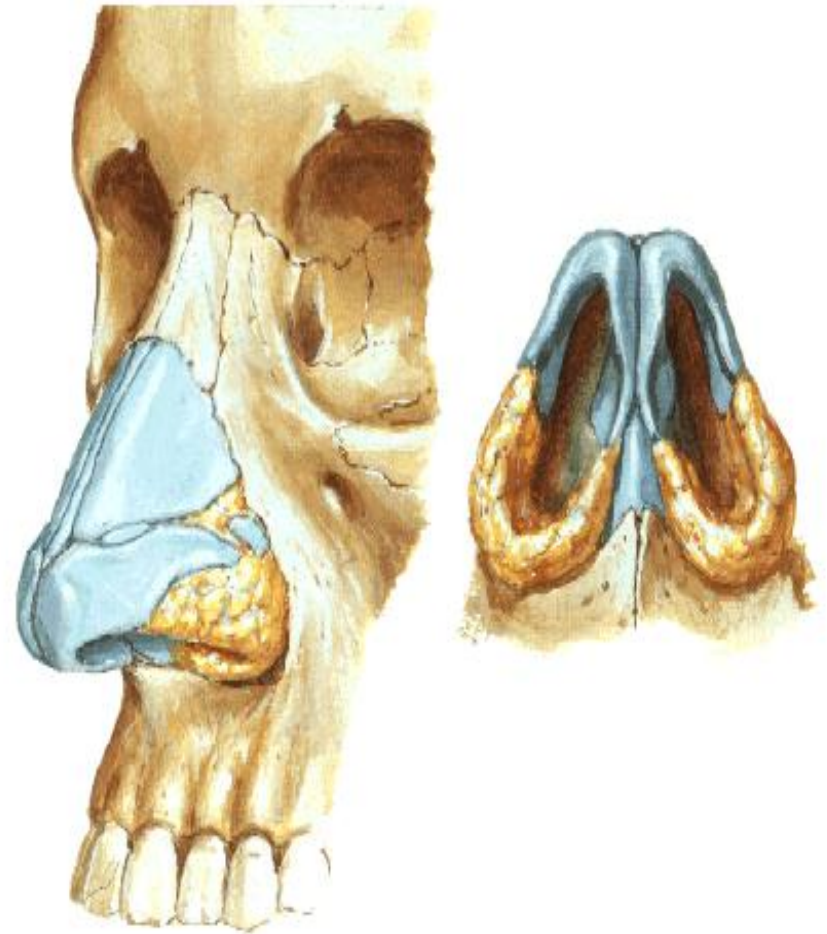


# The nose

- EXTERNAL NOSE: •
- Pyramidal •
- Root •
- Apex •
- External nares or nostrils •
- Dorsum nasi •
- Alae nas •

# SKELETON

- **SKELETON**
- BONY FRAMEWORK
- CARTILAGINOUS FRAMEWORK
- BONES:
  - nasal bones
  - frontal process of maxilla
  - nasal part of frontal bone
- CARTILAGES
  - septal
  - lateral nasal major and minor alar



