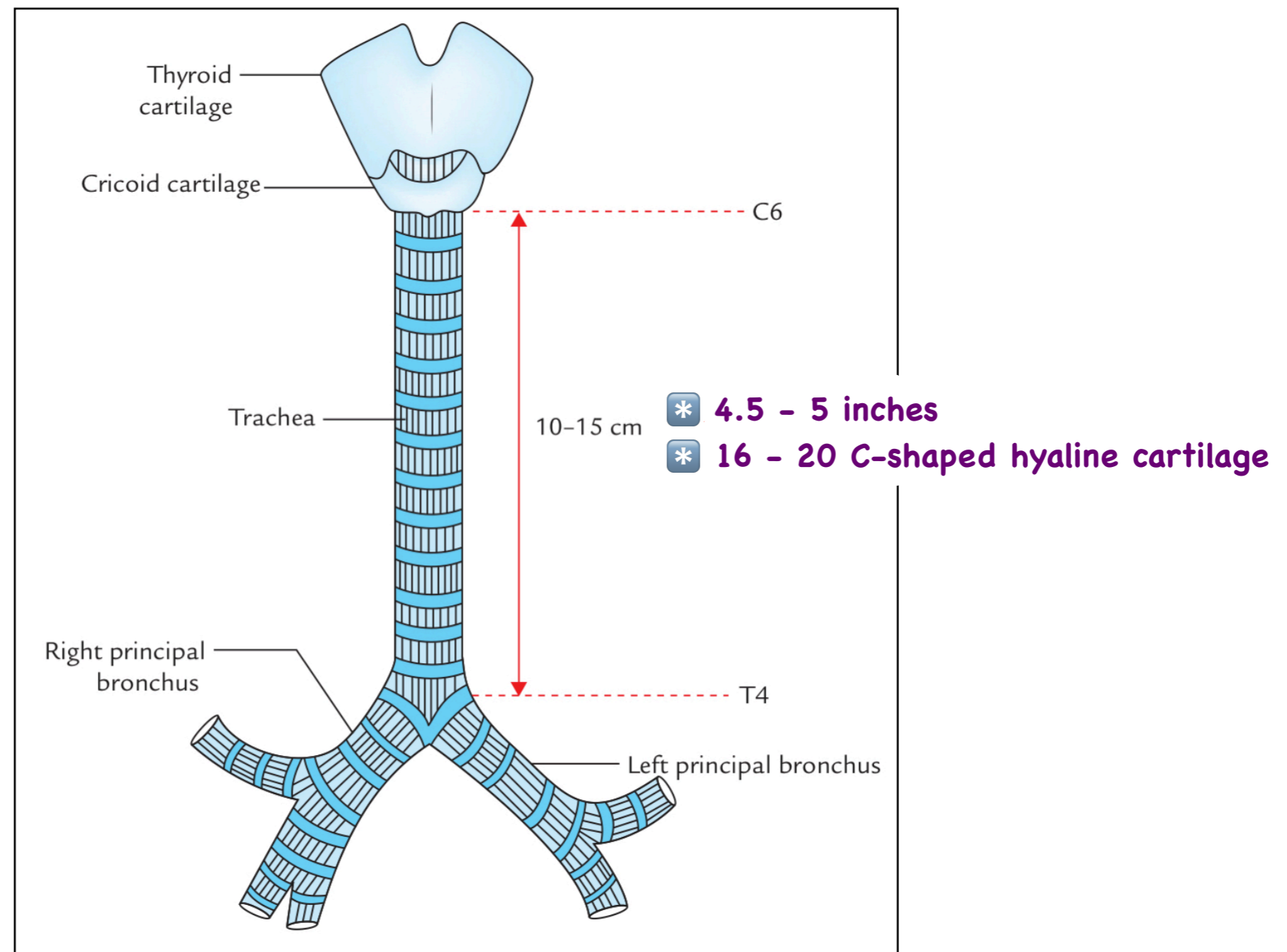


# Lab / Third Week

- 1. Trachea**
- 2. Bronchi.**

# ✦ Trachea

- The students should observe the beginning, length and ending of the trachea:



# ✦ Trachea

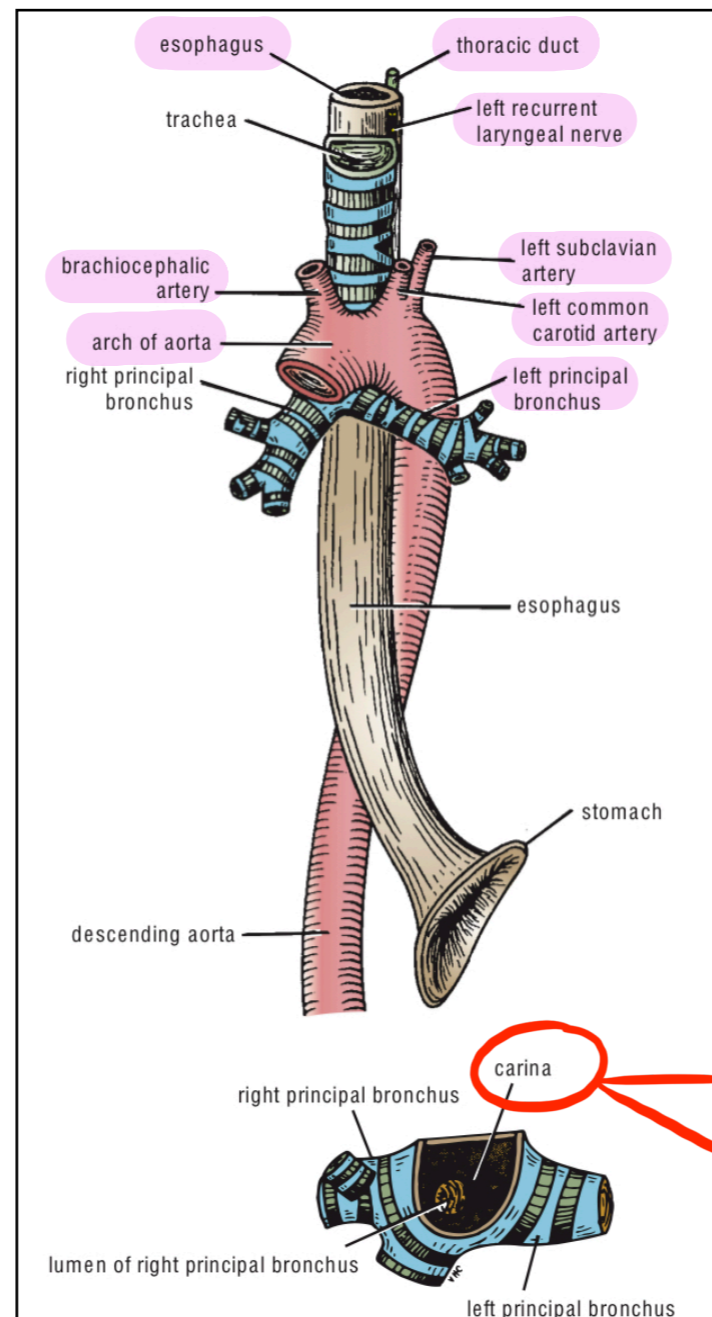
- The students should know the Relations of Trachea :
  - Anteriorly
  - Left
  - Right
  - Posteriorly

## anterior relations:

- 1- Aortic arch.
- 2- Thymus gland
- 3- Thyroid gland, especially the isthmus
- 4- The origin of the brachiocephalic artery.
- 5- Manubrium sterni.

