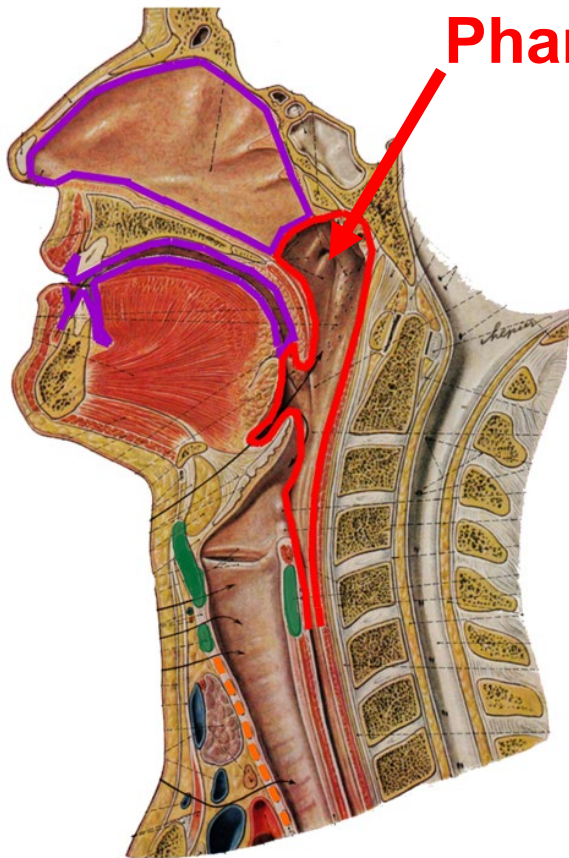
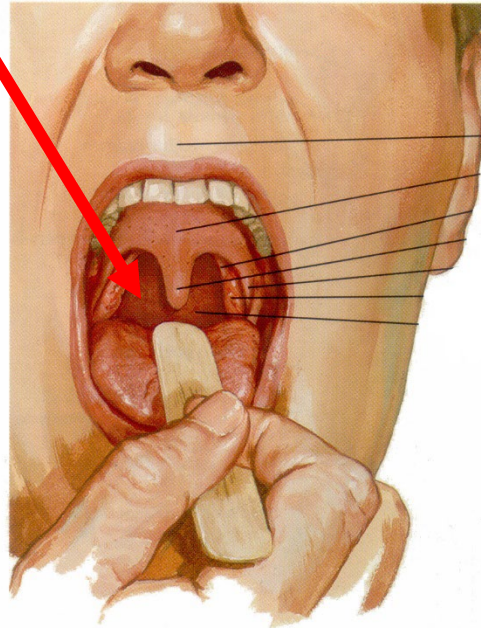


# PHARYNX



Pharynx

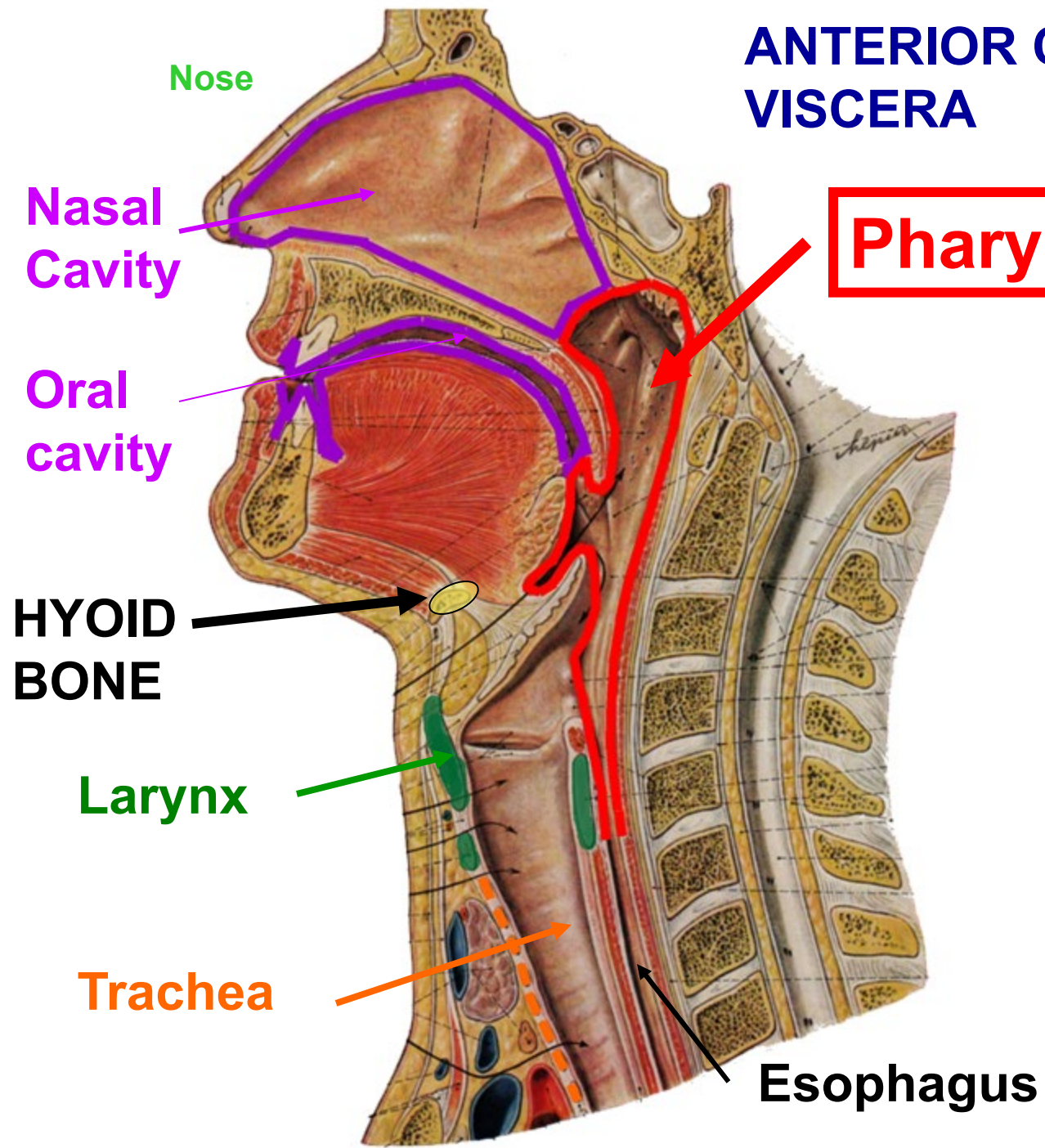


SAY  
AAHH!

## OUTLINE

- LOCATION/  
STRUCTURE
- MUSCLES -  
CIRCULAR,  
LONGITUDINAL
- GAPS
- DIVISIONS
- 'POPCORN'  
LOCATIONS
- NERVES,
- BLOOD SUPPLY
- LYMPHATICS

# ANTERIOR COMPARTMENT - VISCERA



Nose

Nasal Cavity

Oral cavity

HYOID BONE

Larynx

Trachea

Pharynx

Esophagus

1) Larynx and Esophagus open into pharynx

2) Pharynx - a tube of muscles and fascia that opens to nasal and oral cavities



# SAY AAH!

UVULA



PALATO-  
GLOSSAL  
ARCH

PALATO-  
PHARYNGEAL  
ARCH

PALATINE  
TONSIL



**CLINICAL - PALATOGLOSSAL ARCH = SITE OF THE OROPHARYNGEAL MEMBRANE = BOUNDARY BETWEEN ORAL CAVITY (PRECISE SOMATIC SENSORY) AND PHARYNX (IMPRECISE VISCERAL SENSORY)**

