

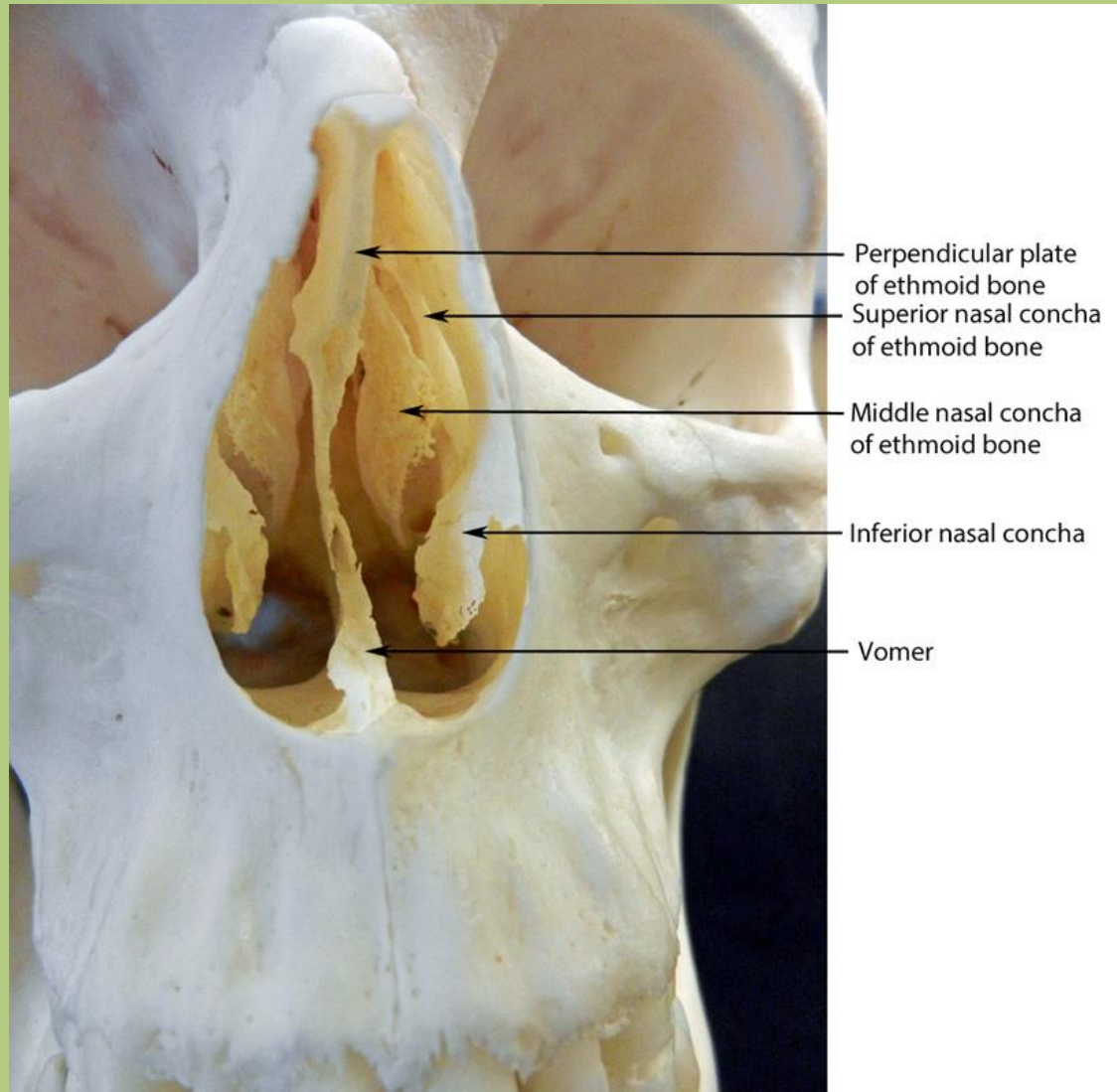


Respiratory system

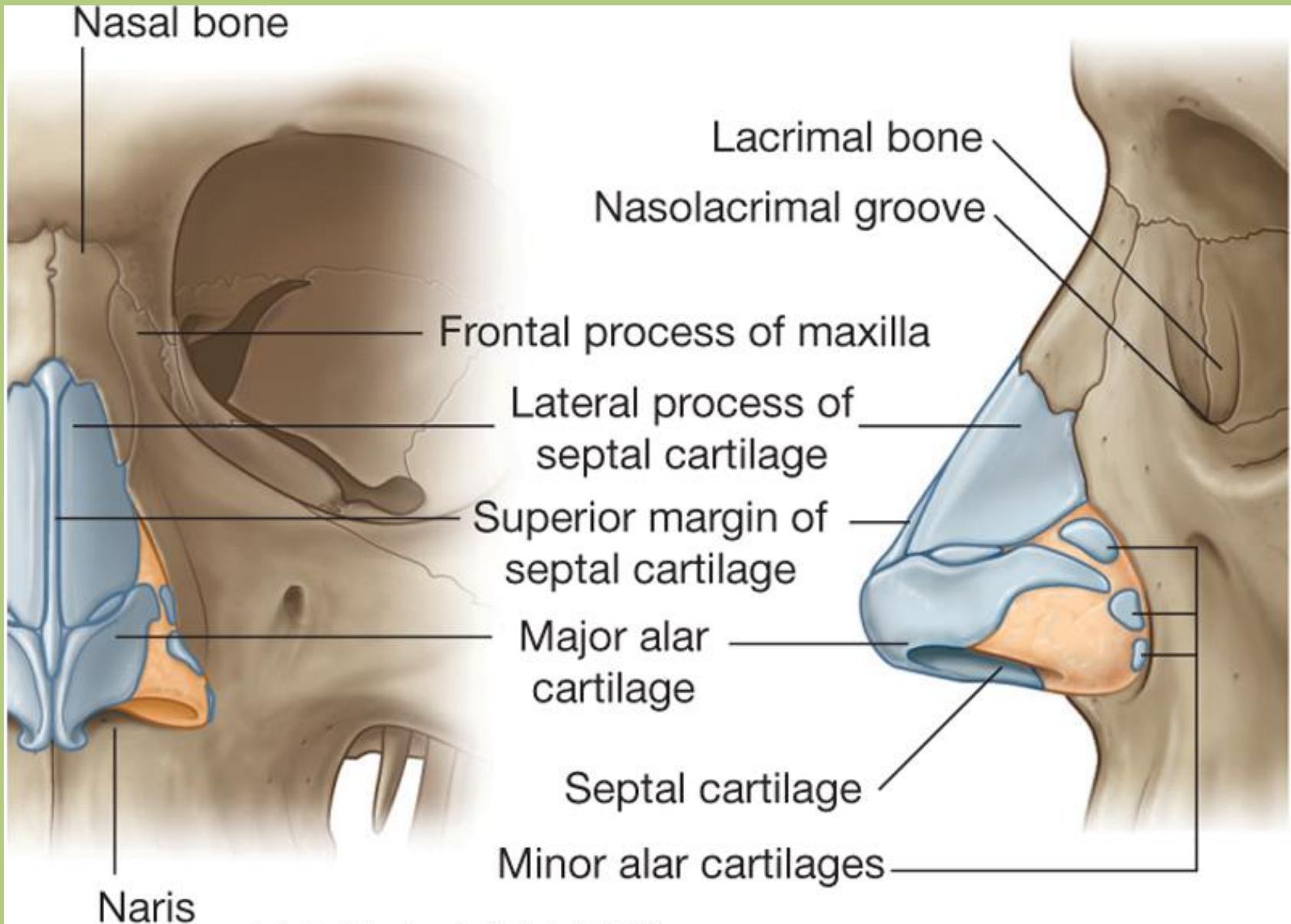
Sándor Katz M.D.,Ph.D.

Nasal cavity

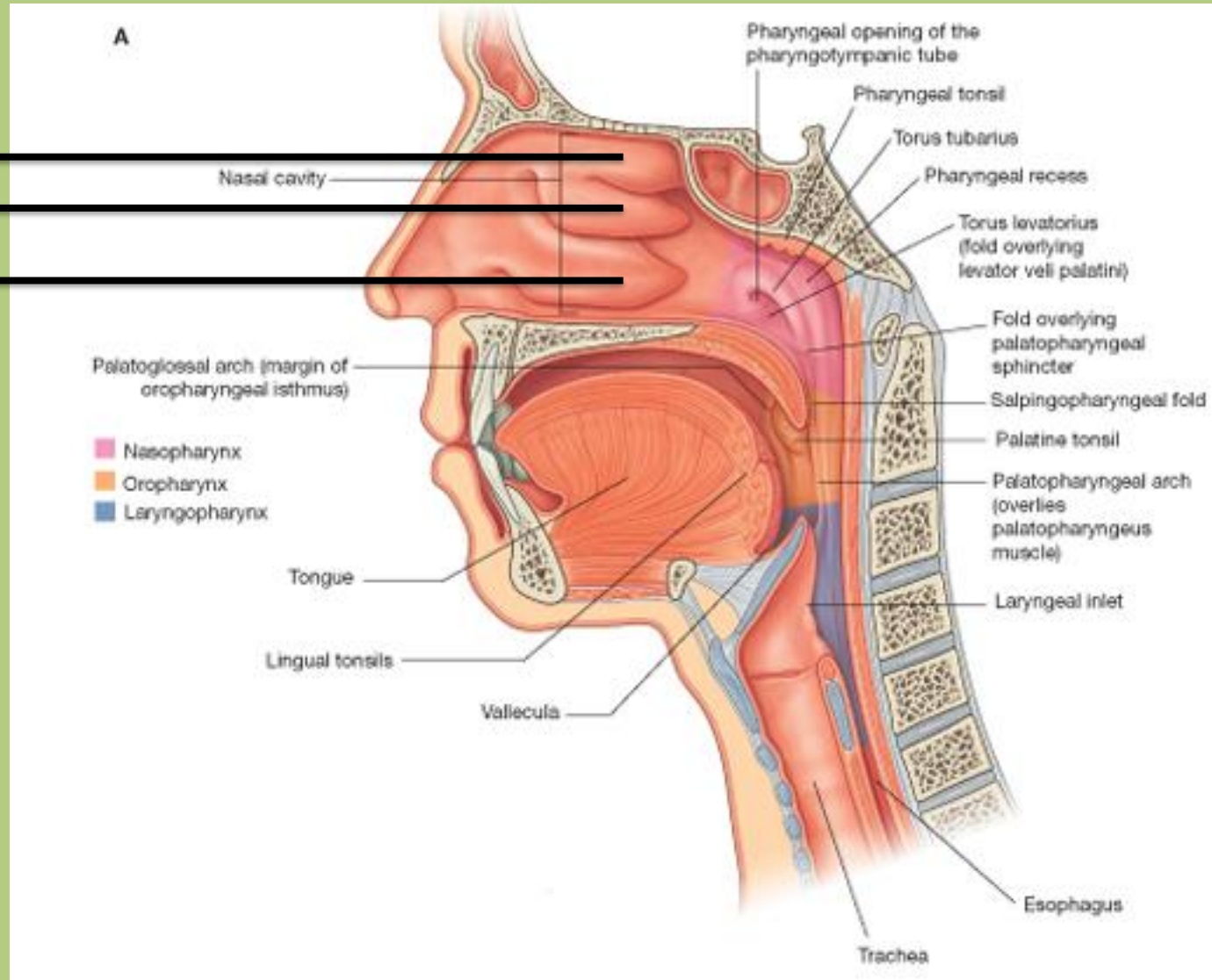
- divided by the nasal septum
- lined by nasal mucosa
- divisible into an olfactory and a respiratory area
- connection with the paranasal sinuses

