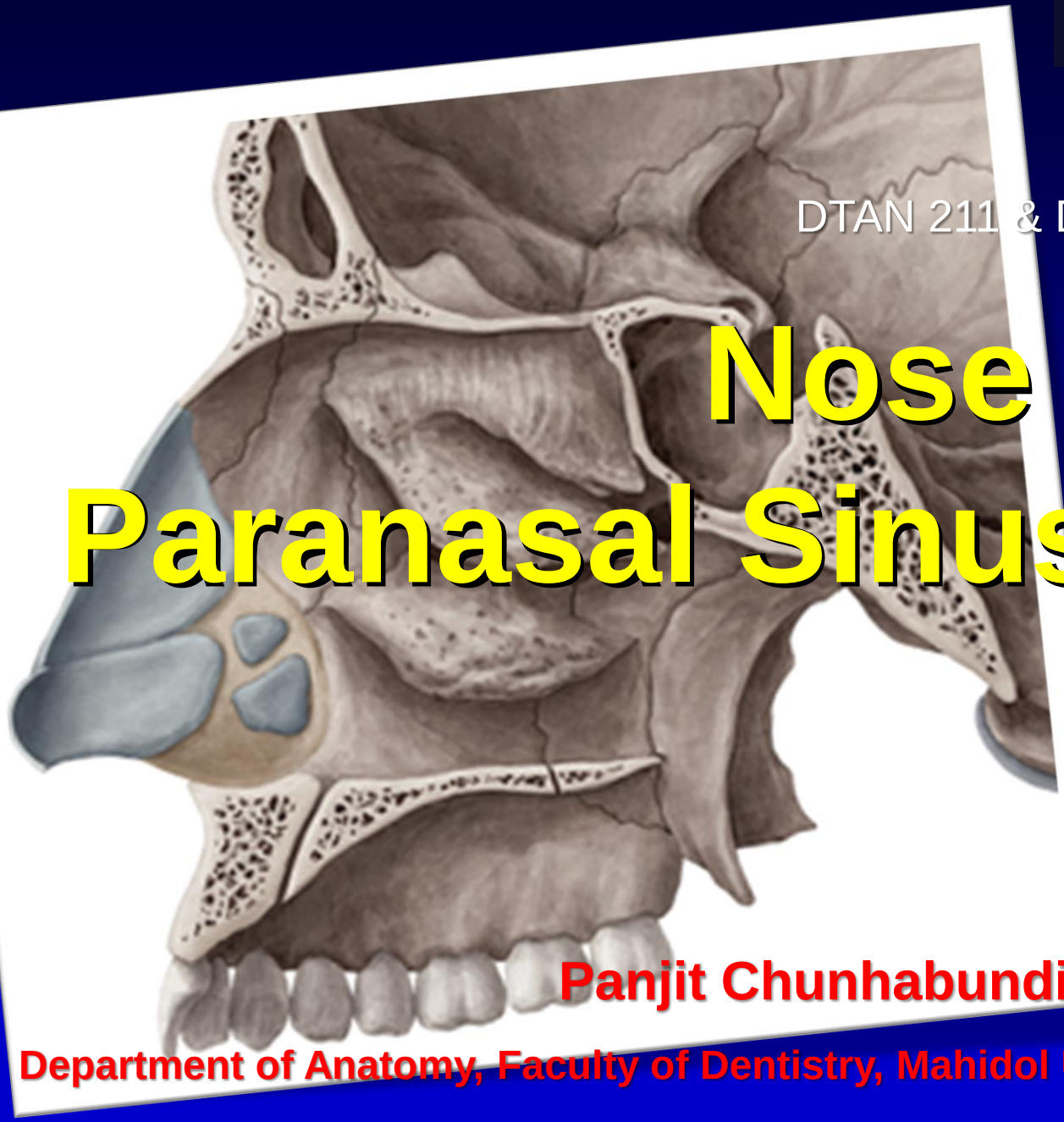
MAHIDOL UNIVERSITY
Wisdom of the Land

DTAN 211 & DTIP 203

Nose and Paranasal Sinuses

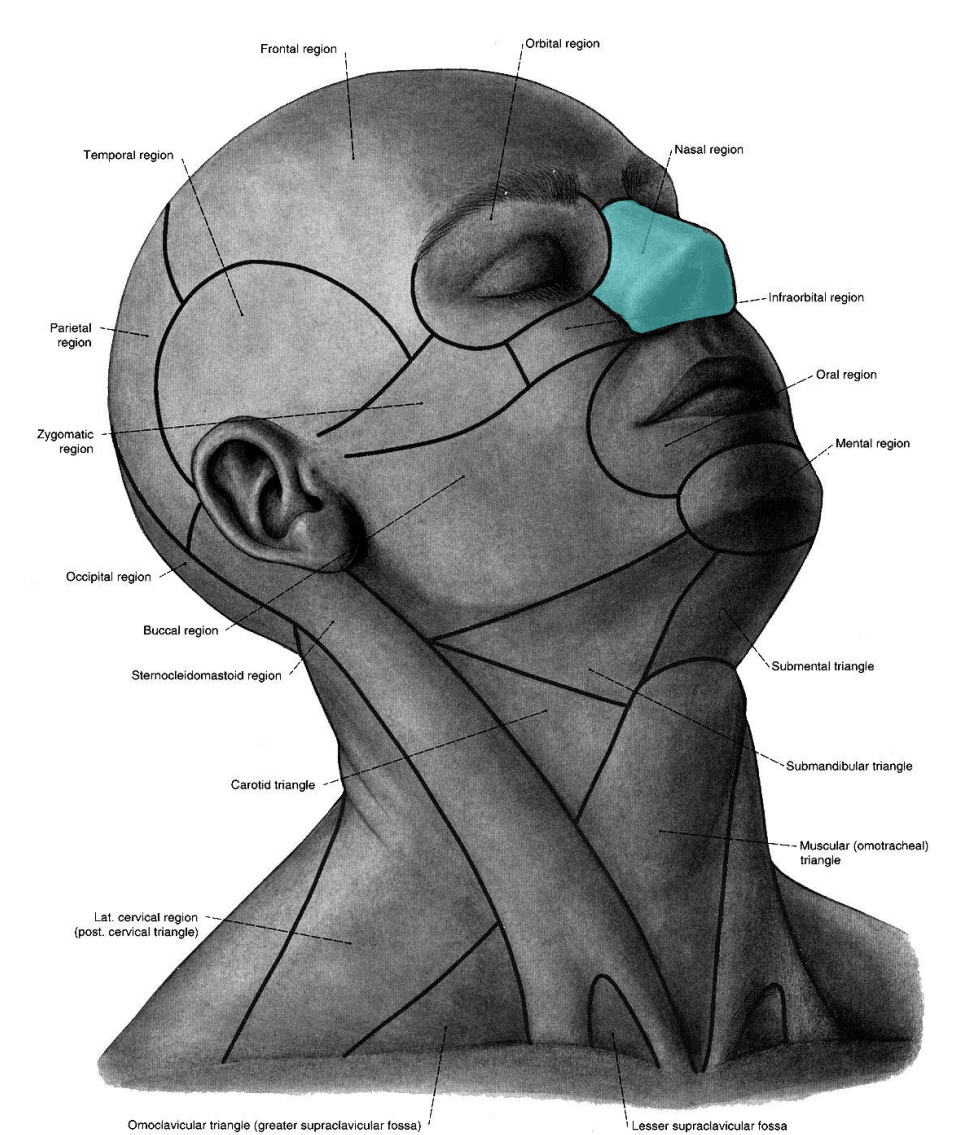


Panjit Chunhabundit, Ph.D.

Department of Anatomy, Faculty of Dentistry, Mahidol University

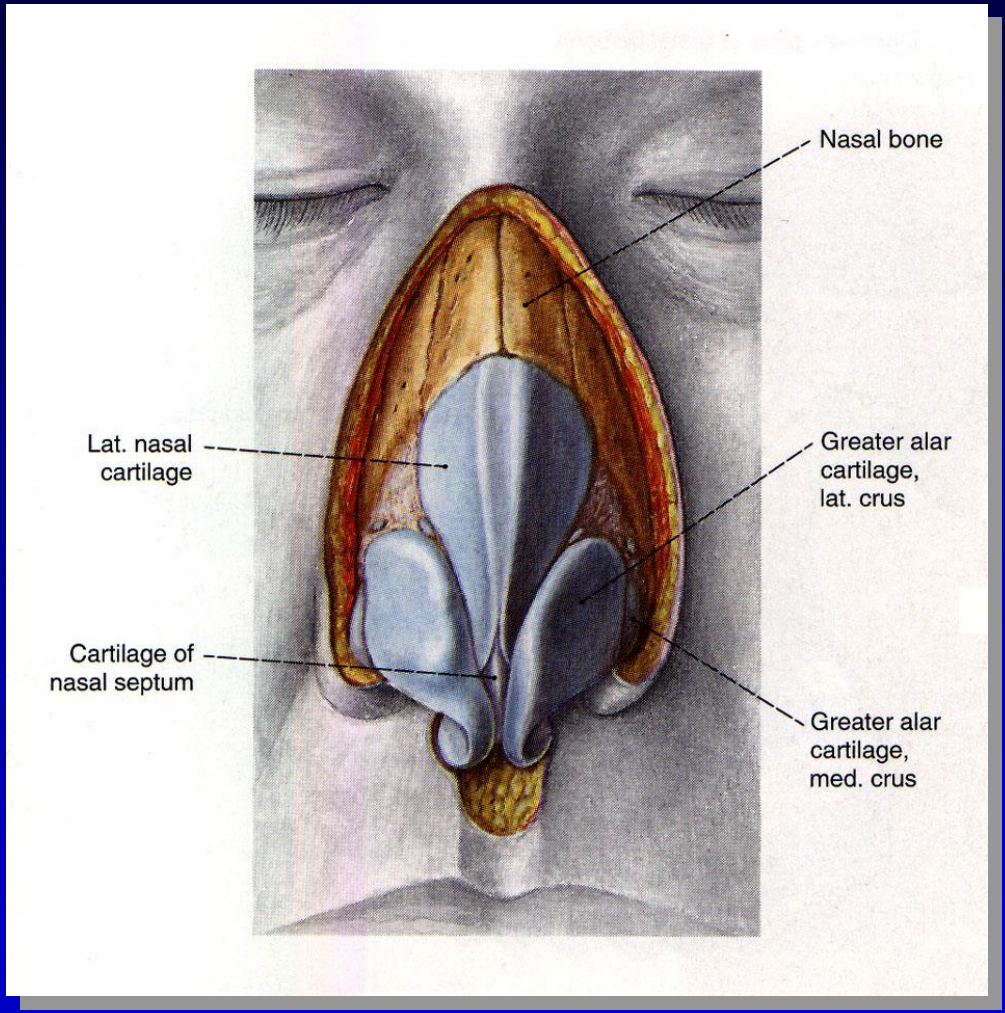
Outline

1. External nose
2. Internal nose (nasal cavity)
3. Subdivision and nasal mucosa
4. Nerve and blood supplies of nasal cavity
5. Paranasal sinuses and their drainage



