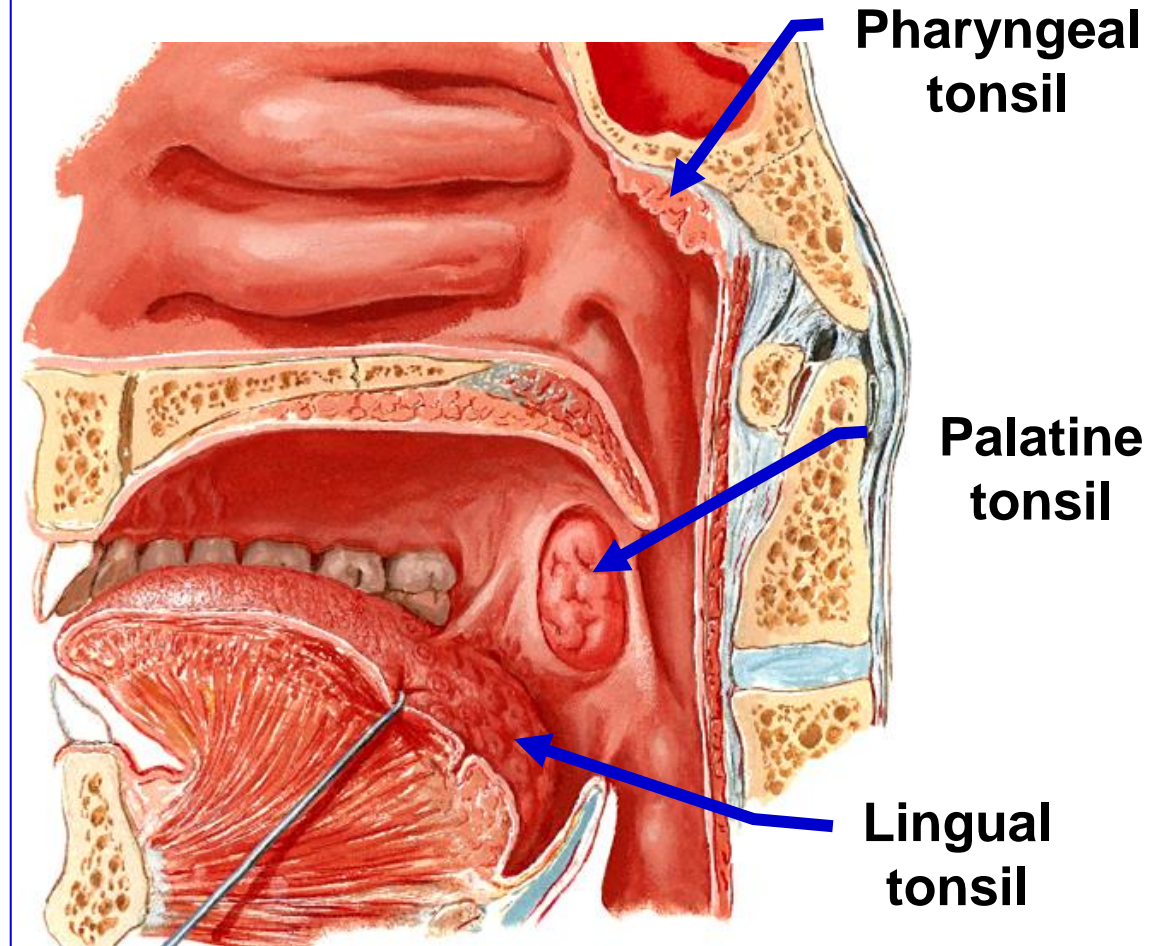
1- **Referred pain** to the middle ear during tonsillitis or after tonsillectomy because the **glossopharyngeal nerve** supplies both tonsil and middle ear (through tympanic branch).

2- **Severe haemorrhage** may follow tonsillectomy due to injury of paratonsillar vein or arteries.

3- The pharyngeal **tonsil**, palatine **tonsils** and lingual **tonsils** form a continuous ring of lymphoid tissue called **waldeyer's ring**.