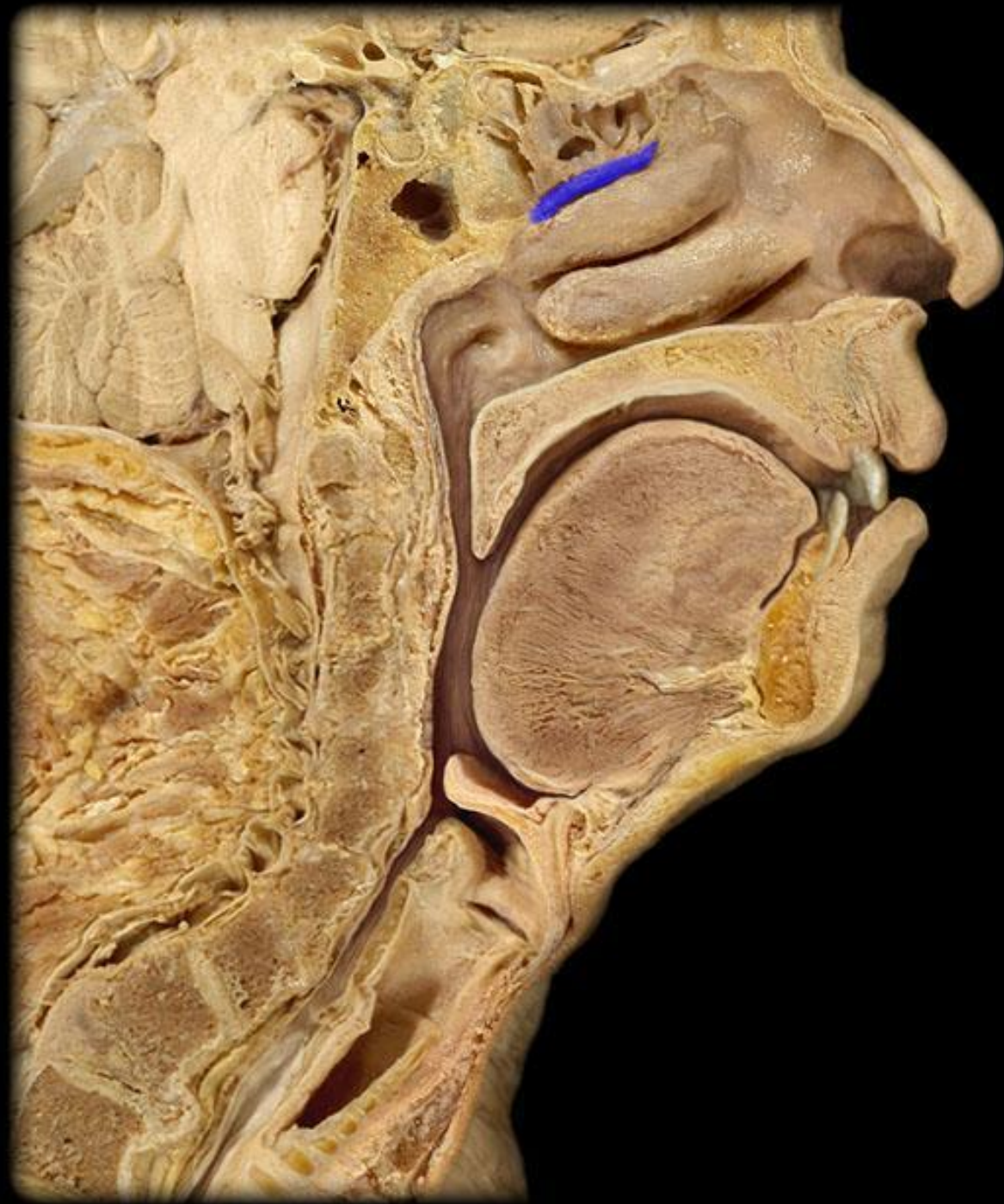


Cartilaginous nasal cavity

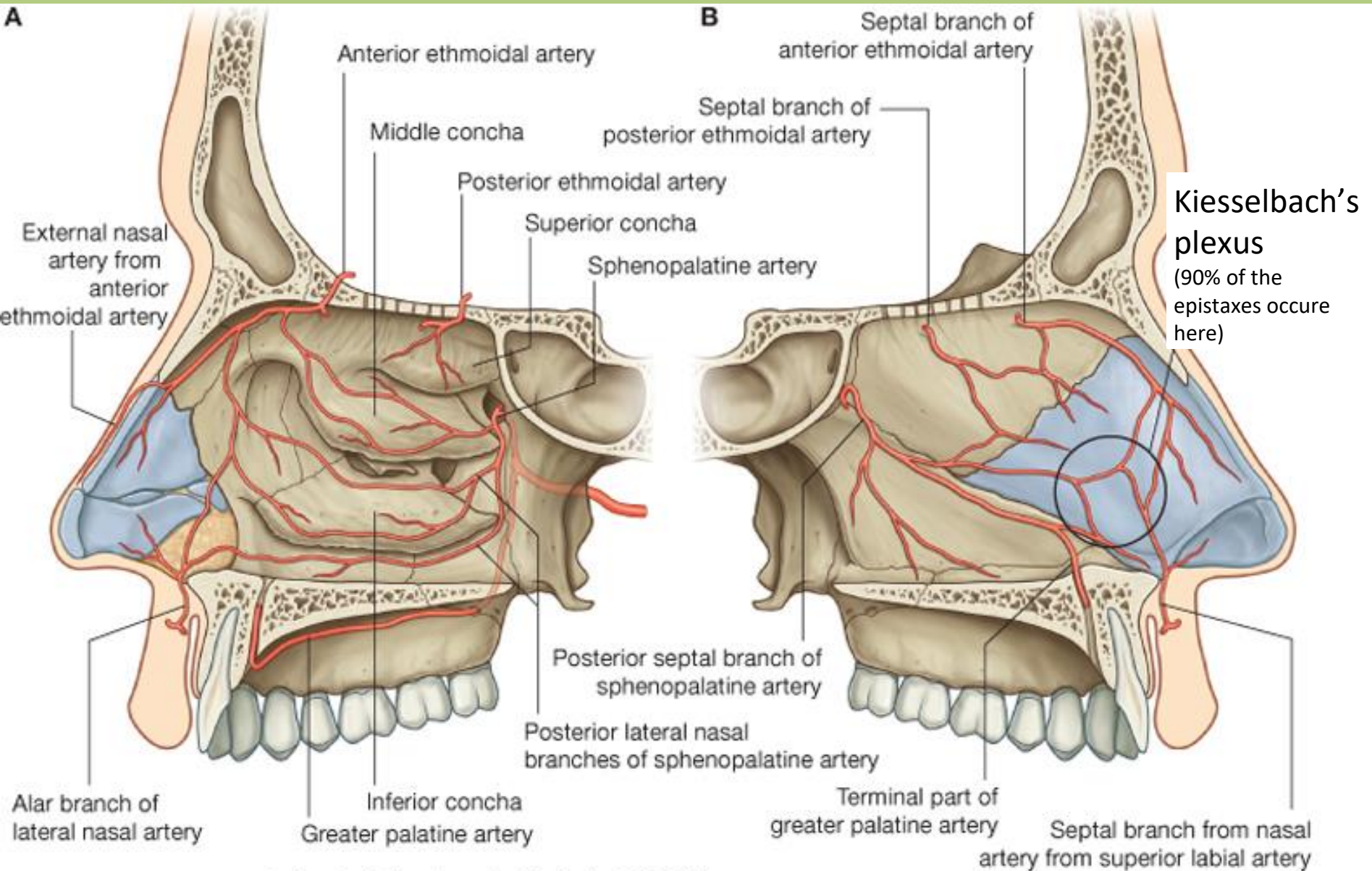


superior nasal concha
middle nasal concha
inferior nasal concha





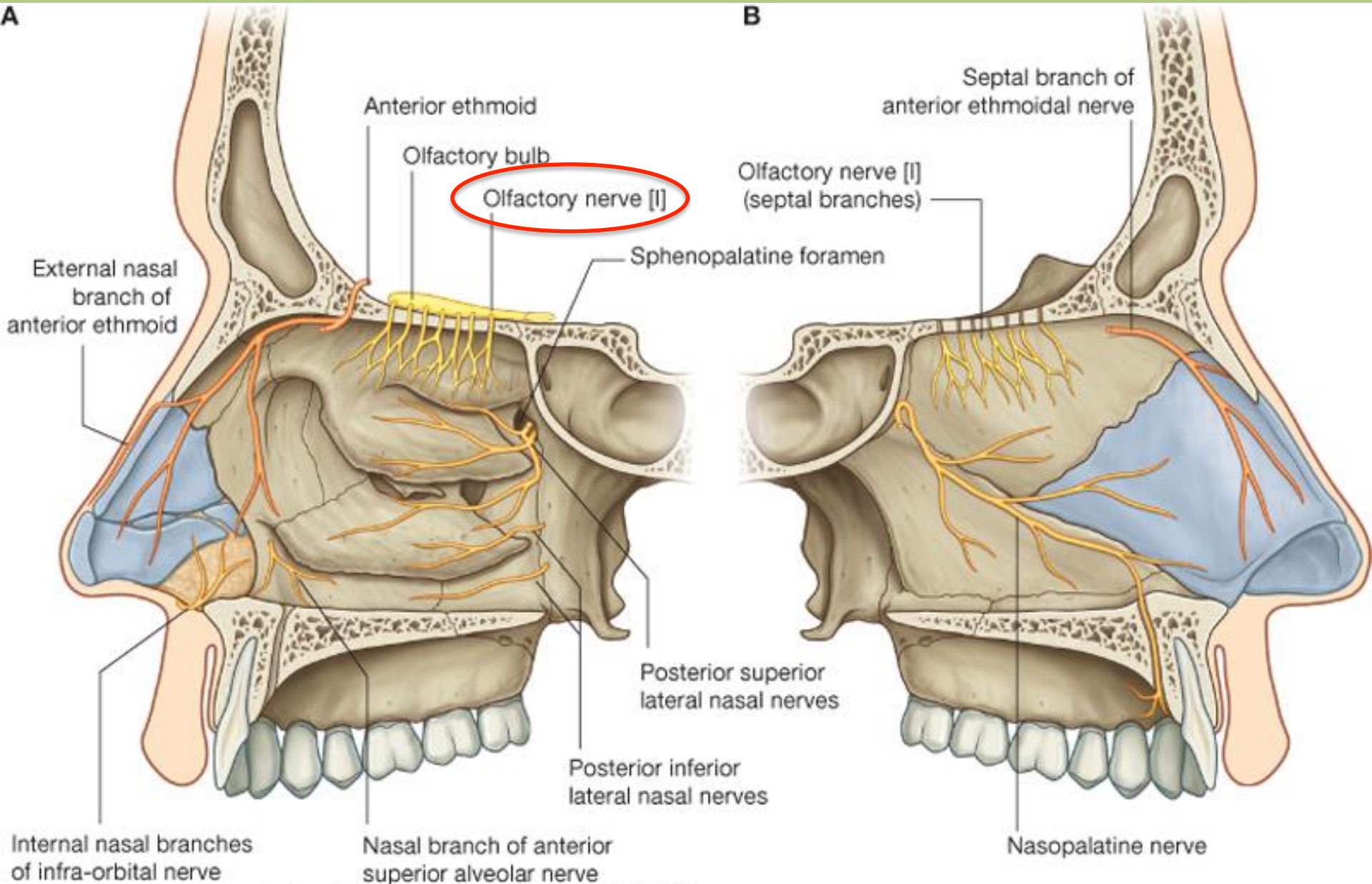
Blood supply of the nasal cavity



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Innervation of the nasal cavity