External Nose

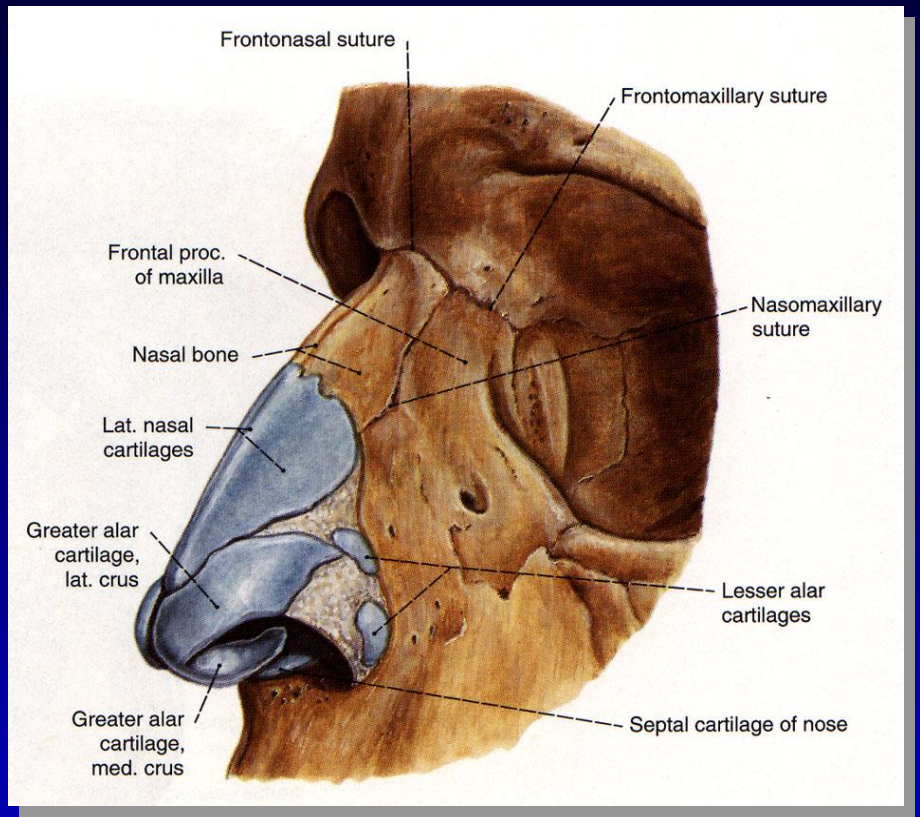
1. Root
2. Dorsum
3. Apex
4. Ala
5. Nostrils

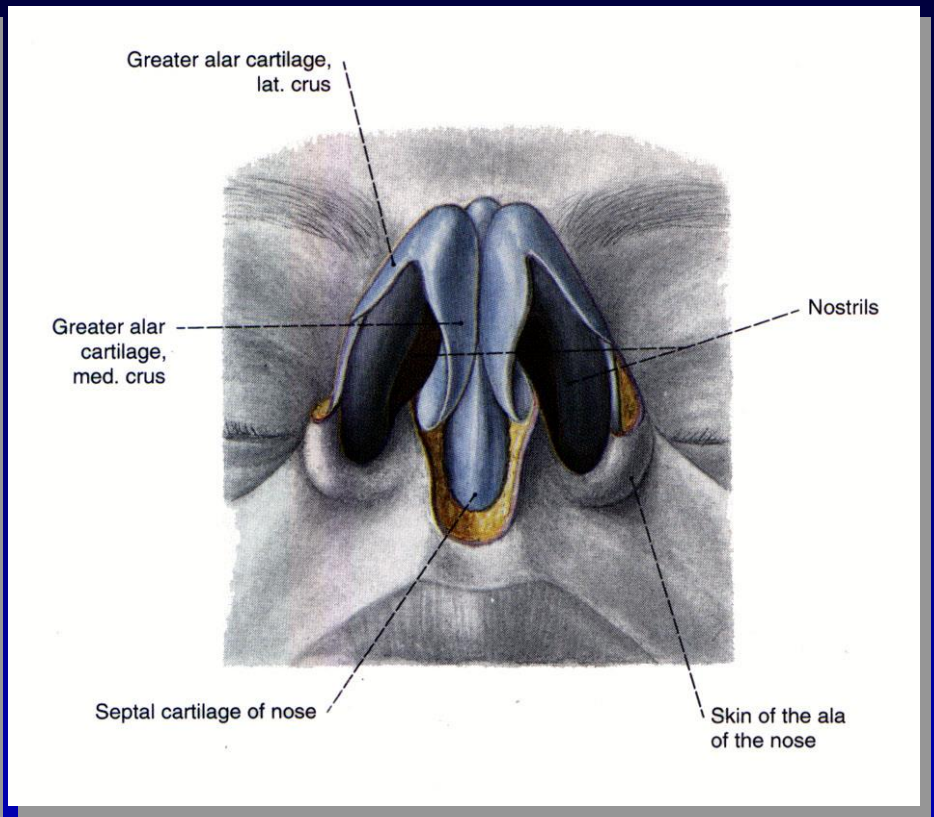


External nose

consists of

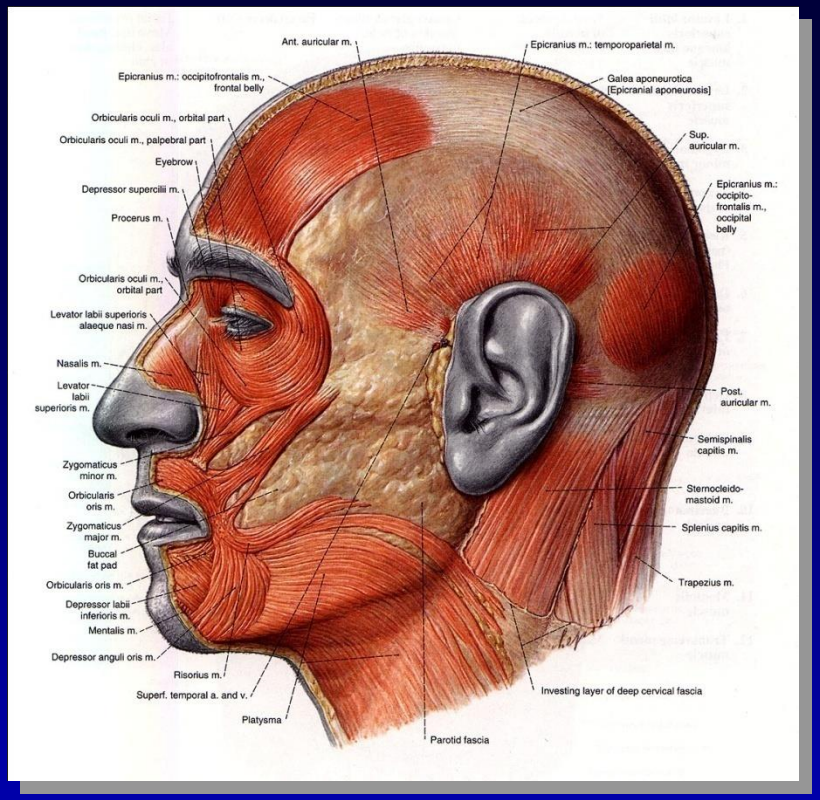
a. Bones
b. Cartilages
c. Muscles
d. Skin