# Vessels and nerves- external nose

Vessels and nerves- external nose •

• **Arteries : Facial artery-** alar, septal branch •

Ophthalmic artery-dorsal nasal branch •

Maxillary artery- infraorbital branch •

**Veins :**Facial , ophthalmic veins •

**Nerves:** motor : buccal branch of facial •

sensory : ophthalmic- infratrochlear branch •

nasociliary – external nasal branch •

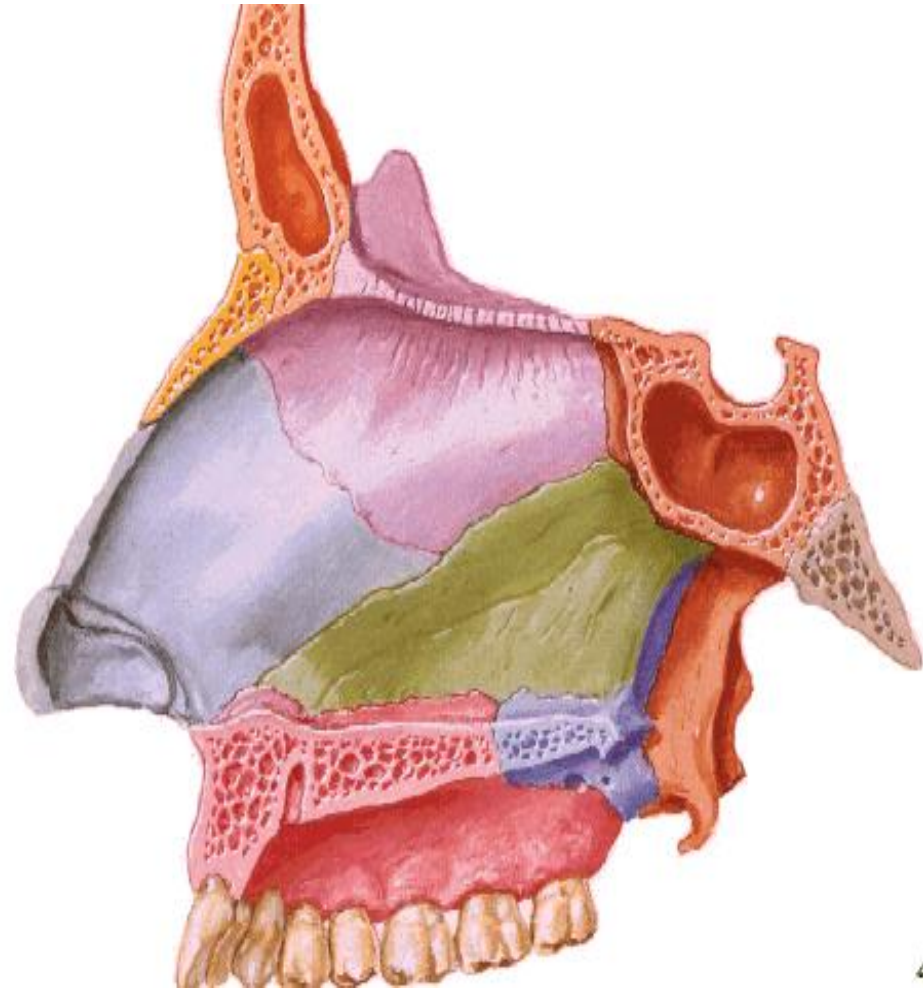
infraorbital- nasal branch •

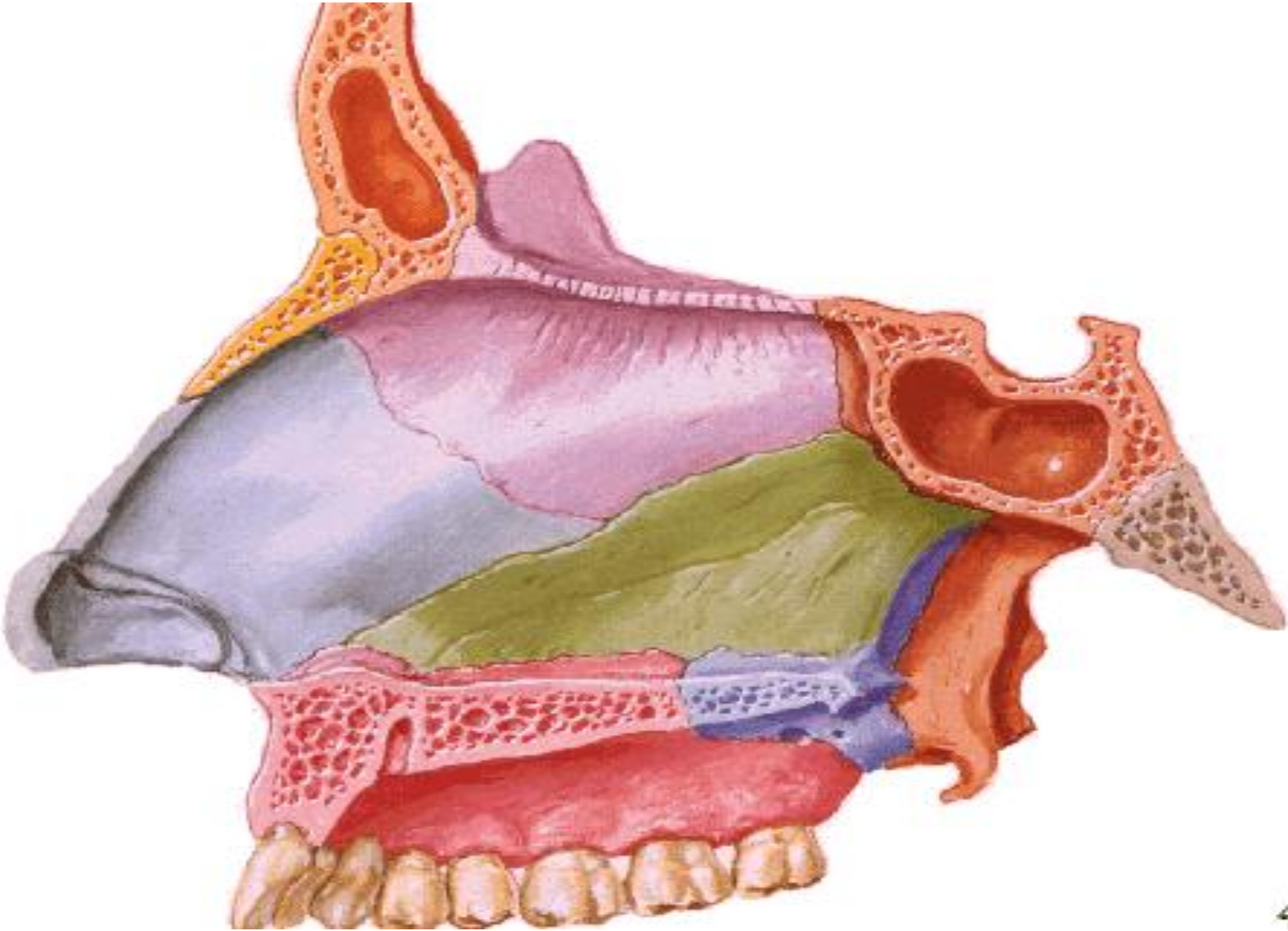
# NASAL CAVITY

- NASAL CAVITY •
- halves- nasal septum •
- External nares- 1.5-2 cm •
- 0.5-1 cm •
- posterior nasal apertures (choanae)– 2.5 by 1.3 cm •
- each half- roof •
- floor •
- medial wall •
- lateral wall •
- three regions- vestibule •
- respiratory region •
- olfactory region •

# NASAL SEPTUM

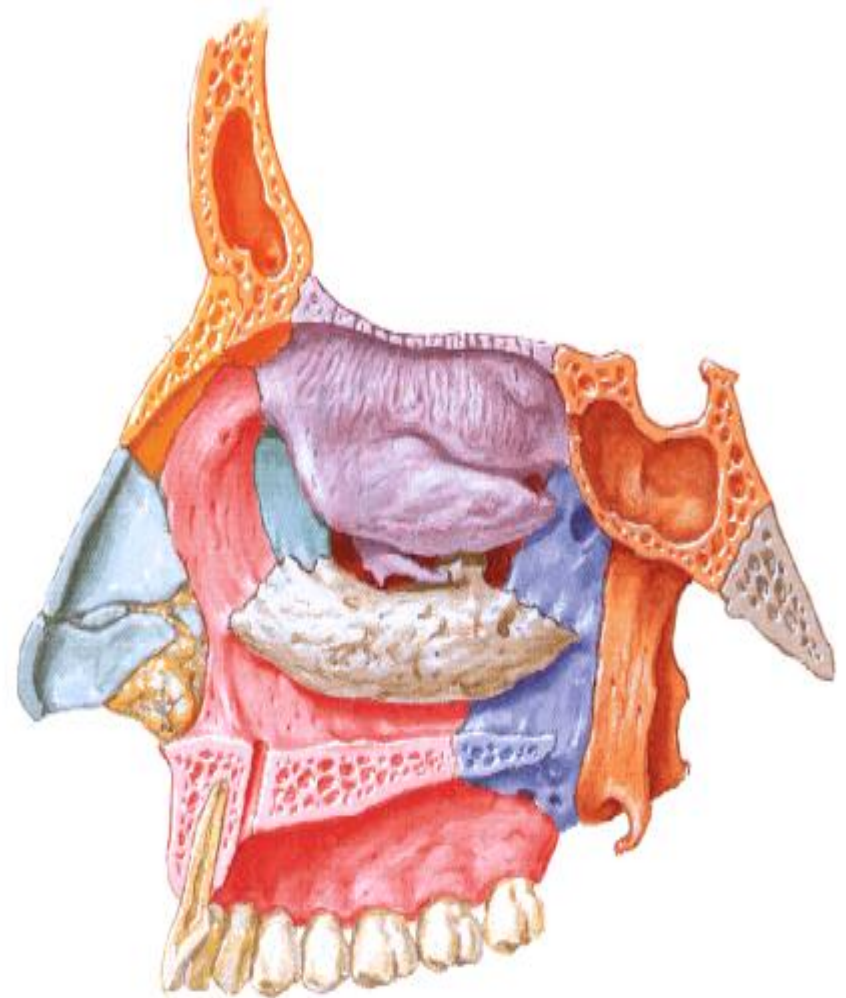
- NASAL SEPTUM •
- Anterior - septal •  
cartilage
- Vomer •
- Perpendicular plate of •  
ethmoid
- Minor contributions- •  
nasal, frontal, sphenoid,  
maxilla, palatine bones
- Often deflected •





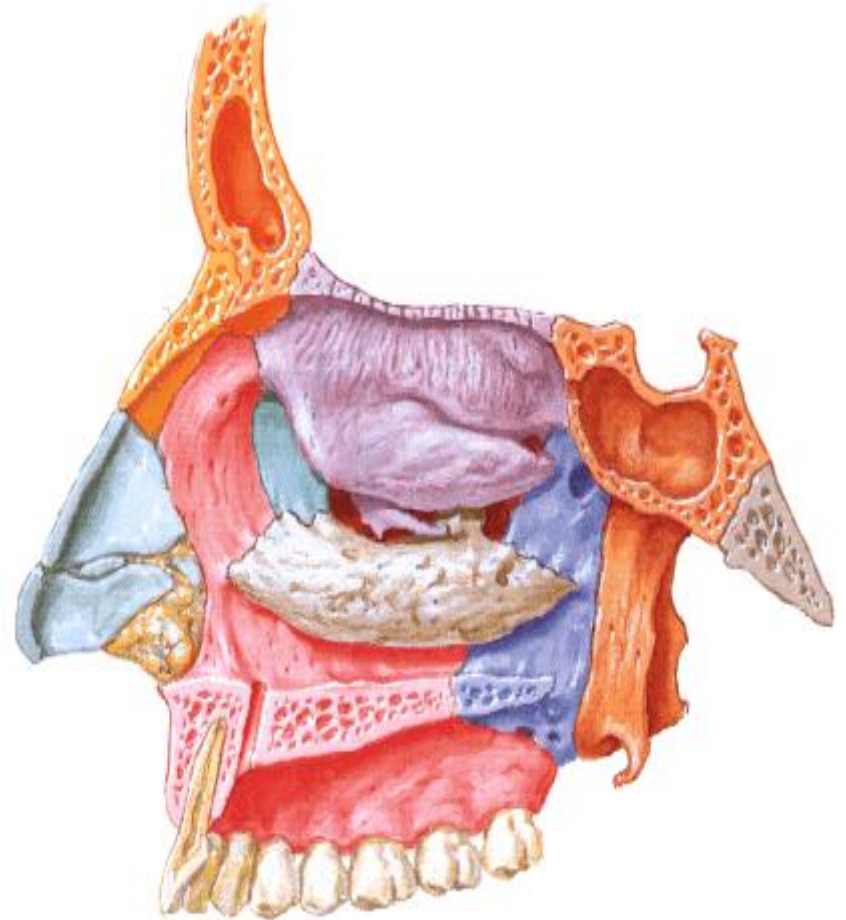
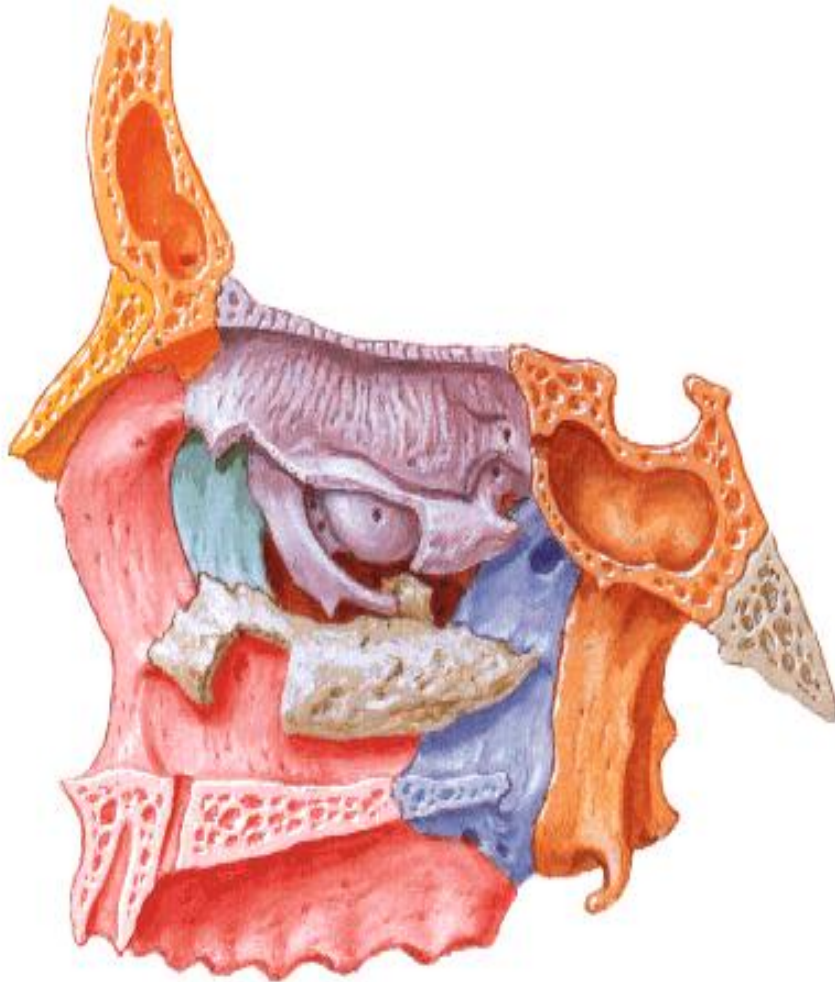
# LATERAL WALL- bones