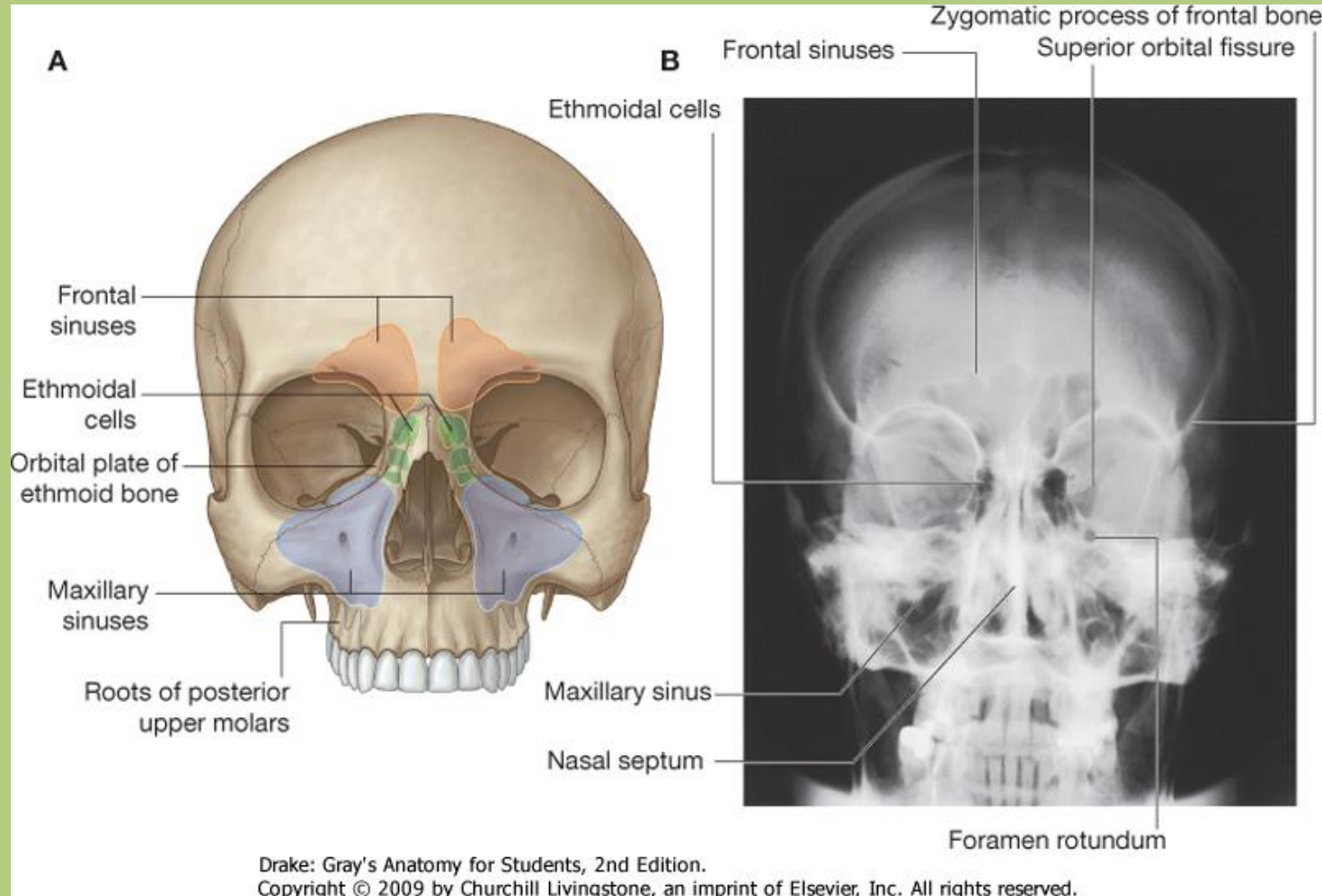


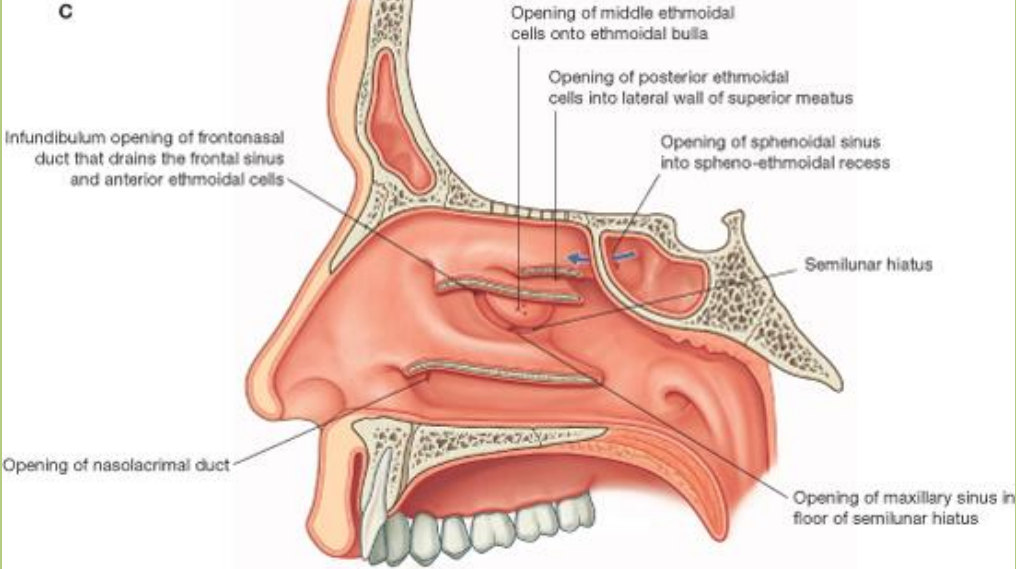
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Paranasal sinuses

- communication with the nasal cavity
- they reduce the weight of the skull
- lined by pseudostratified columnar ciliated epithelium
- they heat and moisturise the air
- act as resonators of voice