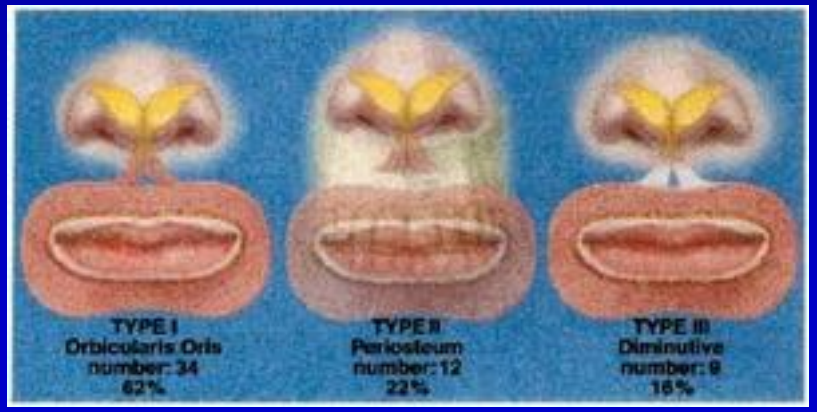




Bones: nasal, frontal and maxillary bones

Cartilages: lateral nasal, greater ala, lesser ala and septal cartilage of nose



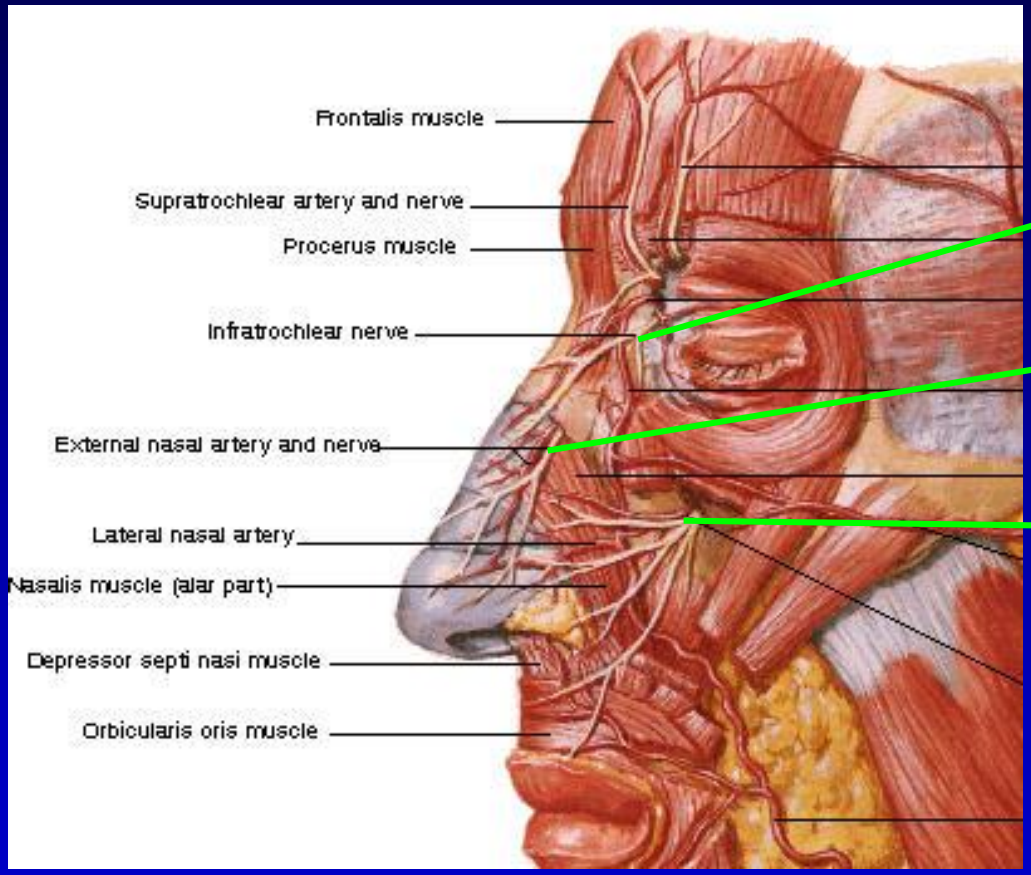


Muscles of Nose

- Nasalis
- Depressor septi

* Levator labii superioris alaeque nasi

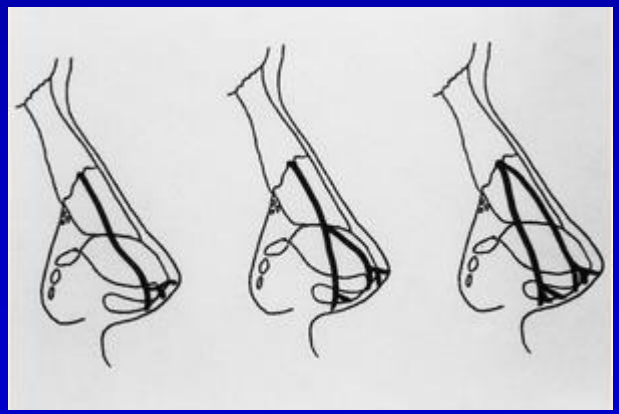
Nerve Supply of External nose



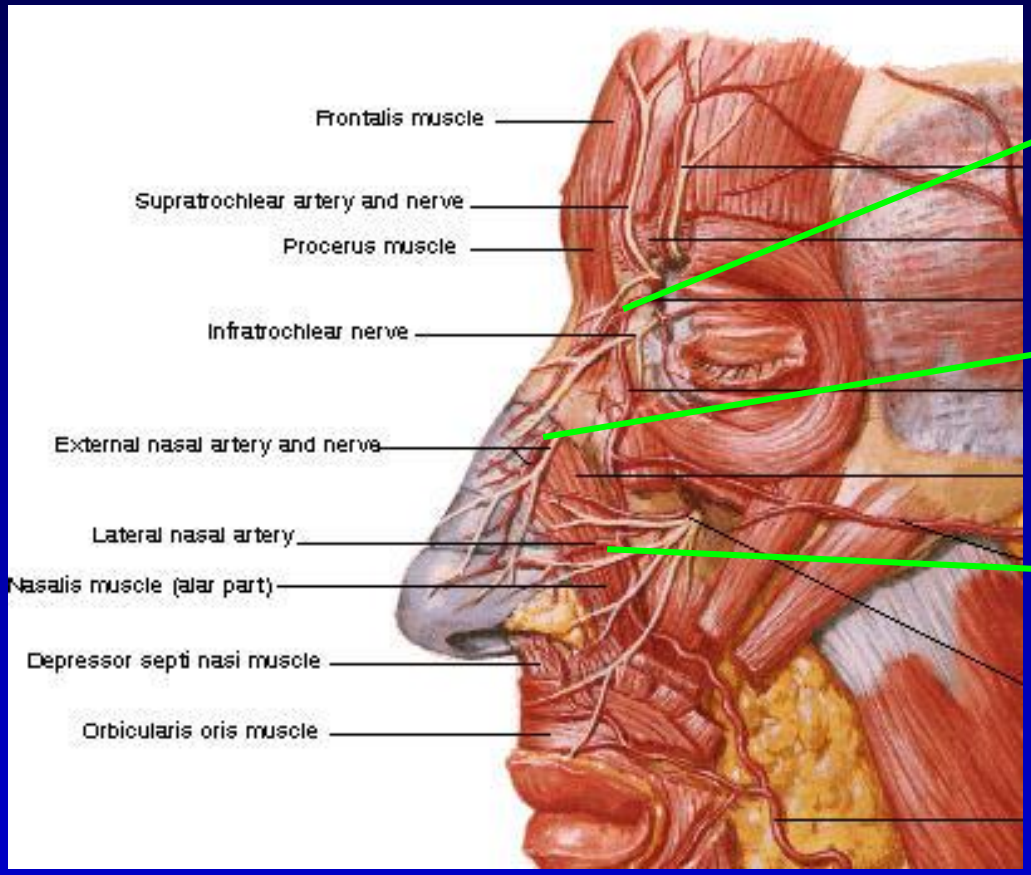
a. Infratrochlear n.

b. External nasal n.

c. Infraorbital n.



Blood Supply of External nose

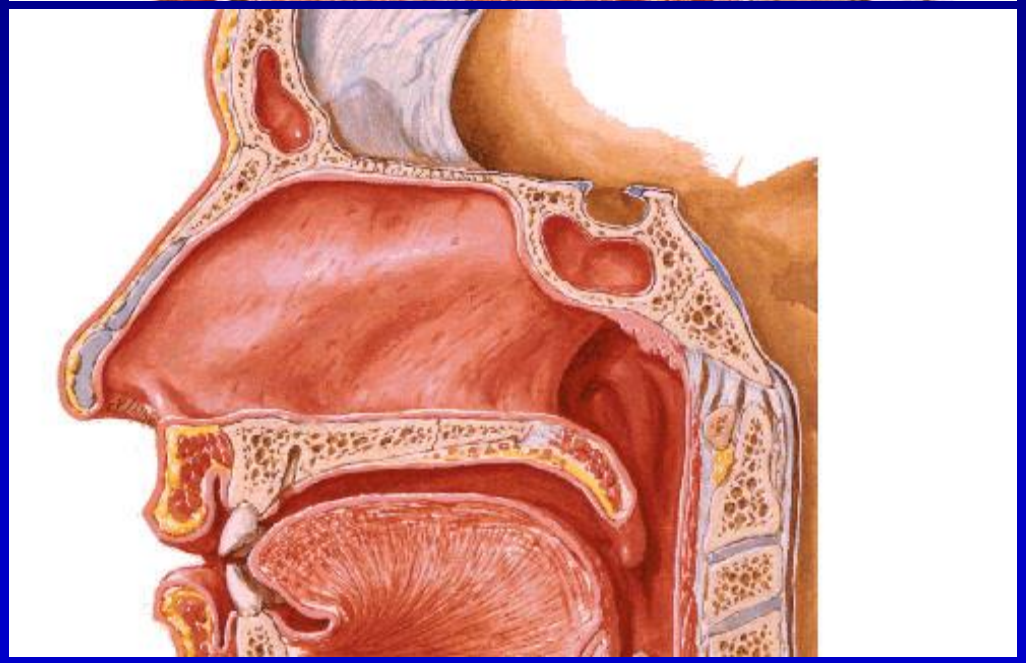


a. Dorsal nasal a.
from ophthalmic a.

b. External nasal a.
from infraorbital a.

c. Lateral nasal a.
from facial a.

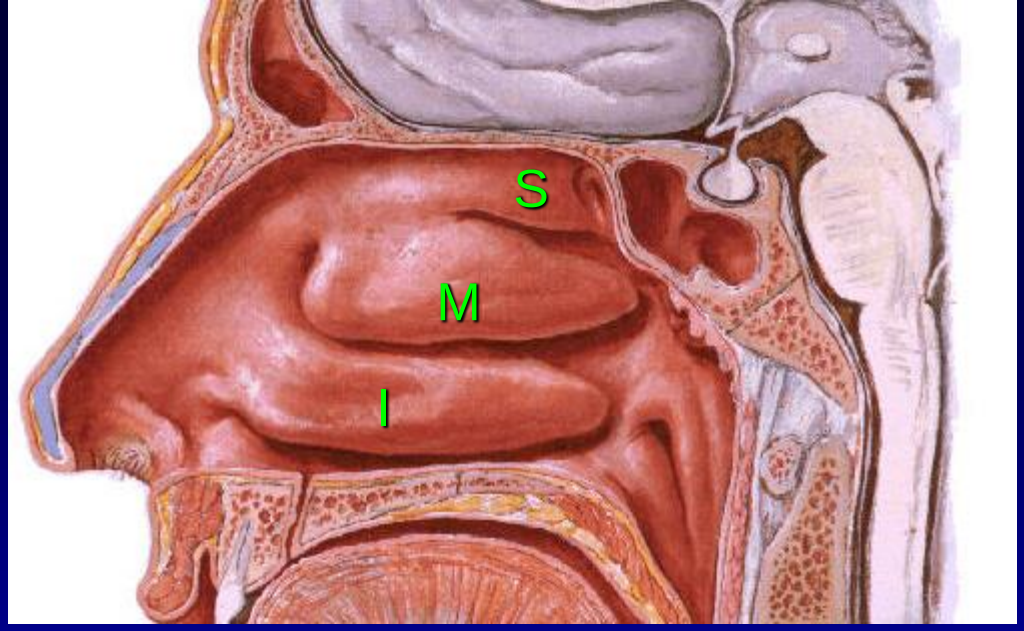


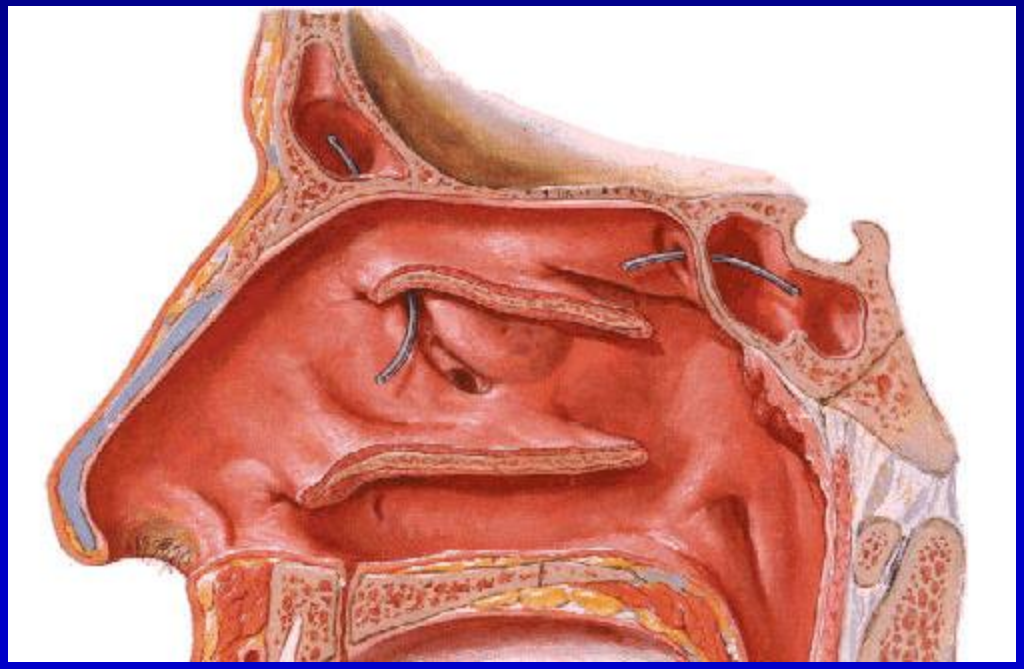


Internal Nose

- Nostrils (anterior nares)
- Choanae (posterior nares)
- Roof
- Floor
- Medial wall
- Lateral wall