## posterior relations:

- 1-The esophagus.
- 2-The left recurrent laryngeal nerve
- 3-Thoracic duct

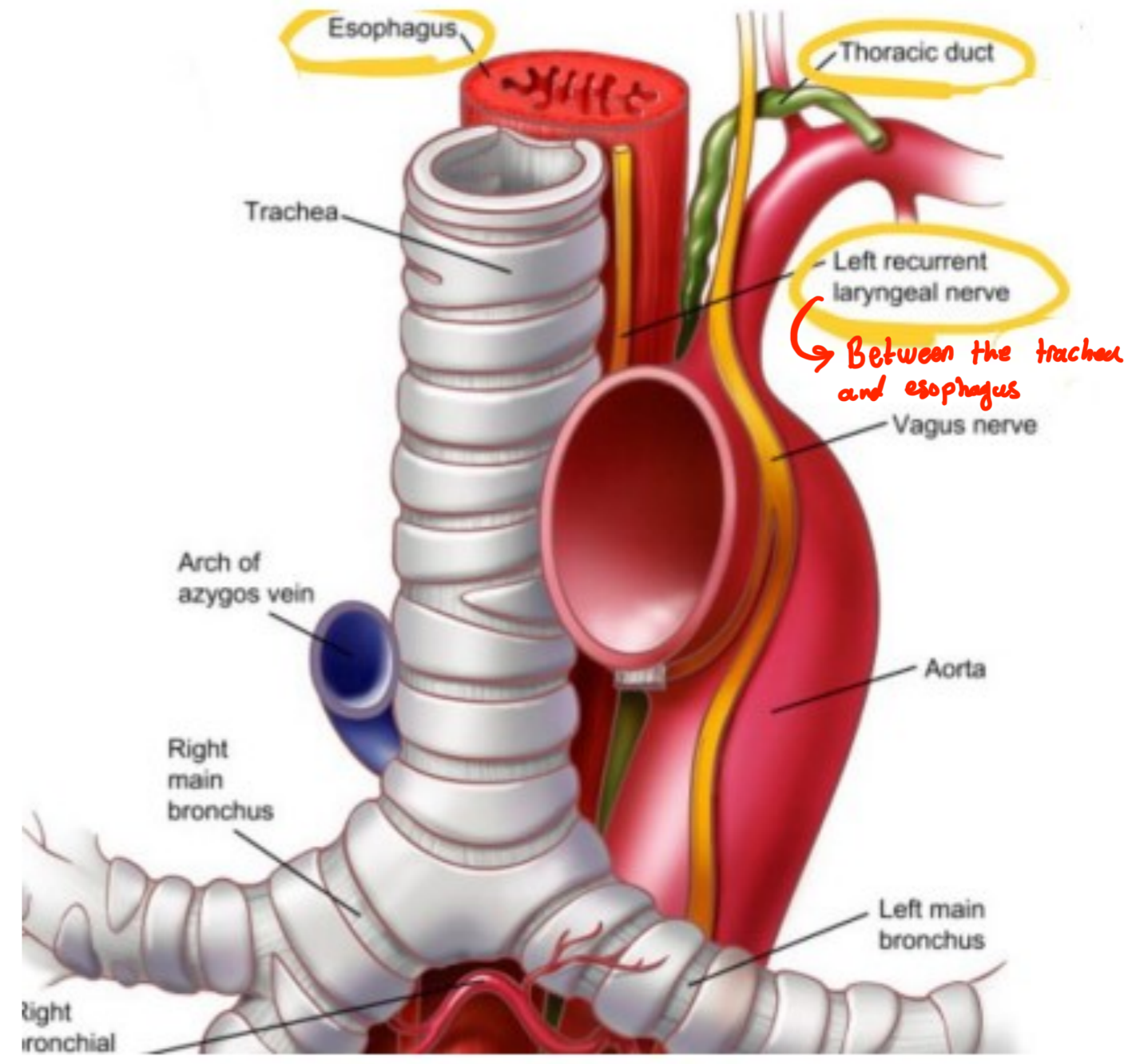
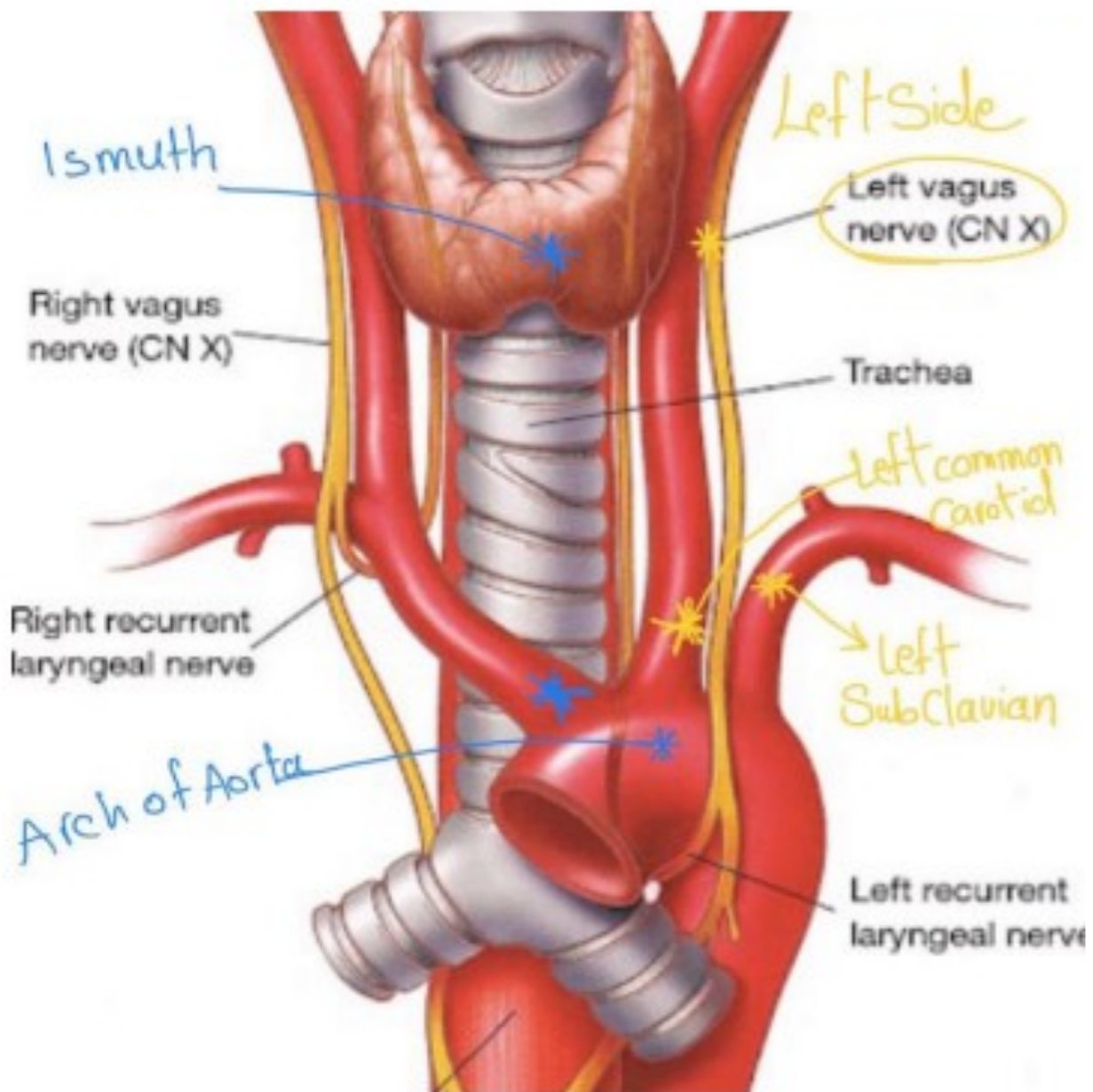