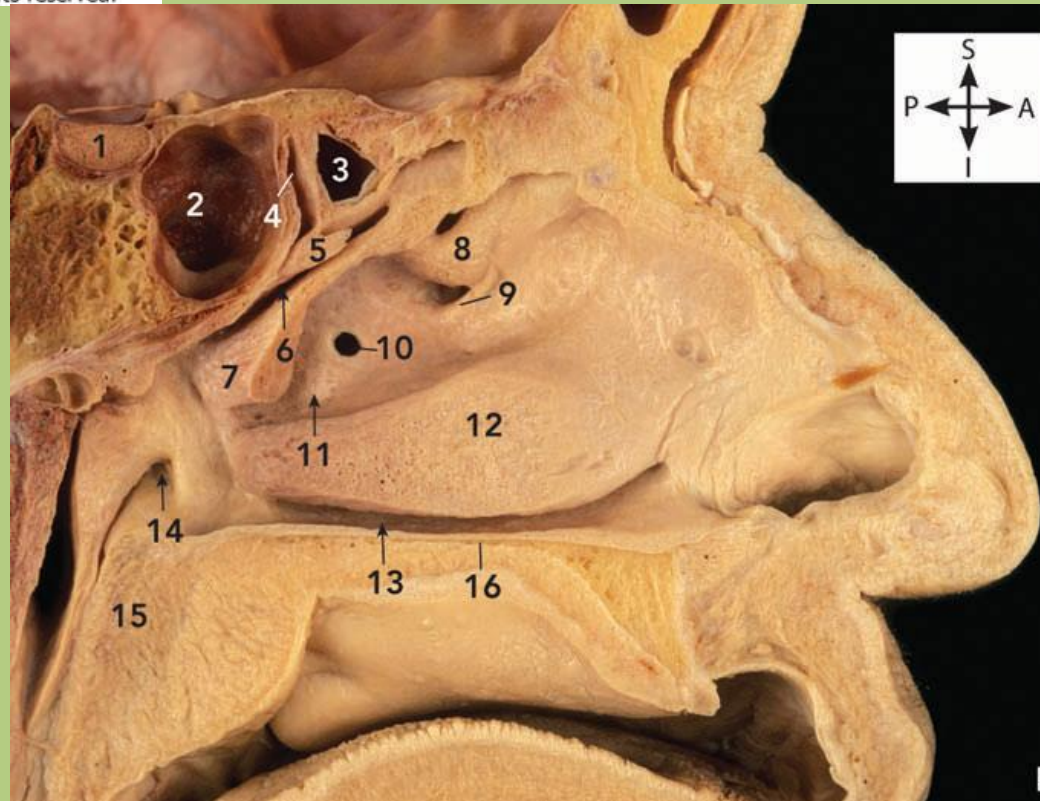




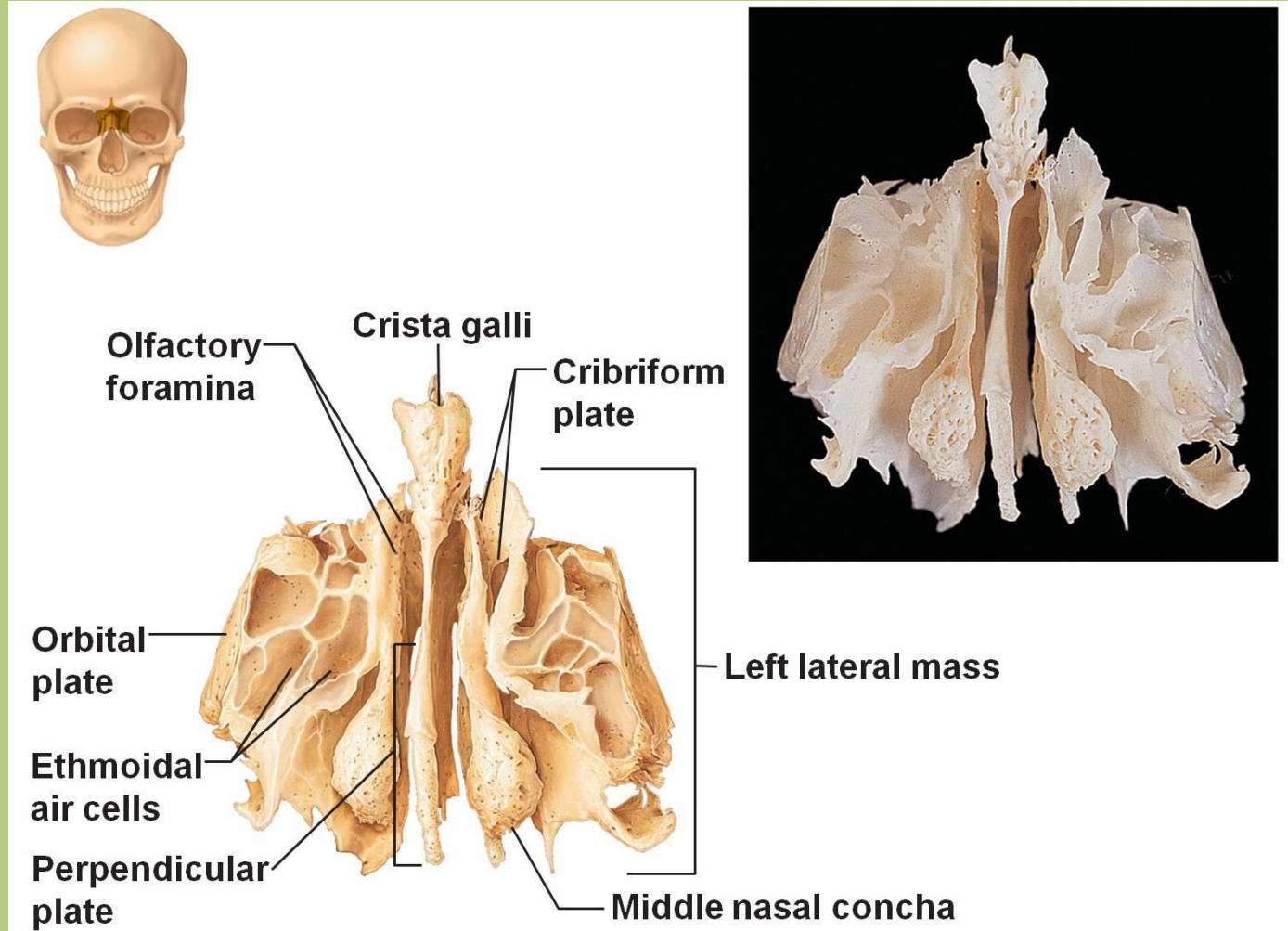
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Openings of the paranasal sinuses

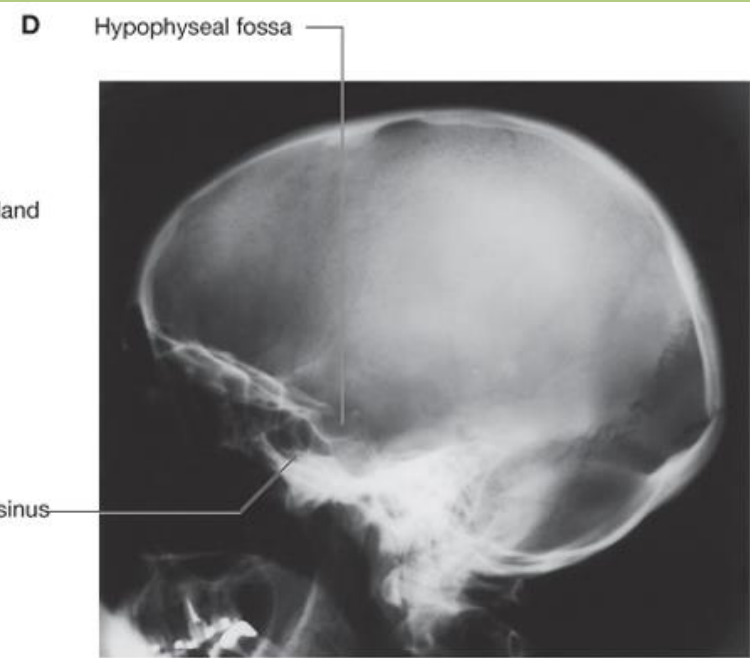
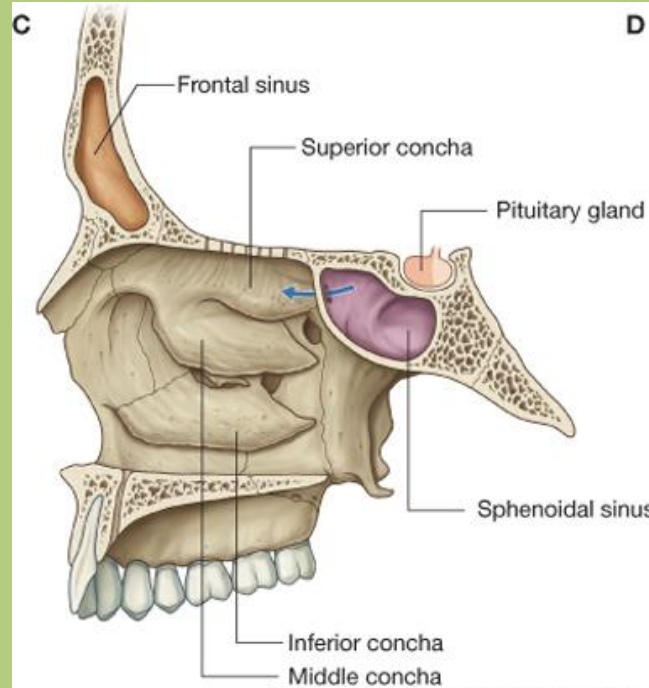
1. hypophysis
2. **sphenoid sinus**
3. **posterior ethmoidal air cells**
4. sphenoethmoid recess
5. superior nasal concha
6. superior nasal meatus
7. middle nasal concha
8. **ethmoid bulla**
9. semilunar hiatus
10. opening of the **maxillary sinus**
11. middle nasal meatus
12. inferior nasal concha
13. inferior nasal meatus
14. opening of the auditory canal
15. soft palate
16. hard palate



