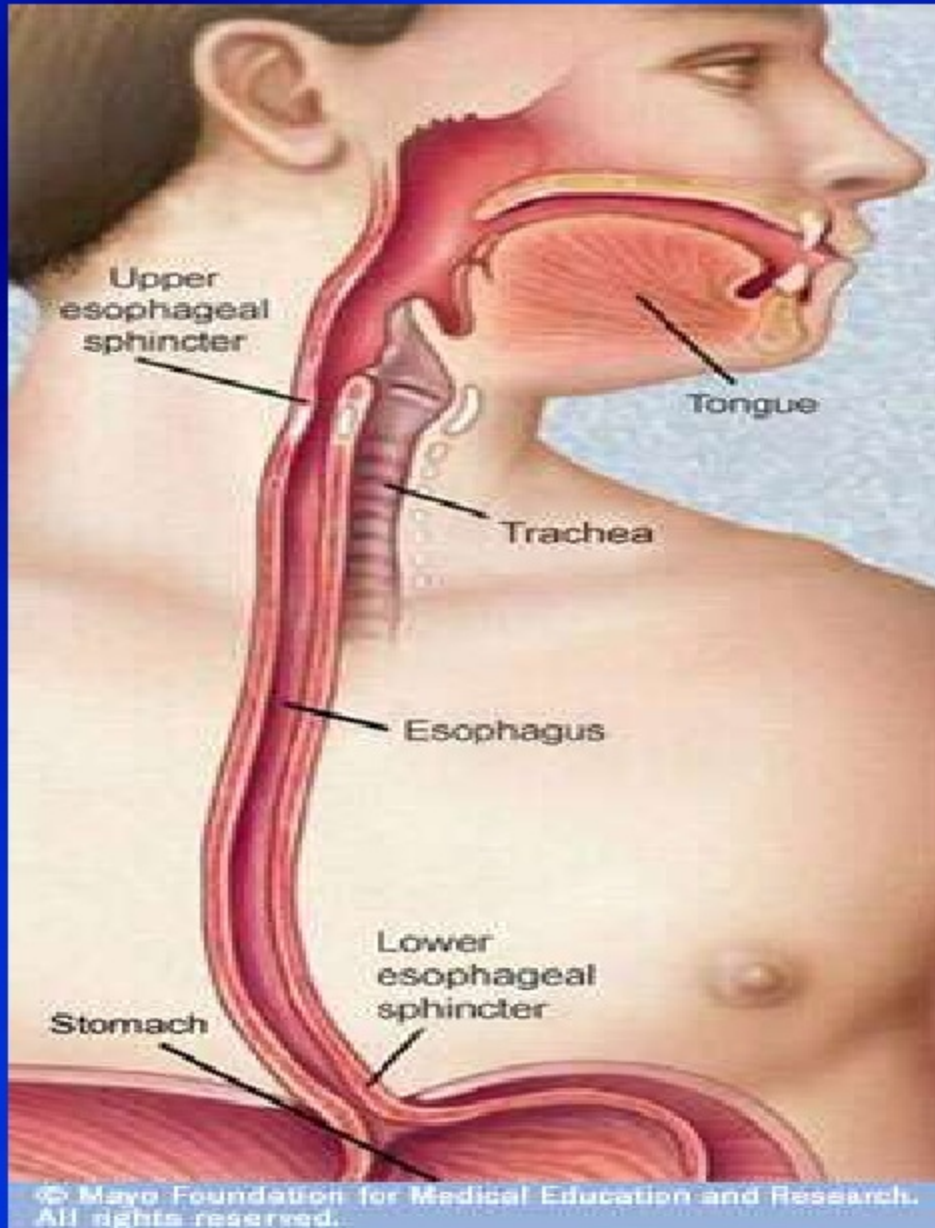


BARIUM SWALLOW

DR.SHAIK FARID

RMMCH

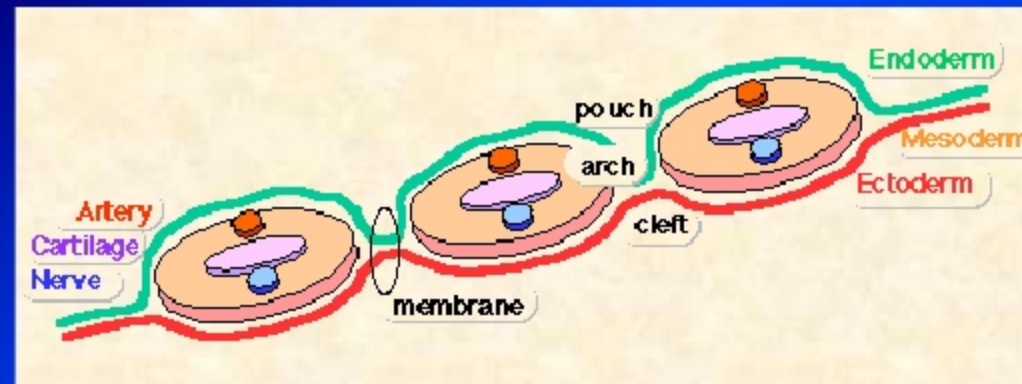
INTRODUCTION



- Barium swallow is a radiological study of pharynx and esophagus upto the level of stomach with the help of contrast.

EMBRYOLOGY OF PHARYNX

- Head & neck structures are derived from pharyngeal arches 1 & 2.