Lateral nasal wall

- Superior concha

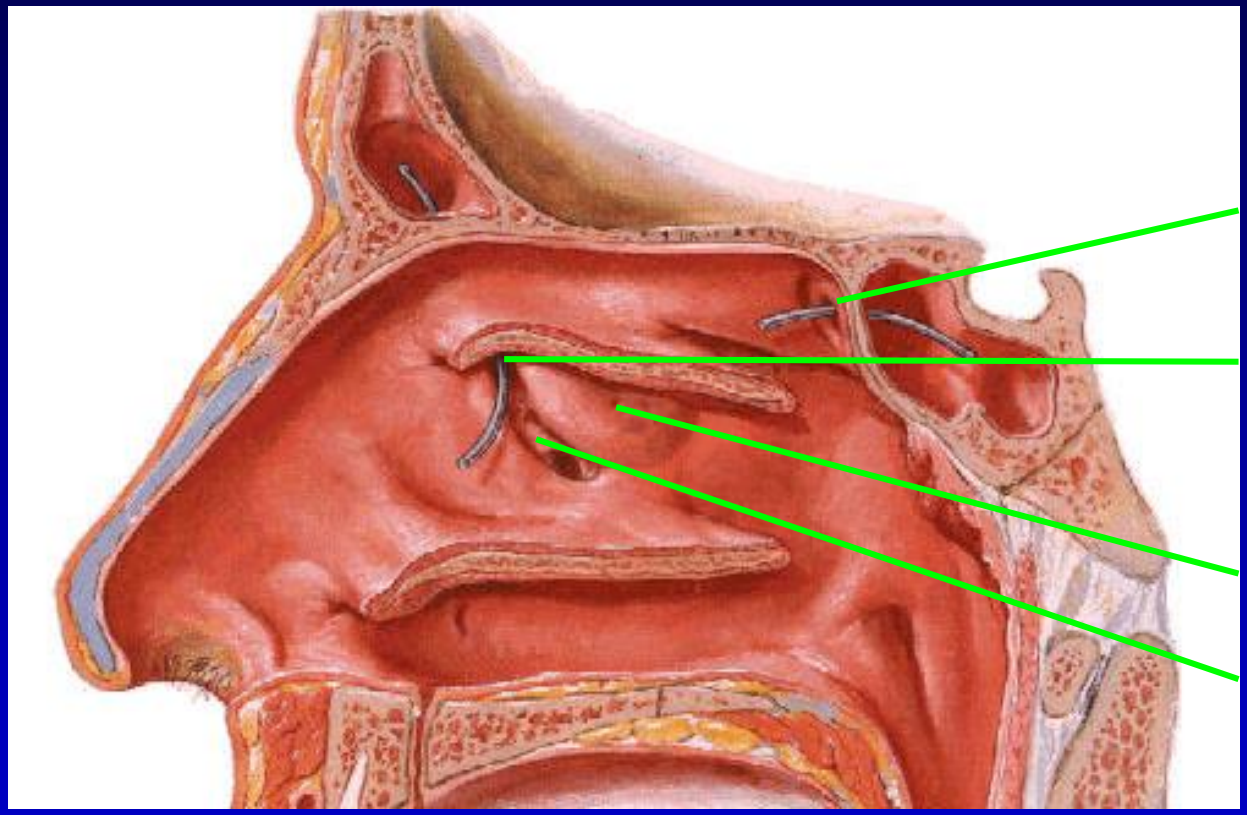
Superior meatus

- Middle concha

Middle meatus

- Inferior concha

Inferior meatus



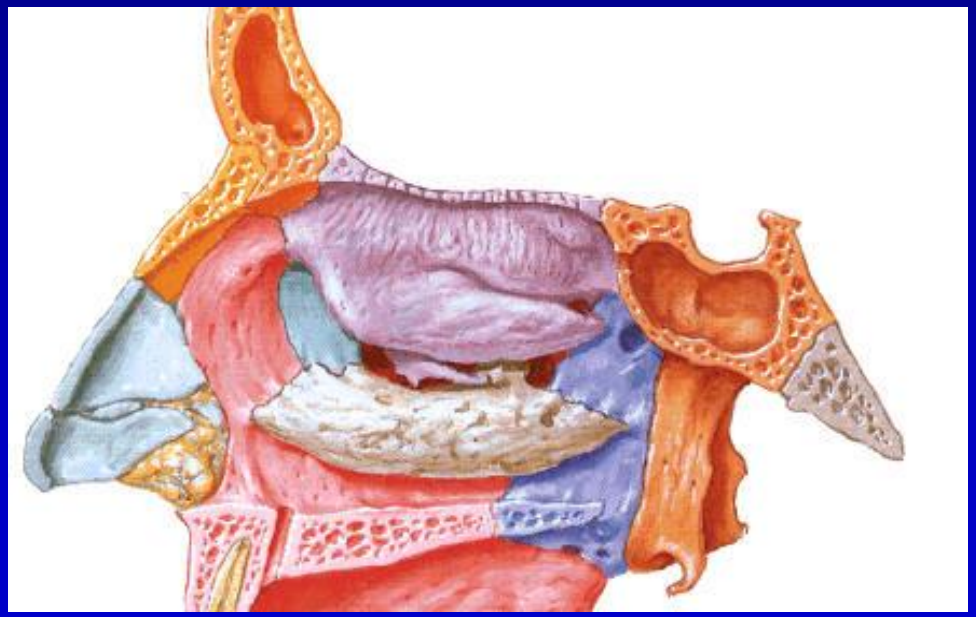
Sphenoethmoidal recess

Ethmoidal infundibulum

Ethmoidal bulla

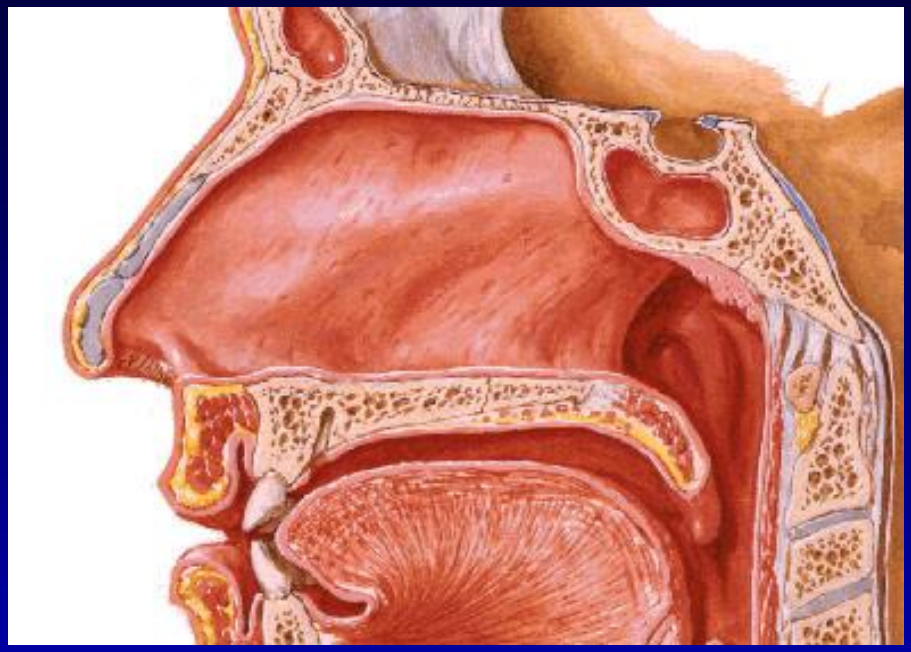
Hiatus semilunaris

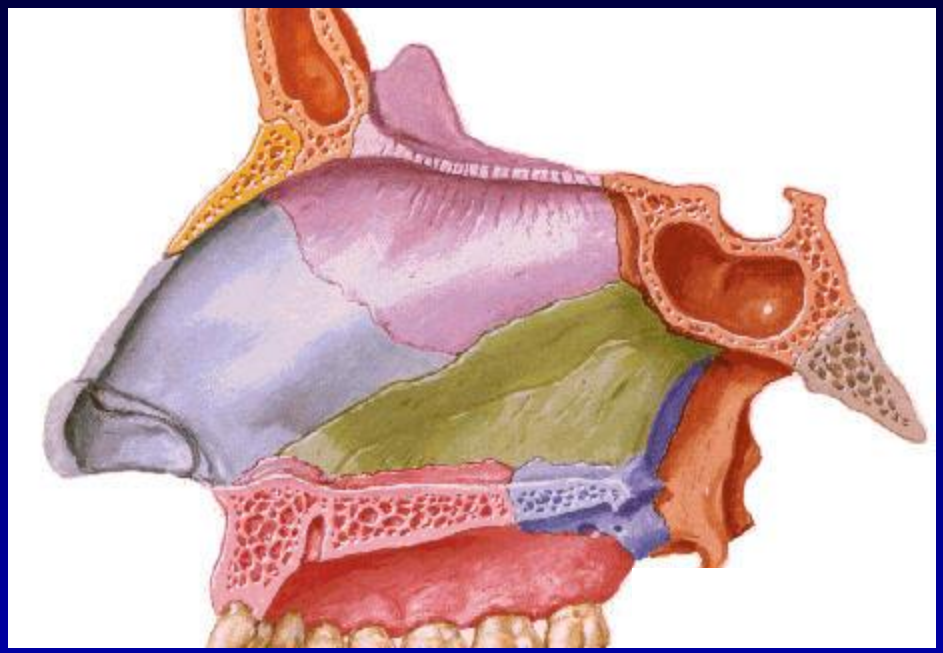




Bone of Lateral Nasal Wall

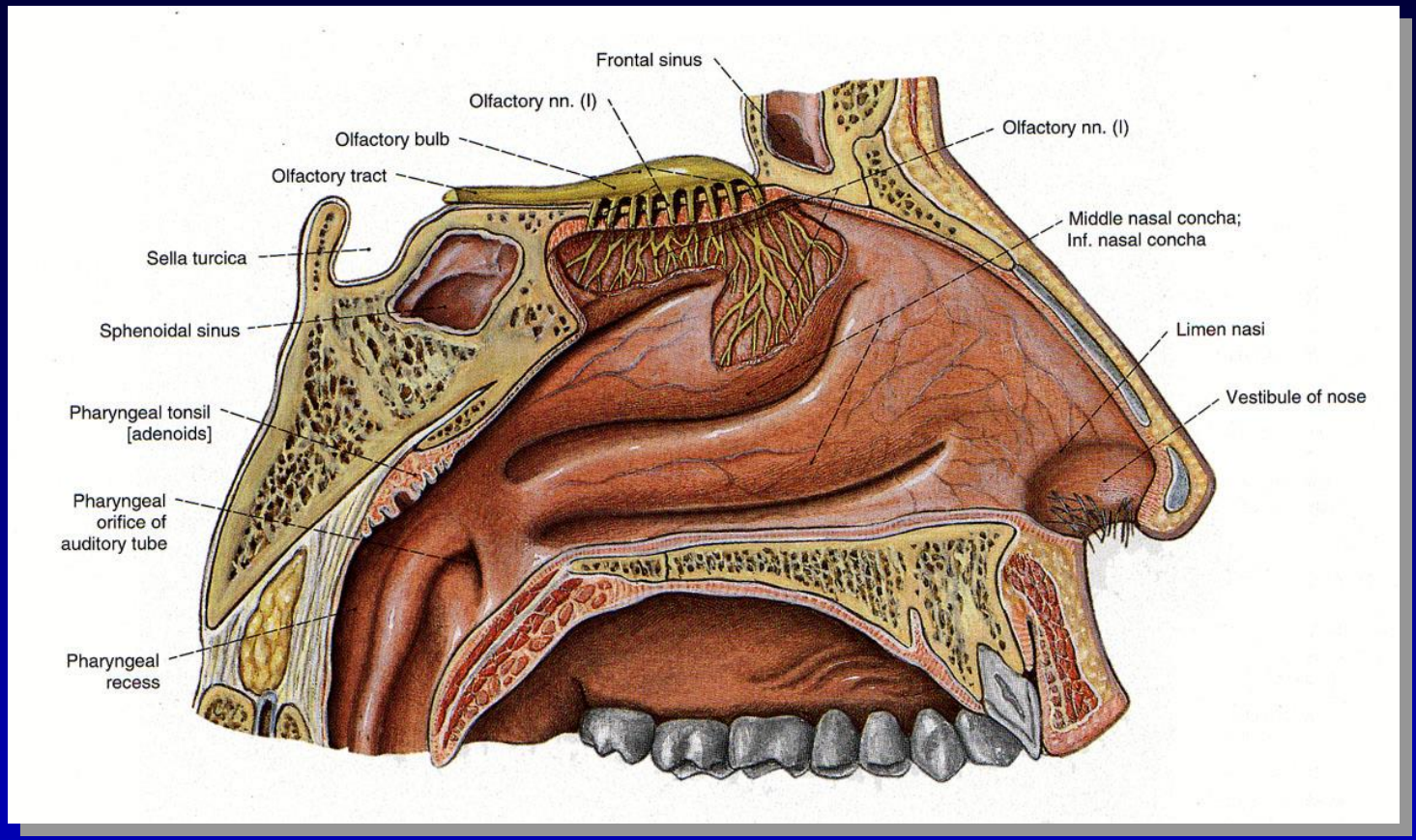
- Nasal bone
- Maxillary bone
- Lacrimal bone
- Inferior concha bone
- Ethmoidal bone
- Palatine bone
- Sphenoid bone