**VIEW: SEPARATE  
PHARYNX FROM  
VERTEBRA,  
POSTERIOR  
COMPARTMENT**

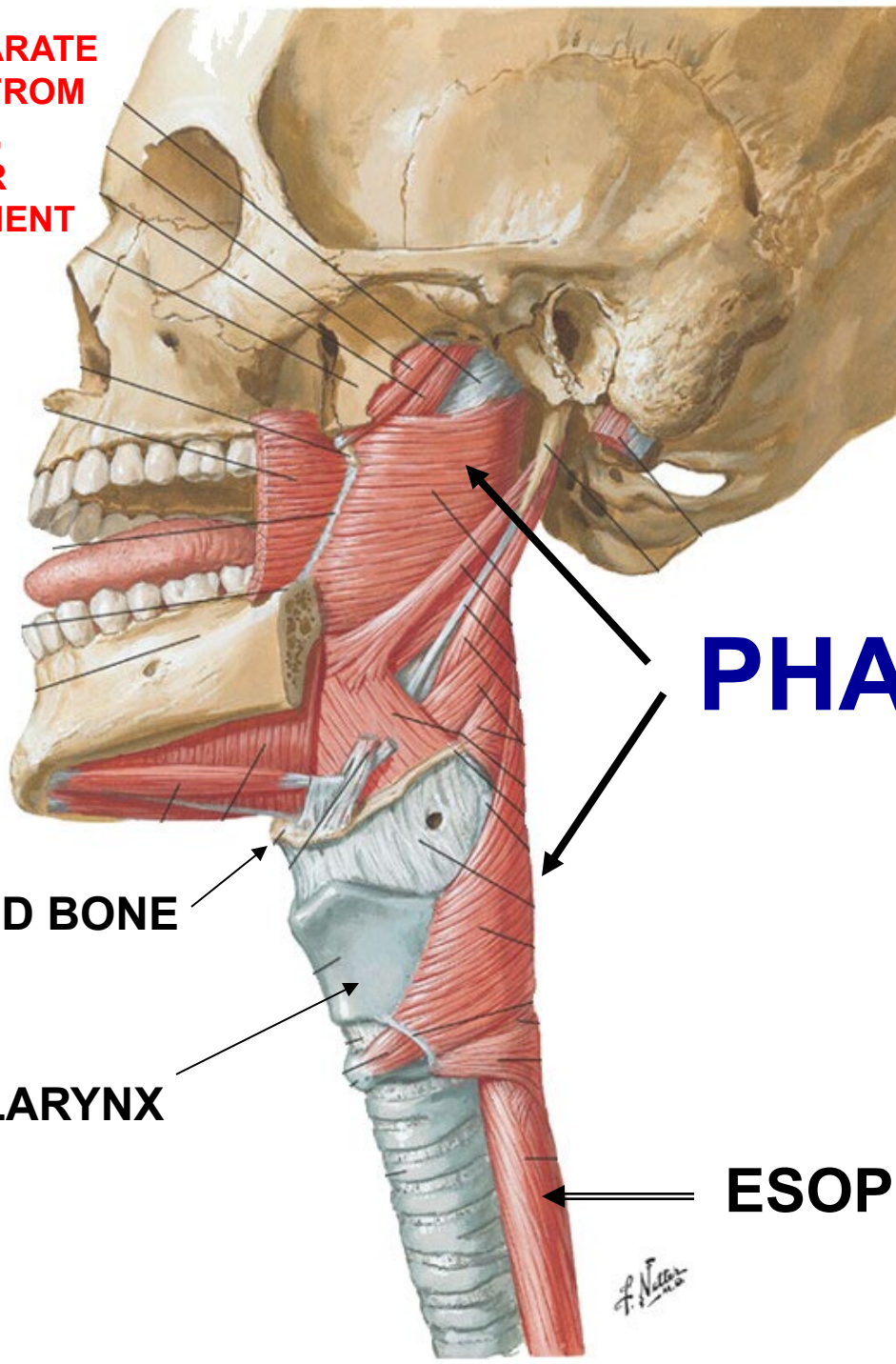
**PHARYNX - is  
continuous  
with esophagus,  
opens to larynx  
trachea**

**HYOID BONE**

**LARYNX**

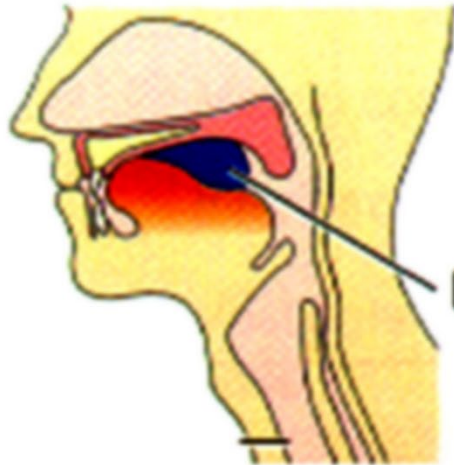
**PHARYNX**

**ESOPHAGUS = TUBE**



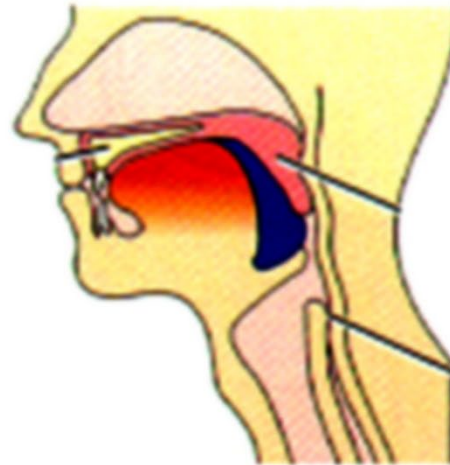
# OVERVIEW OF SWALLOWING

## PHARYNX ACTS TO PROPEL FOOD IN SWALLOWING

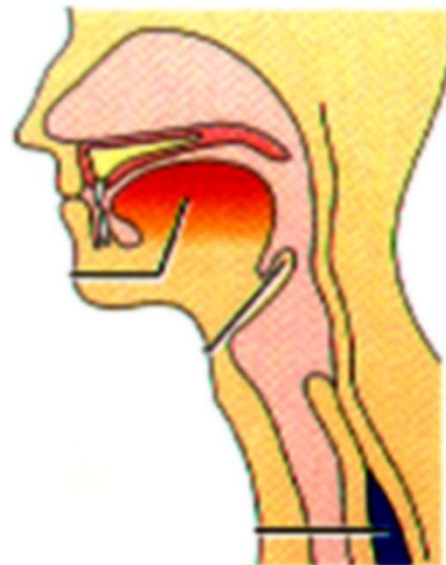
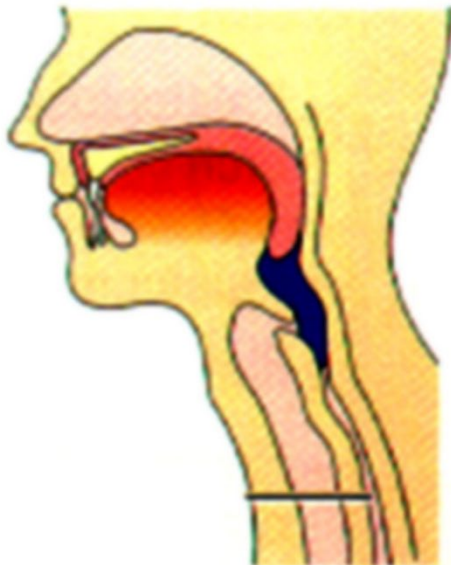


**Voluntary  
phase**

**Bolus = FOOD**



**Involuntary  
phase 1**



**Involuntary  
phases 2,3 =  
Muscles of  
pharynx propel  
food down to  
esophagus**

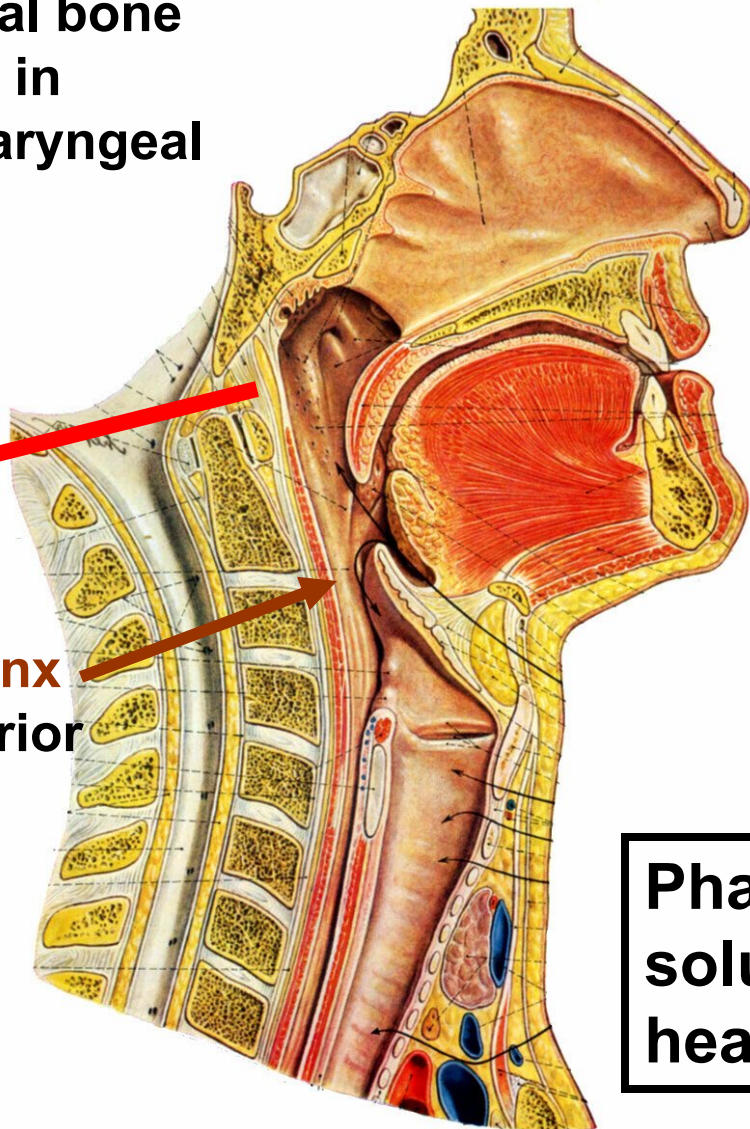


# PHARYNX

Disarticulate C1  
– occipital bone  
separate in  
Retropharyngeal  
Space

**CUT  
HERE**

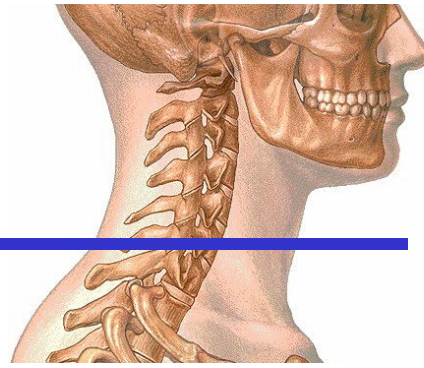
View **Pharynx**  
from Posterior  
Side