- Each arch contain similar component derived from endoderm,ectoderm & mesoderm.
- The cavity within the pharyngeal arches forms the pharynx.



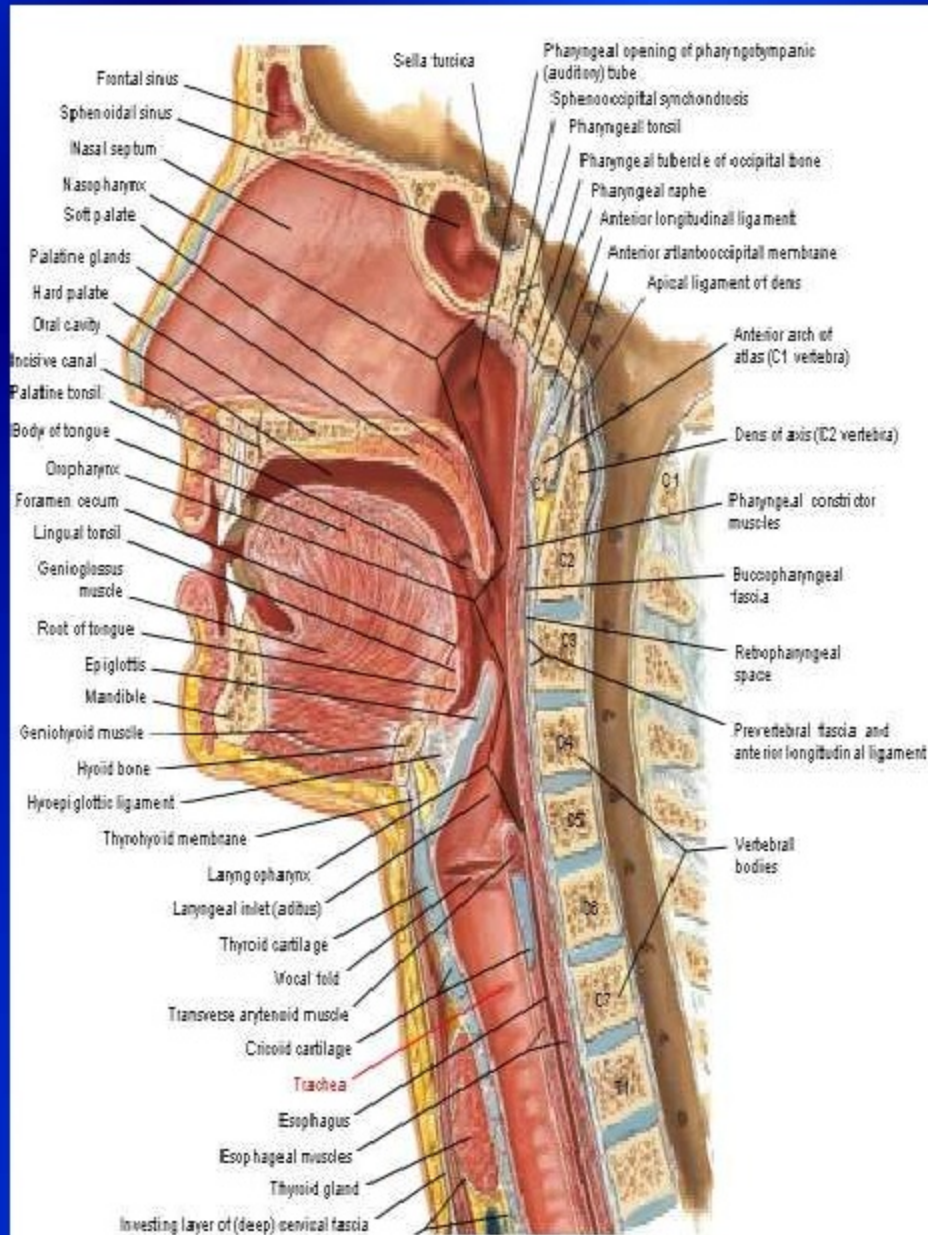
BOUNDRIES OF PHARYNX

- Anteriorly-mouth & nasal choanae
- Superiorly-soft palate & portion of skull
- Inferiorly- postr of tongue
- Posteriorly- pharnygeal constrictors