Nasal Septum (medial nasal wall)

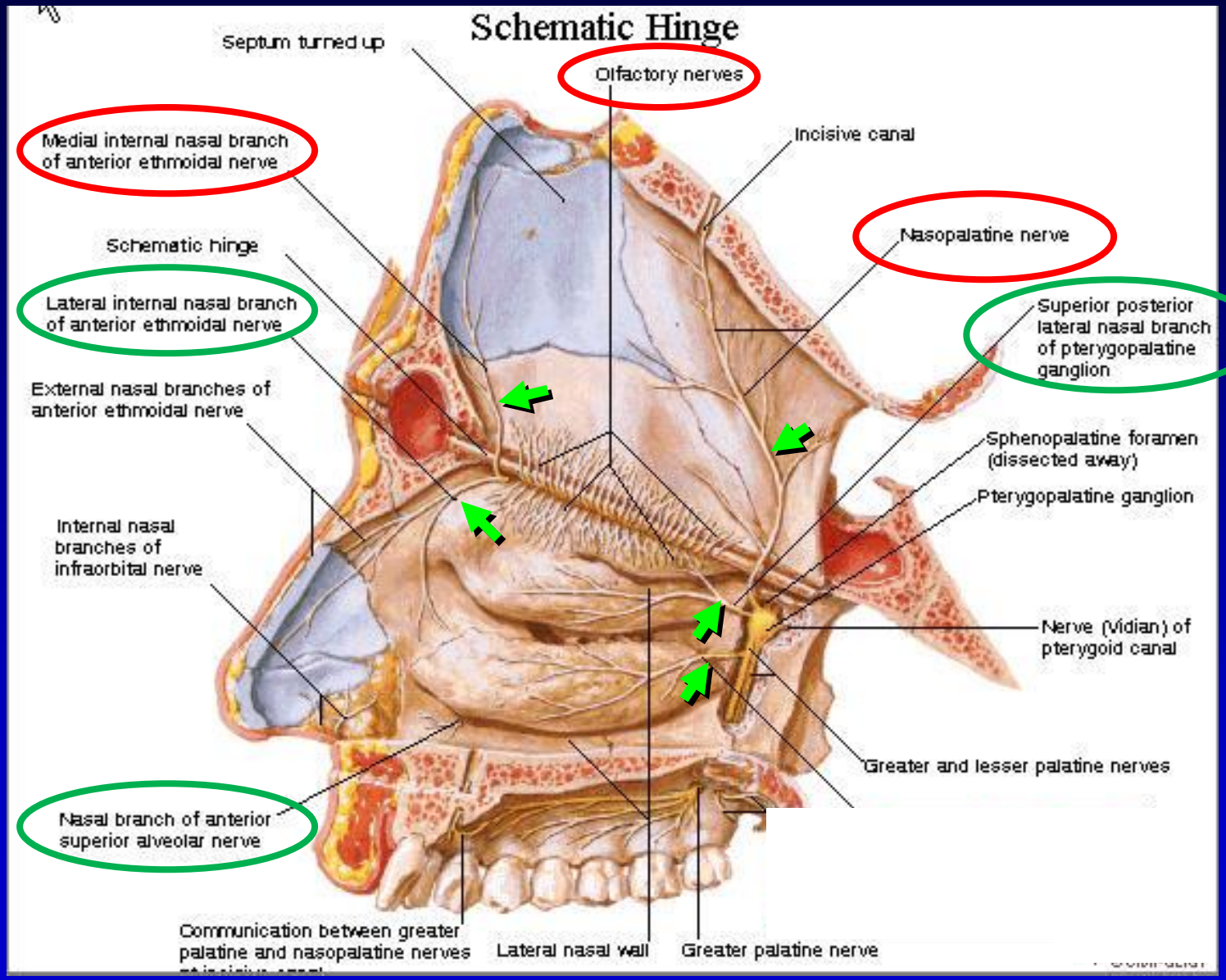
- Perpendicular plate of ethmoid bone
- Palatine bone - posterior 1/3 of floor
- Palatine process of maxilla - anterior 2/3 of floor
- Septal cartilage
- Vomer bone



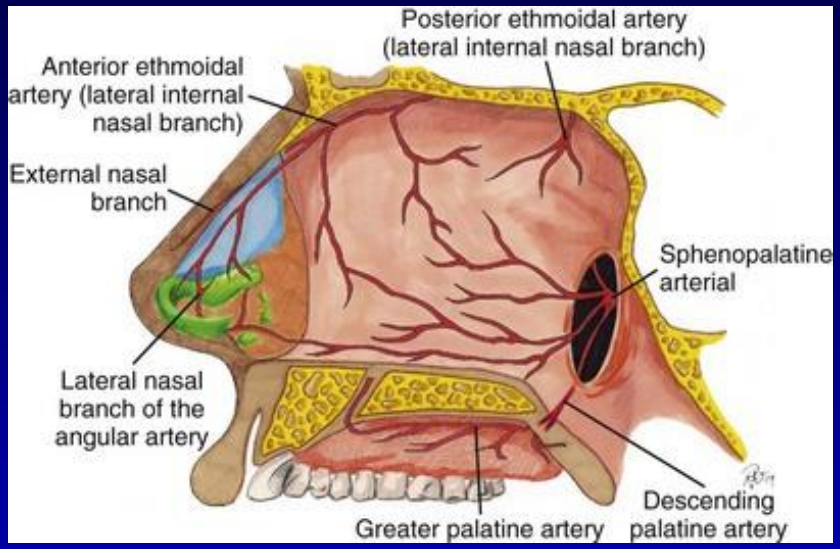
Subdivision of Nasal Mucosa

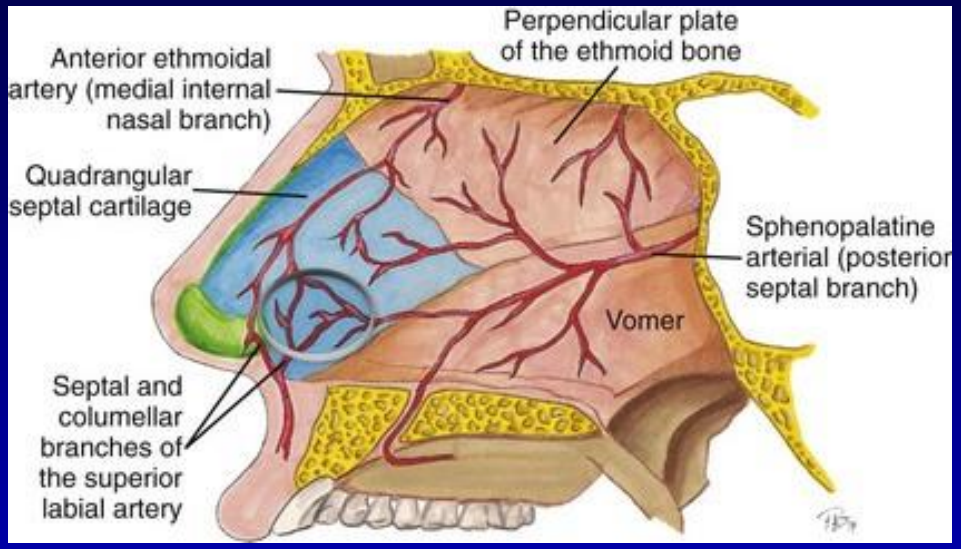
- Vestibule: skin
- Olfactory region: olfactory epithelium
- Respiratory region: mucoperiosteum, mucoperichondrium