- Maxilla- anteroinferiorly •
- Perpendicular plate of palatine •
- Ethmoid labyrinth- superiorly •
- Other bones- nasal, frontal •  
process of maxilla,  
lacrima •
- Irregular- three conchae •
- Superior concha- shortest, •  
shallowest
- Middle concha- large, •  
articulates with palatine
- On removal– ethmoidal bulla, •  
uncinate process, ethmoid
- Inferior concha- independent •  
bone, articulates with maxilla
- Concha suprema •
- sphenopalatine foramen •





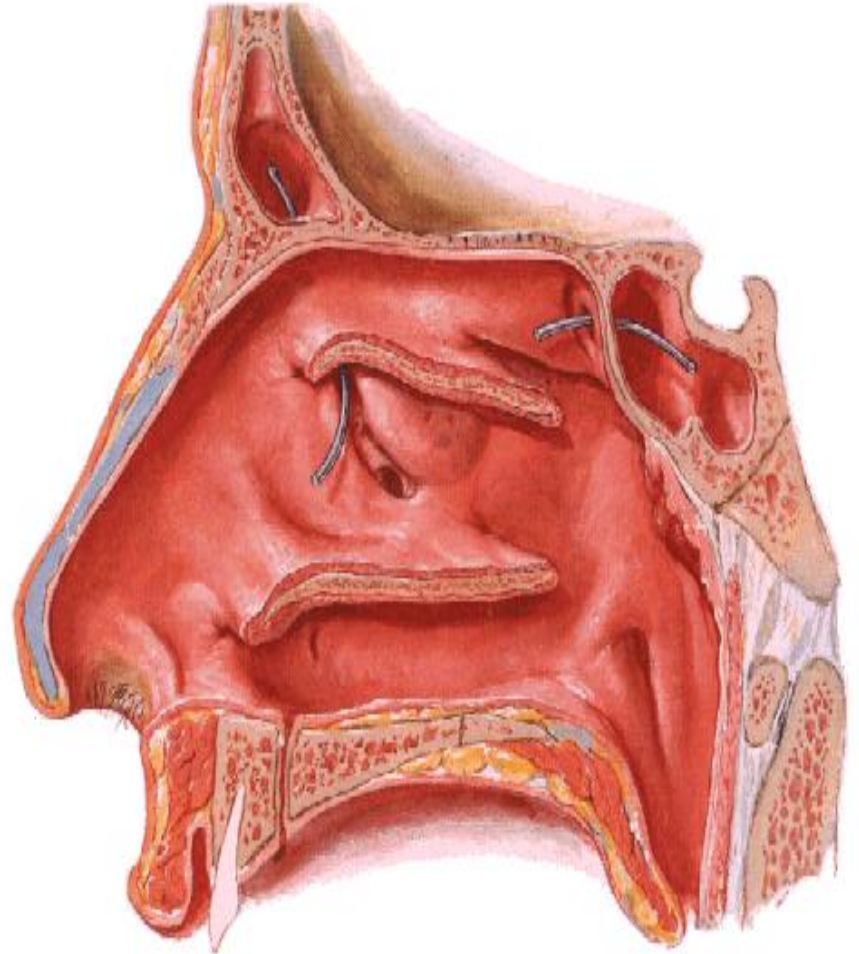
# LATERAL WALL- bones





# LATERAL WALL

- Corresponding meatuses •
- Sphenoethmoidal recess •
- Superior meatus- posterior •  
ethmoidal cells
- Middle meatus- continues •  
atrium of middle meatus,
- Features- bulla ethmoidalis, •  
hiatus semilunaris, ethmoidal  
infundibulum
- Openings of sinuses- •  
anterior and middle  
ethmoidal, frontal, maxillary
- Inferior meatus- •  
nasolacrimal duct



# NASAL ROOF AND FLOOR

- Roof •
- Sphenoidal, ethmoidal and frontonasal regions •
- Floor •
- Transversely concave •
- Palatine pr. Maxilla •
- Horizontal part- palatine bone •

# VESSELS OF NASAL CAVITY

## • SEPTUM •

- Anterior, posterior ethmoidal art.

- Br ophthalmic art. •

- Sphenopalatine br. Maxillary art.