PARTS

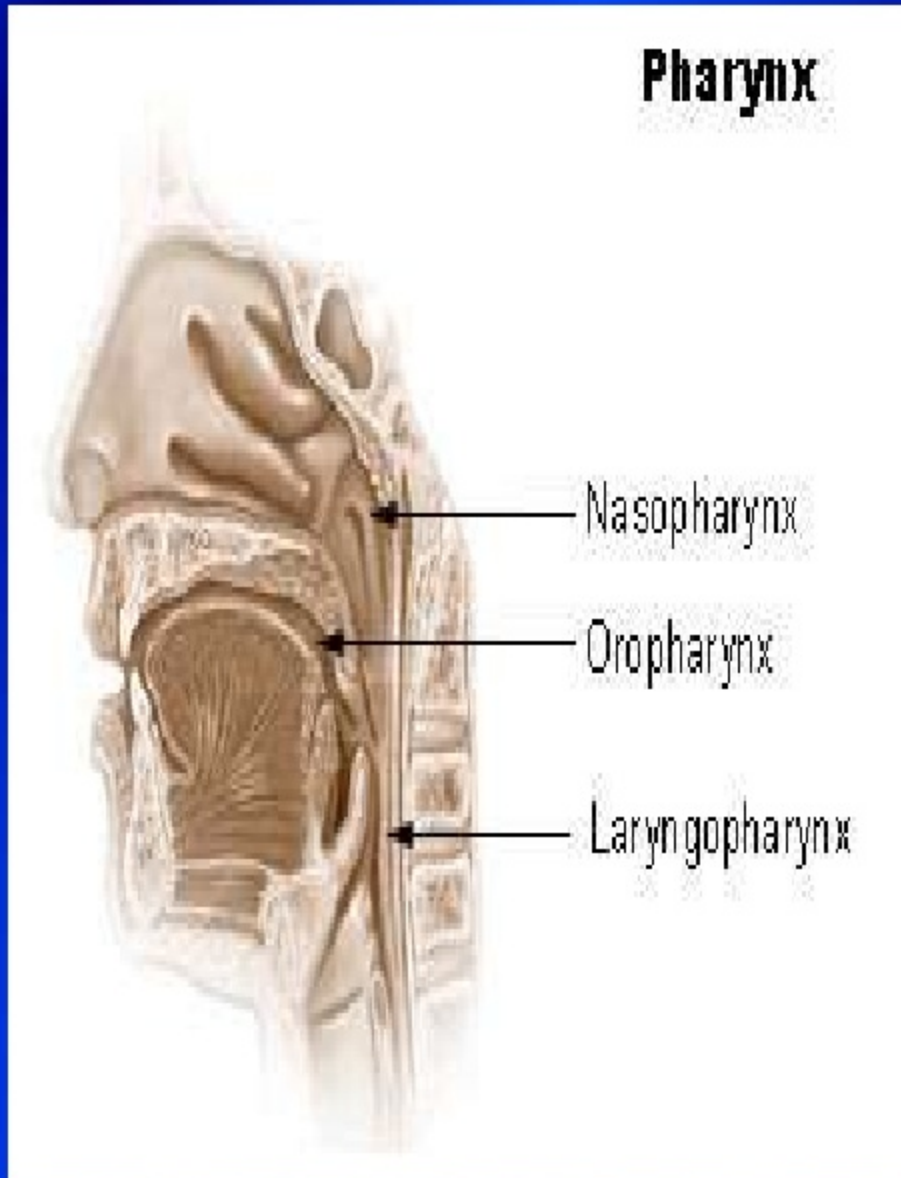
- Naso - ant.pharynx joins nasal cavity
- Oro- midportion of pharynx joins oral cavity
- Hypo-inferior pharynx joins larynx.

NASOPHARYNX



- Lies behind the nasal cavity.
- Postero-superiorly this extends from the level of the junction of the hard and soft palates to the base of skull, laterally to include the fossa of Rosenmuller.
- The inferior wall consists of the superior surface of the soft palate.