## right side relations:

- 1- The azygous arch, which ends in the superior vena cava.
- 2- The brachiocephalic artery.
- 3- Right vagus nerve.
- 4- Right phrenic nerve
- 5- Right main bronchus

## left side relations:

- 1-The arch of the aorta
- 2-Left subclavian artery
- 3-Left common carotid artery
- 4-Left vagus nerve
- 5-Left phrenic nerve
- 6-Left main bronchus

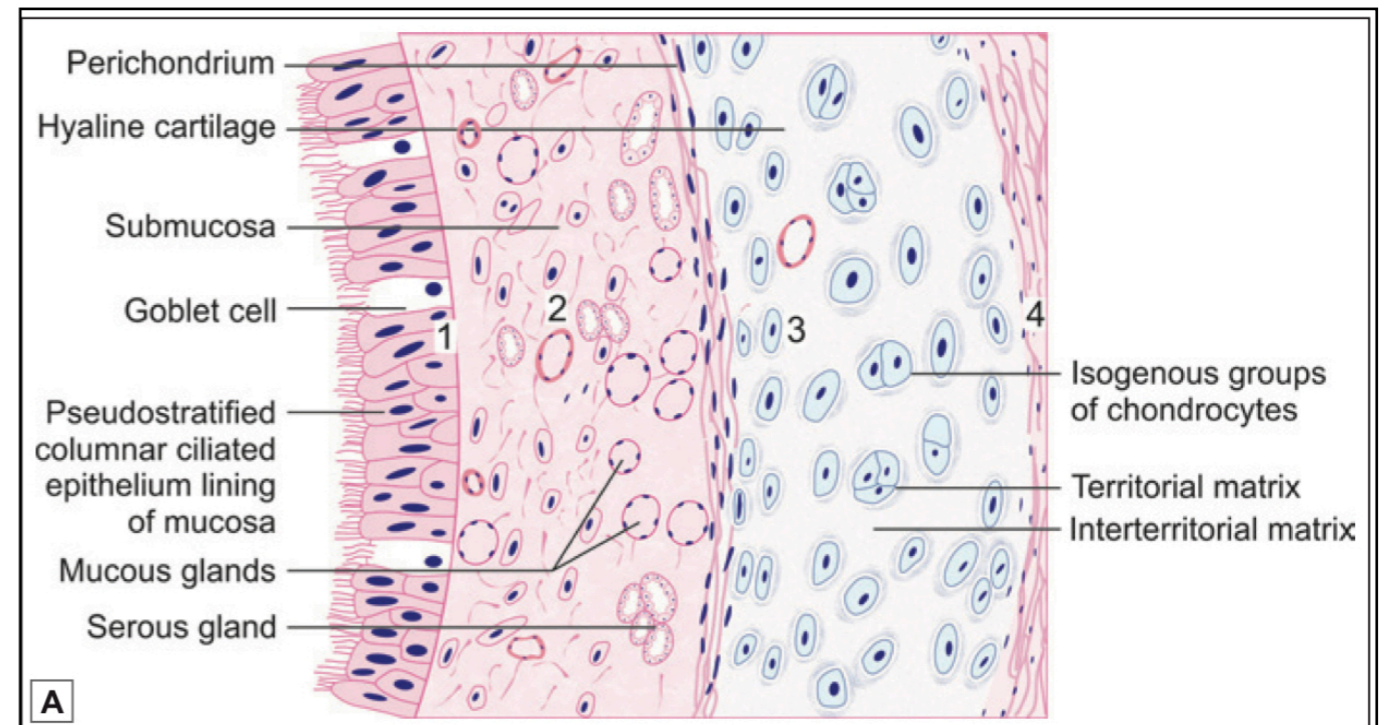
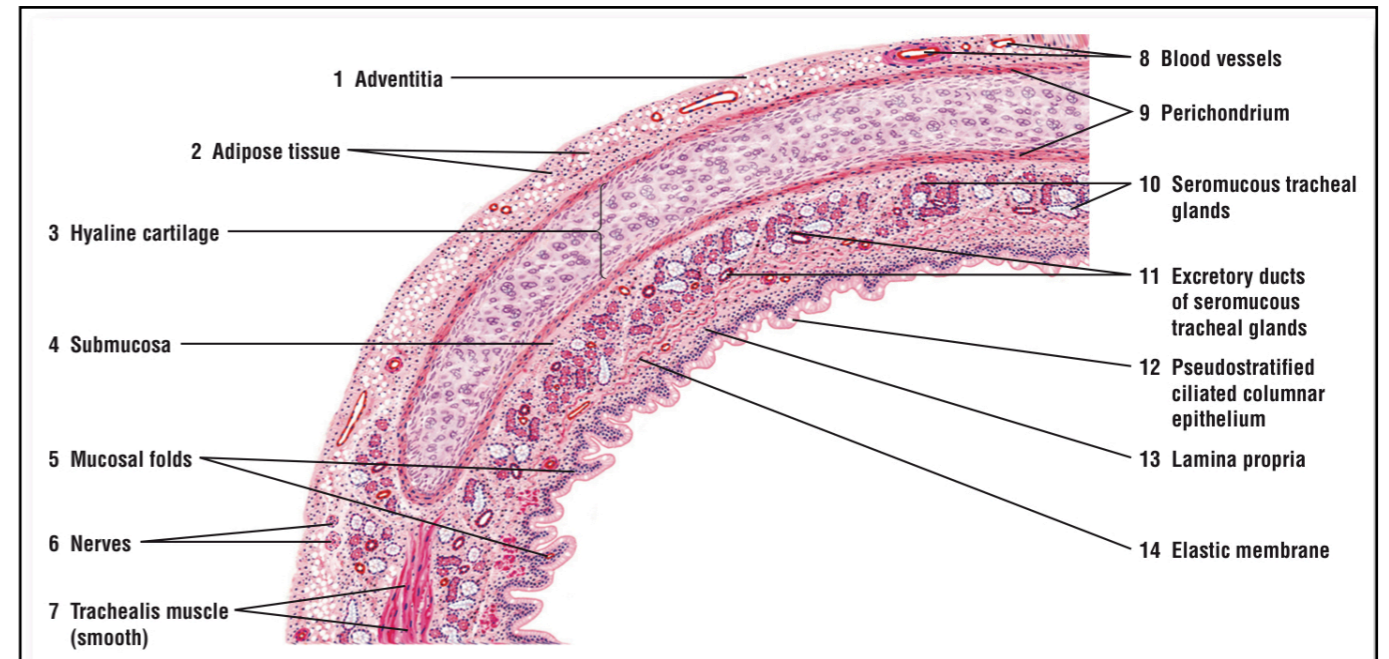


