



Practical Histology

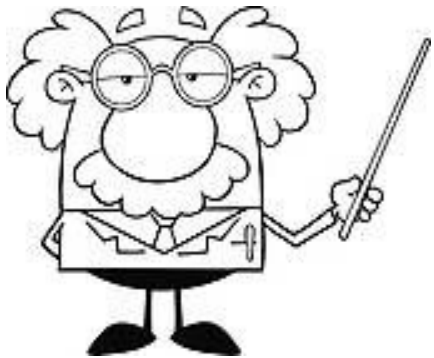
Respiratory block

Everything in green is added by Prof. Raesa so you will not find it in previous team works

وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ حَسْبُهُ

Things you need to know before the exam :

- The pictures in the exam will be the same as the ones included in the slides.
- Don't try to take short cuts during the exam so avoid using abbreviations so you don't lose marks.
- Please keep in mind that this work is done by students , so if there are any mistakes please inform us .
- This work is not by any means a reference.
- Please study hard and don't worry the exam will be easy!!



Nasal cavity and septum

Identify the structure :

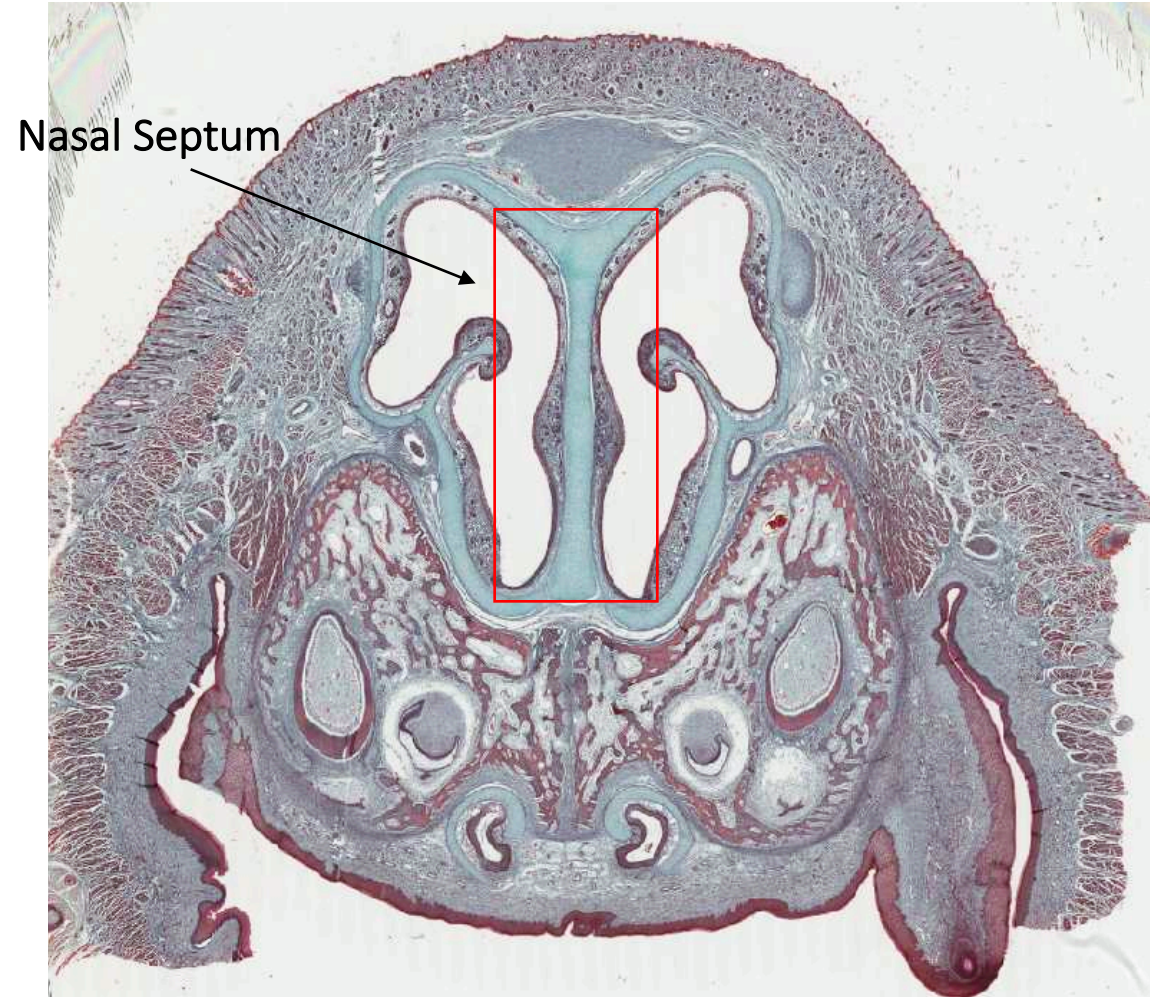
✓ Nasal cavity and septum.