OROPHARYNX



- Lies behind the oral cavity.
- The anterior wall - the base of the tongue and the epiglottic valleculae.
- the lateral wall – tonsil, tonsillar fossa, and tonsillar (faucial) pillars;
- the superior wall - inferior surface of the soft palate and the

LARYNGOPHARYNX / HYPOPHARYNX

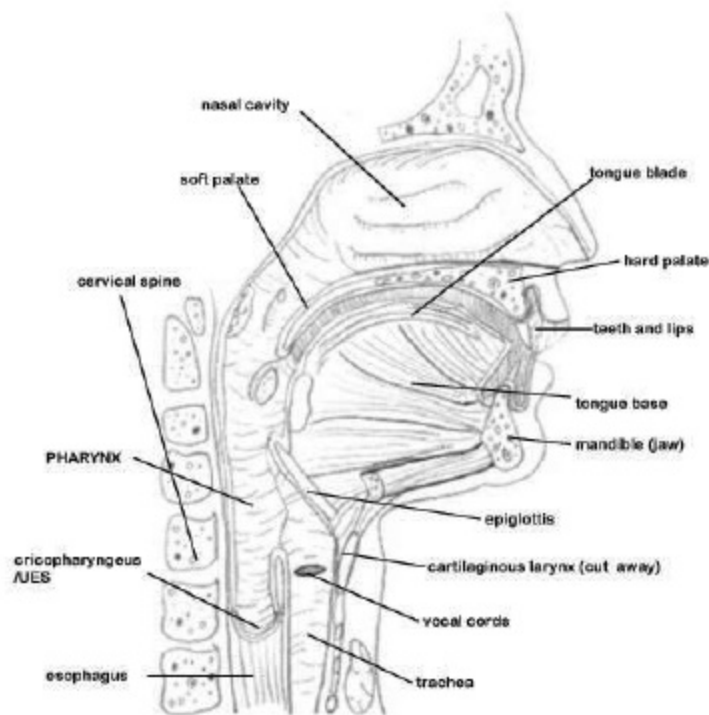


Figure 1—Swallowing Anatomy

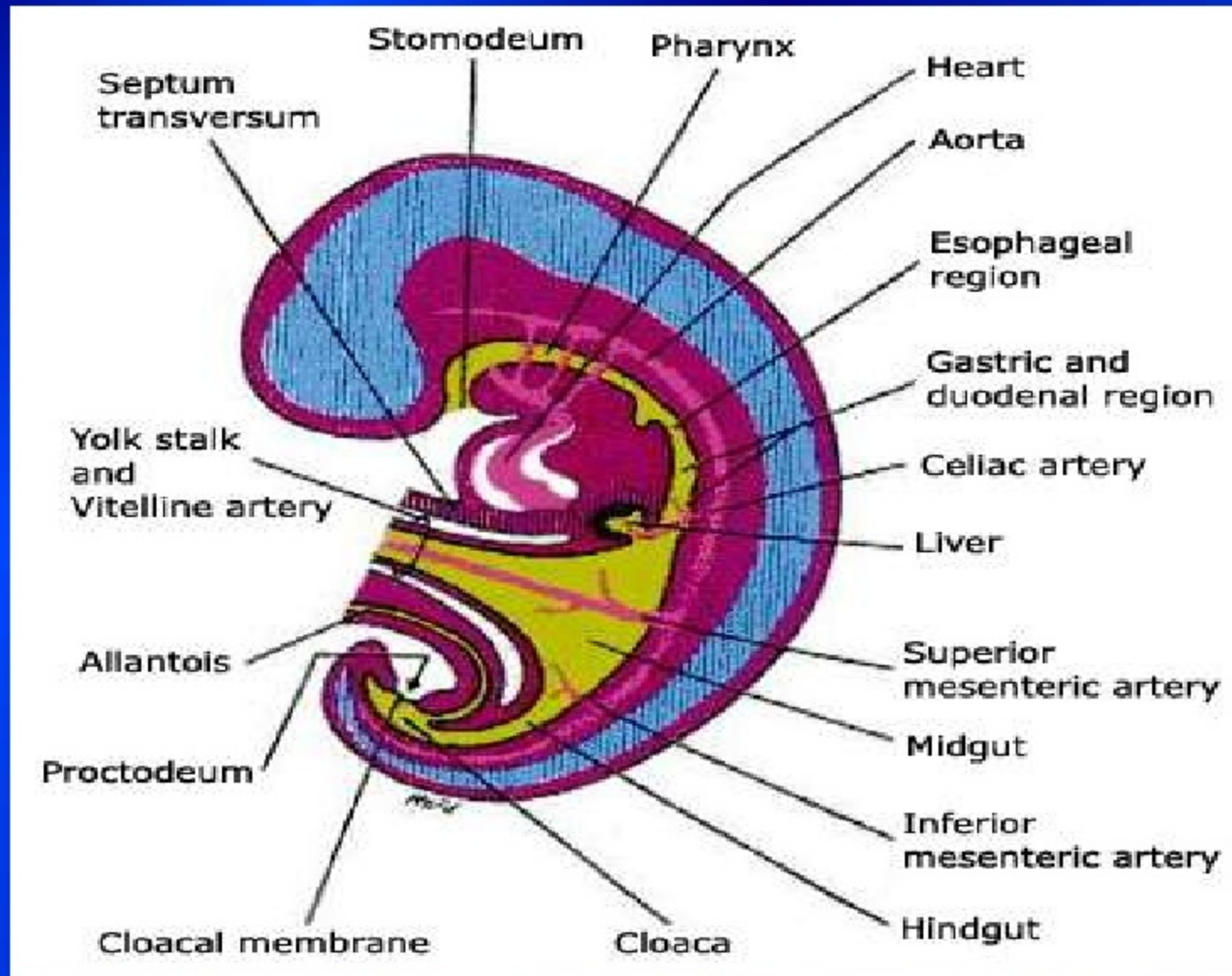
- Levels between C4 to C6, it includes the pharyngo-esophageal junction (postcricoid area), the piriform sinus and the posterior pharyngeal wall.
- Lined with a stratified squamous epithelium.
- It lies inferior to the upright epiglottis and extends to the larynx, where the respiratory and digestive pathways diverge.
- At that point, the laryngopharynx is continuous with esophagus posteriorly.