- Greater palatine br. Maxillary art. •

- Septal br. Facial art. •

## • VEINS •

- Sphenopalatine v, facial v , ophthalmic v •

## • LYMPHATIC DRAINAGE •

- Submandibular nodes •

- Upper deep cervical •

## • LATERAL WALL •

- Anterior, posterior ethmoidal art. •

- Sphenopalatine art. •

- Lateral nasal br. Facial art. •

- Greater palatine art. •

Posterior ethmoidal arteries

Anterior ethmoidal arteries

Lateral nasal branches of facial artery

Greater palatine artery

**Lateral wall of nasal cavity**

Sphenopalatine artery traversing sphenopalatine foramen

Maxillary artery

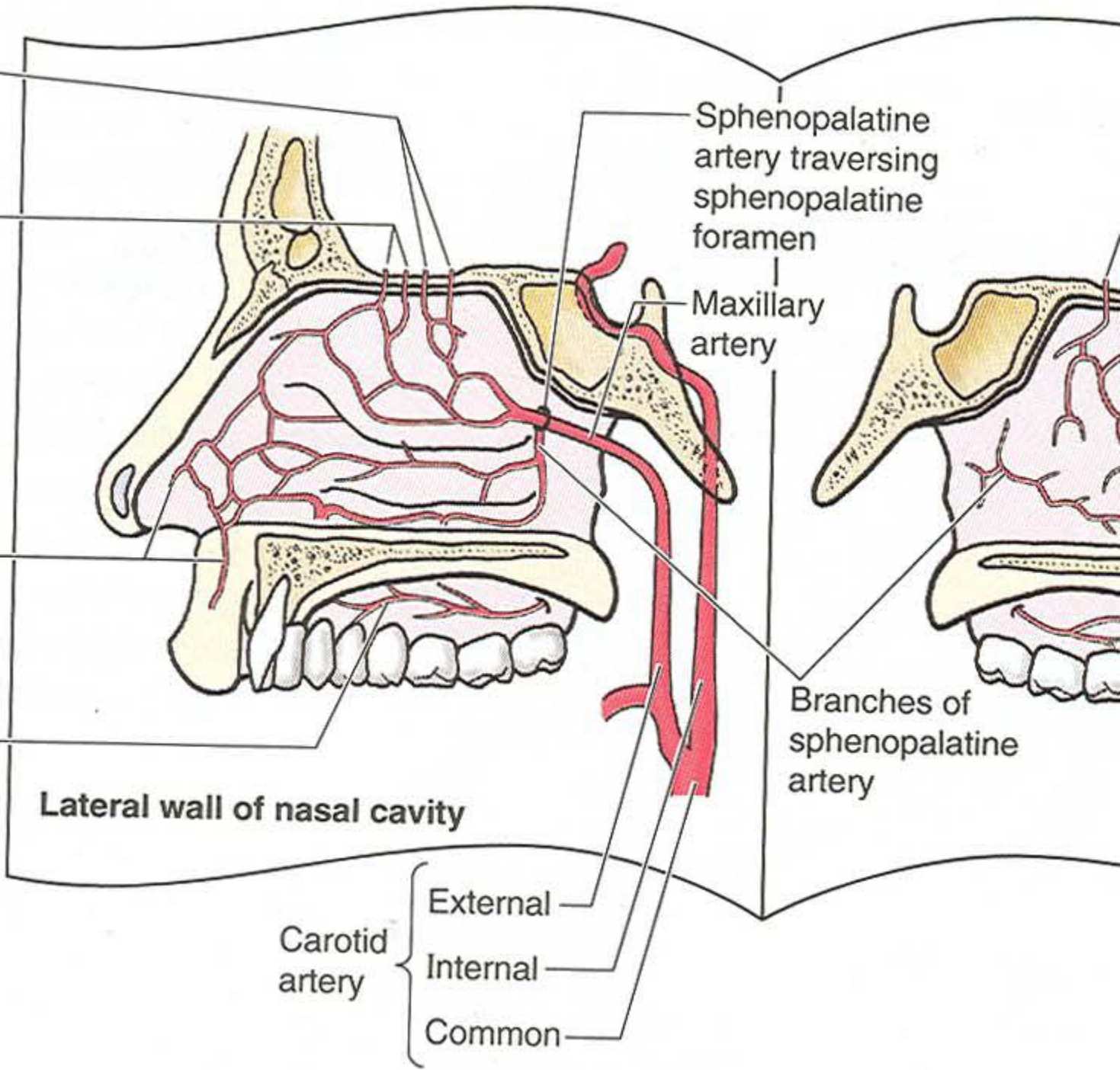
Branches of sphenopalatine artery

Carotid artery

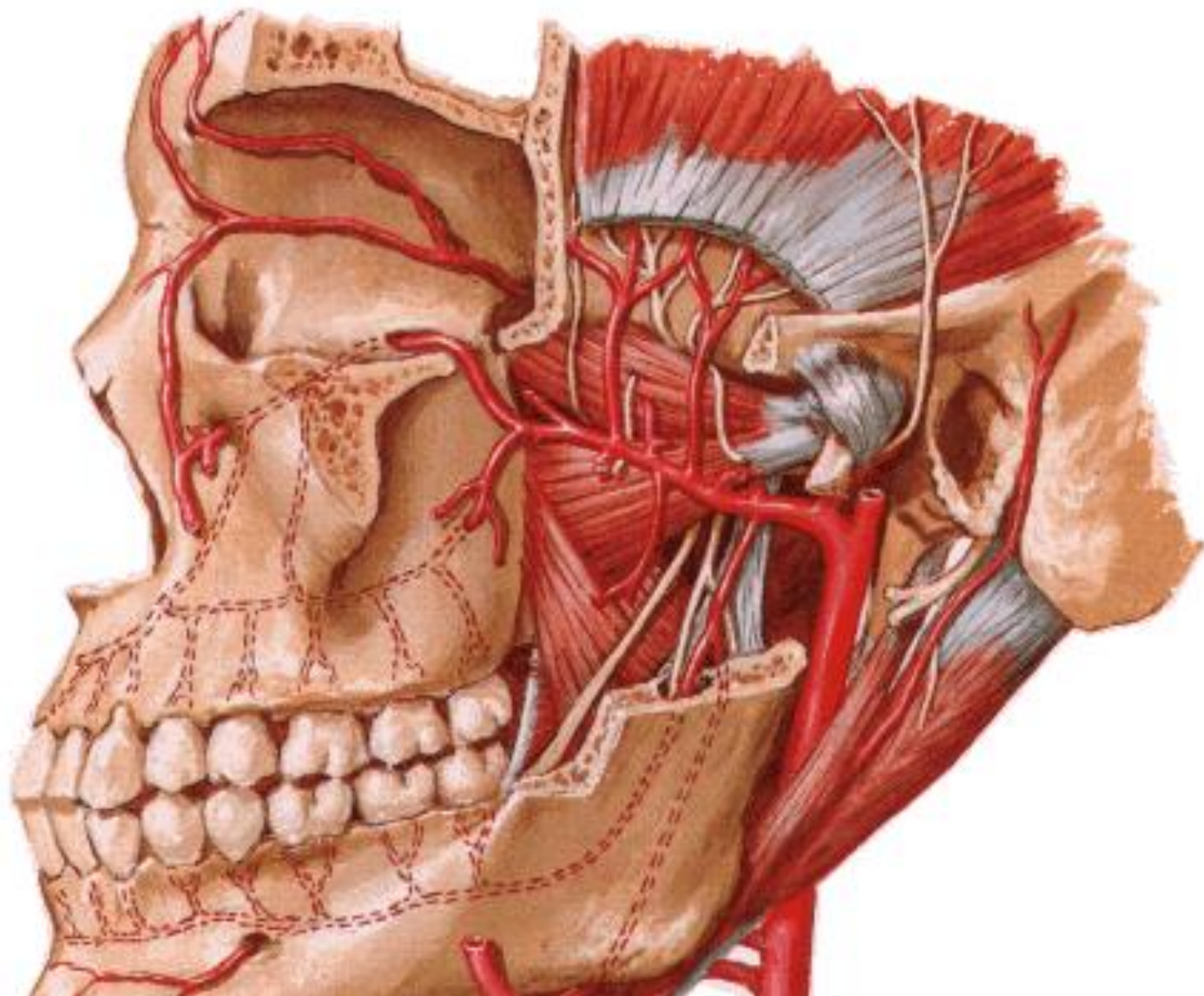