What is the lining epithelium ?

✓ Pseudo-stratified ciliated columnar epithelium with goblet cells.

What is the type of cartilage found in this structure ?

✓ Hyaline cartilage



Respiratory mucosa

Identify the structure :

- ✓ Respiratory mucosa
- ✓ What is main structure of this mucosa?
 - 1) Lining respiratory epithelium.
 - 2) C.T. lamina propria rich in seromucous glands, vascular plexuses, and lymphoid elements

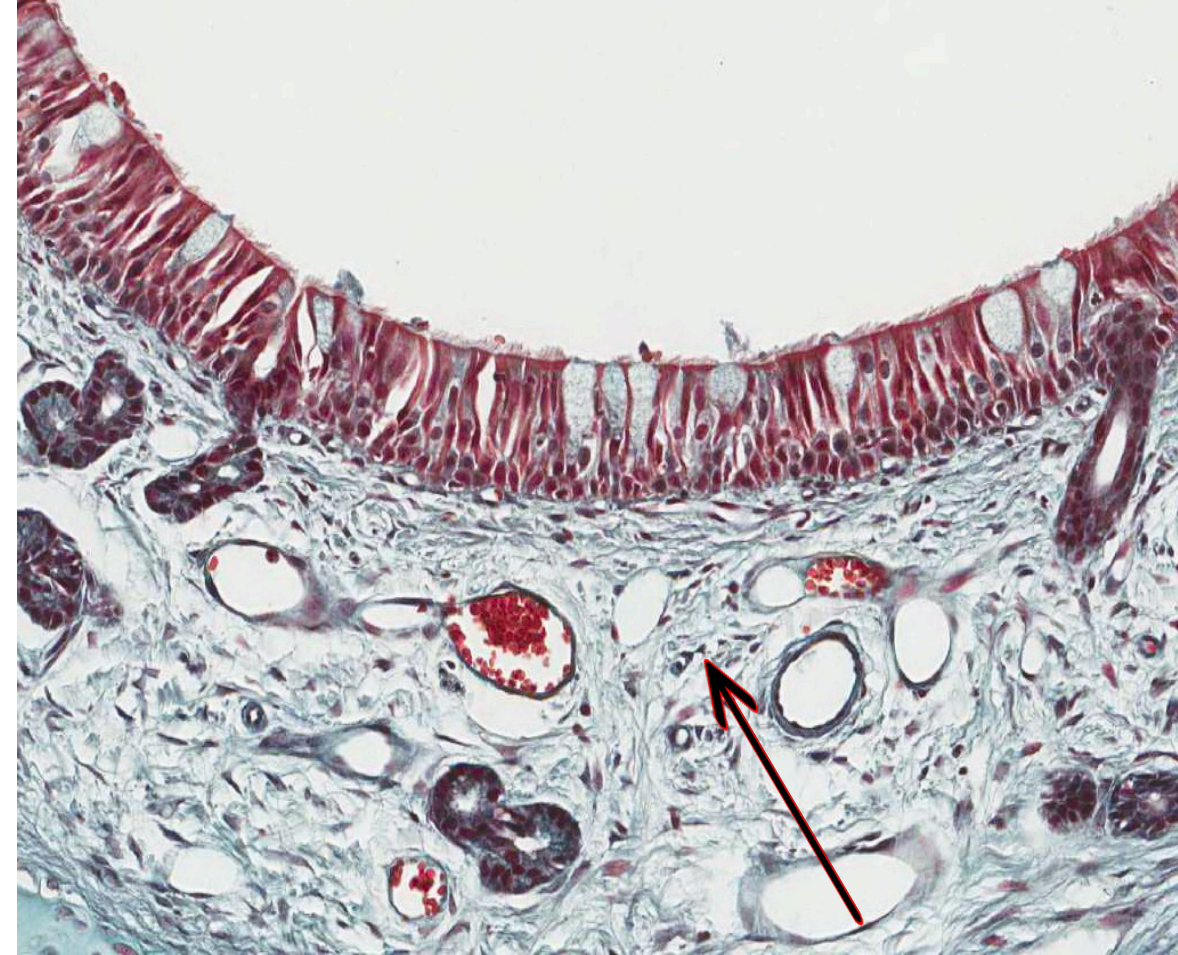
What is the lining epithelium ?