EMBRYOLOGY OF ESOPHAGUS

- Primitive gut tube forms during 4th week of gestation.
- It is derived from incorporation of the dorsal part of the definitive yolk sac into embryo due to embryonic folding.

- Primitive gut is divided into foregut, midgut and hindgut.
- Laryngotracheal diverticulum develop in the midline of the ventral wall of the foregut.
- The distal end enlarges to form lung buds, which is separated from the foregut by tracheo-esophageal folds.

Primordial Gut



- Tracheo-esophageal fold fuse in midline to form tracheo-esophageal septum.
- The foregut divide into laryngotracheal tube(larynx,trachea,bronchi &lungs) ventrally and esophagus dorsally.
- Esophagus is initially short ,but lengthens with descent of heart and lungs.

respiratory
diverticulum



week 3
lateral view

tracheo-
oesophageal
septum



week 4
front view

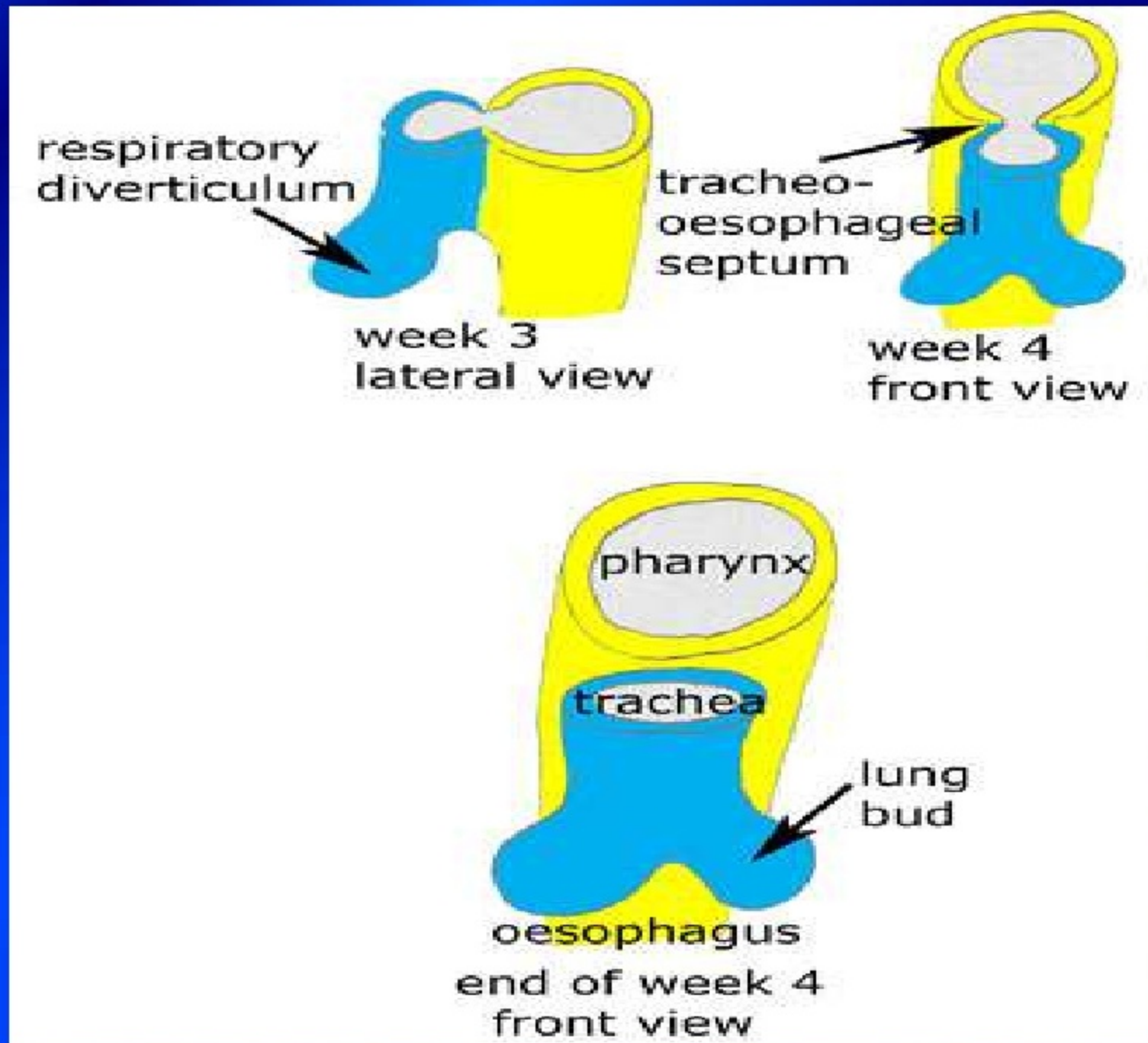
pharynx

trachea

lung
bud



oesophagus
end of week 4
front view

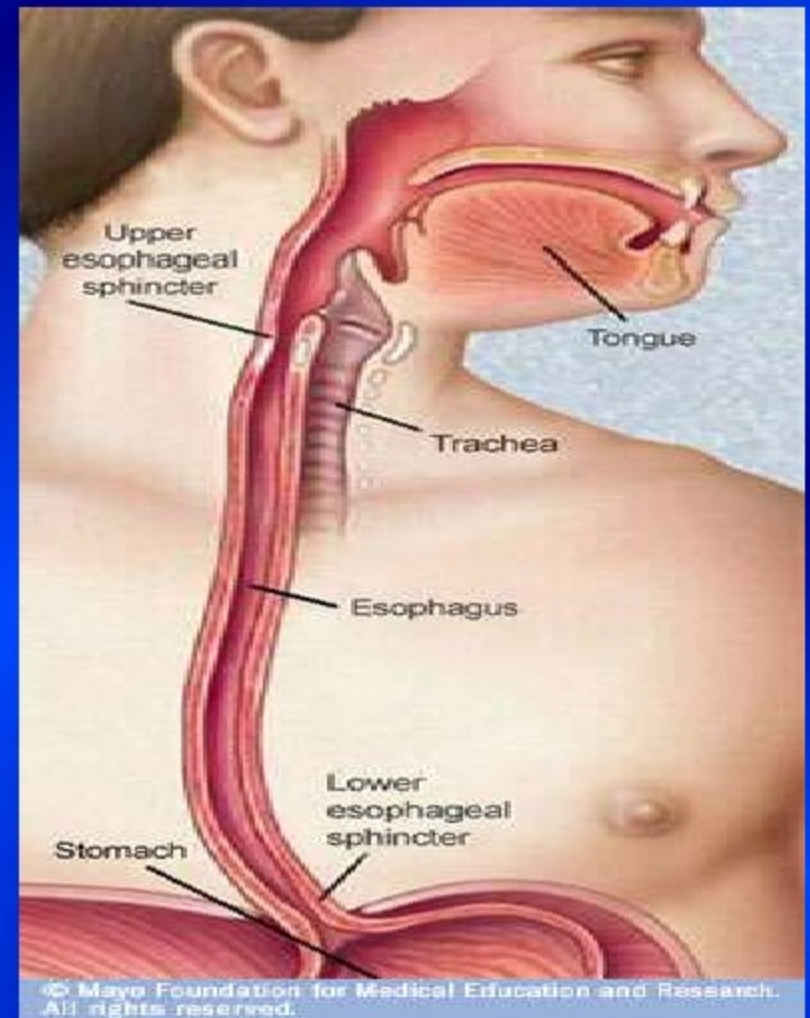


CONGENITAL ANOMALIES

- esophageal atresia, EA,
- tracheoesophageal fistula, TEF,
- esophageal stenosis,
- esophageal cyst,
- tracheobronchial remnant,
- esophageal atresia and tracheoesophageal fistula, EA-TEF,
- esophageal web,
- esophageal muscular hypertrophy,
- esophageal duplications,
- columnar epithelium-lined lower esophagus,
- Barrett's esophagus, laryngotracheoesophageal cleft, LTEC