External

Internal

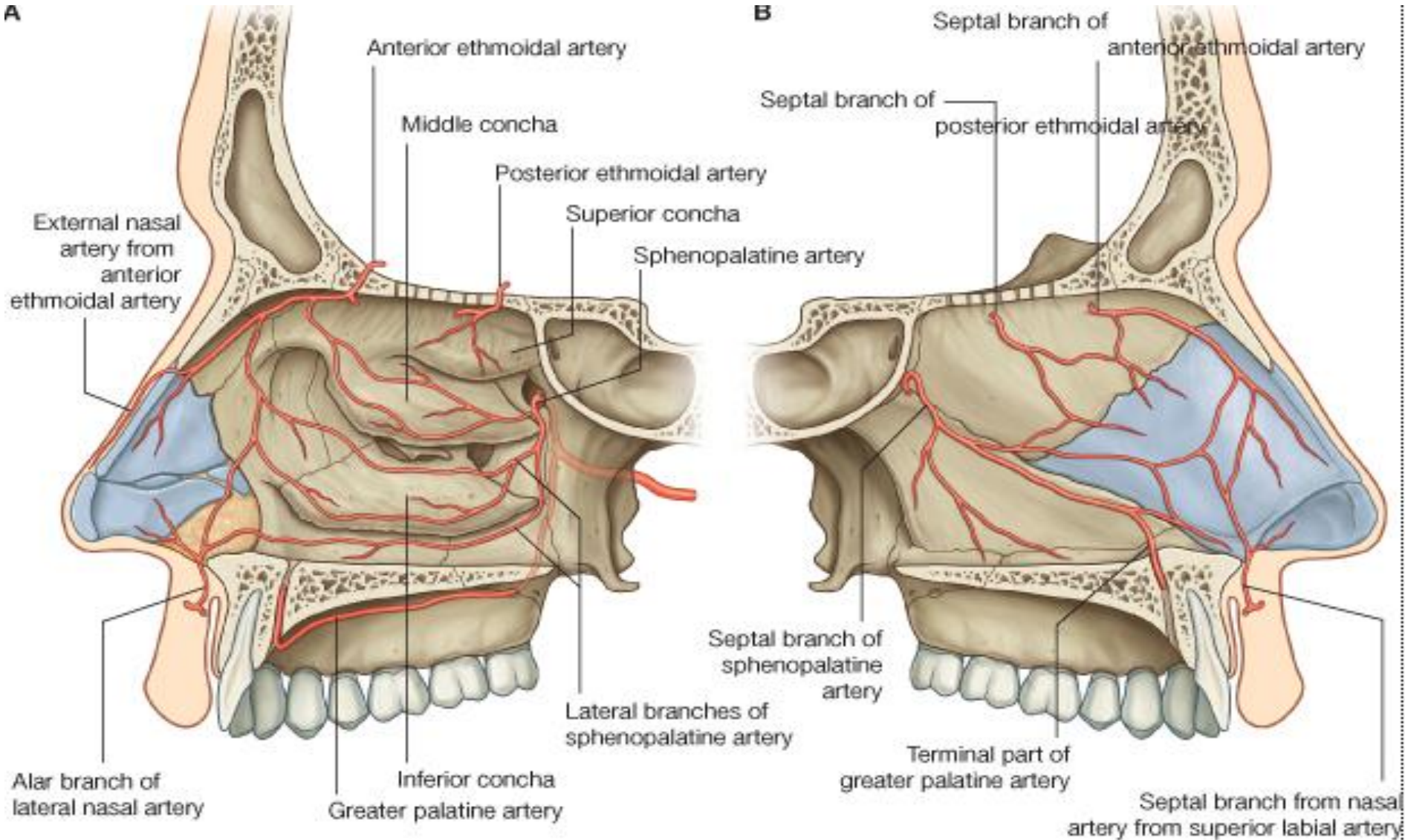
Common







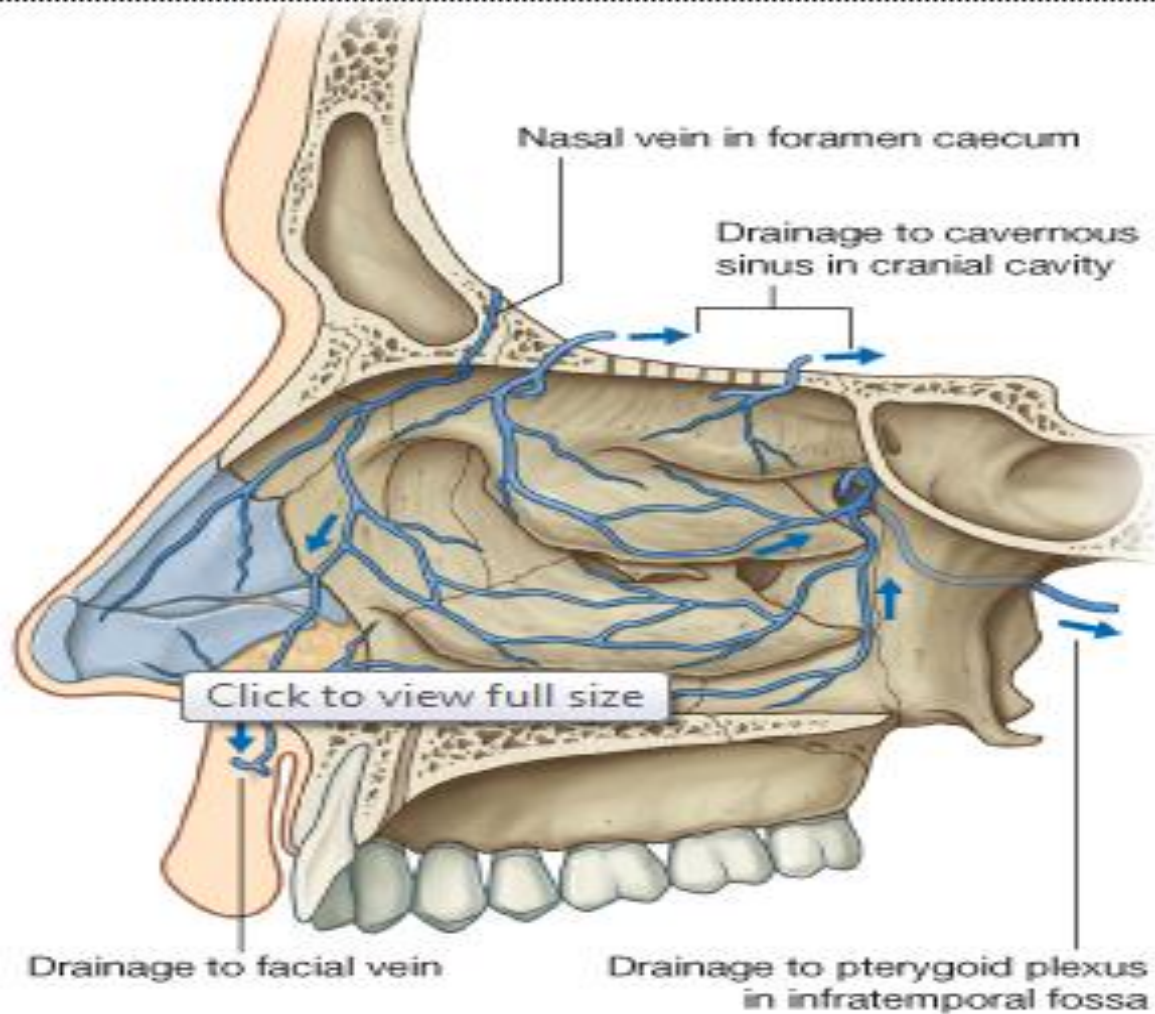
# Arterial supply





# Venous drainage

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# NERVES

## SEPTUM •

- Anterior ethmoidal br. •  
Nasociliary
- Nasal br. Infraorbital •
- Anterior superior alveolar br. •  
Maxillary •
- Medial posterior superior nasal br. •
- Of pterygopalatine gang. •
- **OLFACTORY NERVE** •
- **AUTONOMIC** •
- Sympathetic postganglionic •  
vasomotor •
- Parasympathetic postganglionic •  
pterygopalatine gang. nasal gl. •

## LATERAL WALL •

- Anterior ethmoidal br •
- Anterior superior alveolar br •
- lateral posterior superior nasal br. •
- Of pterygopalatine gang. •