- ✓ Pseudo-stratified ciliated columnar epithelium with goblet cells.

What are the type of cells found in olfactory epithelium ?

- ✓ Bipolar neurons
- ✓ Sustentacular (supporting) cells
- ✓ Basal cells

This type of epithelium is found on roof of nasal cavity.



Seromucous glands

Trachea

Identify the structure :

✓ Trachea.

✓ What are the layers of this structure?

Mucosa, submucosa, and adventitia

What is the lining epithelium ?

✓ Pseudo-stratified ciliated columnar epithelium with goblet cells.

What is the type of cartilage found in this structure ?

✓ C-shaped rings of hyaline cartilage in the adventitia.



Tracheal(or respiratory) mucosa

Identify the structure :

✓ Tracheal mucosa

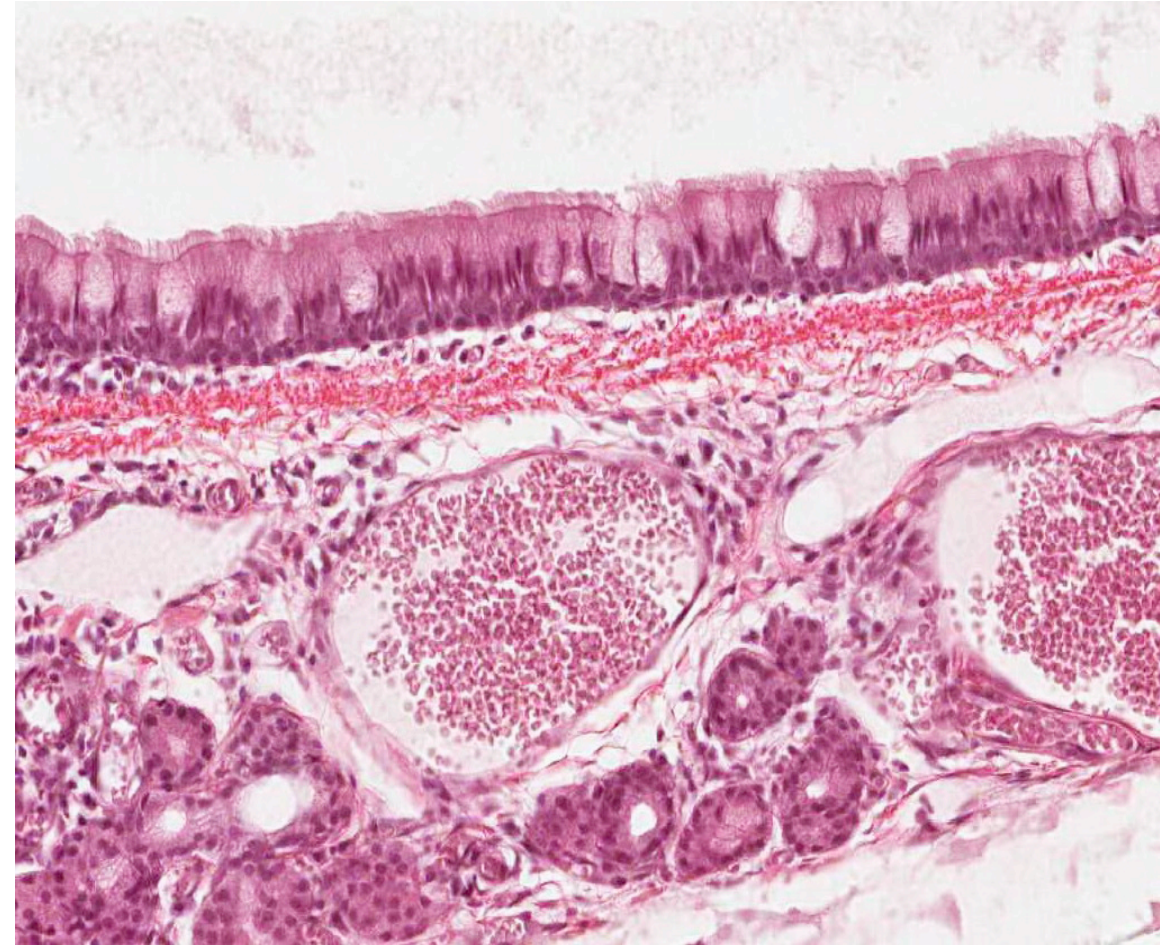
What is the lining epithelium ?