# Trachea

- The trachea is a fibroelastic cartilaginous tube.
- The trachea consists of four layers:
  - ▶ Mucosa
  - ▶ Submucosa
  - ▶ Cartilage and Smooth Muscle Layer
  - ▶ Adventitia

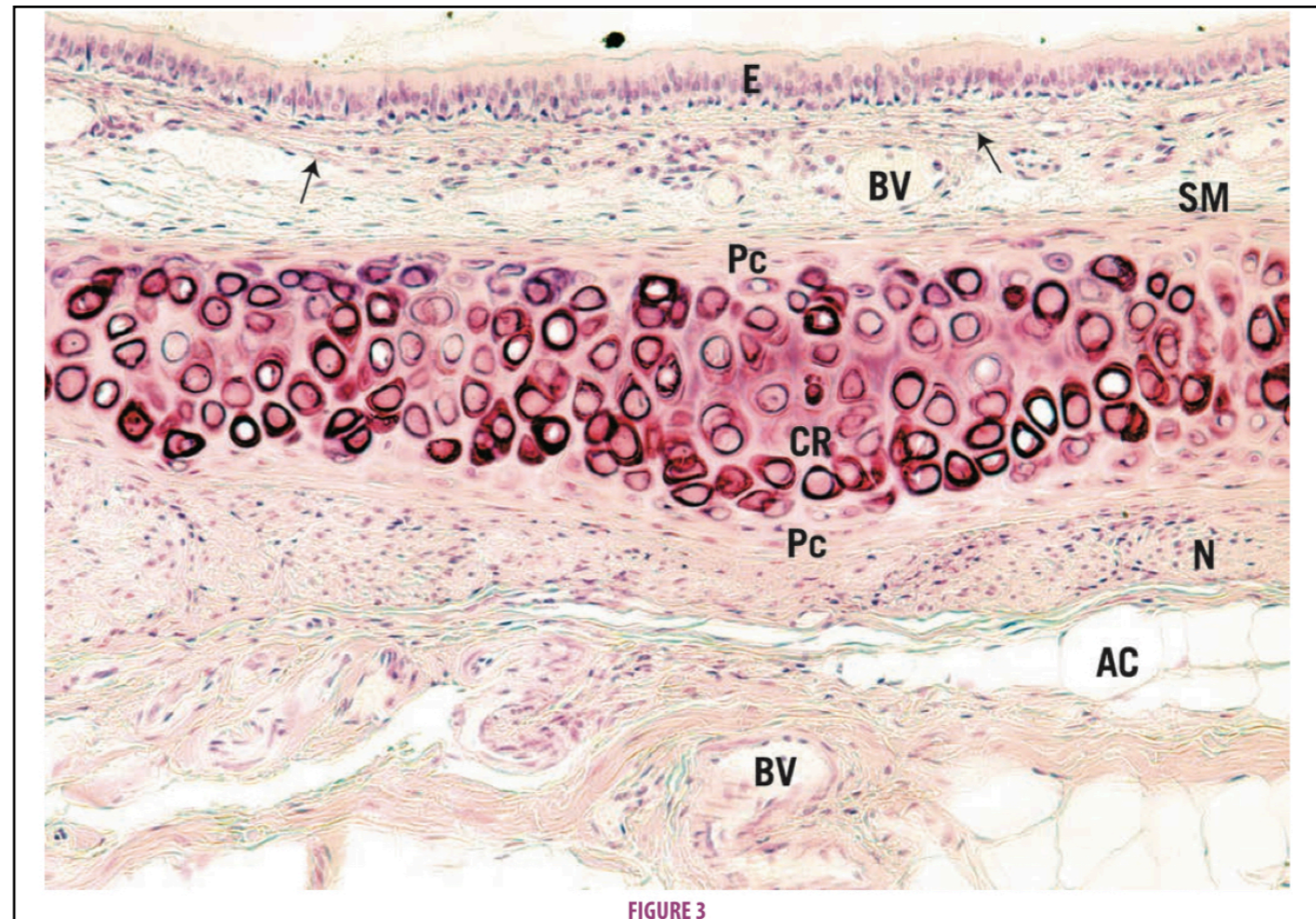
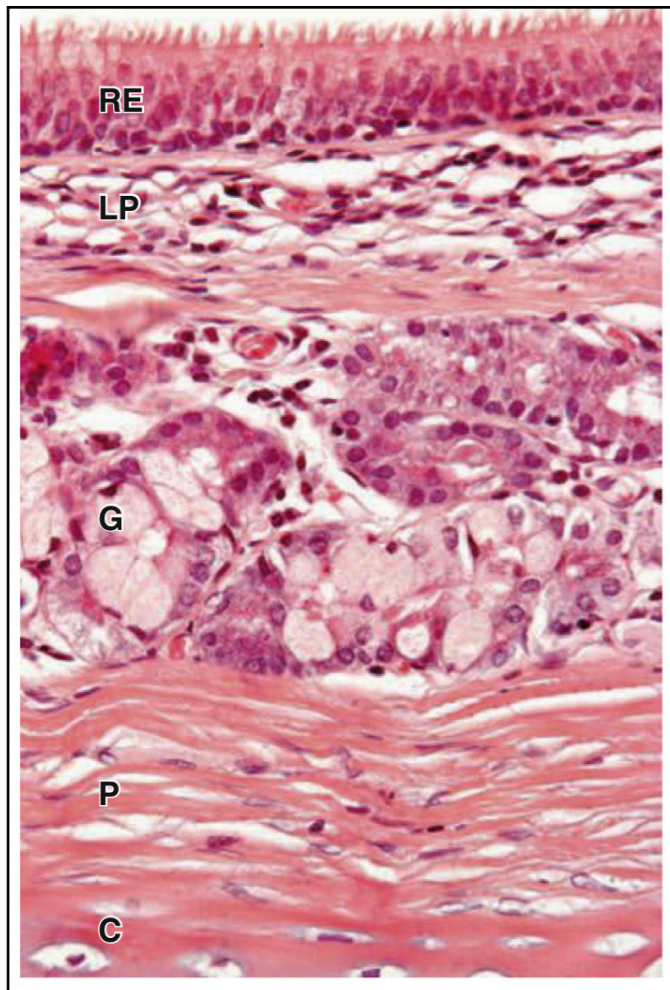
- Mucous Membrane

- ▶ The lumen of the trachea is lined by pseudostratified ciliated columnar.
- ▶ It contains numerous goblet cells, and basal cells that lie next to the basement membrane.
- ▶ Numerous lymphocytes are seen in deeper parts of the epithelium.