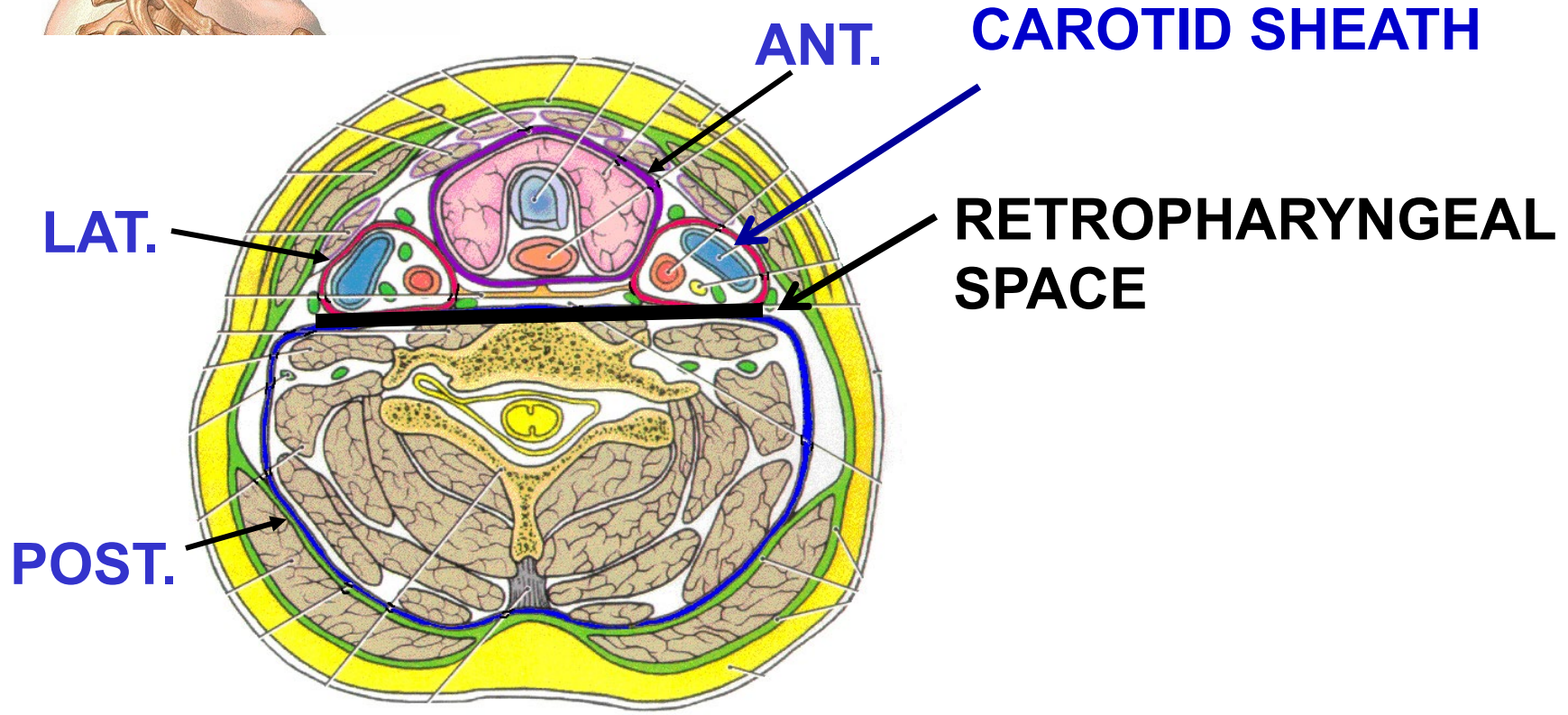
Pharynx is  
Muscular Tube  
opens to nasal,  
oral cavities;  
continuous  
below with  
esophagus;  
Pharynx has  
layers like GI  
tract