Ethmoidal air cells

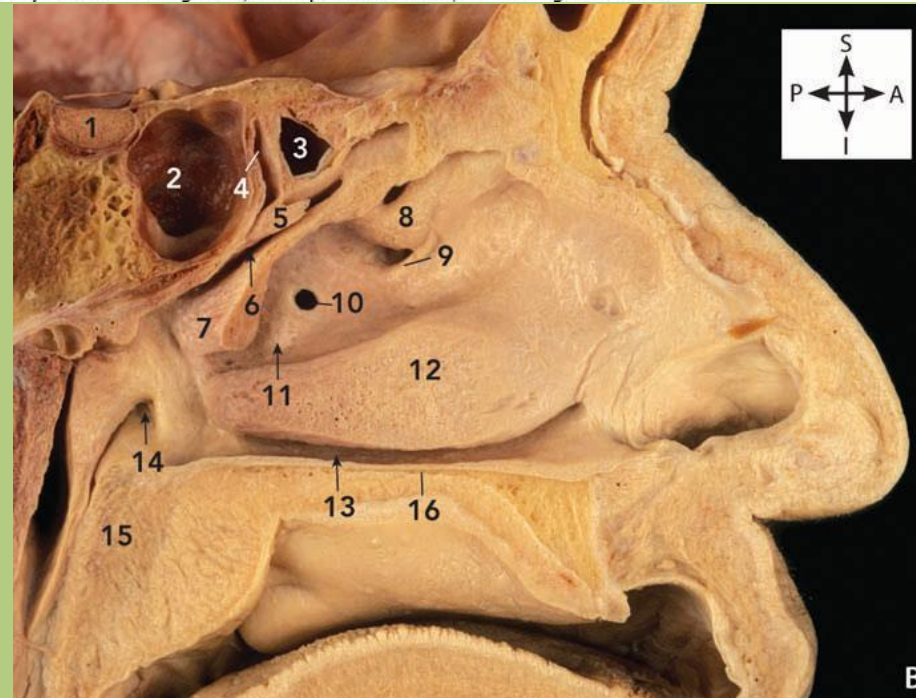


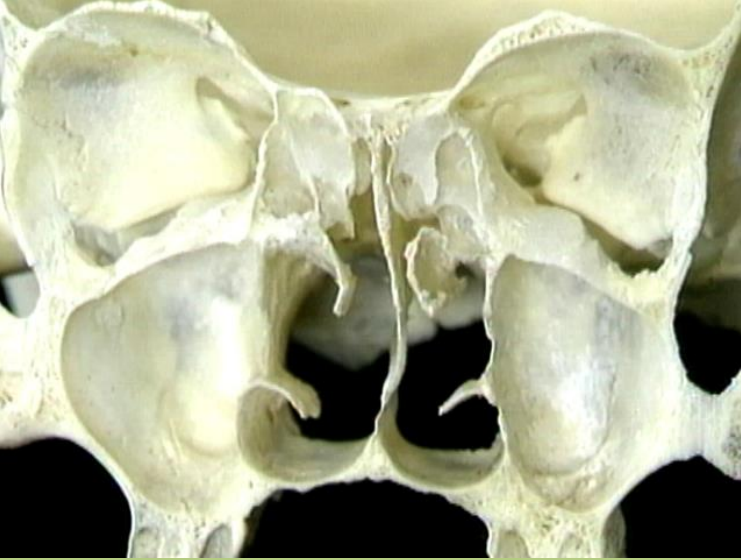
Sphenoid sinus (2)



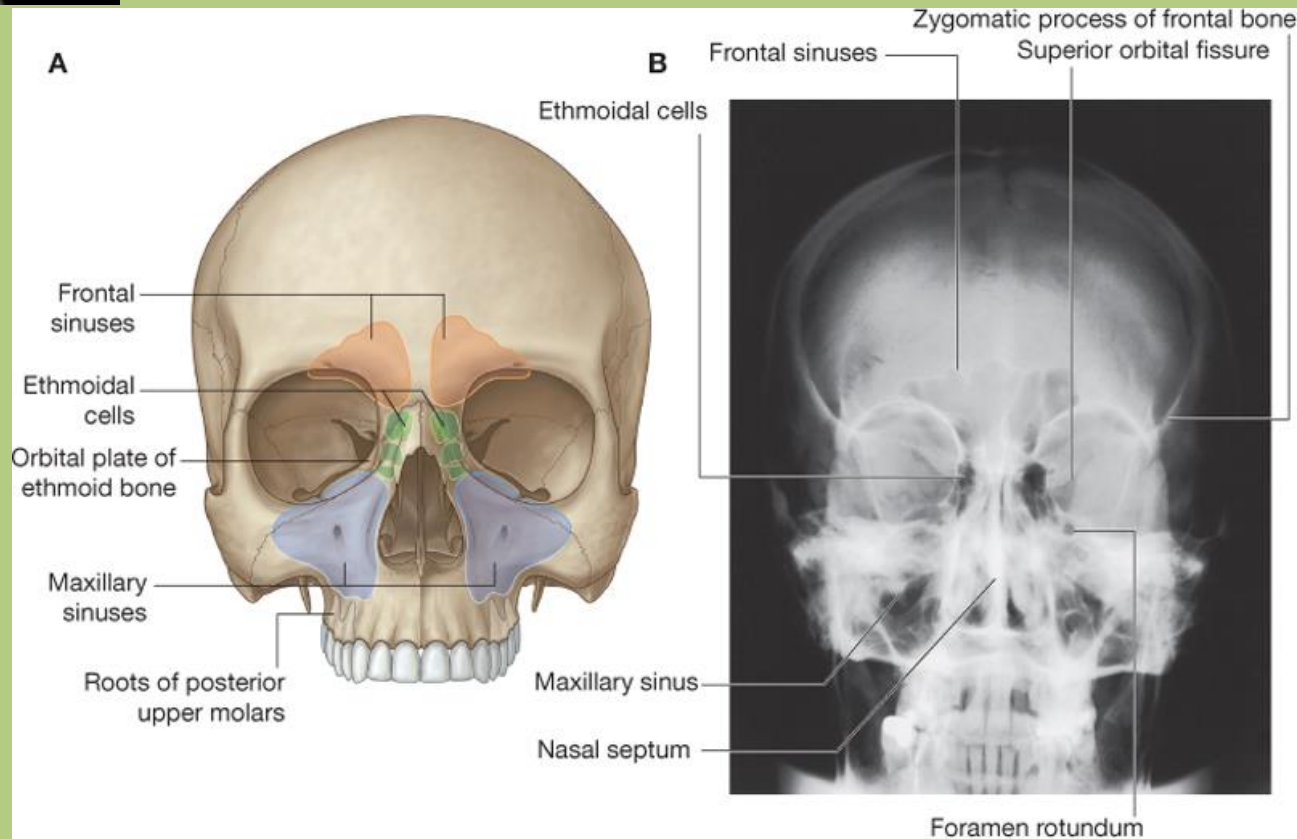
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Maxillary sinus=
Highmore's sinus:

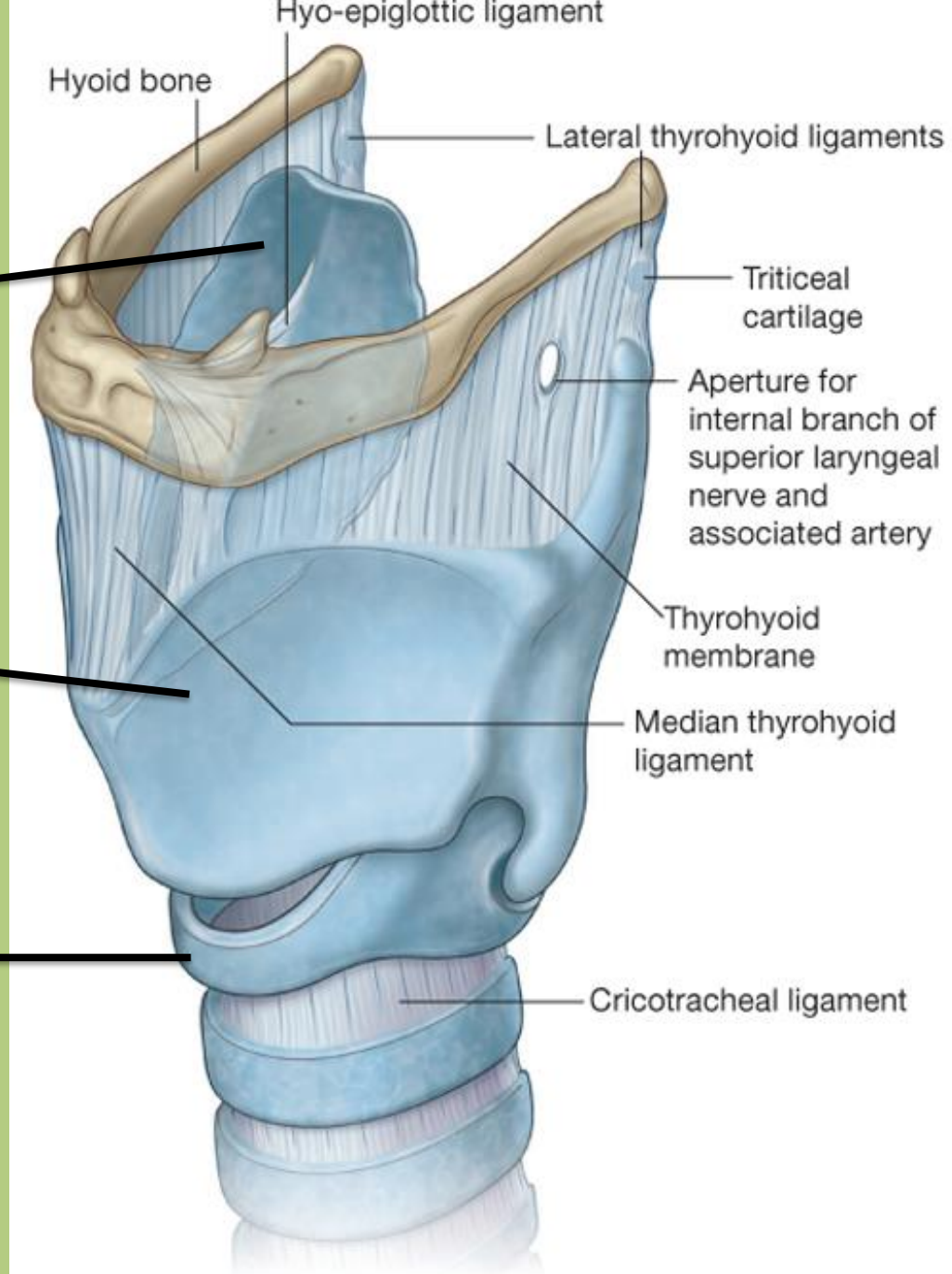


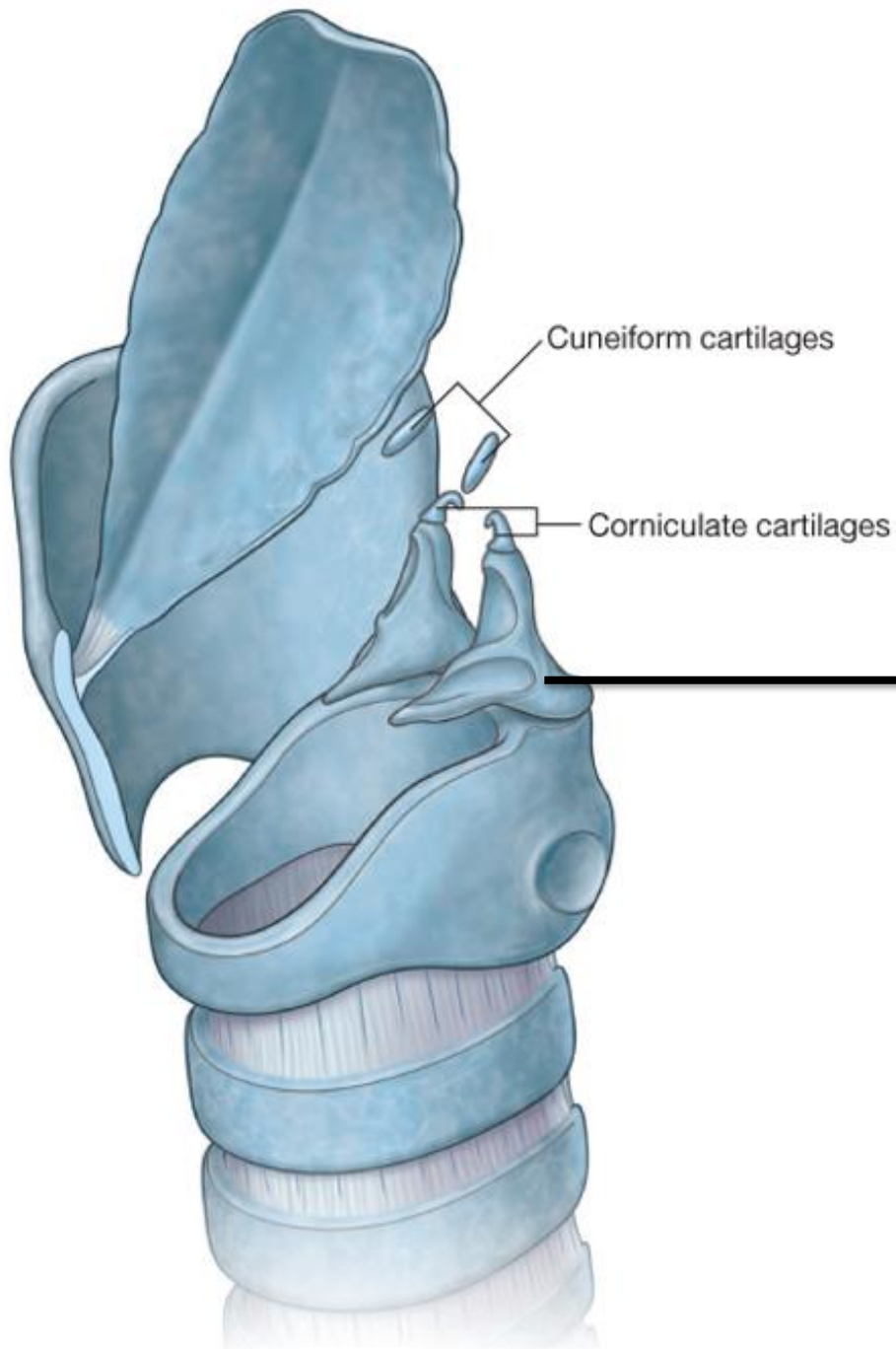
Frontal sinus



Laryngeal cartilages

- epiglottis
- thyroid cartilage
- cricoid cartilage



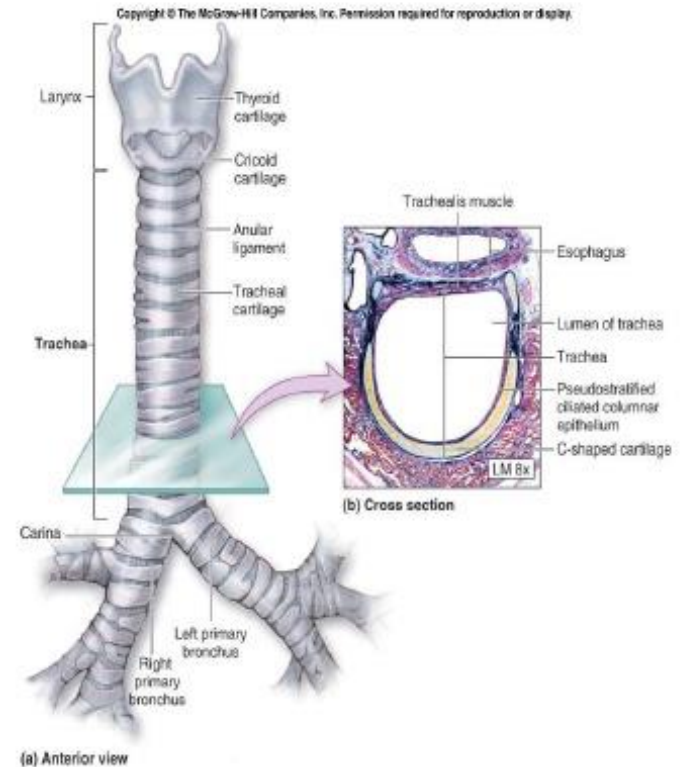


Laryngeal cartilages

- arytenoid cartilages
- corniculate cartilages
- cuneiform cartilages

Trachea

- **Structure:**
The trachea is a rigid fibroelastic structure. Incomplete rings of hyaline cartilage continuously maintain the patency of the lumen.
- The trachea is lined internally with ciliated columnar epithelium.



Trachea

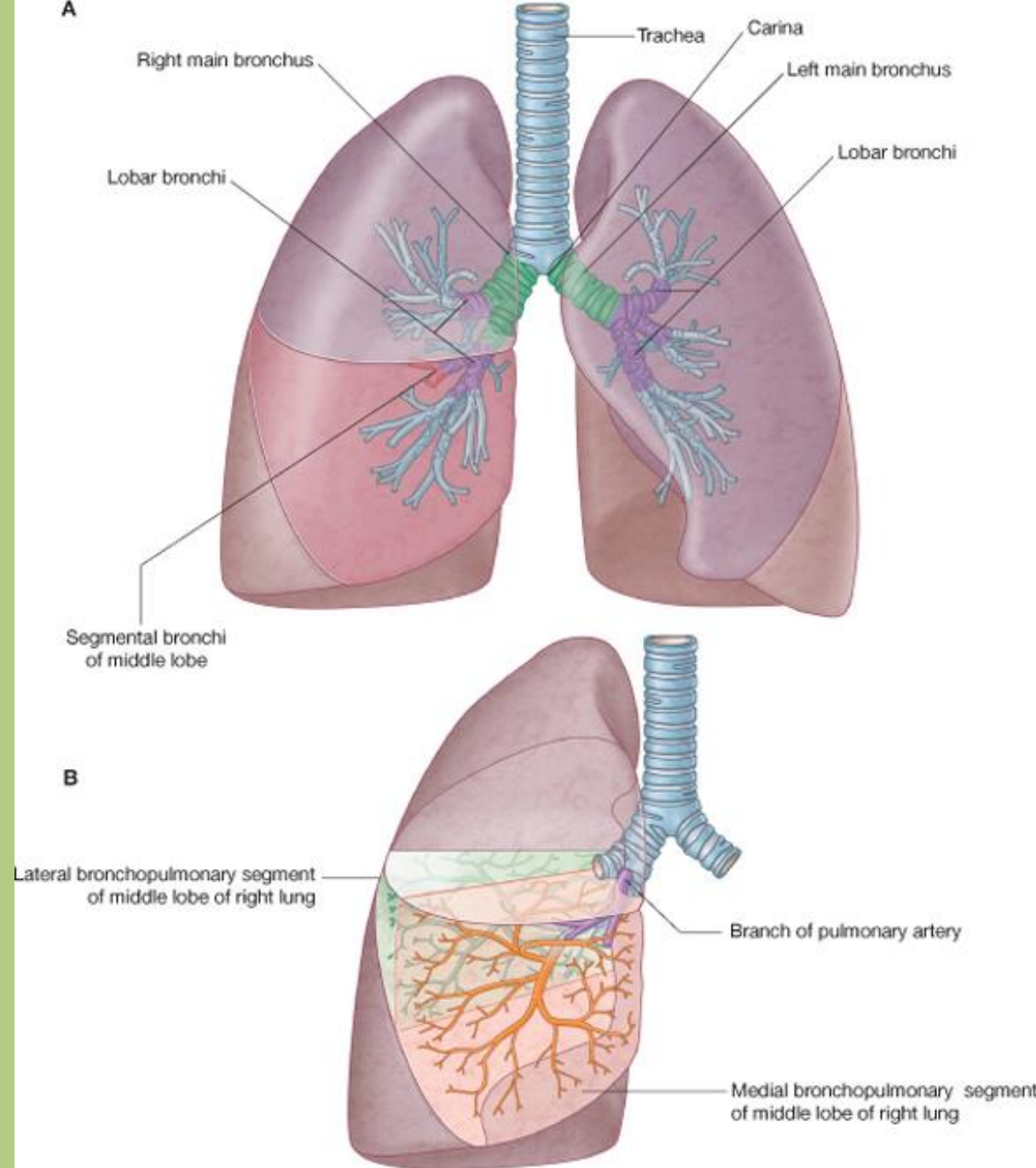
- cartilaginous part
- membranous part

Right main bronchus:

- more vertical
- bigger lumen
(inhaled foreign bodies can block the lumen easily)

Left main bronchus:

- more oblique
- smaller lumen



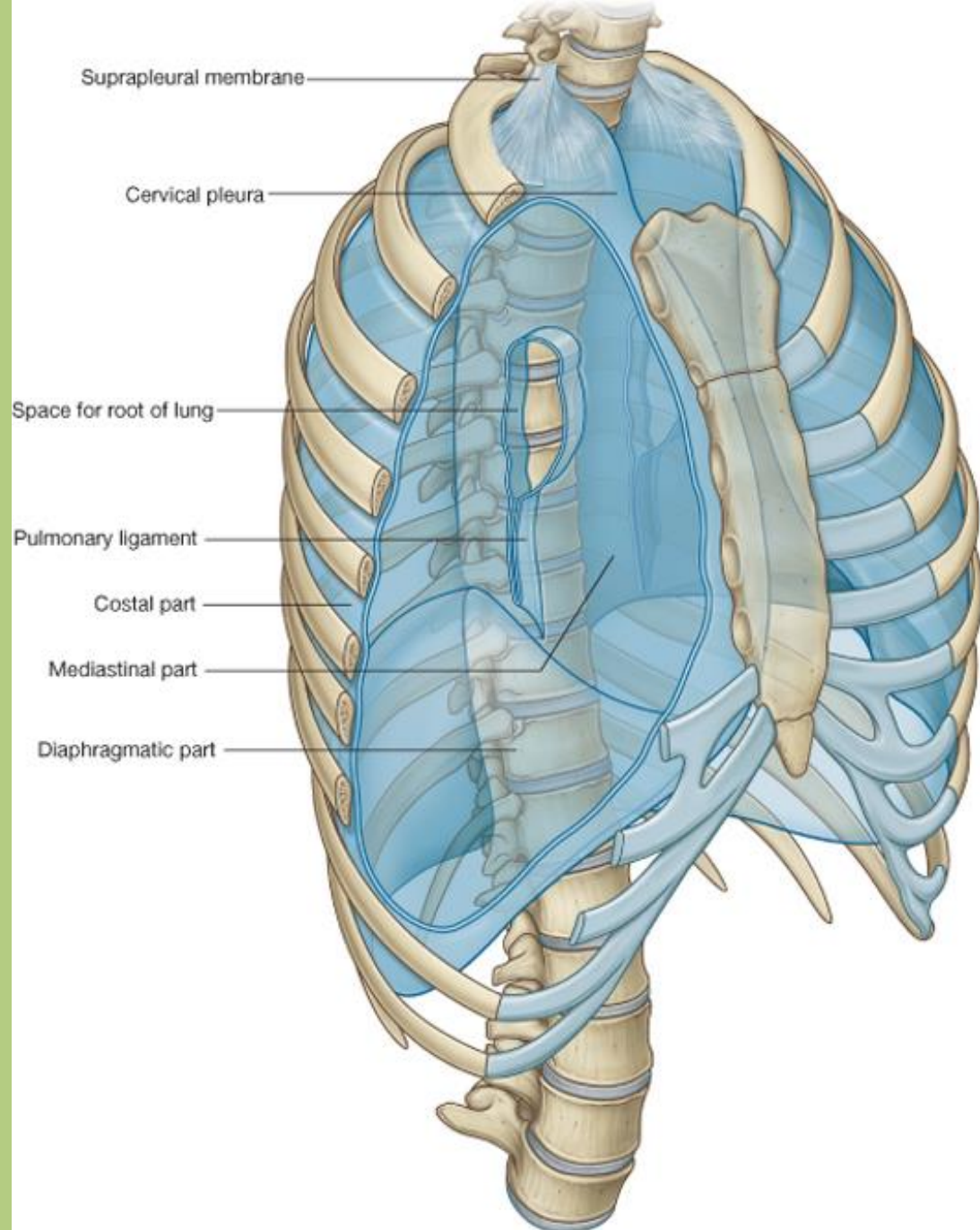
Pleura

It is a serous membrane.

Visceral pleura.

Parietal pleura:

costal part,
diaphragmatic part,
mediastinal part.



Lungs

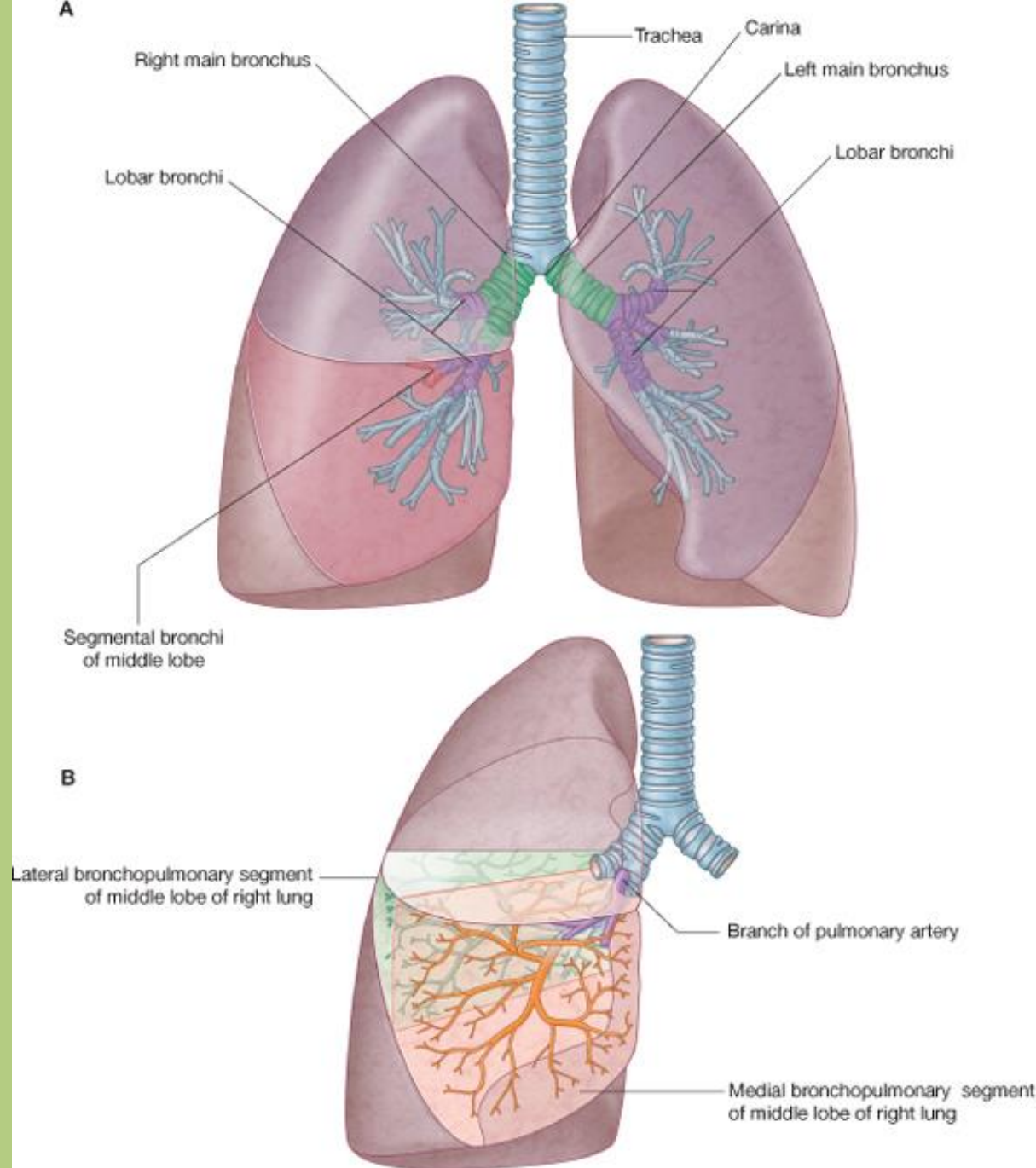
Parts: base, apex and hilum

Surfaces: costal, diaphragmatic and mediastinal

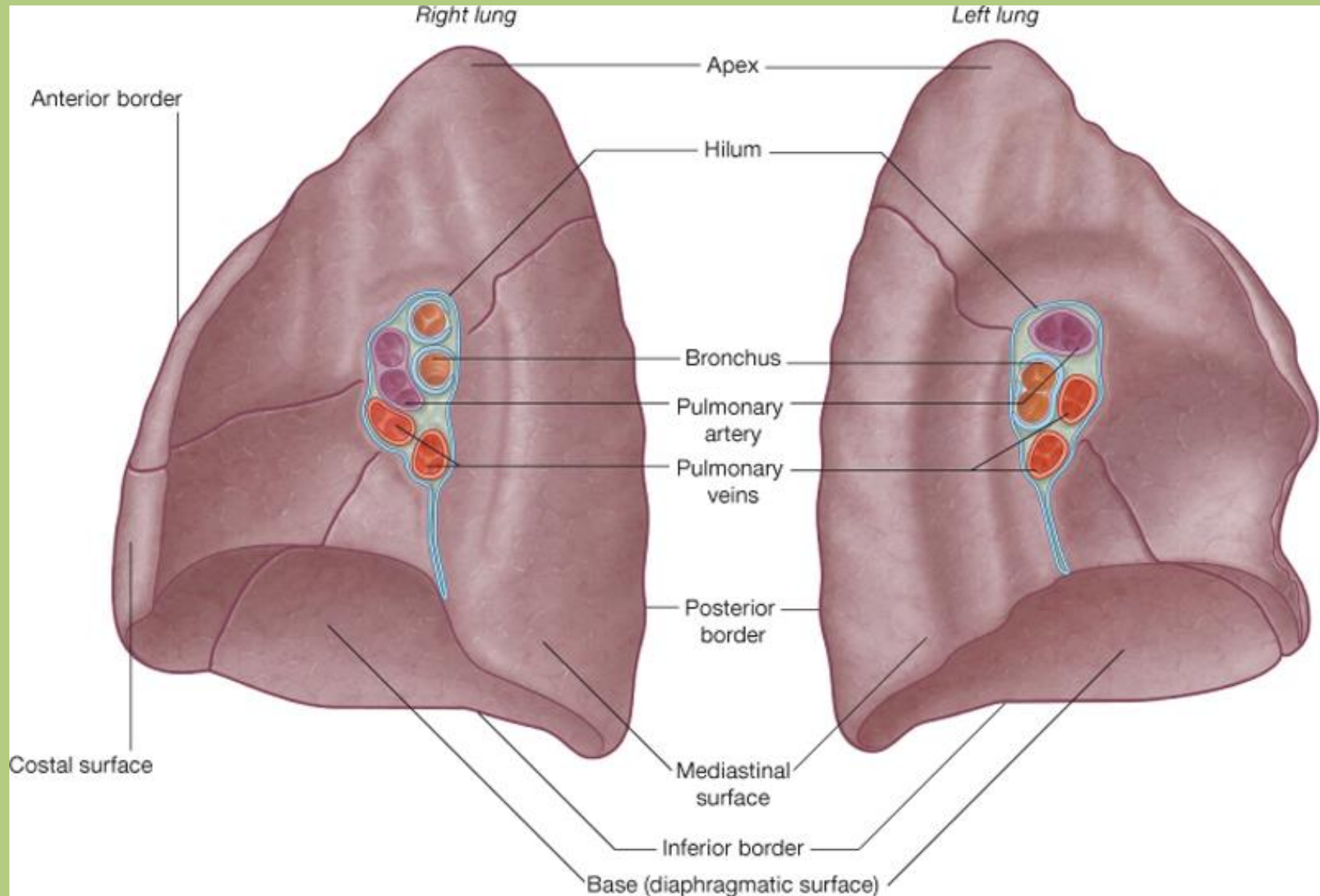
Right lung: 3 lobes (superior, middle and inferior)