# ✦ Trachea

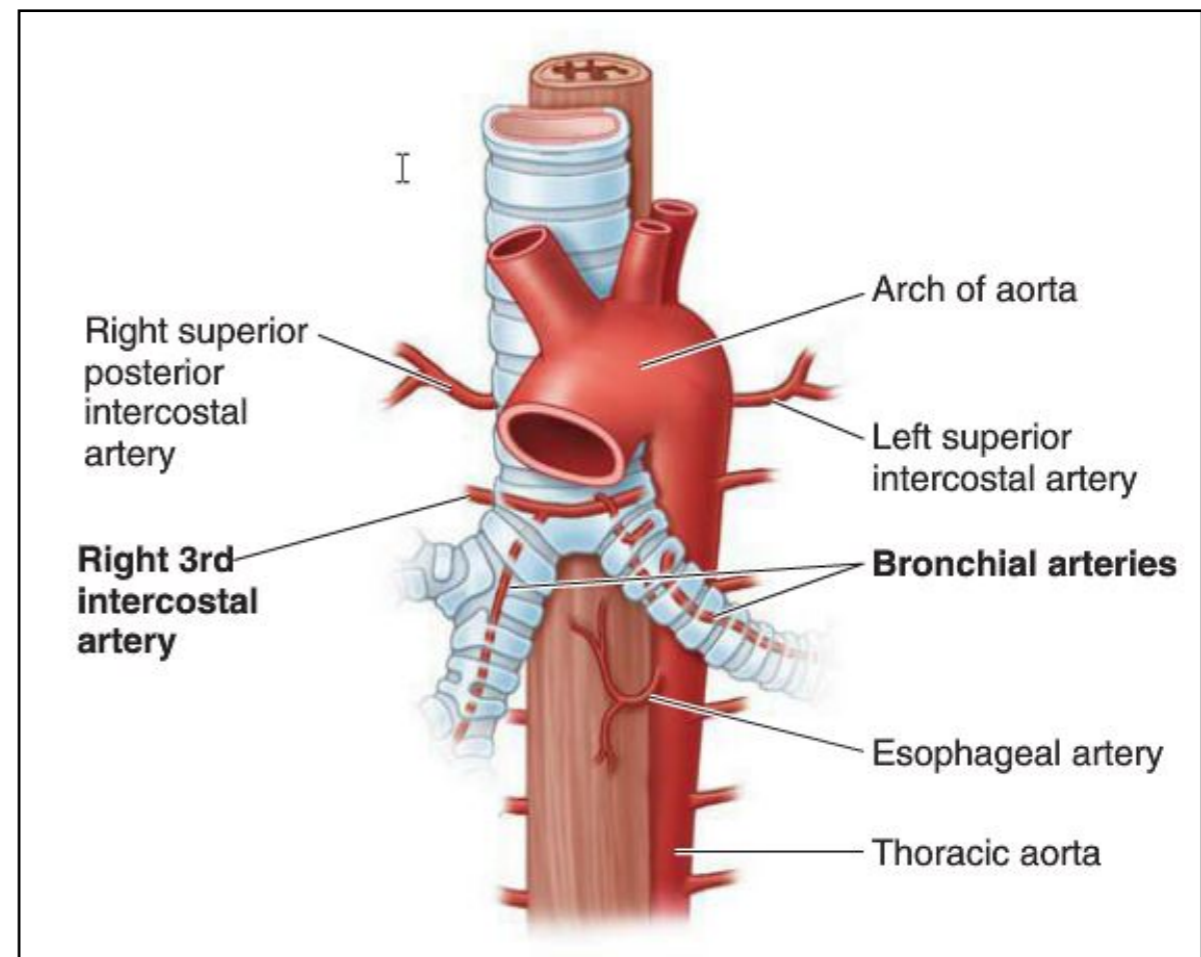
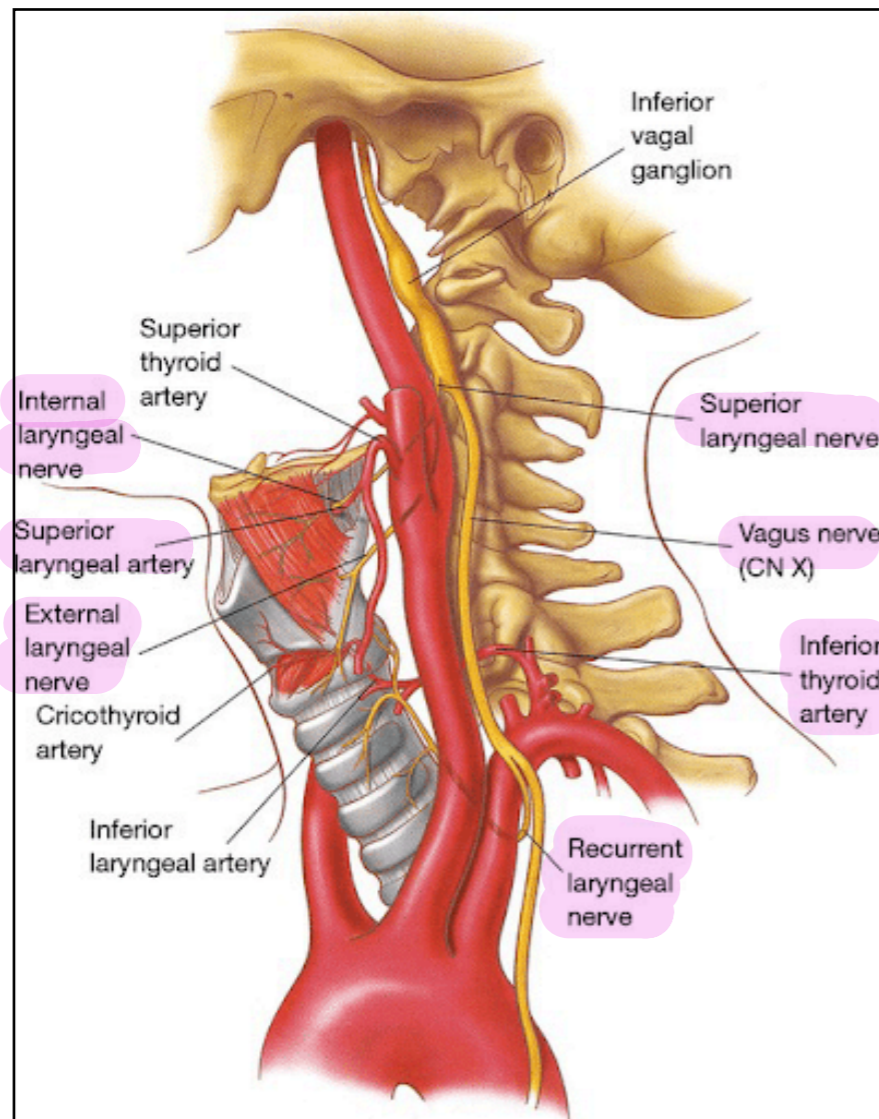
- Submucosa
  - ▶ made up of loose connective tissue containing mucous glands and serous glands, blood vessels and ducts.
- C' shaped plate of hyaline cartilage
  - ▶ Perichondrium has outer fibrous and inner chondrogenic layers.
  - ▶ Observe that the cartilage is absent posteriorly and replaced by trachialis muscle
- Adventitia
  - ▶ is made of fibroelastic connective tissue containing blood vessels and nerves.