✓ Pseudo-stratified ciliated columnar epithelium with goblet cells.

Submucosa contains :

✓ Numerous Mucous and seromucous glands

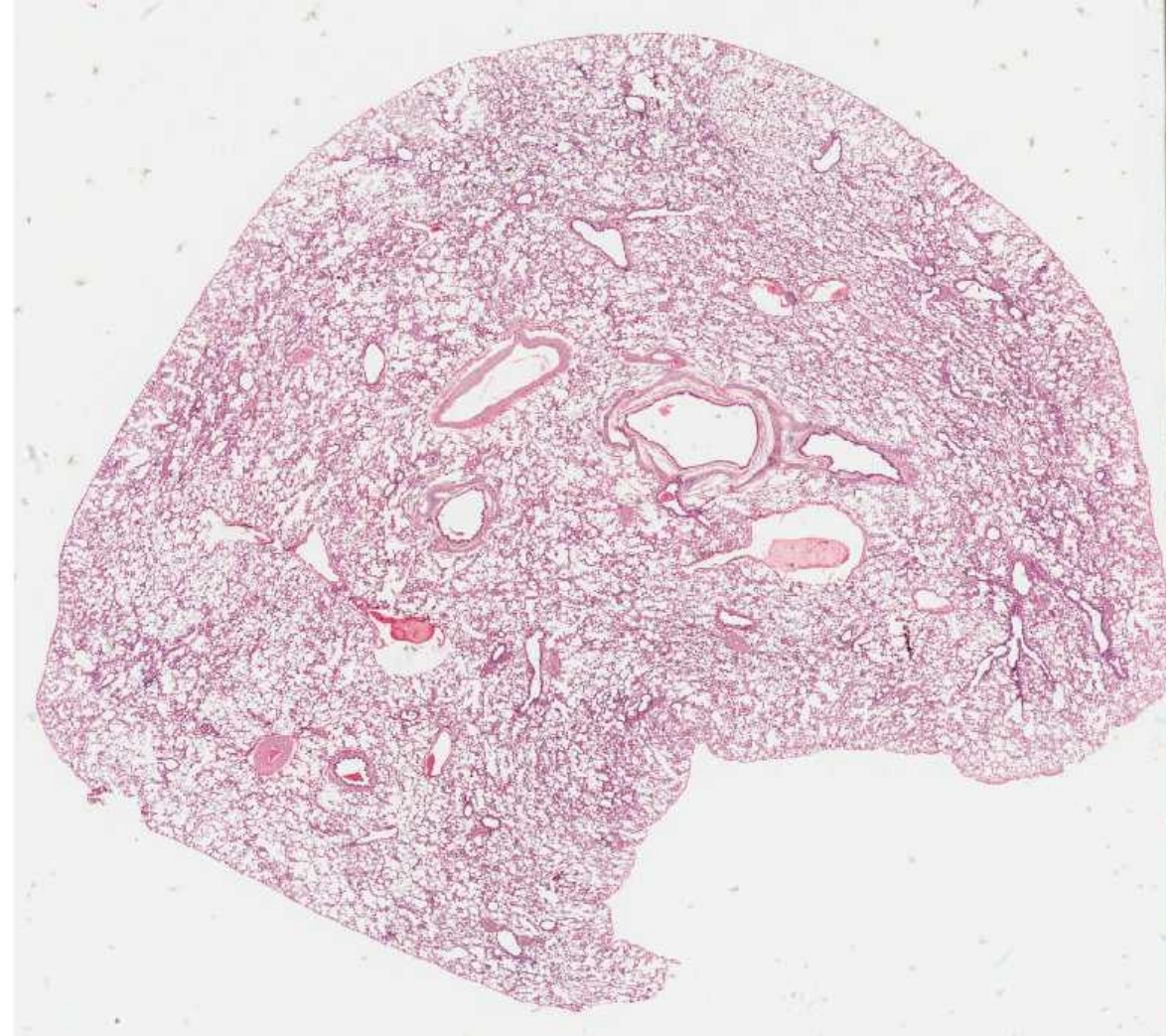
✓ Lymphoid elements



Lung

Contains :