Pharynx is difficult to see;  
solution: disarticulate  
head

# RECALL - neck is compartmentalized



Plane of section



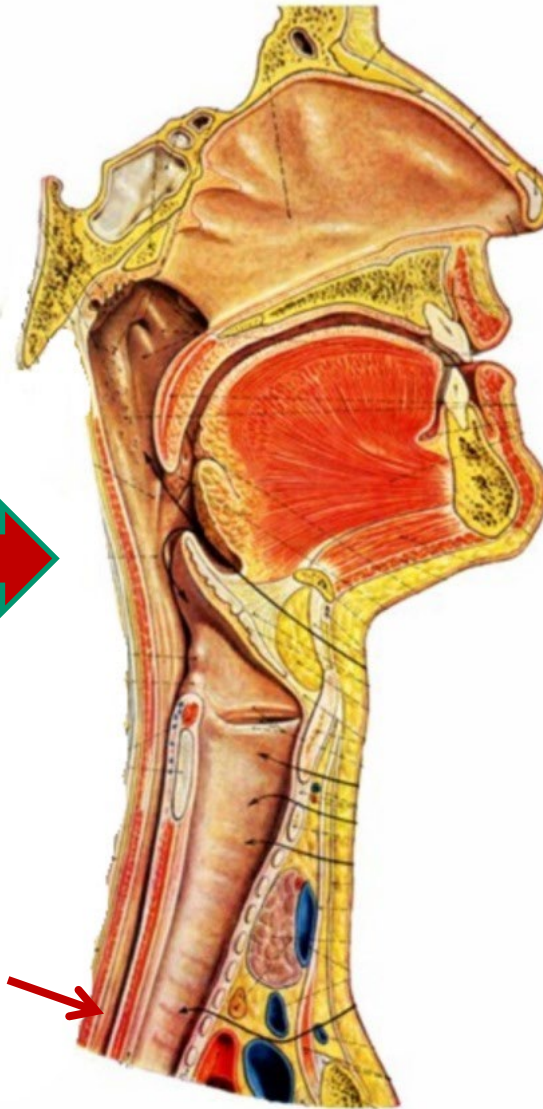
**HORIZONTAL SECTION THROUGH NECK**

# ORIENT TO PHARYNX PROSECTION

**MUSCLES  
OF  
PHARYNX**

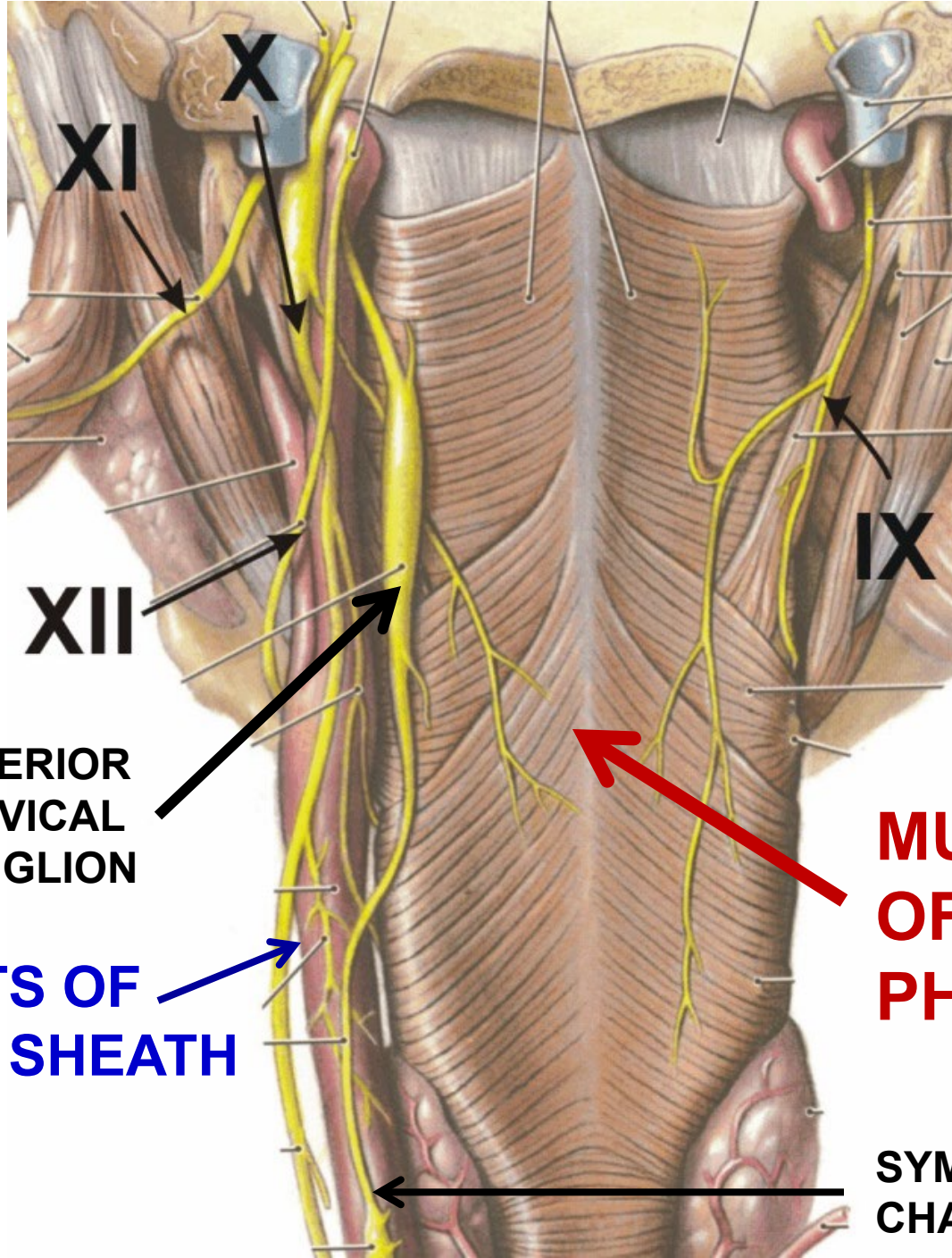


**ESOPHAGUS**



**After disarticulate  
head  
VIEW PHARYNX  
FROM POSTERIOR  
SIDE  
(RETROPHARYNG  
EAL SPACE**





X

XI

XII

IX

SUPERIOR  
CERVICAL  
GANGLION

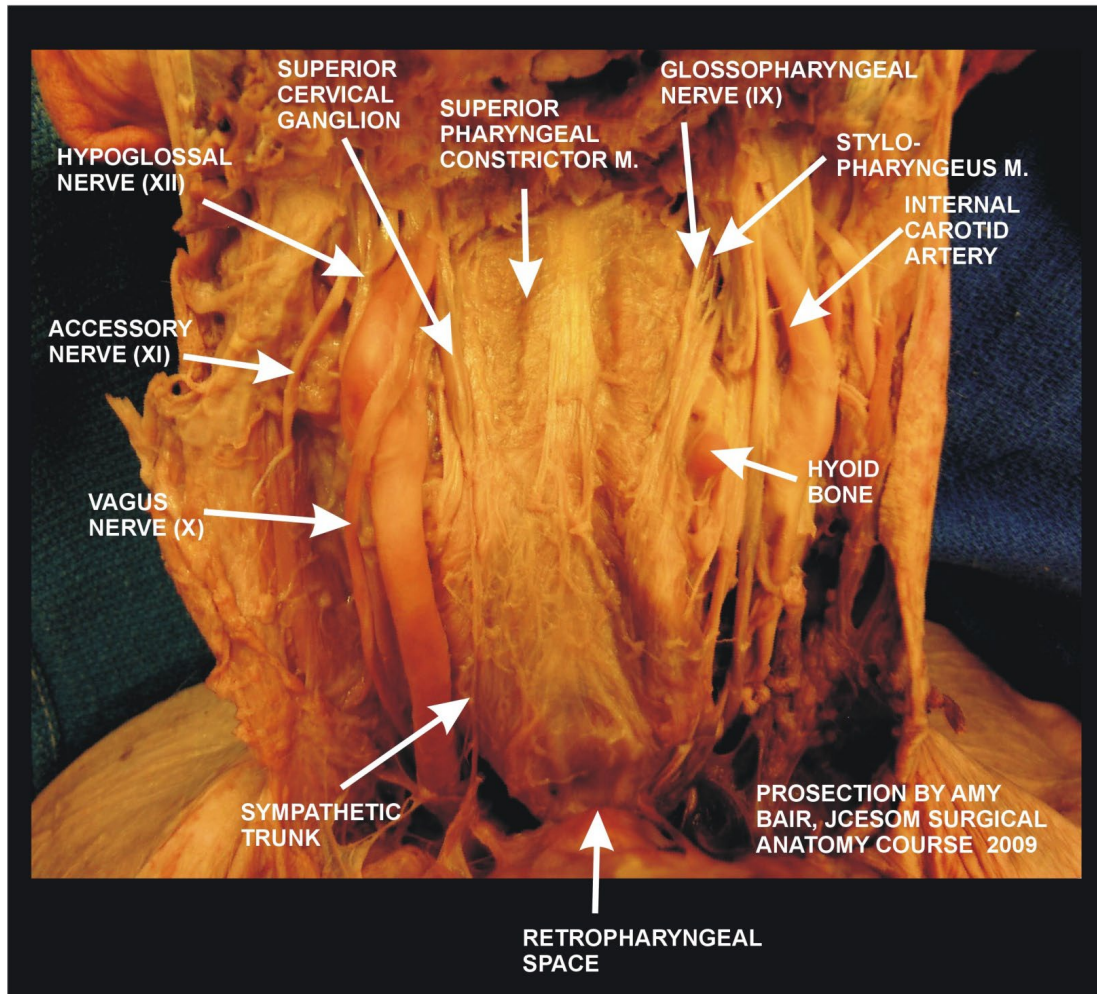
CONTENTS OF  
CAROTID SHEATH

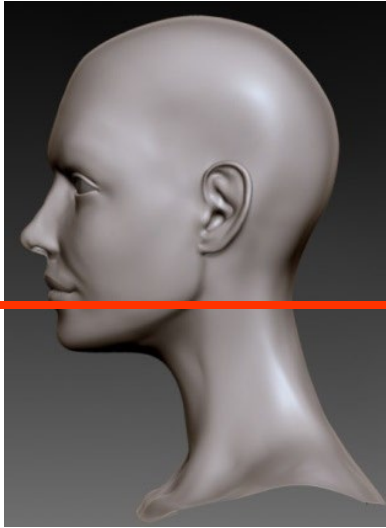
MUSCLES  
OF  
PHARYNX

SYMPATHETIC  
CHAIN

# POSTERIOR PHARYNX AND RETROPHARYNGEAL SPACE

314





**POST.  
COMPARTMENT -  
. Posterior  
Compartment -  
**Vertebrae and muscles**  
which support and  
move head & neck**

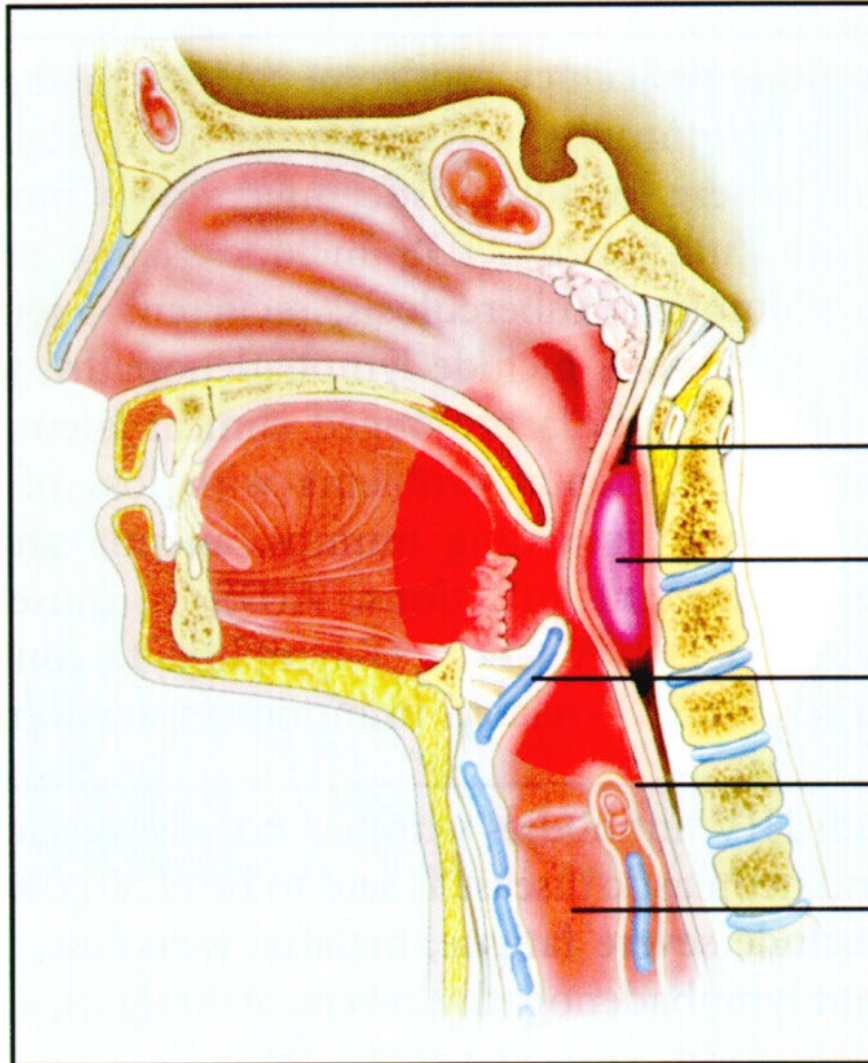




# CLINICAL: RETROPHARYNGEAL ABSCESS



**Infection in retropharyngeal space can spread unimpeded to mediastinum (MIDDLE OF THORACIC CAVITY)**



Retropharyngeal space

Abscess

Epiglottis

Esophagus

Trachea

**Note: George Washington may have died from this**

# LAYERS OF PHARYNX ARE SIMILAR TO GI TRACT

Transverse section of  
esophagus

Outer fascia -  
Bucco-Pharyngeal  
Fascia (part of Pretracheal  
Layer)