Protective incomplete ring of lymphoid tissue

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**During tonsillectomy**, glossopharyngeal nerve may be injured, causing loss of general sensation and taste sensation of the posterior one-third of the tongue.

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# Laryngopharynx

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# Laryngopharynx

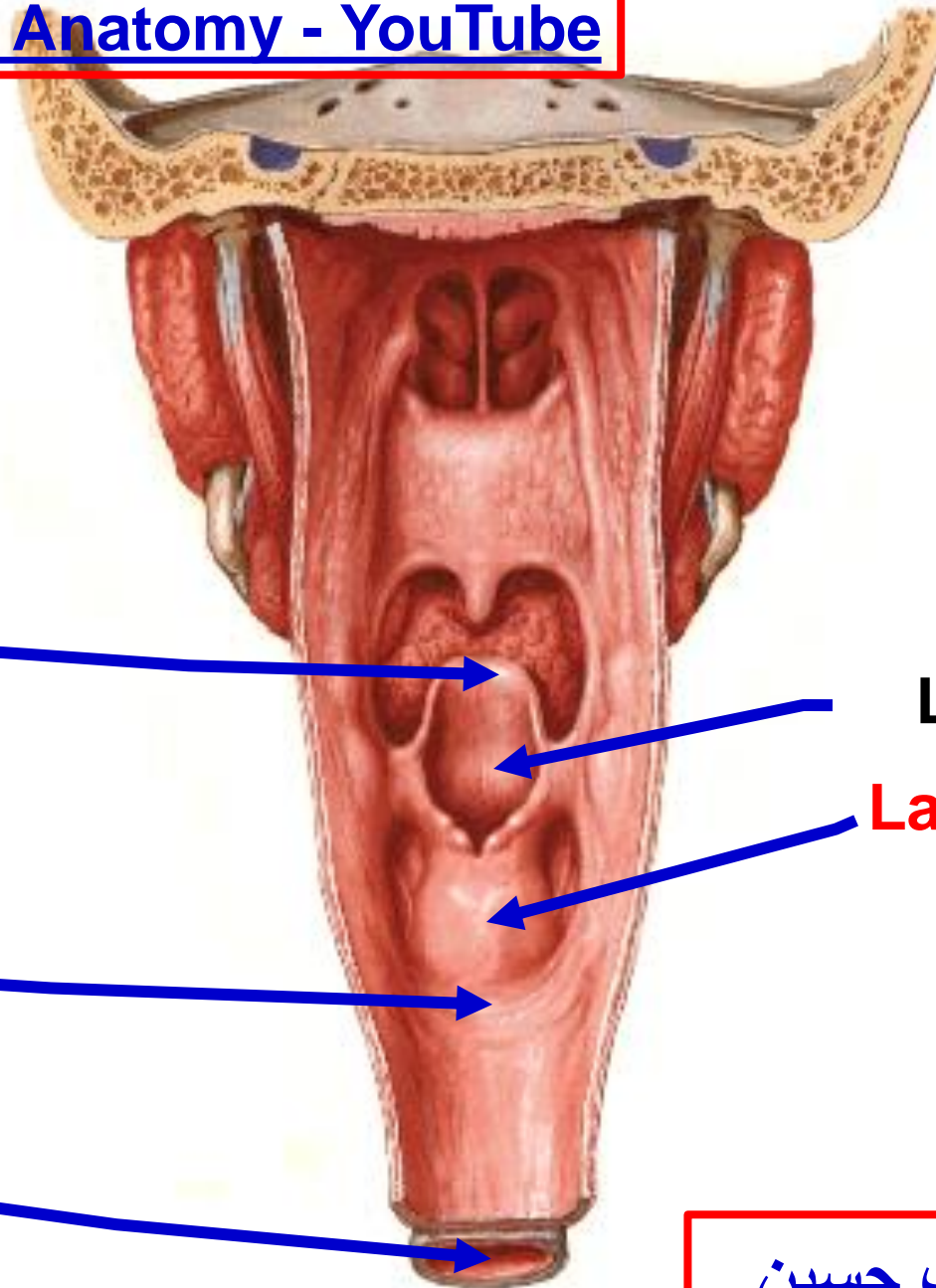
Begins, upper border of epiglottis (C3)