# ✦ Trachea

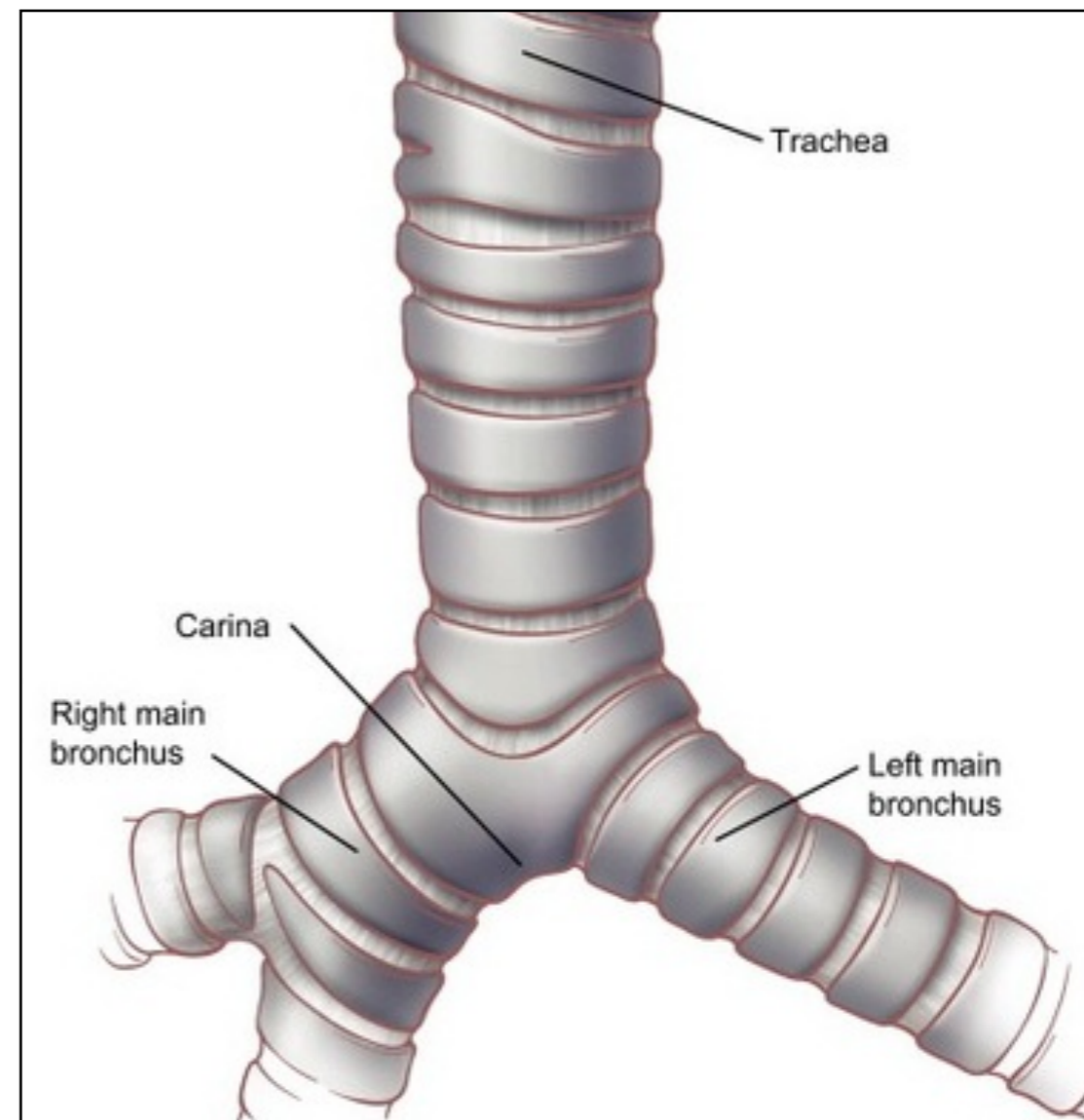
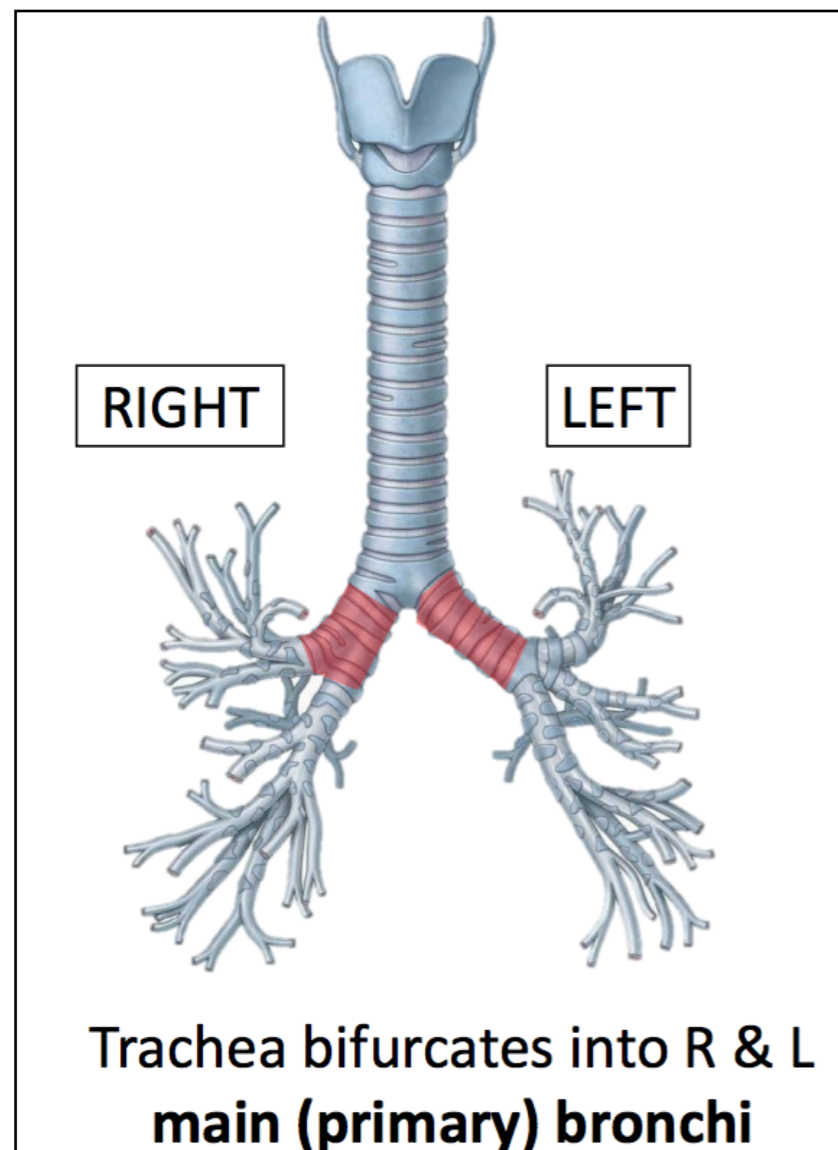
**clinical note**, during Emergency tracheostomy make a suprasternal opening to allow him to breathe through this opening... So the inferior thyroid vein, the anterior jugular arch and thyroid ima artery may get injured.