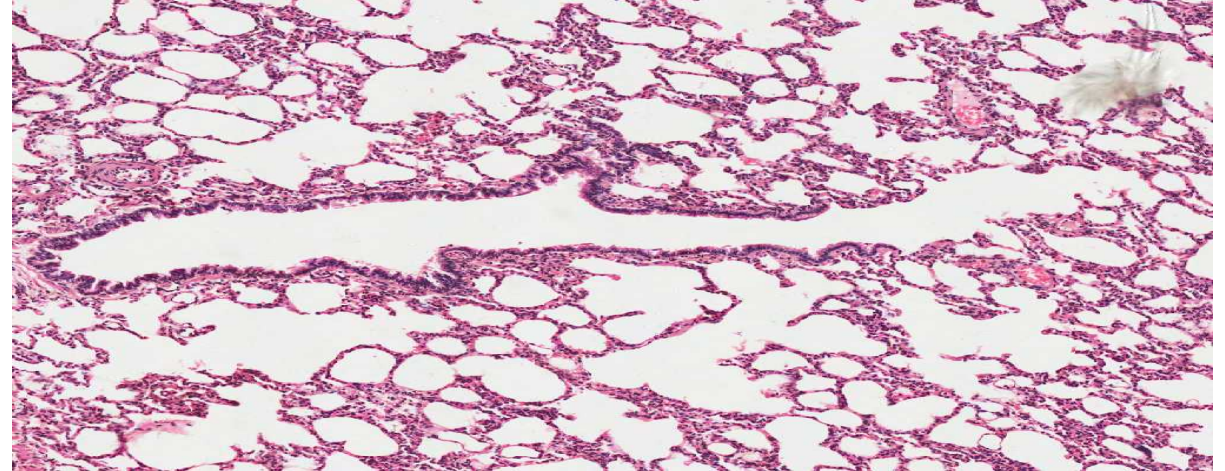
- ✓ Intrapulmonary bronchi
- ✓ Bronchioles
- ✓ Pulmonary Alveoli



Longitudinal sections

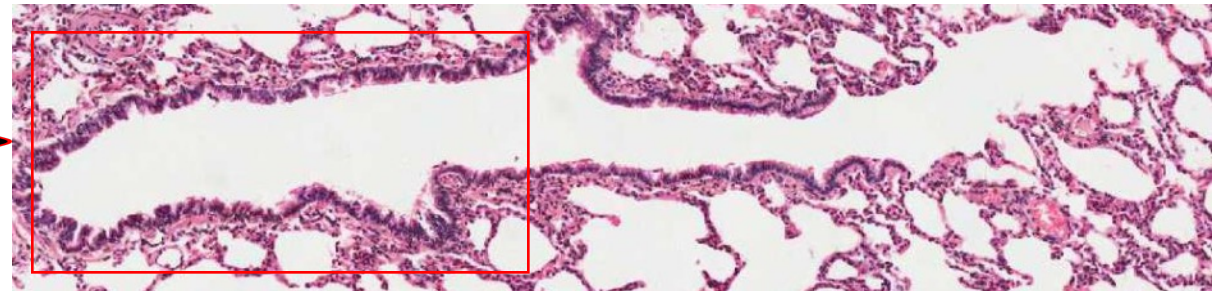
Identify the section :

✓ LUNG



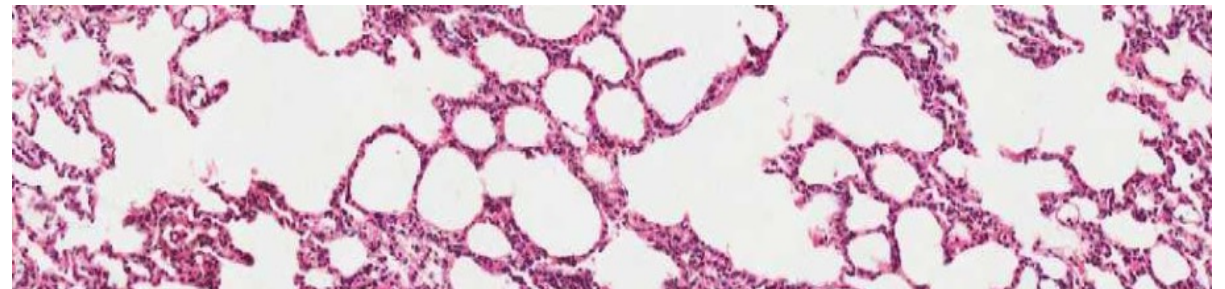
Identify the section :

✓ Terminal Bronchiole (LS)



Identify the section :

✓ Pulmonary alveoli



Intrapulmonary Bronchus

Identify the structure :

- ✓ intrapulmonary bronchus

What is the lining epithelium ?