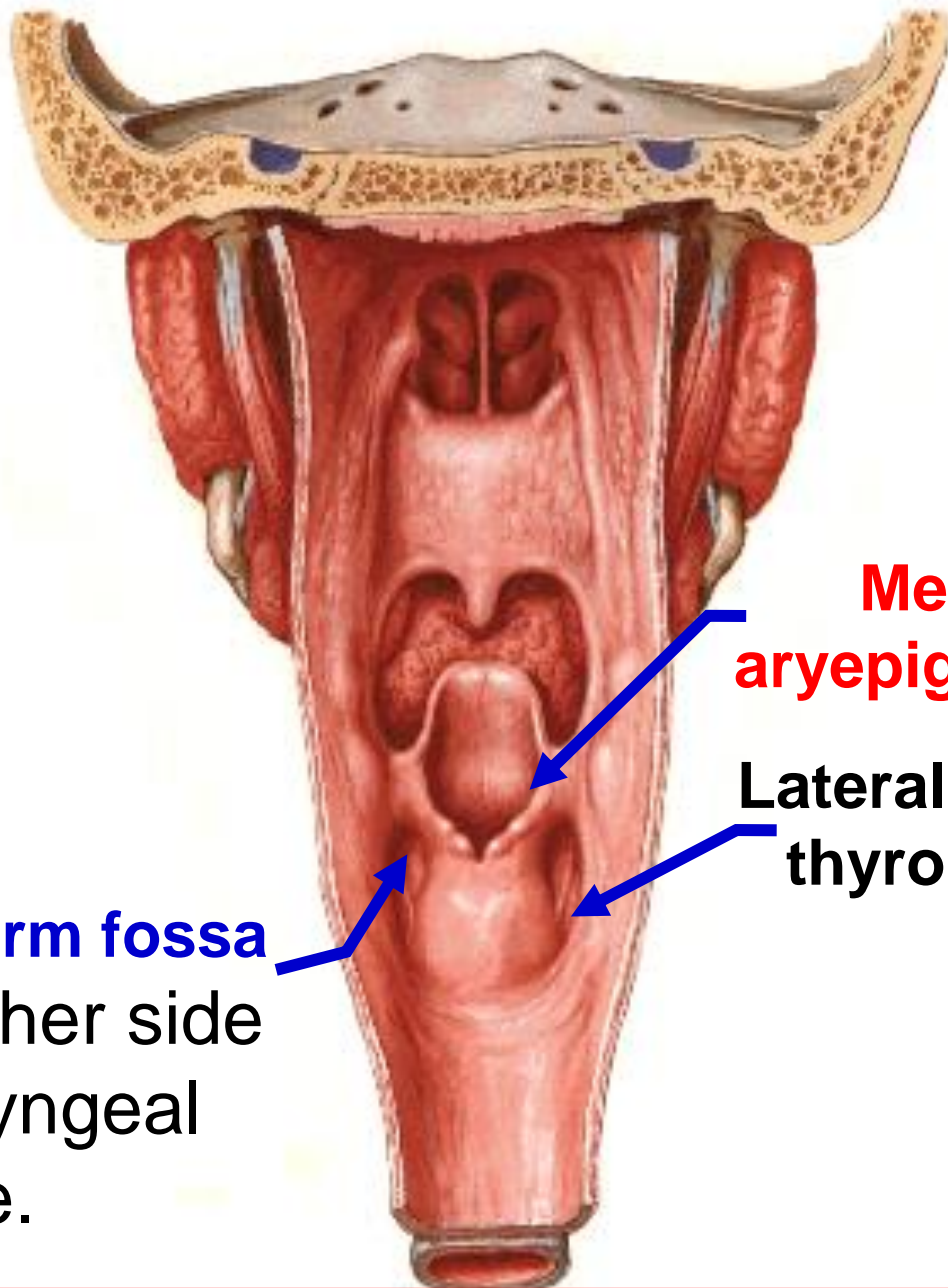
End, lower border of cricoid cartilage (C6)