Muscle layers -  
Inner Layer  
Circular

Outer Layer  
Longitudinal

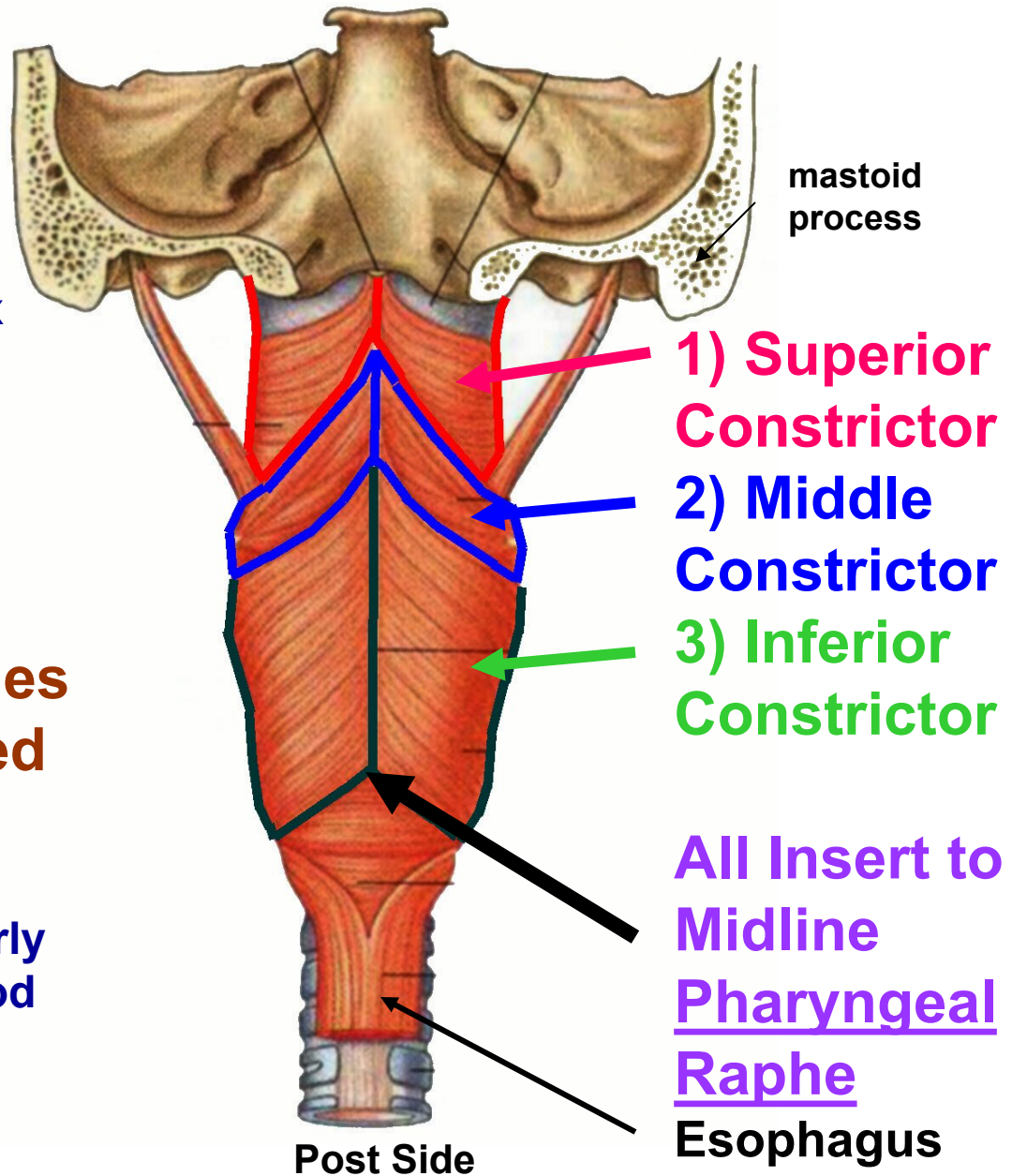
# III. PHARYNX

## B. Location

- 1) Extends from Base of skull
- 2) Post. To Nasal and Oral cavities and larynx
- 3) Ant to vertebrae C1-C6
- 4) medial to Carotid sheath and CN IX-XII
- 5) To level Cricoid Cart.

## C. Circular Muscles of Pharynx - called Constrictors

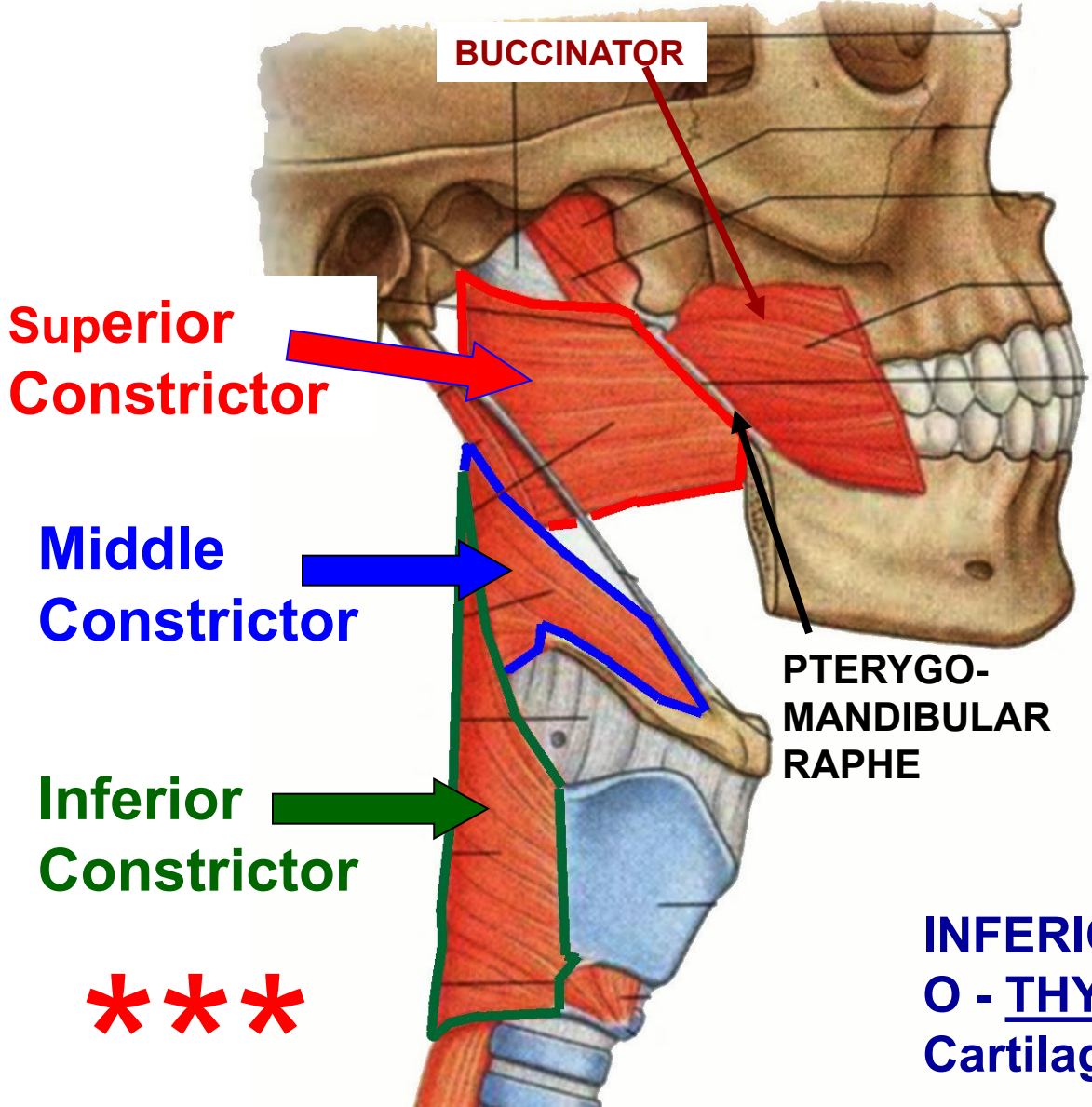
- all insert on midline fibrous raphe posteriorly
- all serve to propel food to esophagus during swallowing by constricting pharynx





# PHARYNX CONSTRICTOR MUSCLES

**KNOW ORIGINS**



**SUPERIOR CONSTRICTOR \***  
O - Pterygo-mandibular Raphe  
(Connective tissue 'ligament' from Medial Pterygoid plate to Mandible)

**CONTINUOUS ANT. WITH BUCCINATOR**

**MIDDLE CONSTRICTOR**  
O - HYOID

**INFERIOR CONSTRICTOR**  
O - THYROID & CRICOID  
Cartilage

**Tell Constrictors Apart by level of insertion: Inf. to Thyroid, Cricoid; Middle to Hyoid; Superior - region superior to Hyoid bone**

# PHARYNX - LONGITUDINAL MUSCLES

## 1. Stylopharyngeus

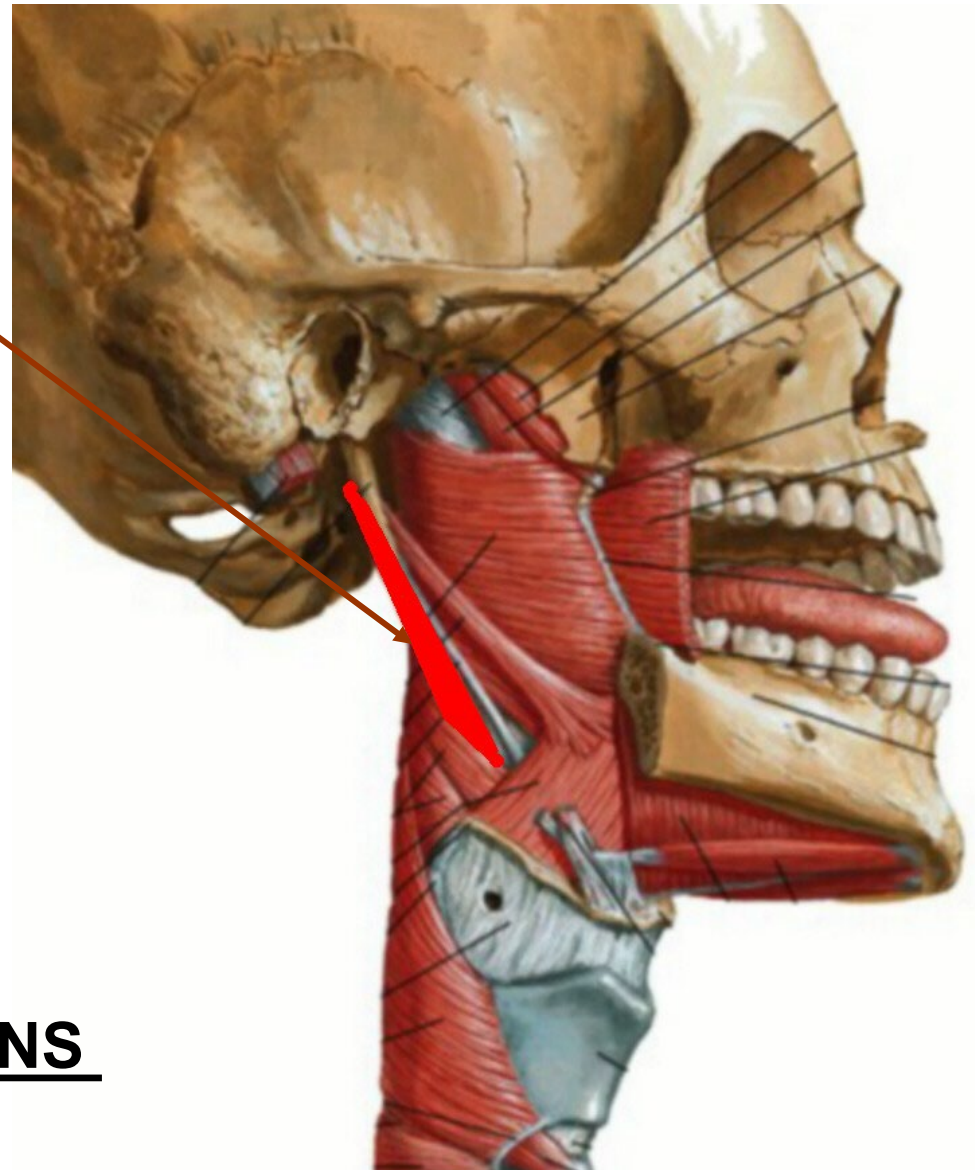
O - Styloid process  
of Temporal bone

I - Thyroid Cartilage

A - Raise pharynx  
and pull walls laterally

Inn - IX (BRANCHIO-  
MOTOR)