ANATOMY OF ESOPHAGUS

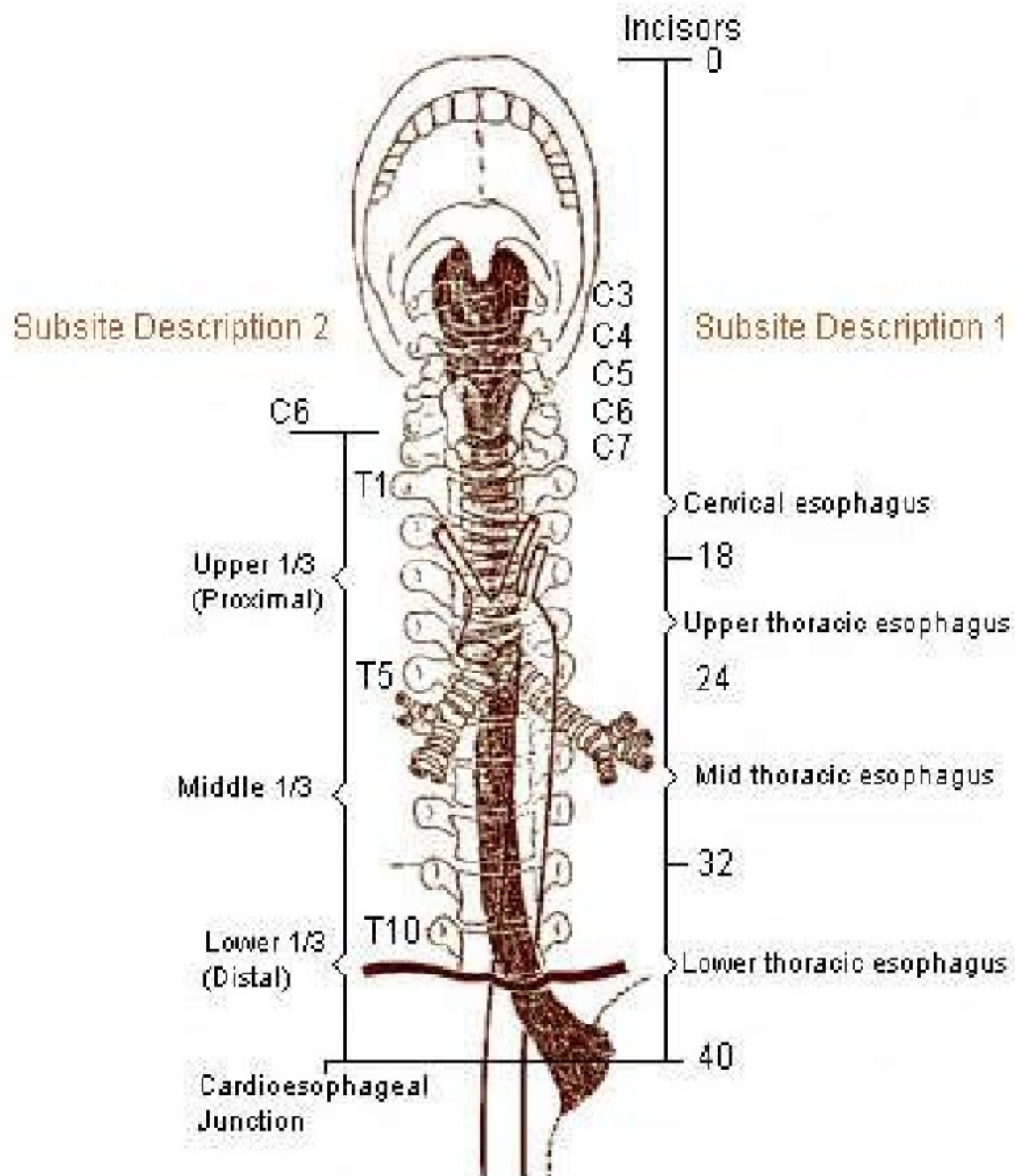
- Flattened muscular tube, size 18 to 26cm beginning at lower border of cricoid cartilage (opp 6th cervical vertebra) and ending at cardiac orifice of stomach (opp 11th cervical vertebra)
- Divided into 3 anatomical segments
i.e., cervical, thoracic & abdominal