Esophagus

Larynx

Laryngopharynx





**Piriform fossa**  
on either side  
of laryngeal  
orifice.

**Medially,  
aryepiglottic fold**

**Laterally, Lamina of  
thyroid cartilage**

### ❖ Piriform fossa

- In the floor of the fossa, there is the **internal laryngeal nerve**.
- During swallowing, foreign body may be lodged in fossa
- The nerve may be injured during removal of the foreign body.



- **Mechanism of deglutition**

- The process of deglutition passes through **3 successive stages**:

**A- First stage: voluntary.**

- The **bolus** of food is formed by raising the tongue against the hard palate from tip and extending backwards by **styloglossus** and **palatoglossus muscles**.

**B- Second stage: involuntary.**

1- The soft palate is raised by the levator palati and tense by the tensor palati.

- At the same time, the pharyngeal isthmus is closed.

(by contraction of the palatopharyngeus muscles).

2- The pharynx and larynx are drawn up behind the hyoid bone.

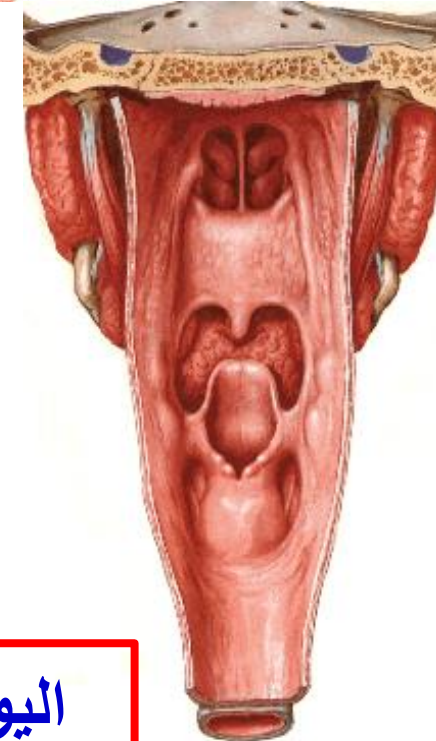
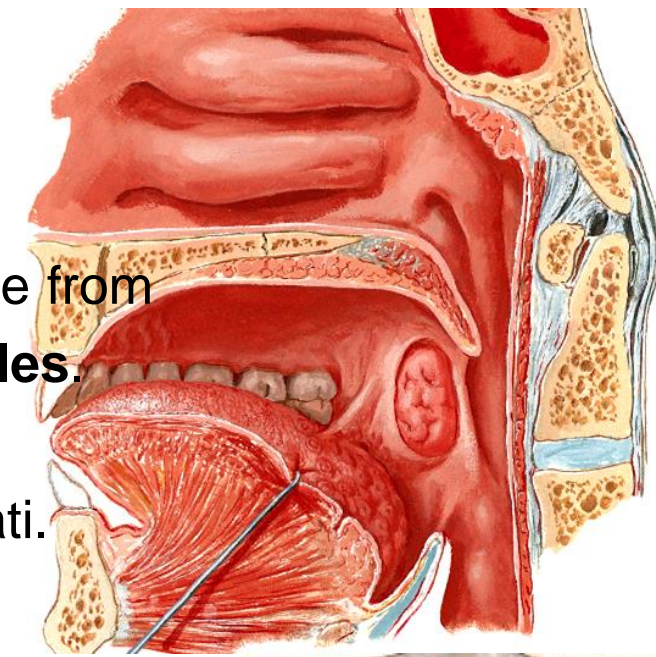
(by Salpingopharyngeus, Palatopharyngeus, and Stylopharyngeus).

- At the same time, the laryngeal opening is closed.

(by approximation of the aryepiglottic folds).