Nerve Supply of Nasal Wall

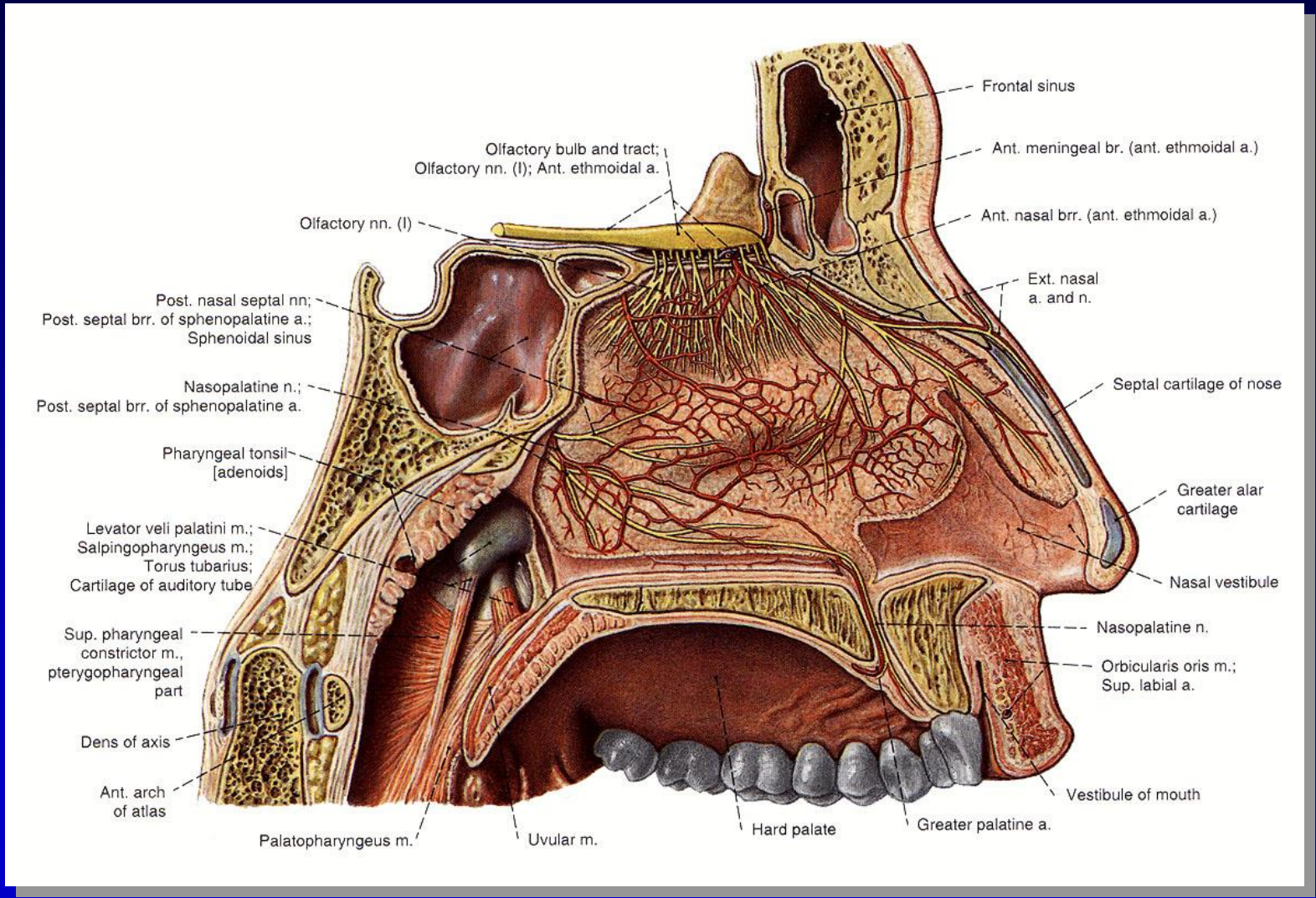


Blood Supply of Lateral Nasal Wall

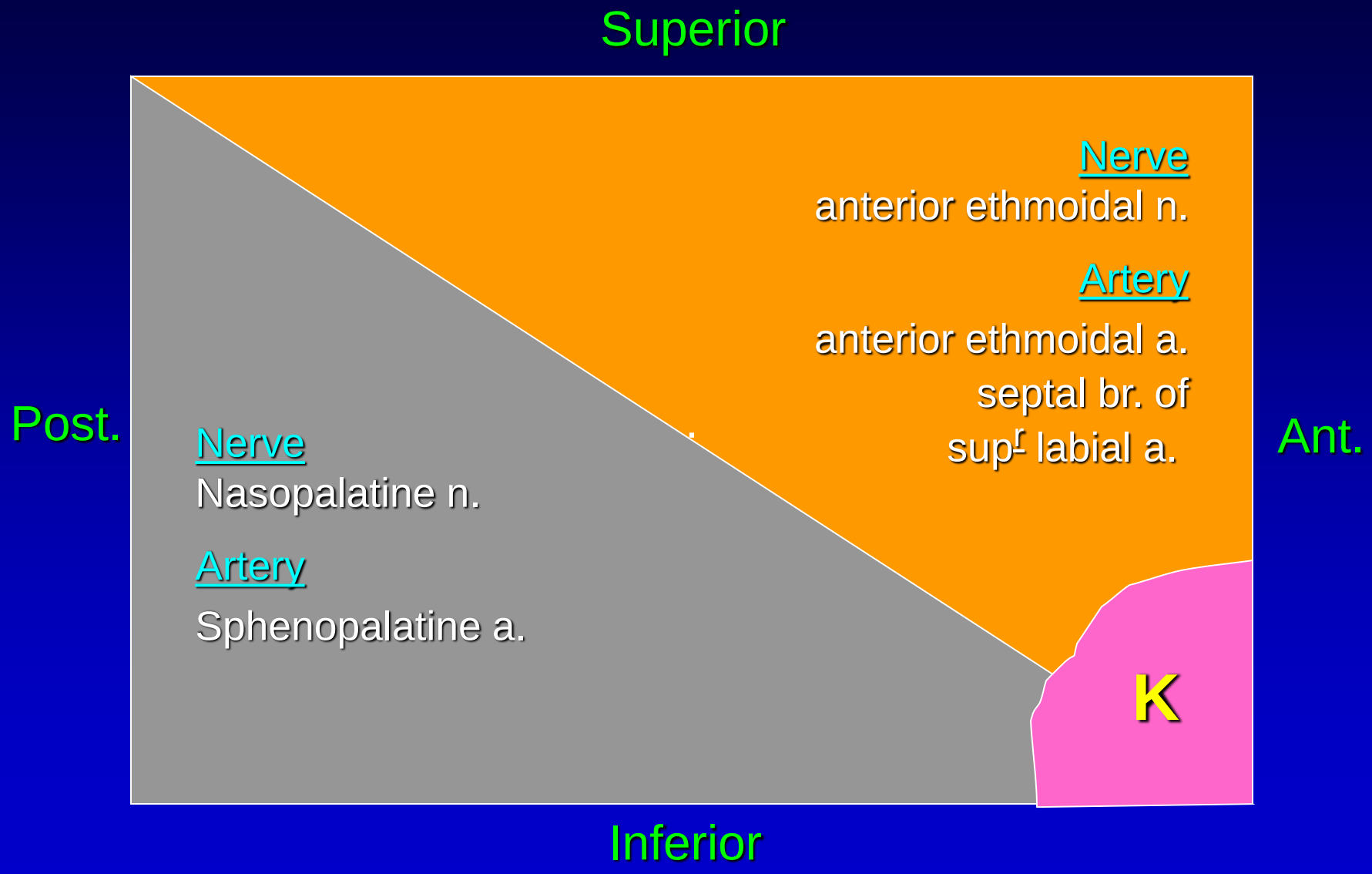




Blood & Nerve Supply of Nasal Septum



Blood & Nerve Supply of Nasal Septum



K = Kiesselbach's plexus

Site of anastomosis of

a. Septal branch of superior labial artery
b. Septal branch of sphenopalatine artery
c. Medial nasal branch of anterior etmoidal artery

The Paranasal Sinuses

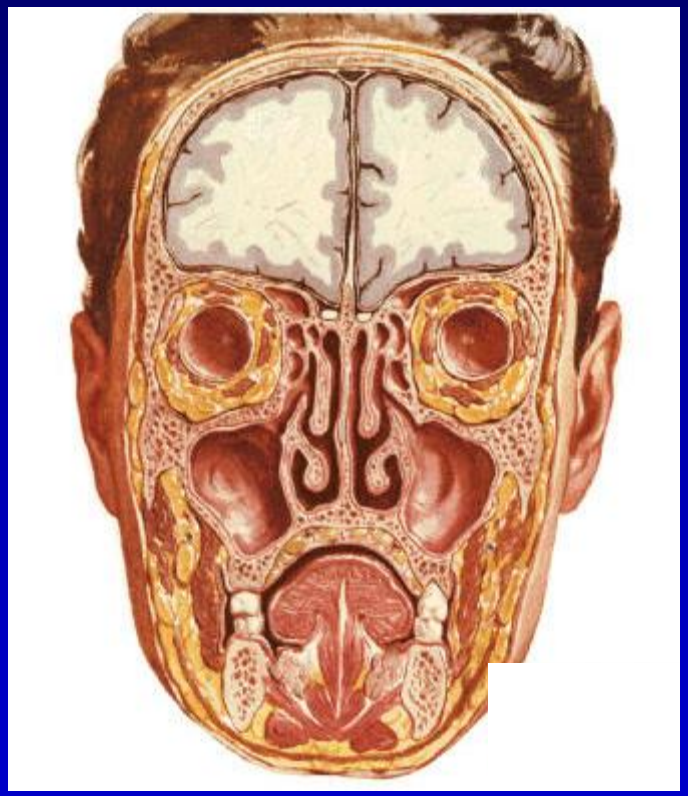
- Originating as evagination in the mucosa of nasal meatuses during the 3rd of 4th month of fetal life.

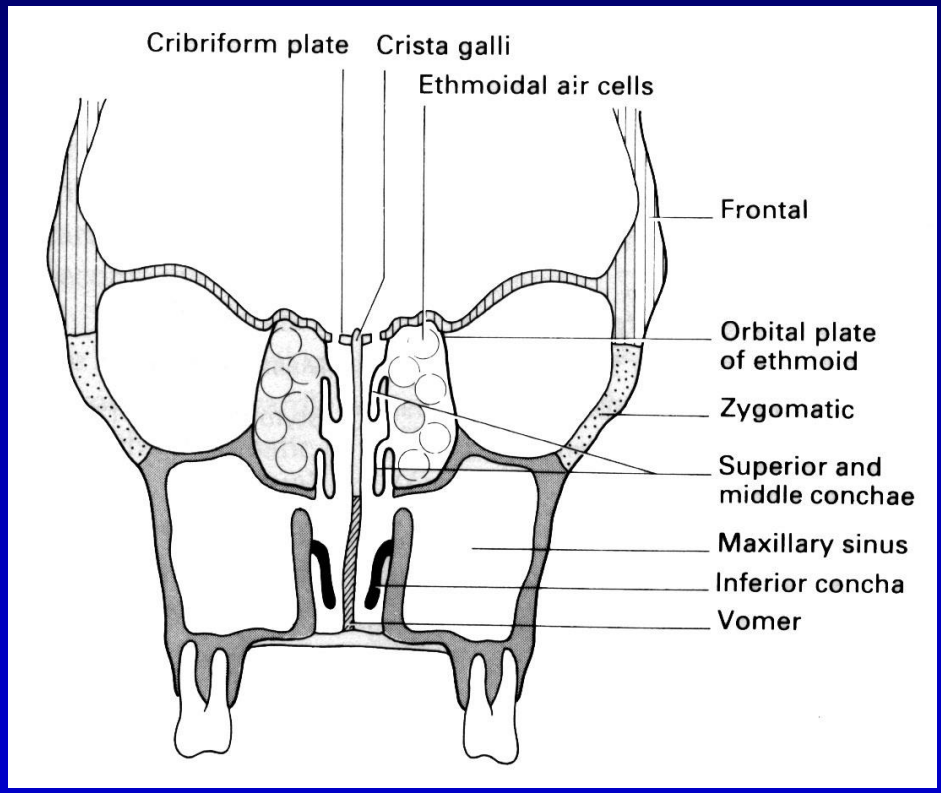
- They are paired and named for the bone in which they are located.

- They probably serve to supply mucous to nasal fossae, to moisten & warm the inspired air, to lighten the skull, and to help the resonance of the voice.