Left lung: 2 lobes (superior and inferior)

The lobes are built up by segments.



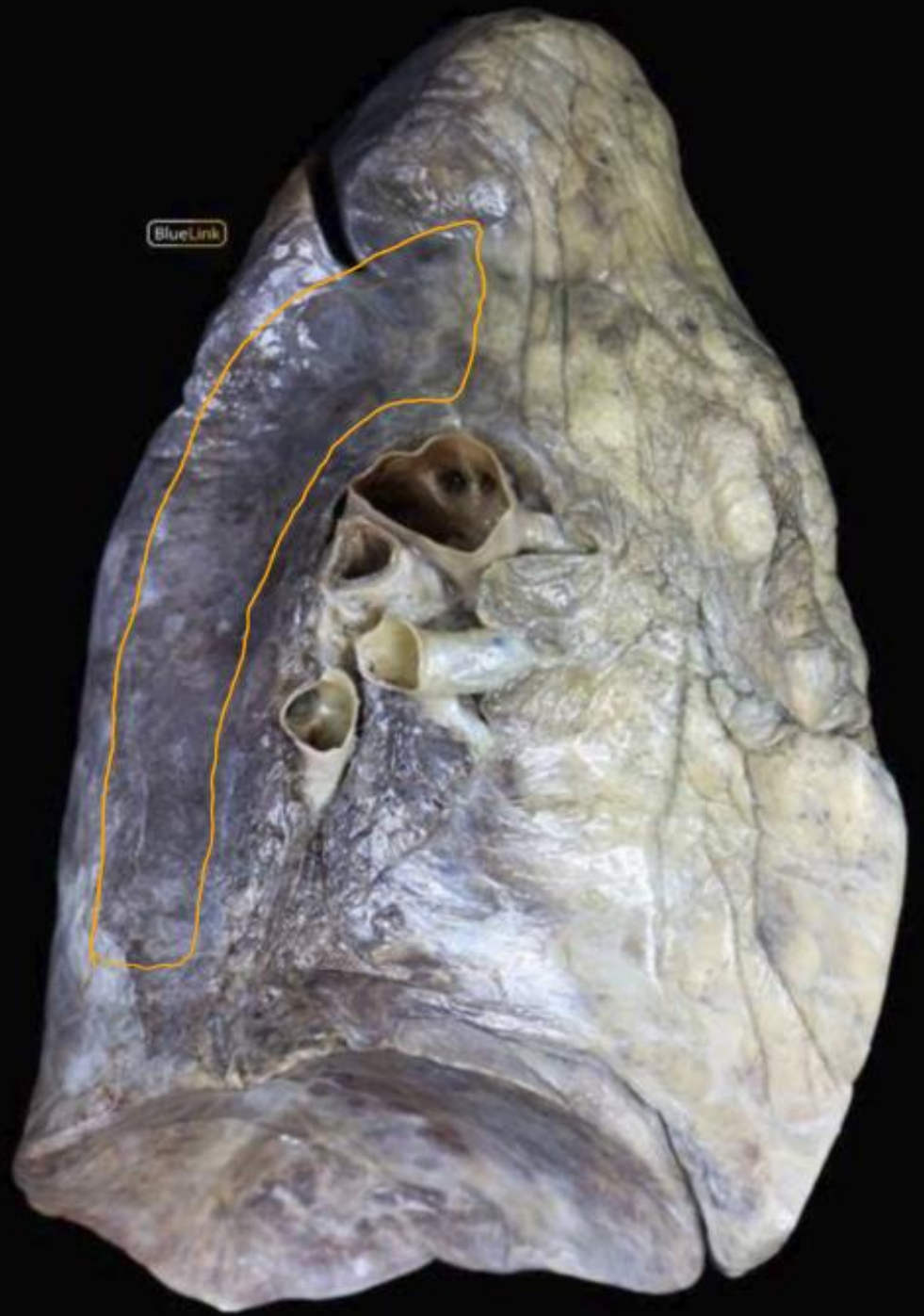
Hilum of the lungs



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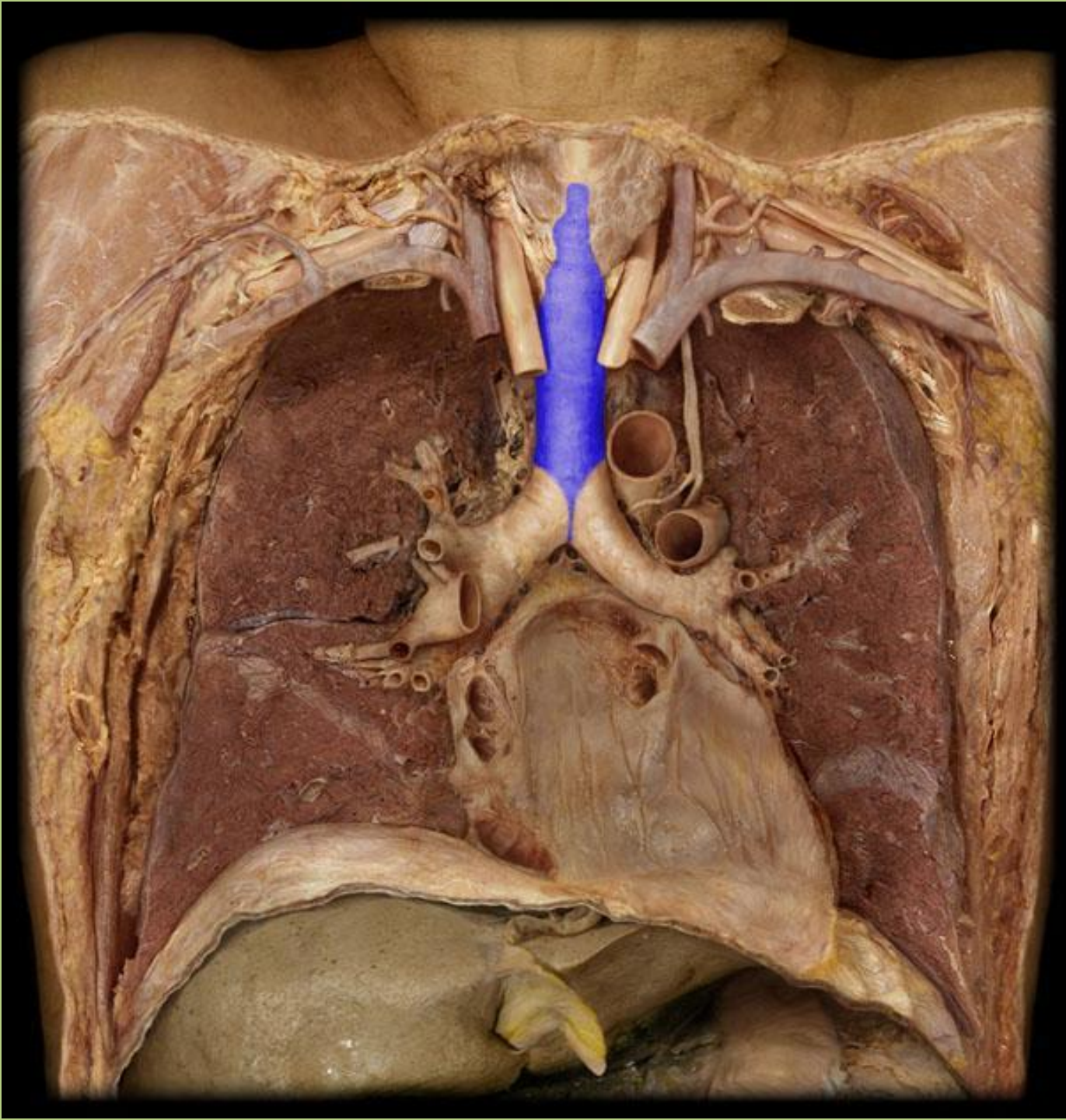
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left lung



right lung





Thank you for your attention.

References: Drake: Gray's Anatomy for Students, 2nd ed.
Standring: Gray's Anatomy, 39th ed.
Radiopaedia.org
Thieme Atlas of Anatomy, General Anatomy and Musculoskeletal System, Head and Neuroanatomy and Internal Organs 2nd ed.