**C- Third stage: involuntary**

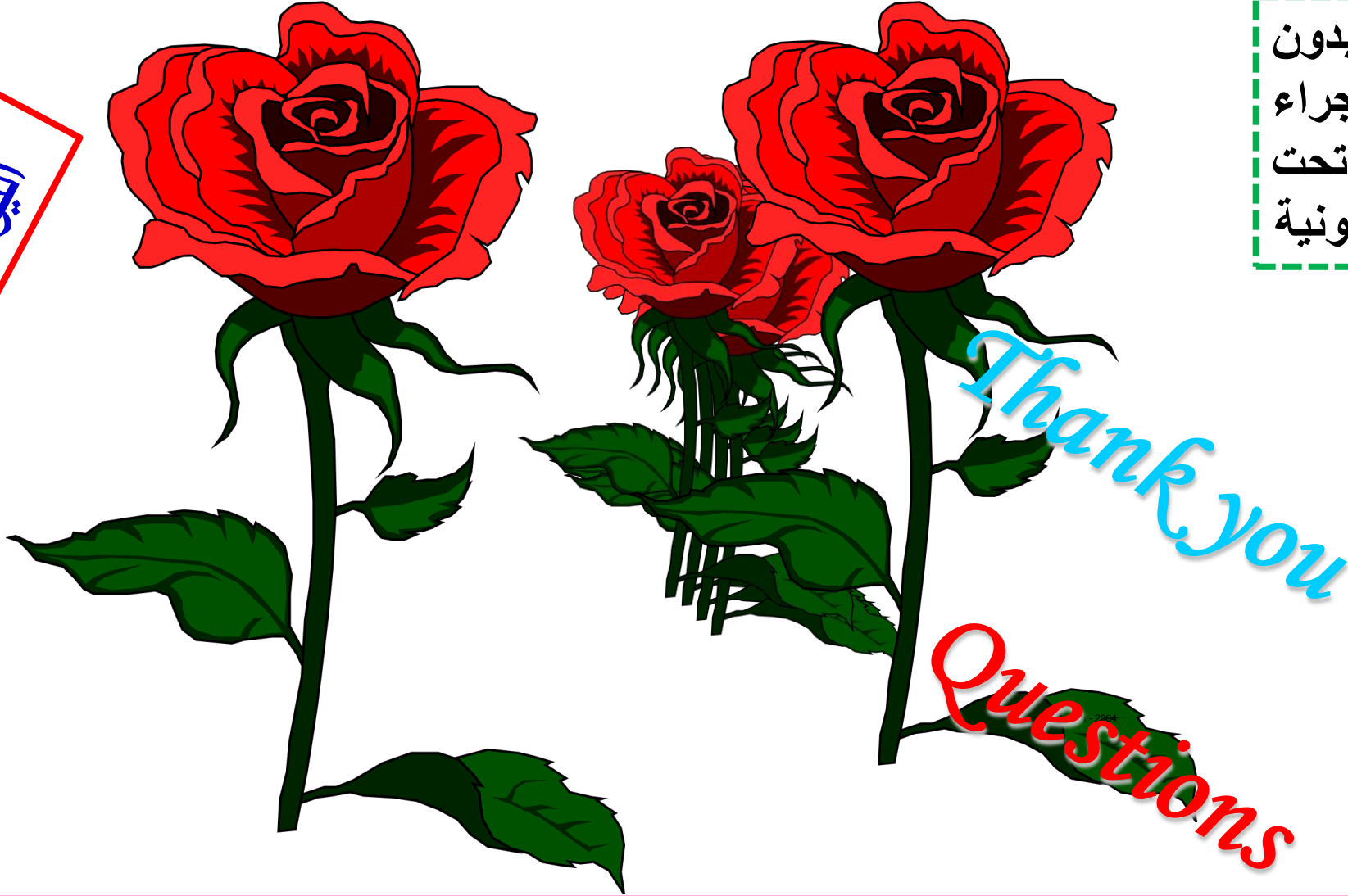
- The bolus of food passes down through pharynx by peristaltic contraction of superior, middle, and inferior constrictor muscles to push the bolus of food down to the esophagus .



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