Paranasal Sinuses

1. Frontal sinus
2. Maxillary sinus
3. Ethmoidal sinuses
4. Sphenoidal sinus

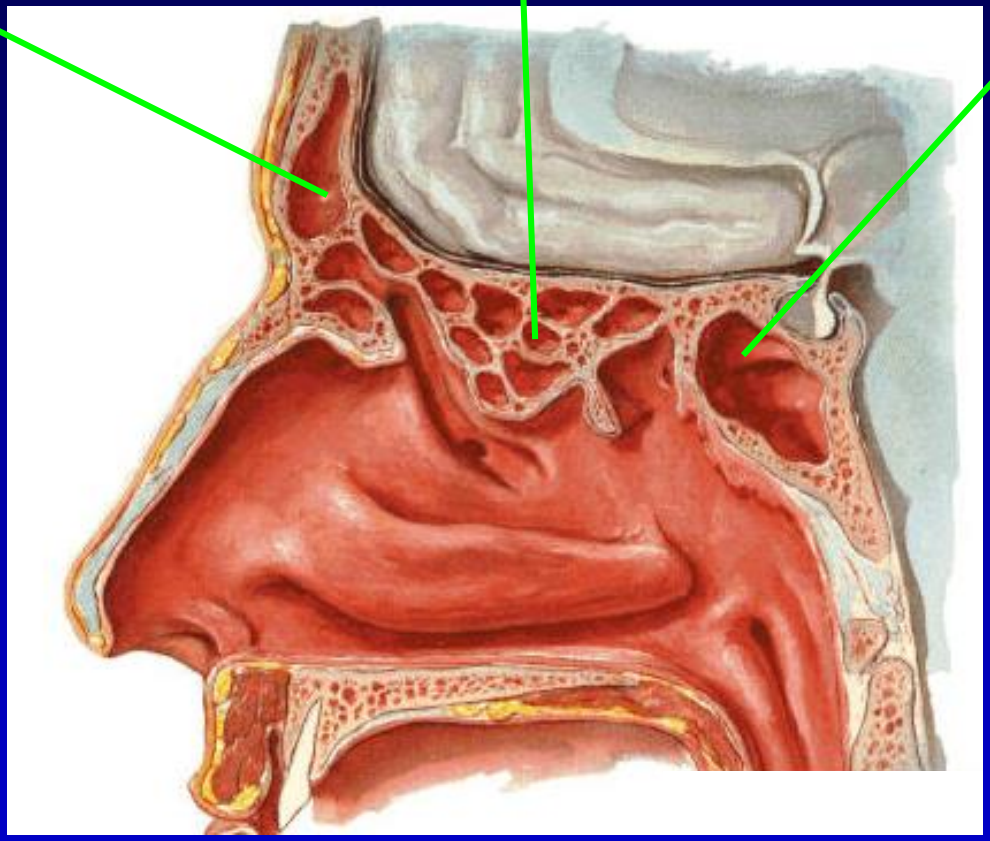




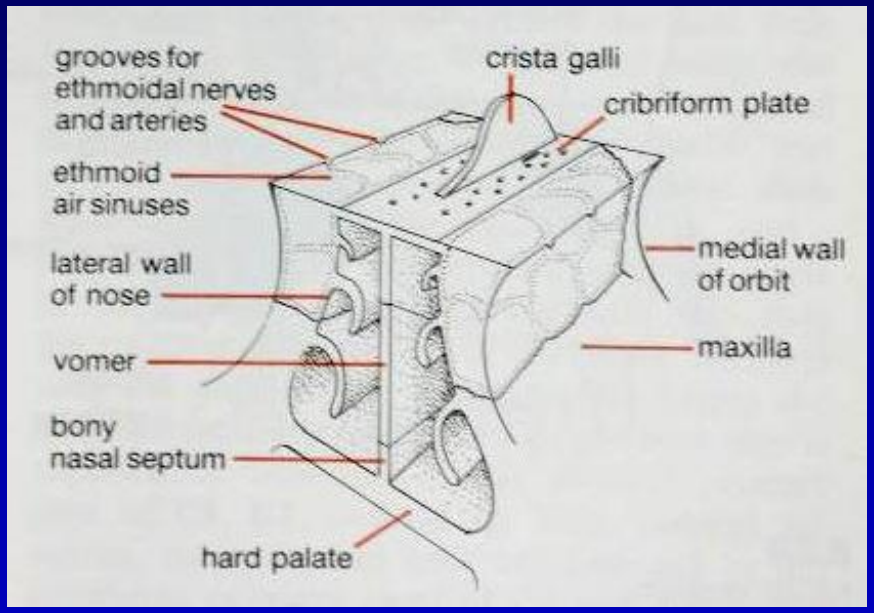
Ethmoidal sinuses

Frontal sinus

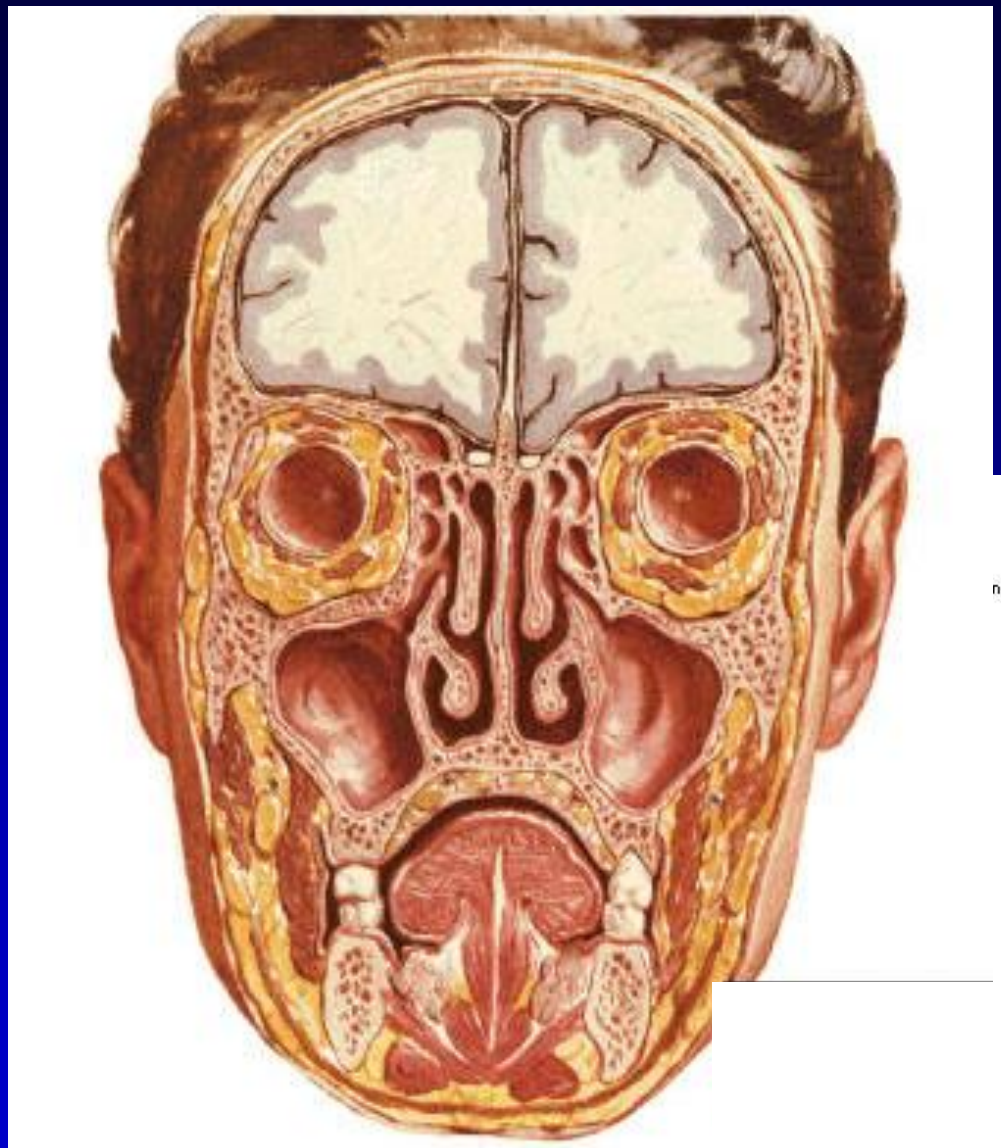
Sphenoidal sinus

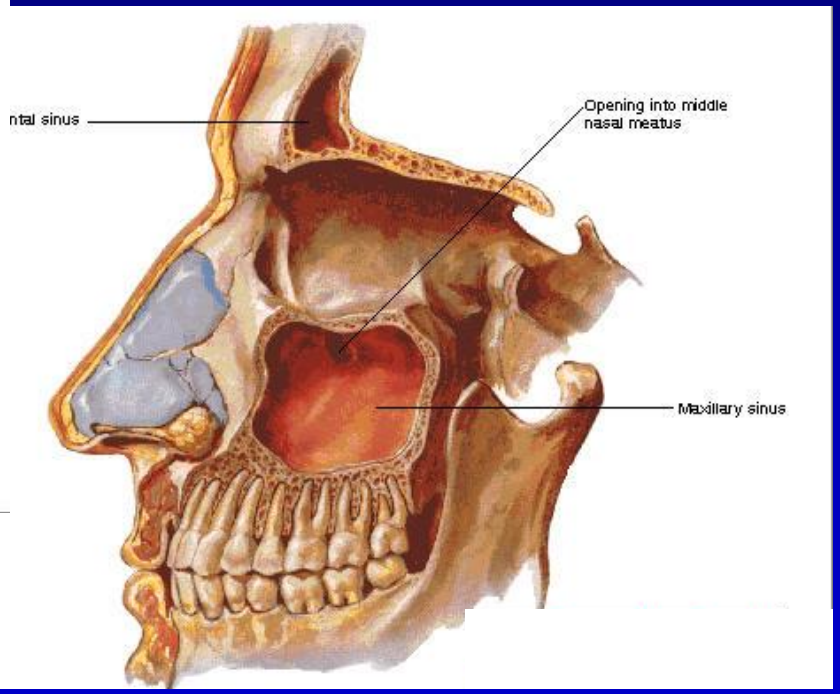



F
E
M

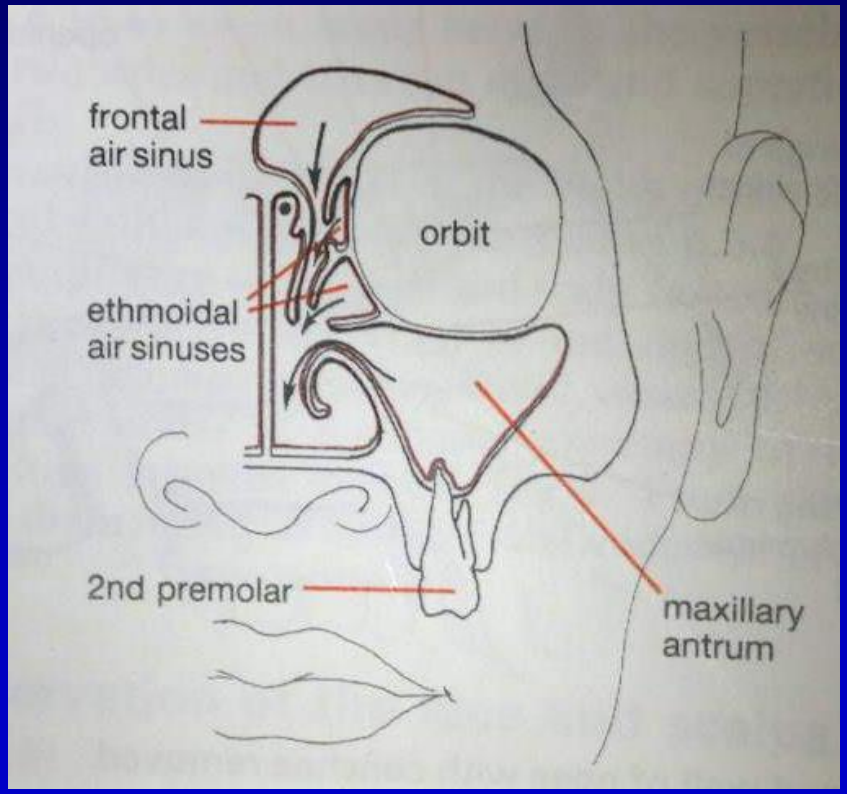

grooves for ethmoidal nerves and arteries
crista galli
cribriform plate
ethmoid air sinuses
medial wall of orbit
lateral wall of nose
maxilla
vomer
bony nasal septum
hard palate