- The students should know the blood supply of Trachea :
  - the upper two thirds are supplied by the inferior thyroid arteries
  - the lower third is supplied by the bronchial arteries



# ✦ Bronchi.

- The students should know the different between the right main bronchus and left main bronchus







	<b>Right main bronchus</b>	<b>Left main bronchus</b>
Length	Shorter (1")	Longer (2-3")
Lumen	Wider	Narrower
Alignment	More vertical (almost parallel to the trachea, with a small deviation)	More horizontal
IMPORTANT	In the hilum of the right lung, it divides into: <ul style="list-style-type: none"><li>- <b>Eparterial bronchus</b> (above pulmonary artery)</li><li>- <b>Hyparterial bronchus</b> (below pulmonary artery)</li></ul>	In the hilum of the left lung, it remains as one main bronchus.

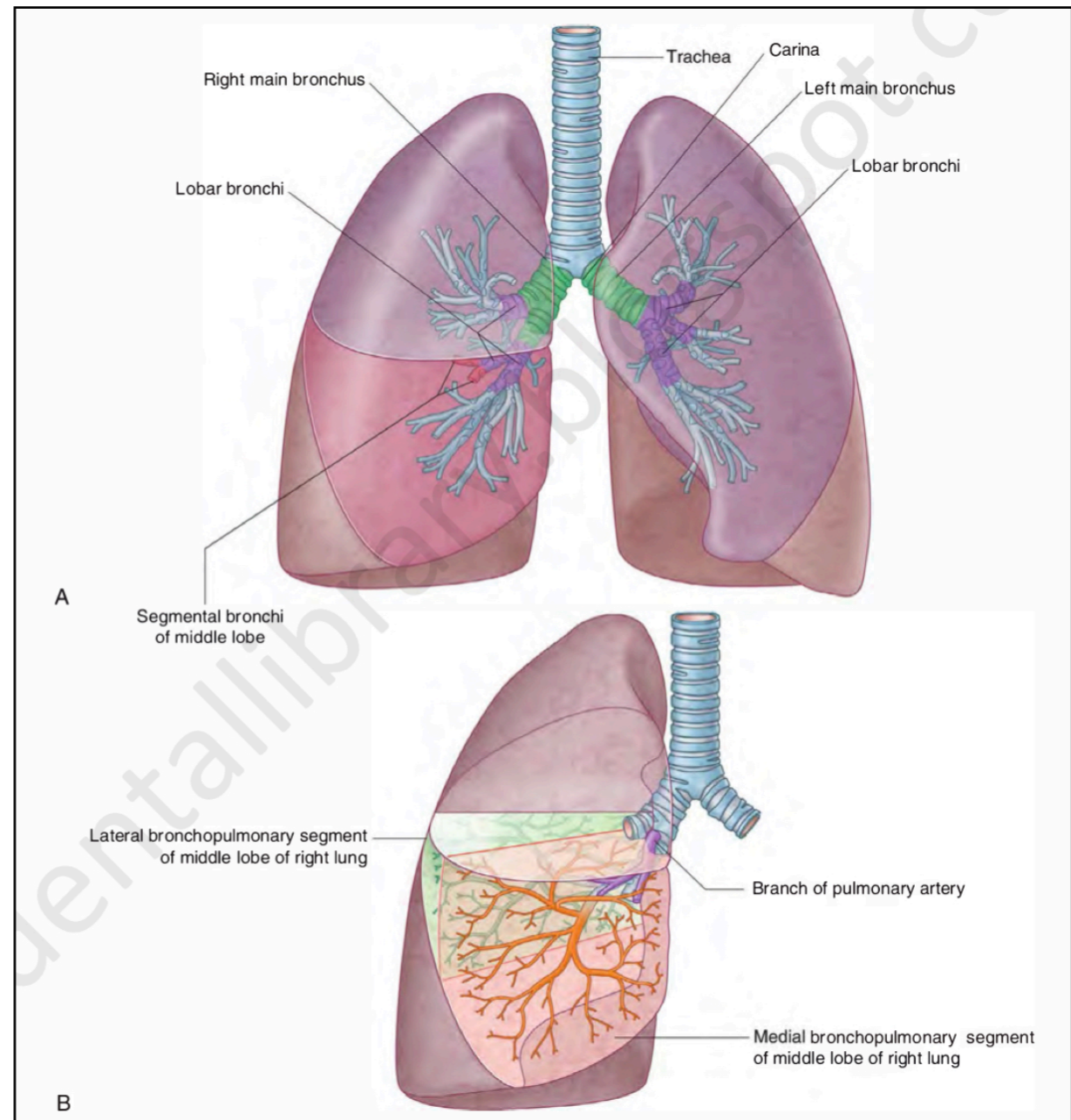
# ✦ Bronchi.

- The students should know the bronchial tree:
  - lobar bronchi
  - segmental bronchi
  - bronchopulmonary segment

-The right and left main bronchi are called the primary bronchi.

-The secondary bronchi are called lobar bronchi. So, on the right side there are three lobar bronchi, since the right lung has three lobes(upper, middle and lowerlobes), and on the left side there are two lobar bronchi, since the left lung has two lobes (upper and lower lobes).