**SEE ON PROSECTIONS**  
**ex. 314**



## D. Structures Through Gaps In Constrictors

# PHARYNX

### 1) Between Sup. Constrictor and Skull

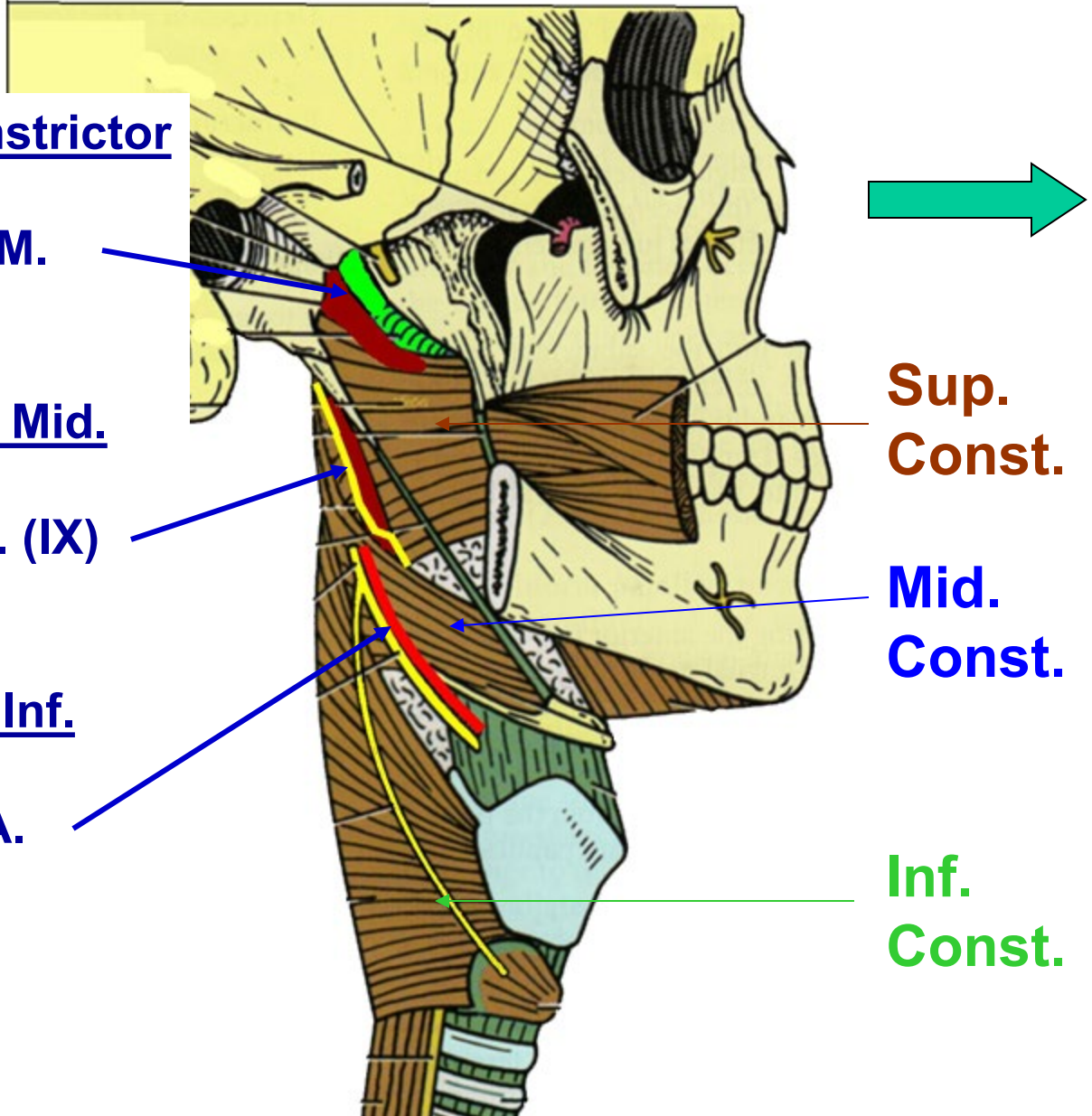
Levator Veli Palatini M.  
Auditory Tube

### 2) Between Sup. and Mid. Constrictor

Glossopharyngeal N. (IX)  
Stylopharyngeus M.

### 3) Between Mid. and Inf. Constrictor

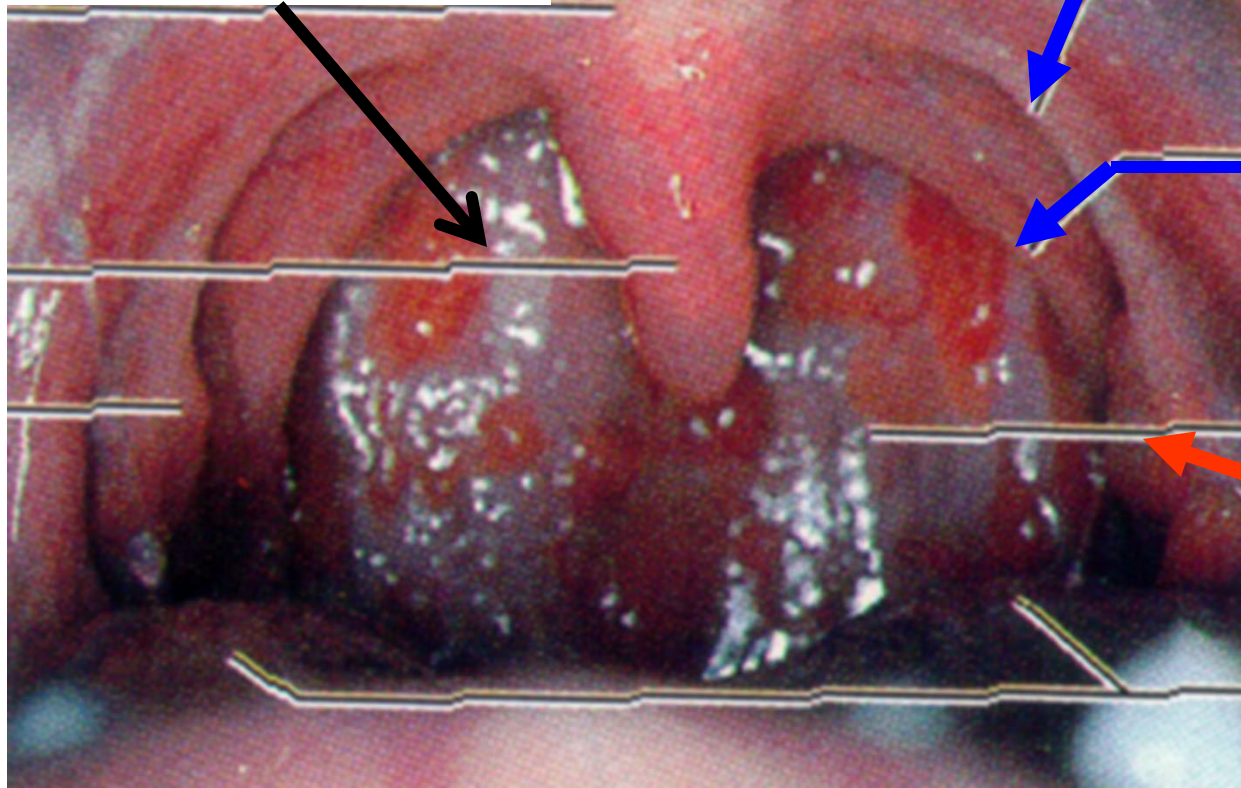
Superior Laryngeal A.  
Internal Laryngeal N.