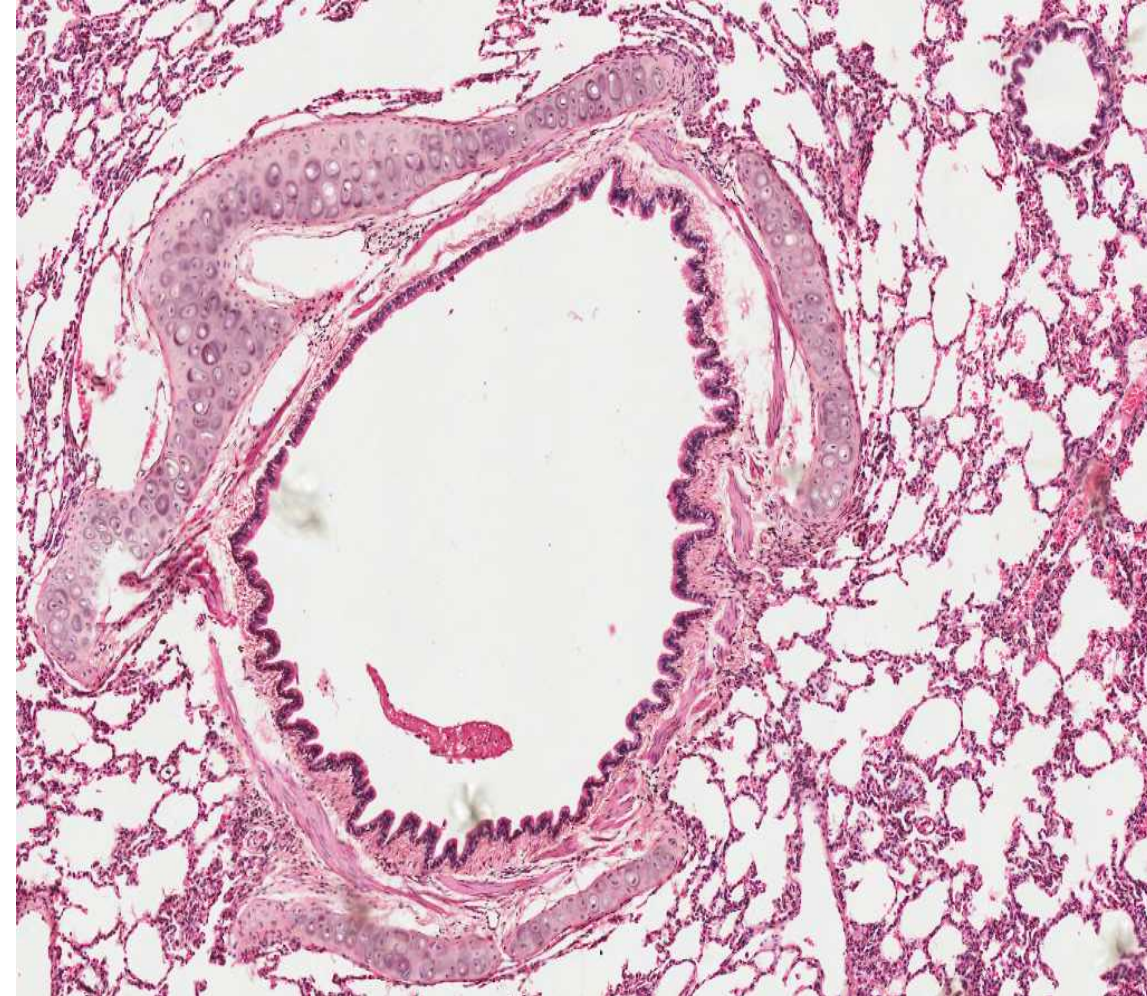
- ✓ Pseudo-stratified ciliated columnar epithelium with goblet cells.

What is the type of cartilage found in this structure ?

- ✓ Plates of hyaline cartilage

What is the difference between intrapulmonary and extrapulmonary bronchus ?

Intrapulmonary bronchus	extrapulmonary bronchus
<u>Plates</u> of hyaline cartilage	<u>C-shaped</u> rings of <u>hyaline cartilage</u>



What is the differences between intrapulmonary bronchus and the bronchiole?