Anterior ethmoidal nerve

Internal nasal branches

Nasal branch of anterior superior alveolar nerve

Internal nasal branch of infraorbital nerve

**Nasopalatine nerve**

Palatine nerves  
Greater  
Lesser

Olfactory bulb

**Maxillary nerve**

Nerve of pterygoid canal

Pterygopalatine ganglion

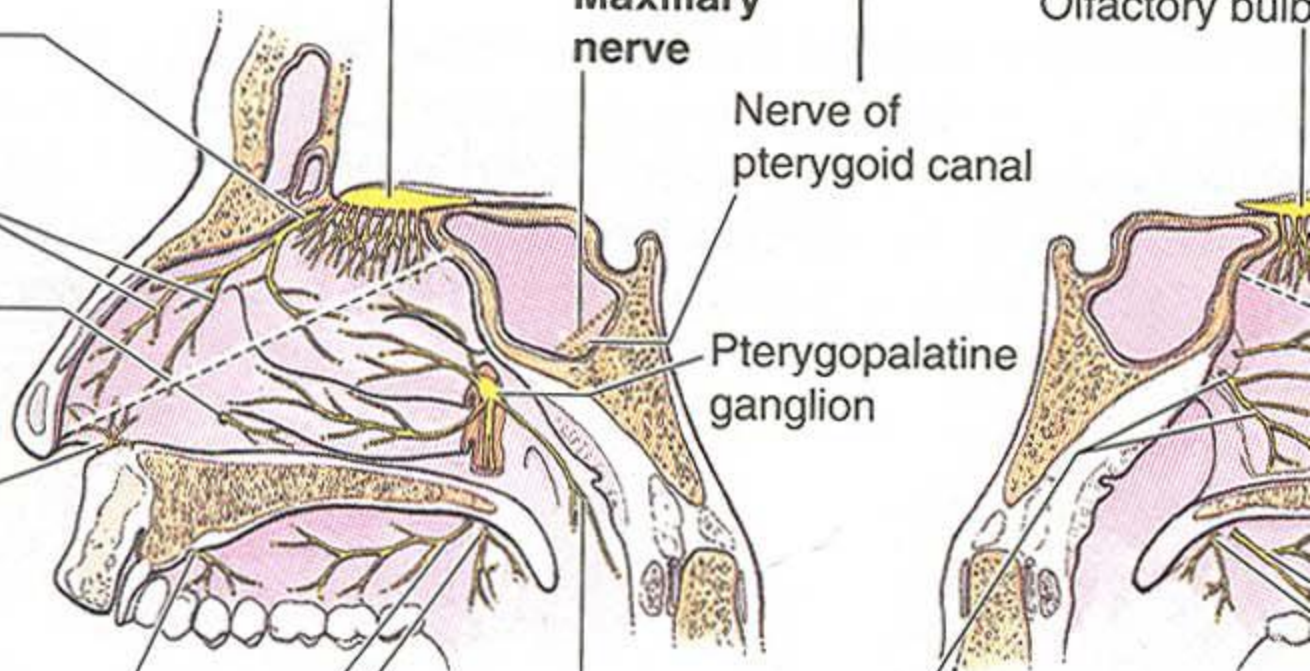
Pharyngeal nerve