-The tertiary bronchi are called bronchopulmonary segments. There are 10 bronchopulmonary segments on the right and 10 on the left in adults



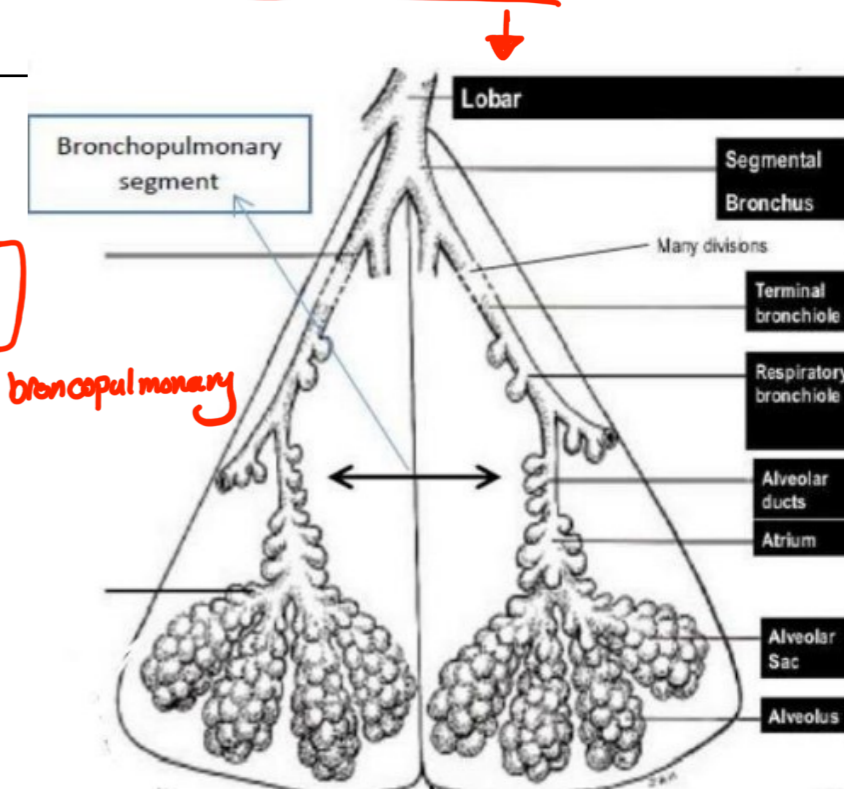
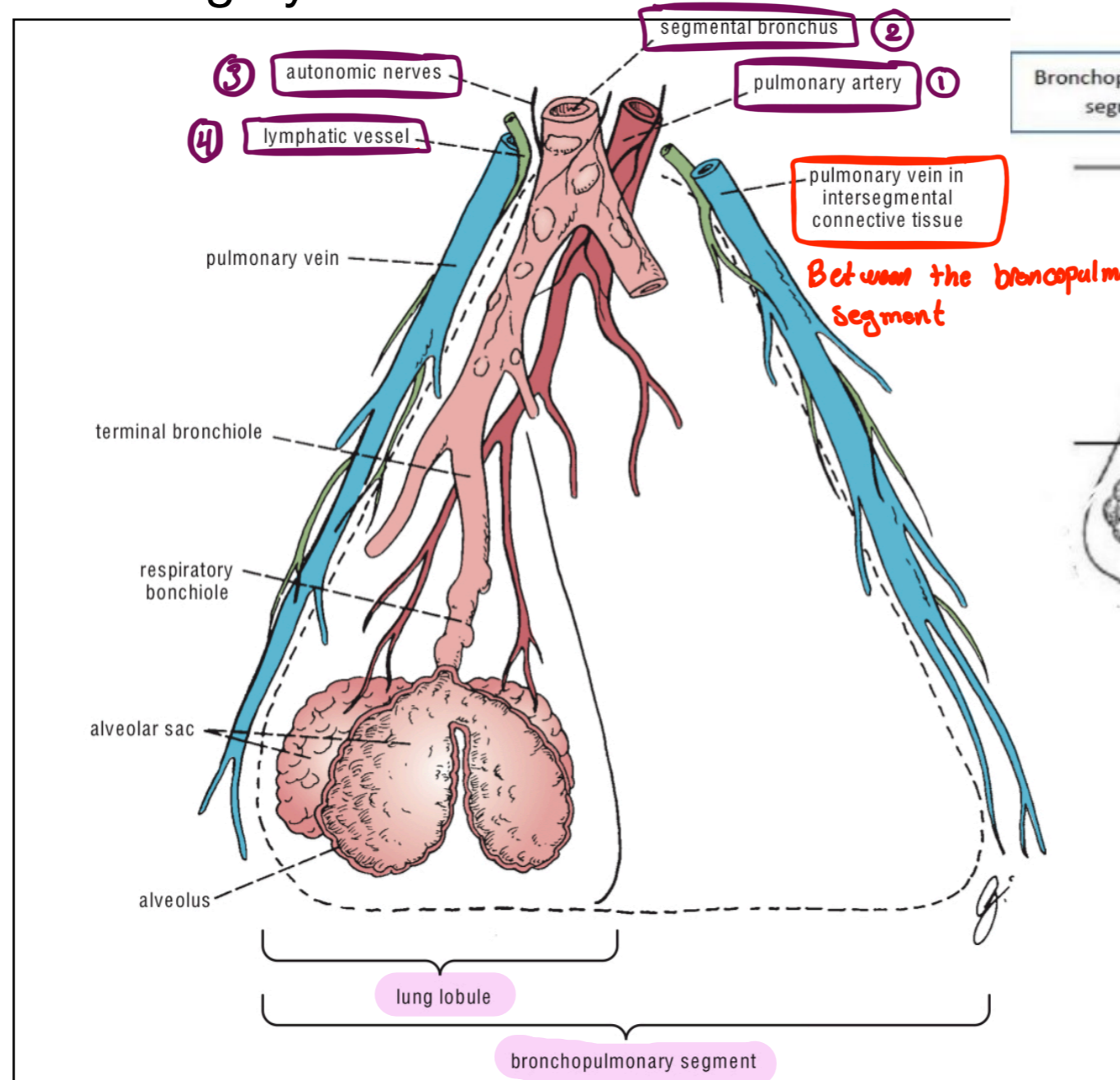
# ✦ Bronchi.

Bronchopulmonary segment further divides into terminal bronchioles, which give rise to respiratory bronchioles, that end in the pulmonary unit.

Pulmonary unit consist of alveolar ducts, atria, air sacs and pulmonary alveoli (functional segment inside the bronchopulmonary segment).

- The student should know the characters of the Bronchopulmonary segment
- It's very important in surgery.

The importance of these bronchopulmonary segments - surgically- is that if you need to remove a part of the lung, these segments are removed (Segmentomy). In the past, the entire lobe was removed



# ✦ Bronchi.

- The student should know the distribution of the bronchopulmonary segments in each lung:
  - Rt. Lung 10 segments (upper, middle, basal lobes)
  - Lt. lung 10 segments (upper, basal lobes)

- Clinical points:
  - Foreign body is usually descend in the right main bronchus.
  - The foreign body in erect Poisson usually descend to the posterior basal segment.
  - In recumbent Poisson (patient and dentist) the extracted tooth descend to the lower lobe to the apico-basal segment.