# SAY AAH!

LOOKS LIKE BACK WALL:  
SUPERIOR CONSTRICTOR



PALATO-  
GLOSSAL  
ARCH

PALATO-  
PHARYNGEAL  
ARCH

PALATINE  
TONSIL

\*\*\*

**CLINICAL - PALATOGLOSSAL ARCH = SITE OF THE OROPHARYNGEAL MEMBRANE = BOUNDARY BETWEEN ORAL CAVITY (PRECISE SOMATIC SENSORY) AND PHARYNX (IMPRECISE VISCERAL SENSORY)**

# F. DIVISIONS OF PHARYNX

## 1) Nasopharynx

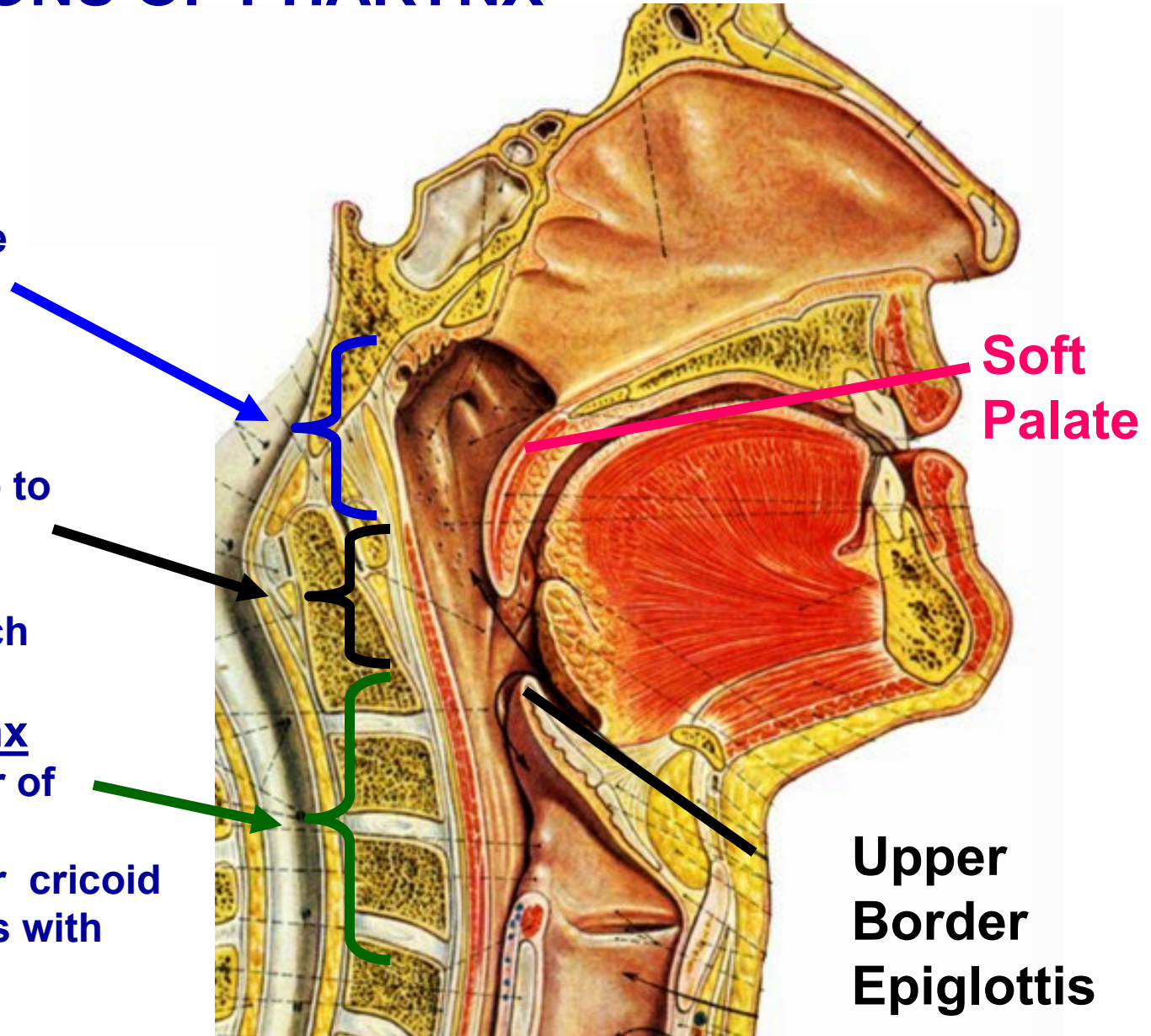
Inf. To Sphenoid  
Ant. To Occip. Bone  
Post to nasal cav.  
Sup to soft palate

## 2) Oropharynx

Inf. to soft pal.; Sup to  
upper border of  
Epiglottis; Post.  
to palatoglossal arch

## 3) Laryngopharynx

Inf. To upper border of  
epiglottis  
Sup to lower border cricoid  
cart. Communicates with  
esophagus - inf  
Larynx - ant.





# CONTENTS OF PHARYNX

in Nasopharynx

- Pharyngeal Tonsil (Adenoids)

- opening of Auditory Tube (Torus tubarius - overlies opening)

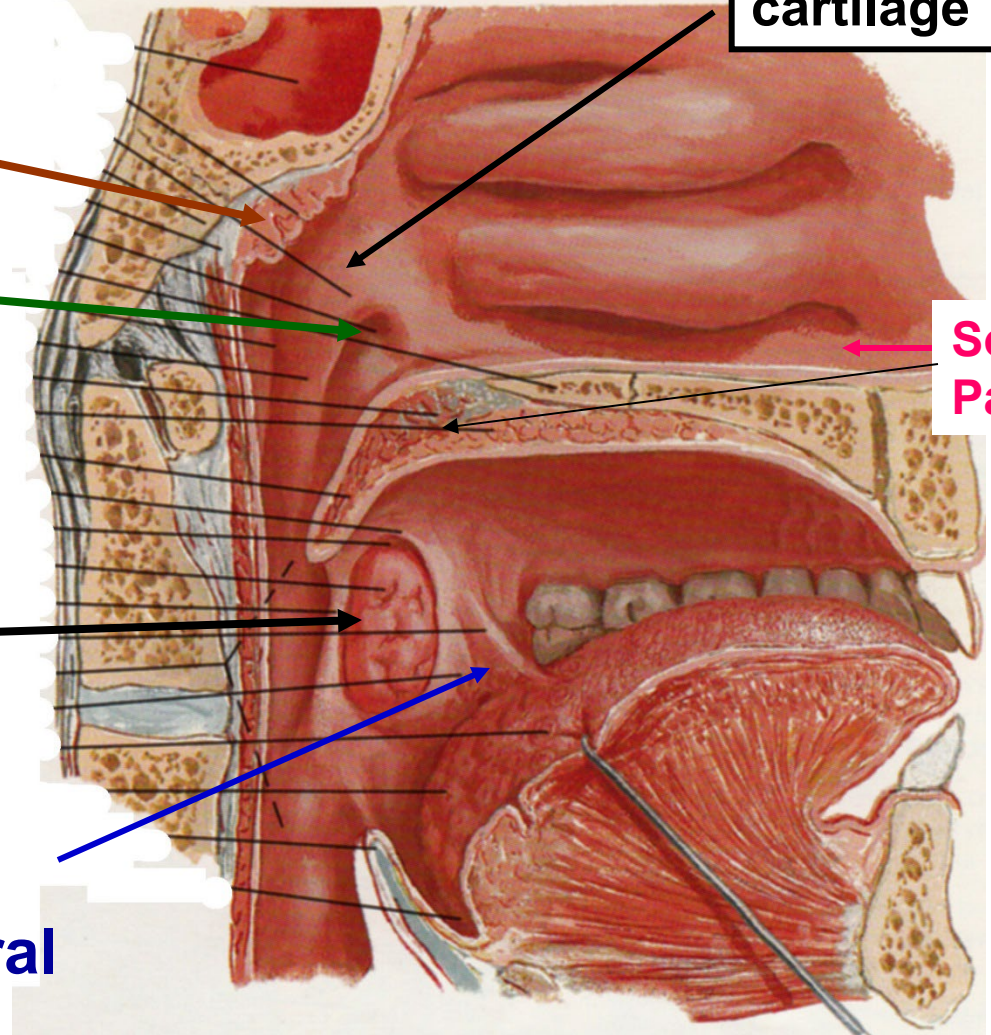
in Oropharynx

- Palatine Tonsils

posterior to Palatoglossal Arch (boundary between Oral Cavity and Oropharynx)