1. Bronchiole has not cartilage.
2. Bronchiole is more rich in smooth muscle bundles.
3. No seromucous glands or lymphoid nodules in bronchioles.
4. in bronchioles the lining epithelium is simple type.
5. Goblet cells are less in number in the bronchioles

prof. Raeesa added this

Terminal Bronchiole

Identify the structure :

- ✓ Terminal Bronchiole

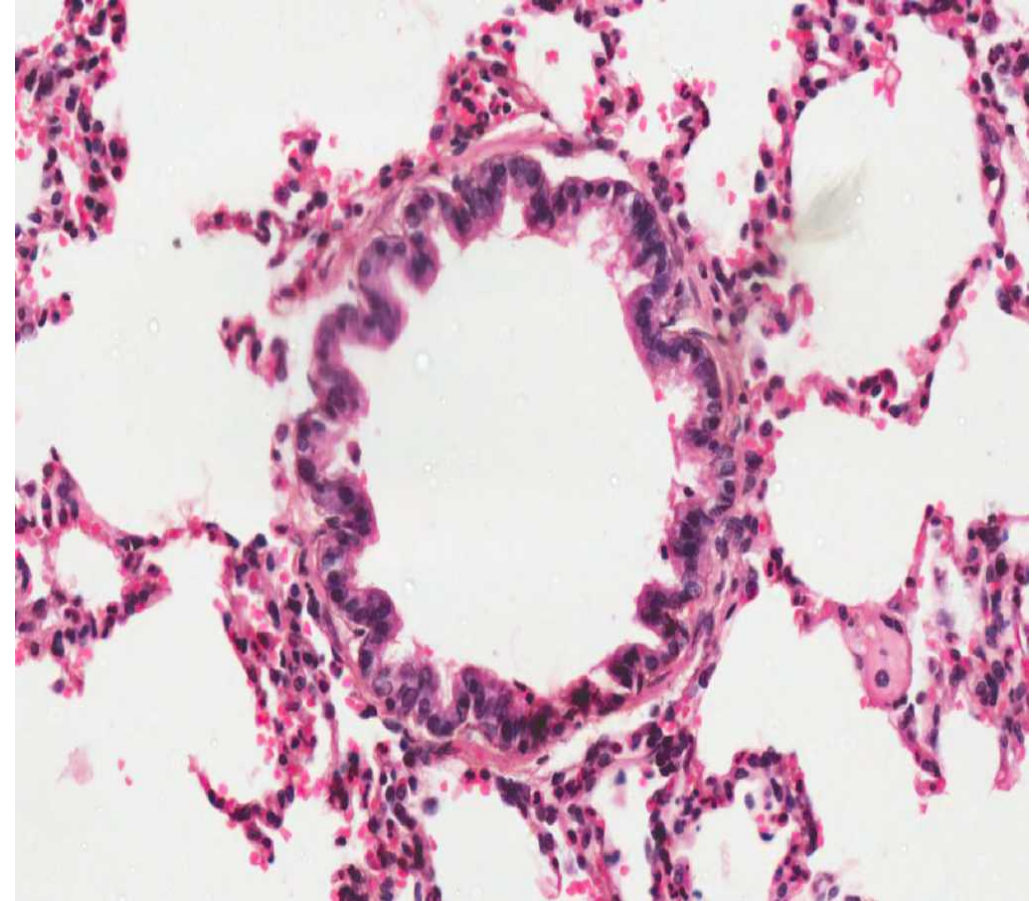
What is the lining epithelium ?

- ✓ Simple cuboidal partially ciliated epithelium with Clara cells.

NO GOLBET CELLS

What is the function of clara cells?

- ✓ Degrade toxins in inhaled air (immune cell like function)
- ✓ Divide to regenerate the bronchiolar epithelium.
- ✓ Produce surfactant-like material



Pulmonary Alveoli

Type of epithelium ?