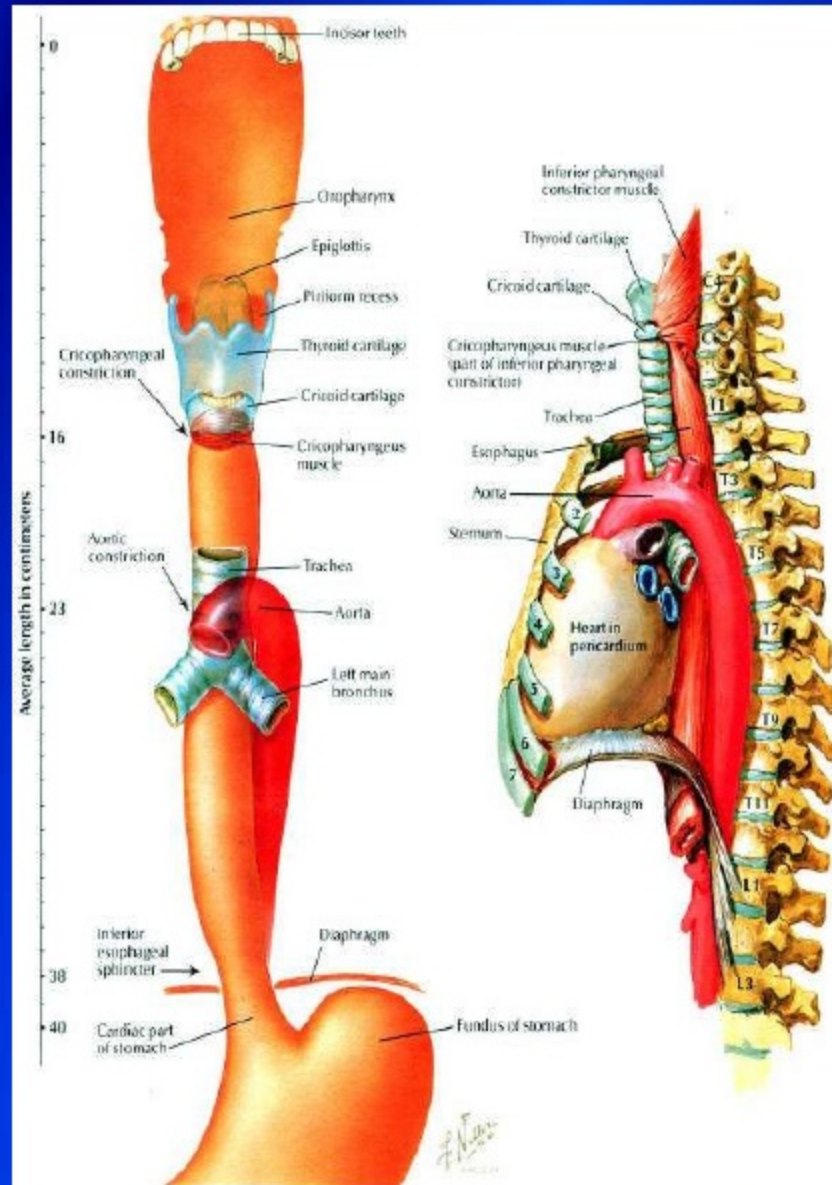
- Cervical esophagus extend from pharyngeal junction to suprasternal notch and is abt 4-5cm.
- At this level, esophagus bordered anteriorly by trachea, post by vertebral column and lat by carotid sheath and thyroid gland.

- Thoracic esophagus extend from suprasternal notch(opp T1) to diaphragmatic hiatus(opp T10).18cm in length.
- Anteriorly lies the trachea, rt pulmonary artery, left main bronchus & diaphragm.post it rest on vertebral column and closely related to thoracic duct, azygous & hemiazygous vein.

- Abdominal esophagus extend from diaphragmatic hiatus to orifice of cardia of stomach.size abt 1 cm.
- Its right border is continuous with lesser curvature & left border is demarcated from fundus by esophagogastric angle of implantation(angle of His)



ESOPHAGEAL CONSTRICTION



- Superiorly: level of Cricoid cartilage, juncture with pharynx
- Middle: crossed by aorta and left main bronchi
- Inferiorly: diaphragmatic sphincter