**TORUS TUBARIUS - cartilage**

**Soft Palate**



**TORUS** - donut shape

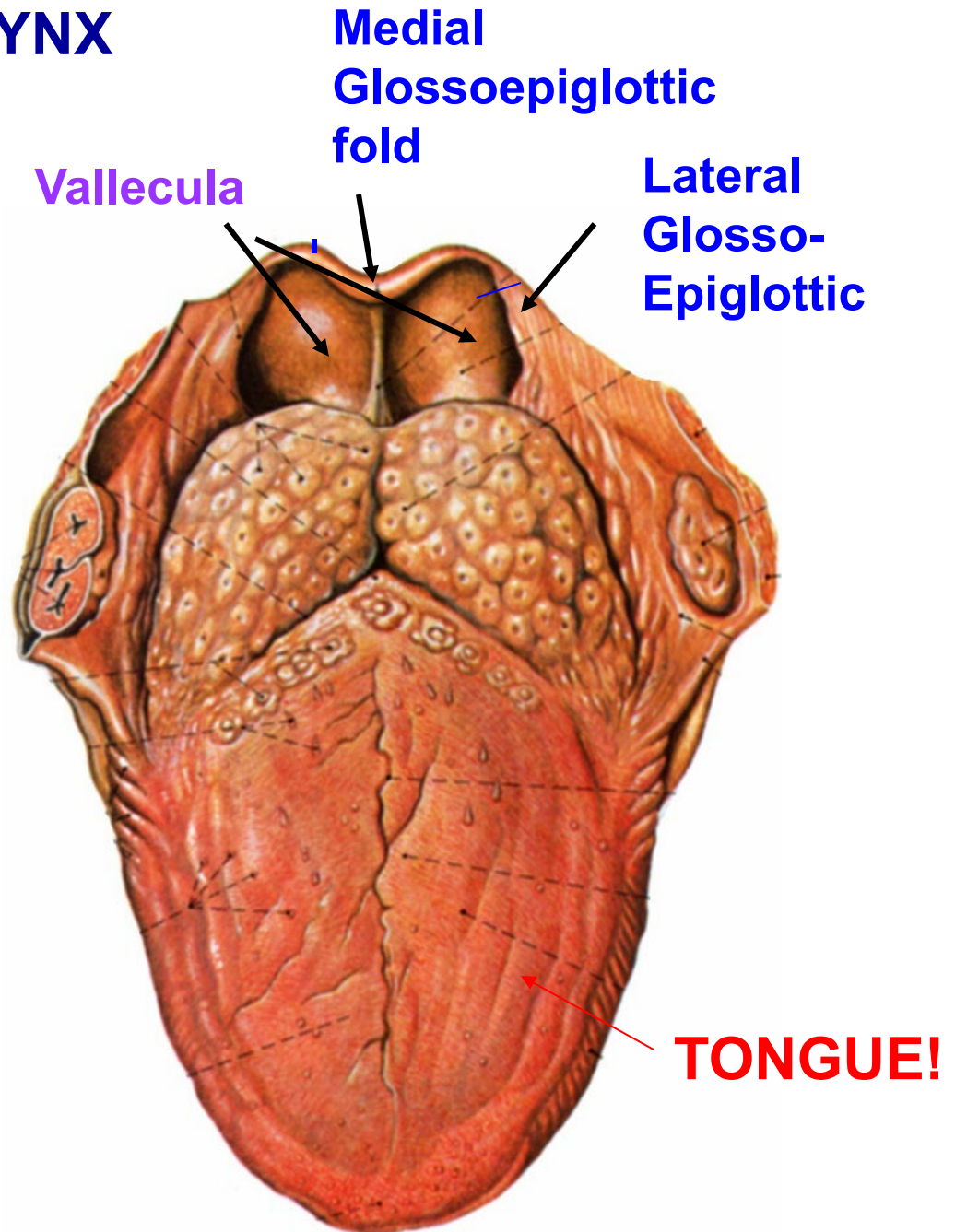


# CONTENTS OF PHARYNX

in Oropharynx  
- Valleculae =  
depressions (2)  
Between Med & Lat  
Glossoepiglottic  
Folds; Food/objects  
Lodge in  
Valleculae

Clinical: **Valleculae =  
Popcorn 1**

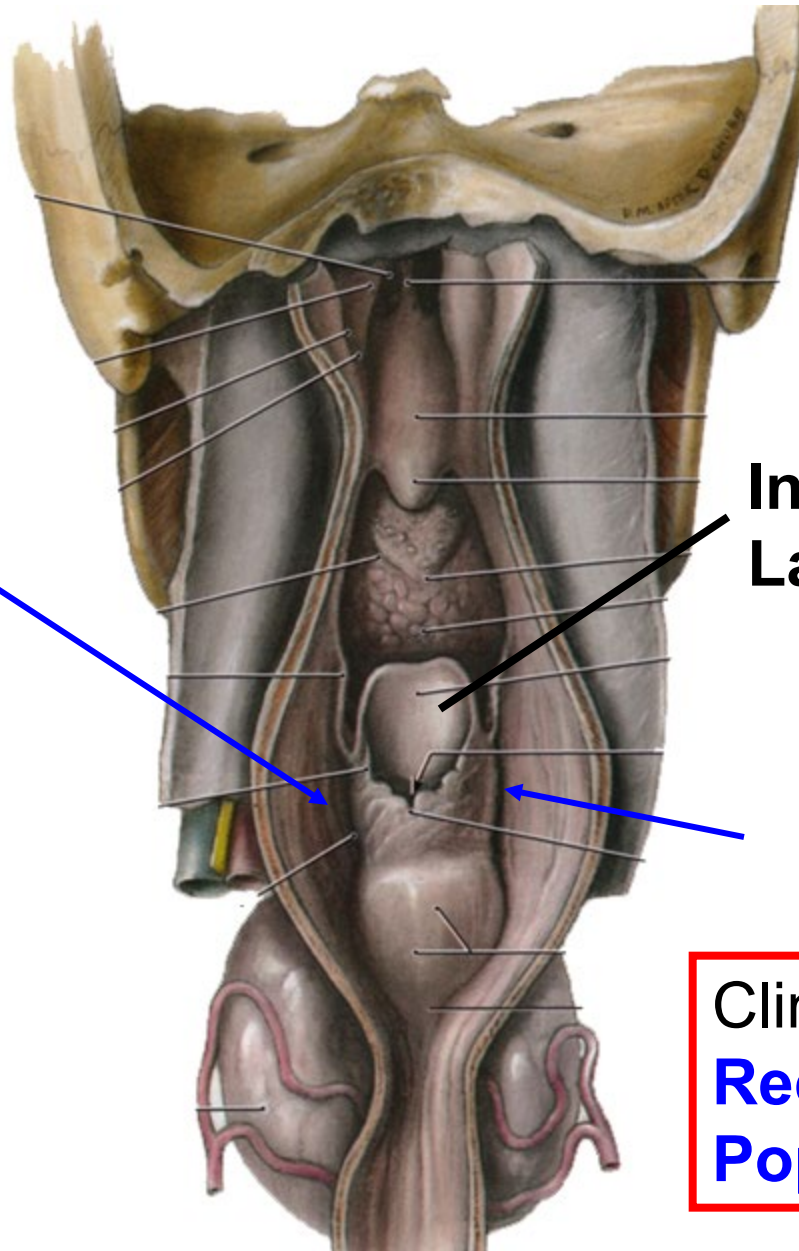
**\*\*\***



# CONTENTS OF PHARYNX

in Laryngo  
Pharynx-  
Piriform  
Recesses –  
Lateral  
To Inlet  
Of  
Larynx

foreign  
objects  
lodge in  
Recesses

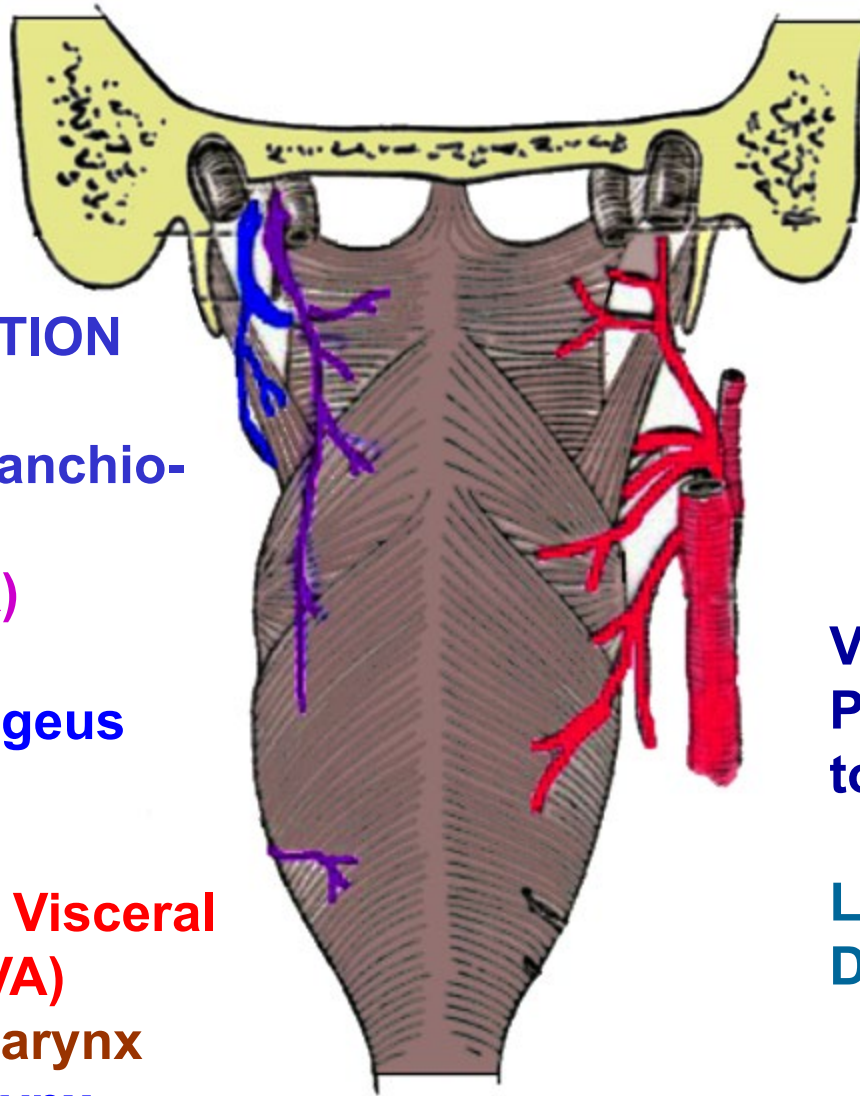


Inlet of  
Larynx

Piriform  
Recess \*\* \*\*

Clinical: Piriform  
Recess =  
Popcorn 2

# PHARYNX: INNERVATION, BLOOD SUPPLY



## G. INNERVATION

1) Motor- Branchio-  
motor (SVE)

All Vagus (X)

except

Stylopharyngeus  
(IX)

2) Sensory - **Visceral**  
**Sensory (GVA)**

VII - Nasopharynx

IX - Oropharynx

X - Laryngopharynx

## H. Blood Supply

Ascending Pharyngeal  
Facial  
Lingual  
Maxillary

Veins

Pharyngeal plexus  
to Int. Jugular

Lymphatics

Deep Cervical Nodes



**POPCORN QUESTIONS - Food stuck when trying to swallow - not localize because innervation is Visceral Sensory**

**POPCORN 1) Posterior tongue - food caught in Valleculae between Medial and Lateral Glossoepiglottic folds**

**POPCORN 2) 'Throat'- food caught in Piriform recesses, lateral to opening of larynx**