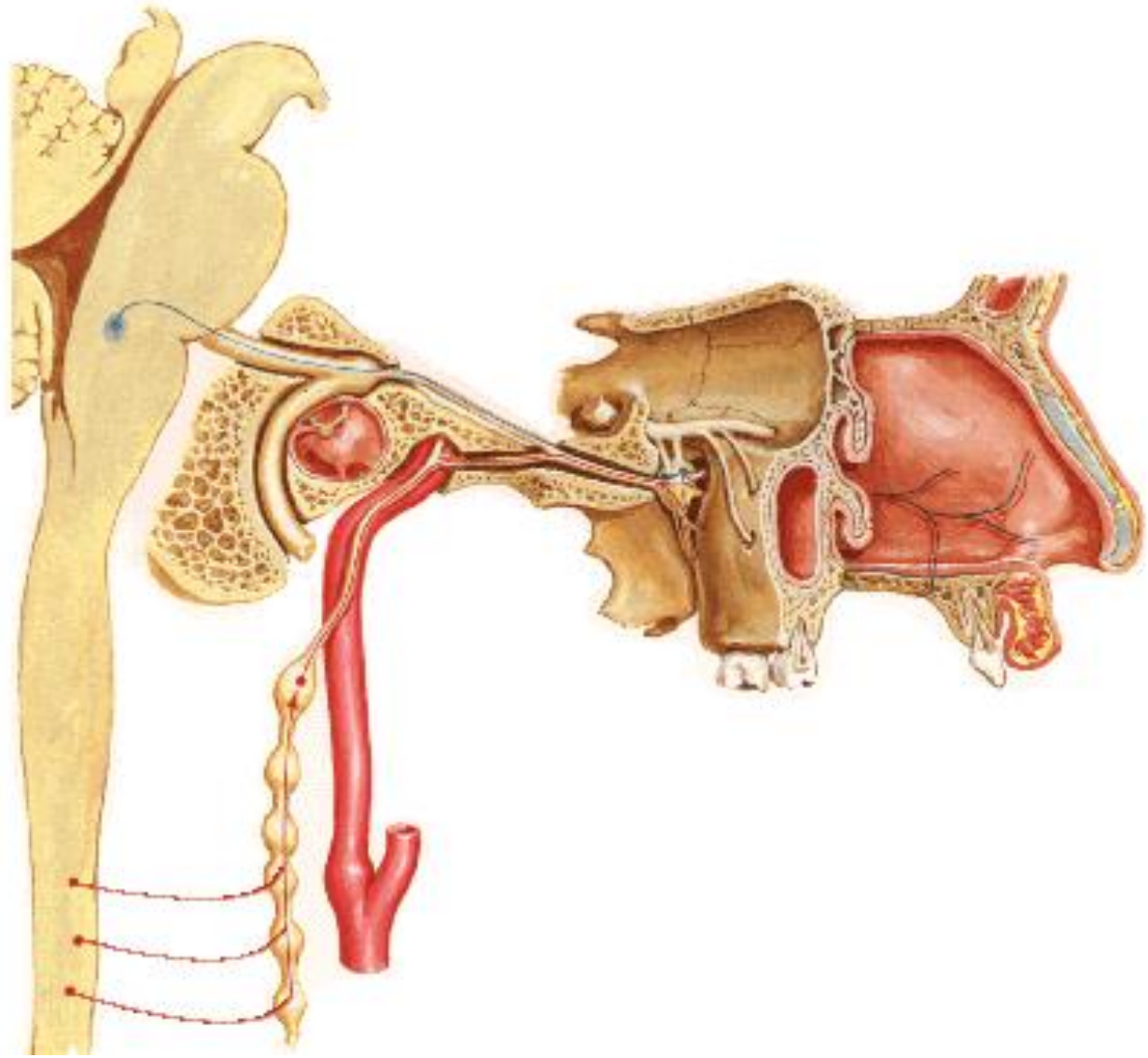
LATERAL WALL

Olfactory bulb

Nasopalatine nerve

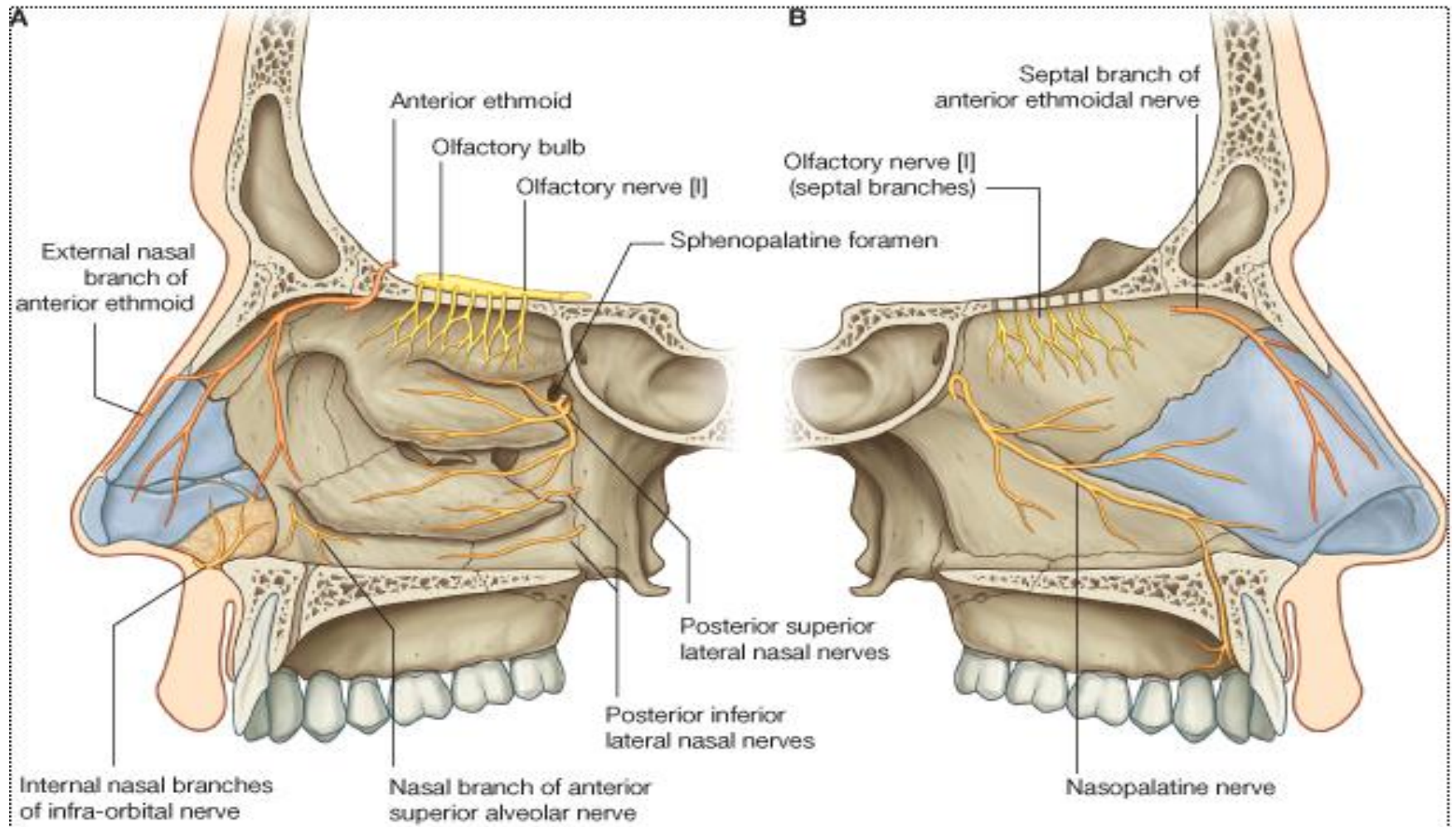
NASAL SE



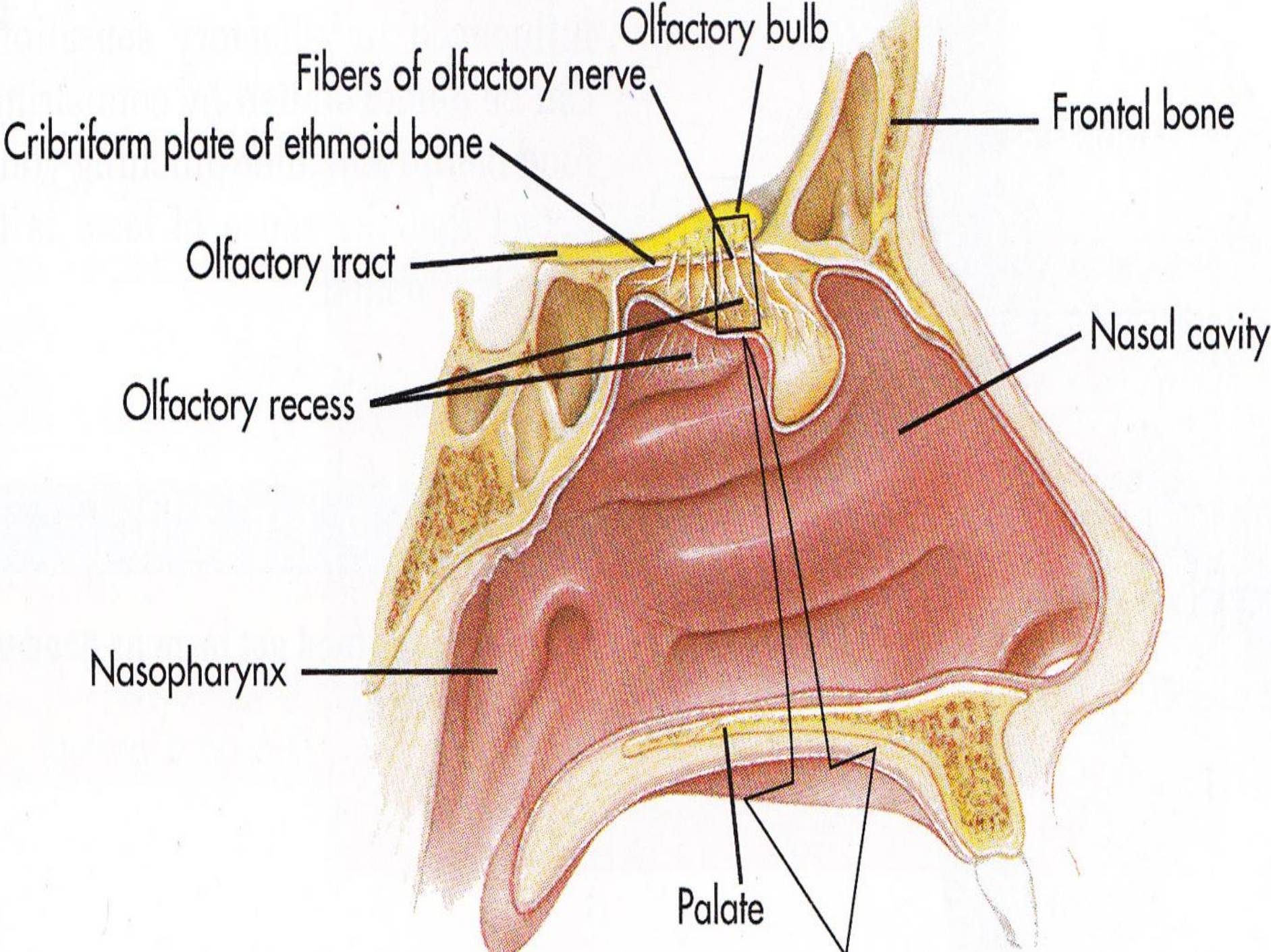




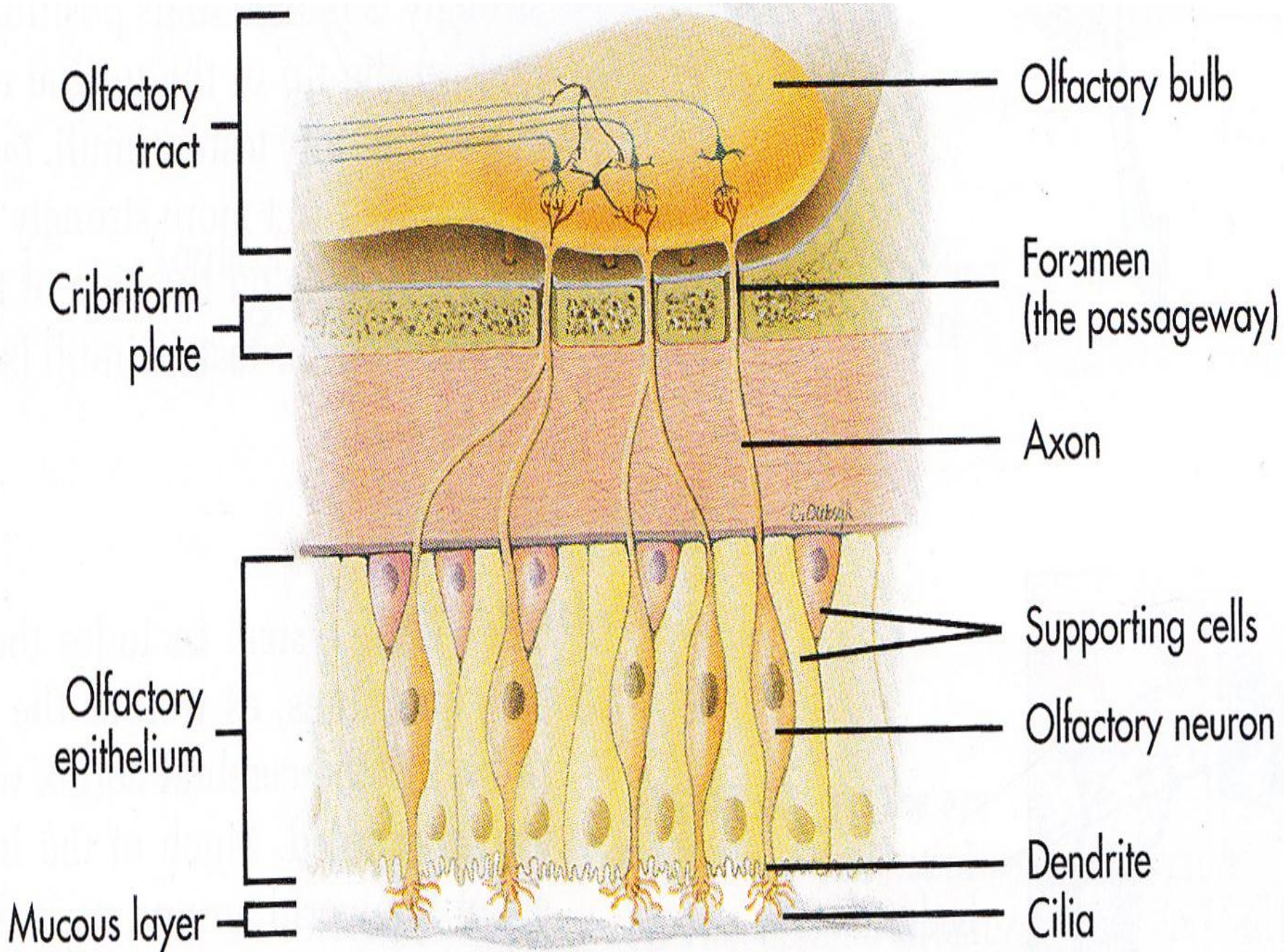
# Nerve supply











Olfactory tract

Cribriform plate

Olfactory epithelium

Mucous layer

Olfactory bulb

Foramen (the passageway)