- ✓ Simple squamous epithelium

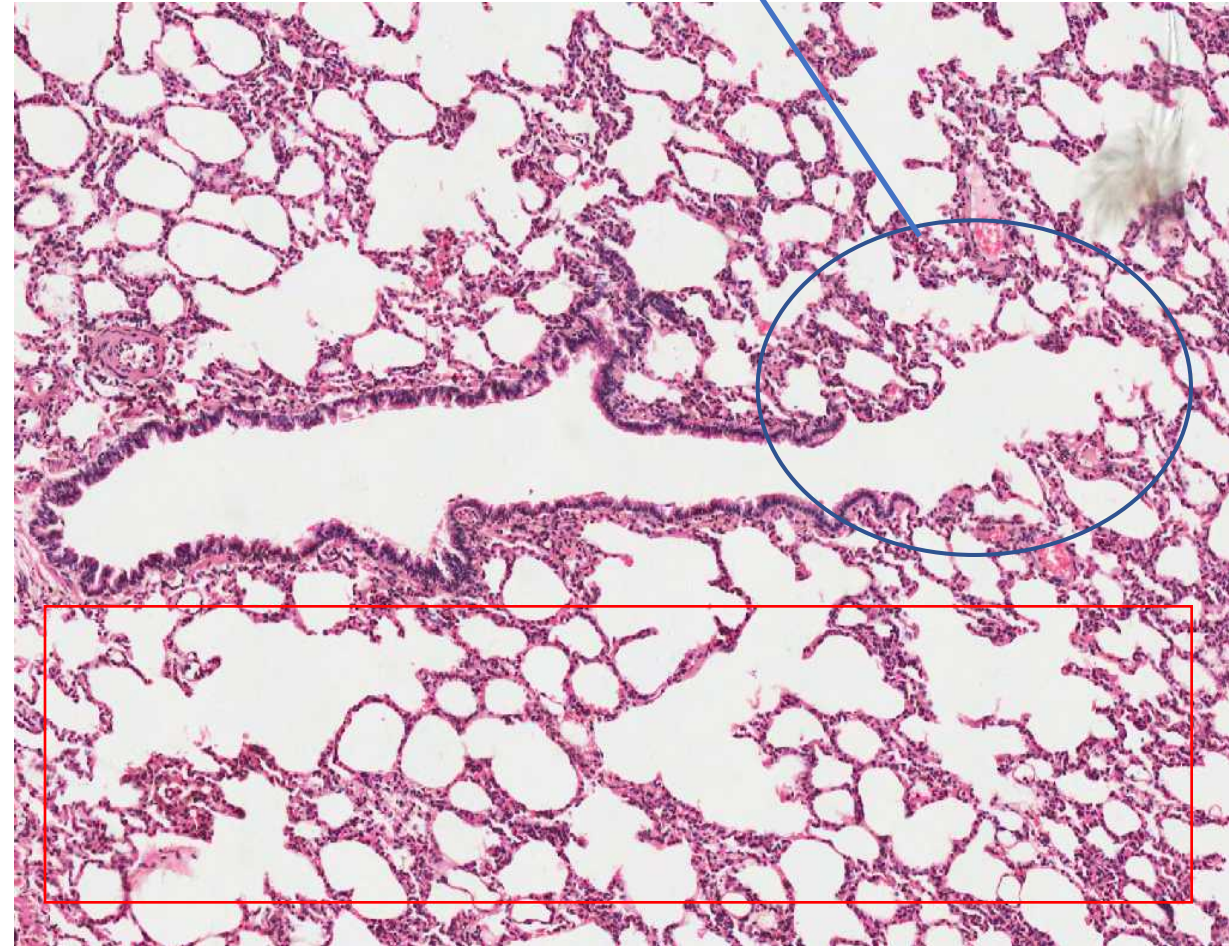
What are the types of cells found in the Alveolar epithelium ?

- ✓ Type I Pneumocytes
- ✓ Type II Pneumocytes

Alveoli



Alveolar duct



Pulmonary Alveoli cont..

What is interalveolar septum ?

- ✓ is a region between 2 adjacent alveoli
- ✓ It contains the interstitium
- ✓ It is formed of the wall of the alveoli and interstitium.

Describe the structure , and the sites where the Alveolar Macrophage (Dust cell) is found :

- ✓ Site: In the Lumen of Alveoli and in the interalveolar septa
- ✓ Structure: Irregular

What are the compartment of the blood-gas barrier ?

- ✓ Surfactant
- ✓ Type I Pneumocyte
- ✓ Fused basement membrane of both type I pneumocyte and endothelial cells of pulmonary capillaries
- ✓ Endothelial cells

What is the difference between Type I Pneumocytes and Type II Pneumocytes ?

	<u>Type I Pneumocytes</u>	<u>Type II Pneumocytes</u>
Structure	Simple Squamous "Flattened" , No lamellar bodies	Cuboidal "Rounded" , have lamellar bodies
Number	Less than type II	More numerous than type I
Function	Gas exchange	Secrete Surfactant

Thank you & good luck

- Histology team

Done by :
✓ Team leaders

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