Axon

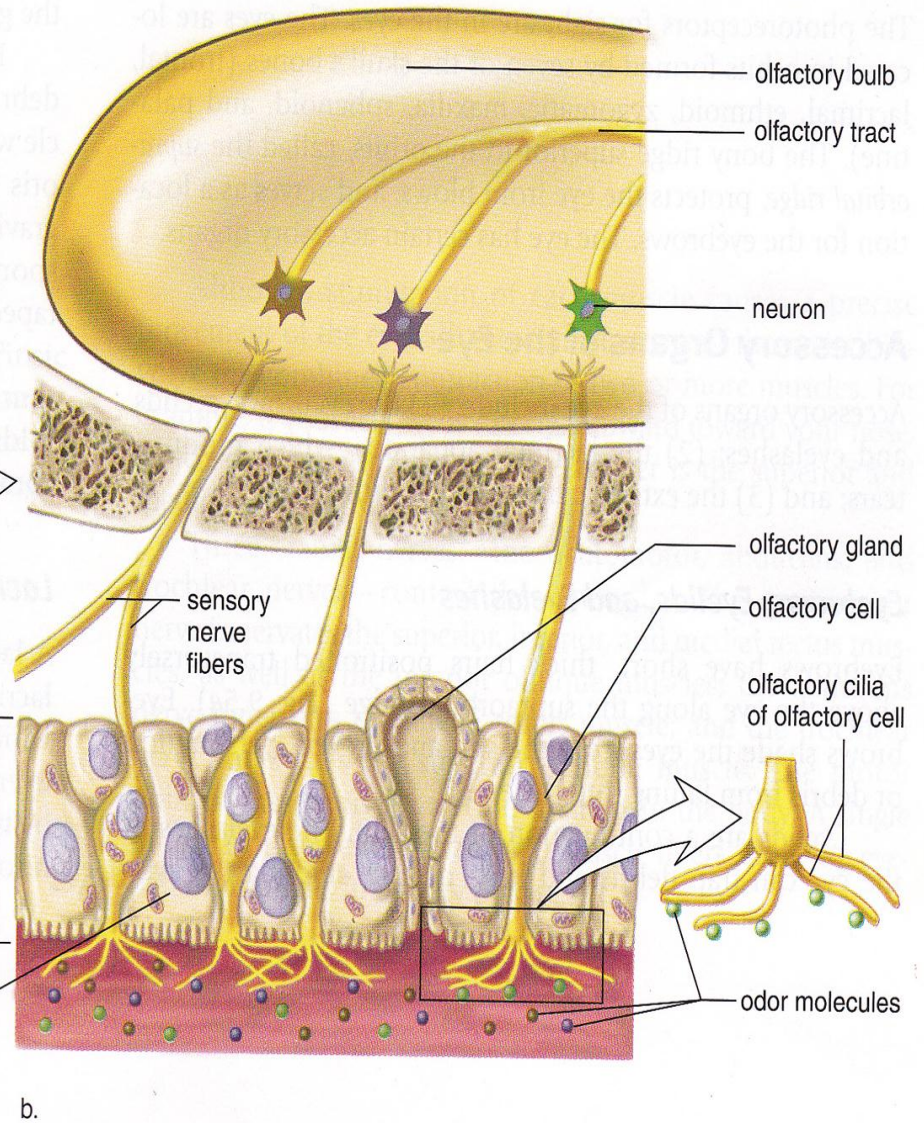
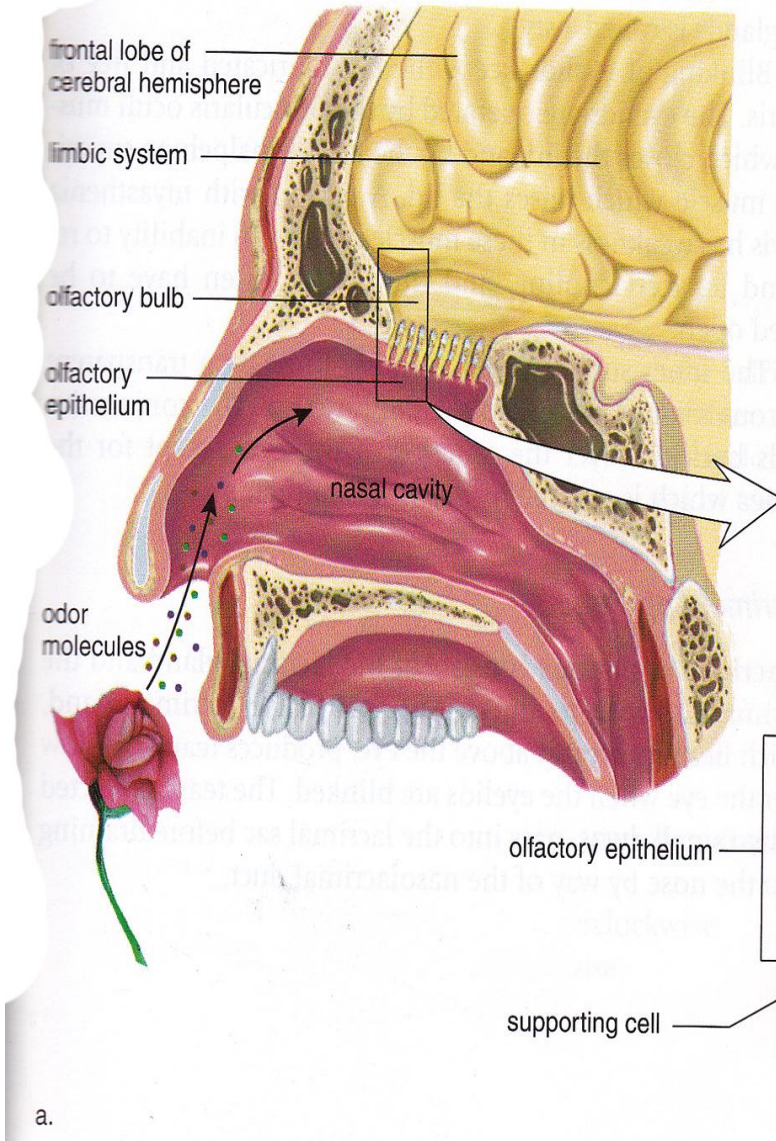
Supporting cells

Olfactory neuron

Dendrite

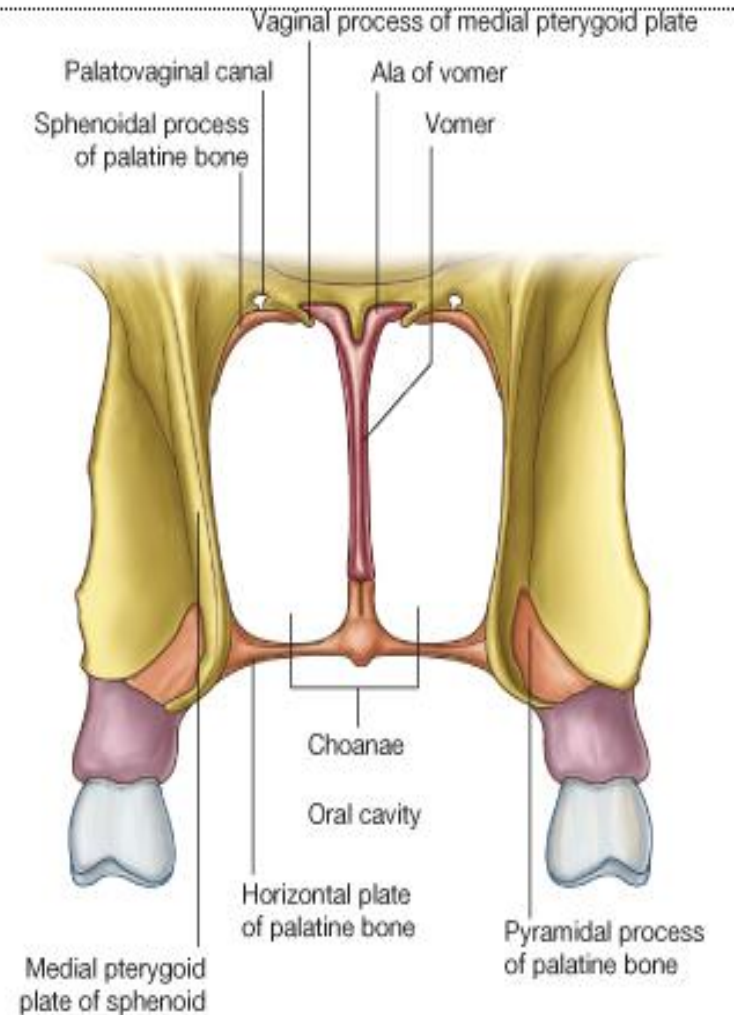
Cilia





# Posterior nares (choanae)

- Oval openings between nasal cavities and nasopharynx
- rigid openings completely surrounded by bone
- inferiorly, by the posterior border of the horizontal plate of the palatine bone;
- laterally, by the posterior margin of the medial plate of the pterygoid process;
- medially, by the posterior border of the vomer.
- The roof of the choanae is formed:
  - anteriorly by the ala of the vomer and the vaginal process of the medial plate of the pterygoid process;
  - posteriorly by the body of the sphenoid bone.



## Applied Anatomy

- Nasal fractures
- Deviation of the nasal septum
- Rhinitis
- Epistaxis
- Sinusitis: Frontal

Ethmoidal air cells

Maxillary

sphenoidal

Transillumination of sinuses

- *Because only thin shelves of bone separate the sphenoidal sinuses from the **nasal cavities below and hypophyseal fossa above**, the pituitary gland can be surgically approached through the **roof** of the nasal cavities by passing first through the anteroinferior aspect of the sphenoid bone and into the **sphenoidal sinuses** and then through the top of the sphenoid bone into the hypophyseal fossa.*