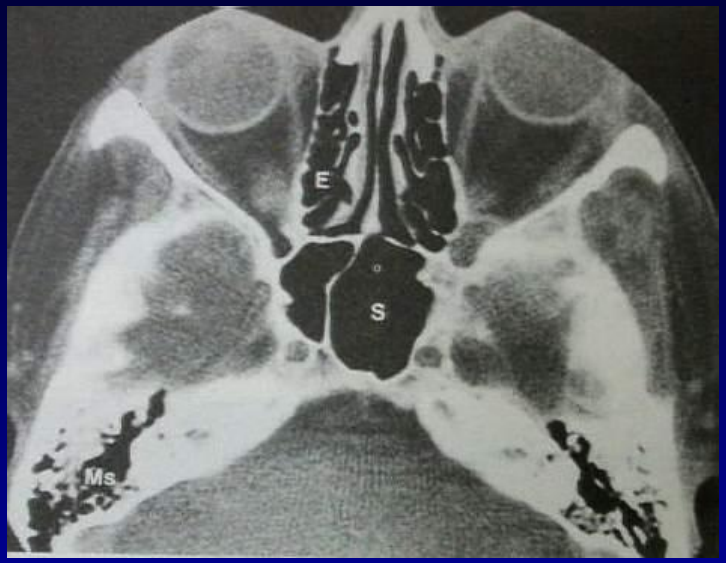
Maxillary sinus



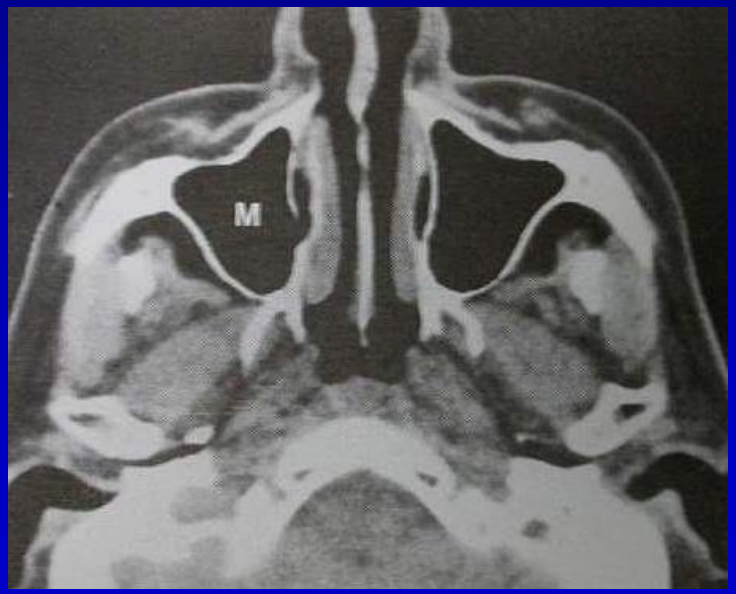



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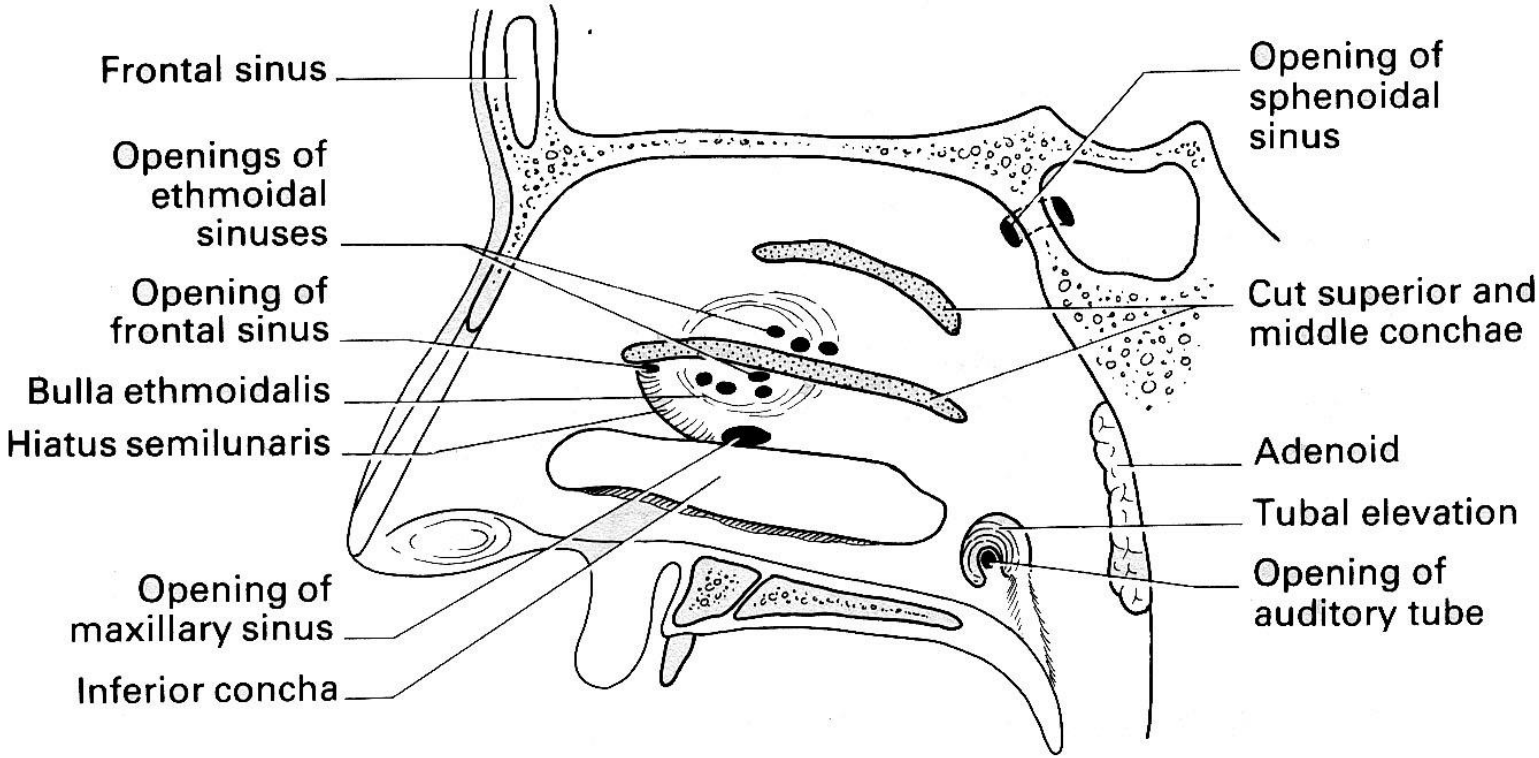

frontal
air sinus
orbit
ethmoidal
air sinuses
2nd premolar
maxillary
antrum


E
S
Ms

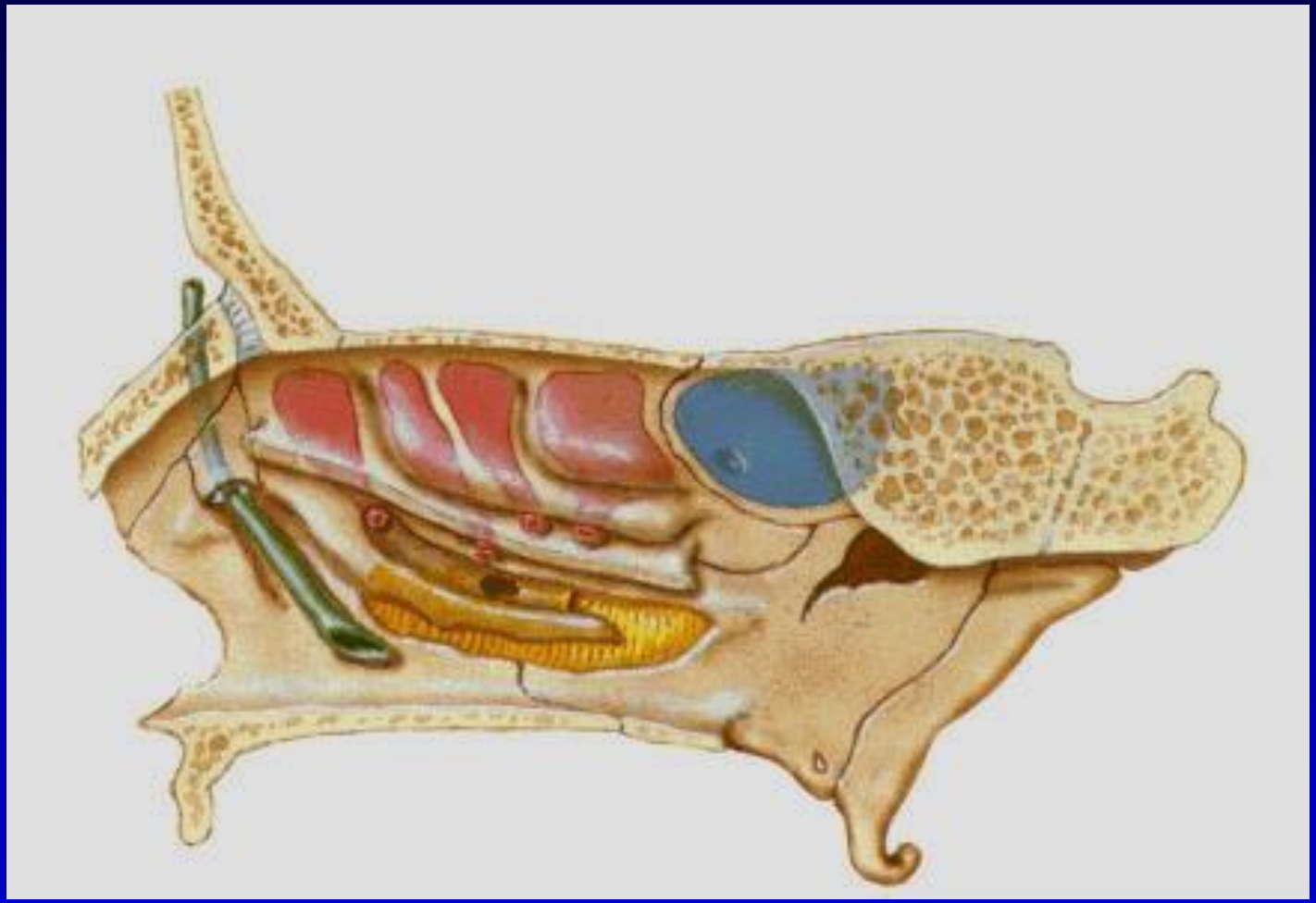


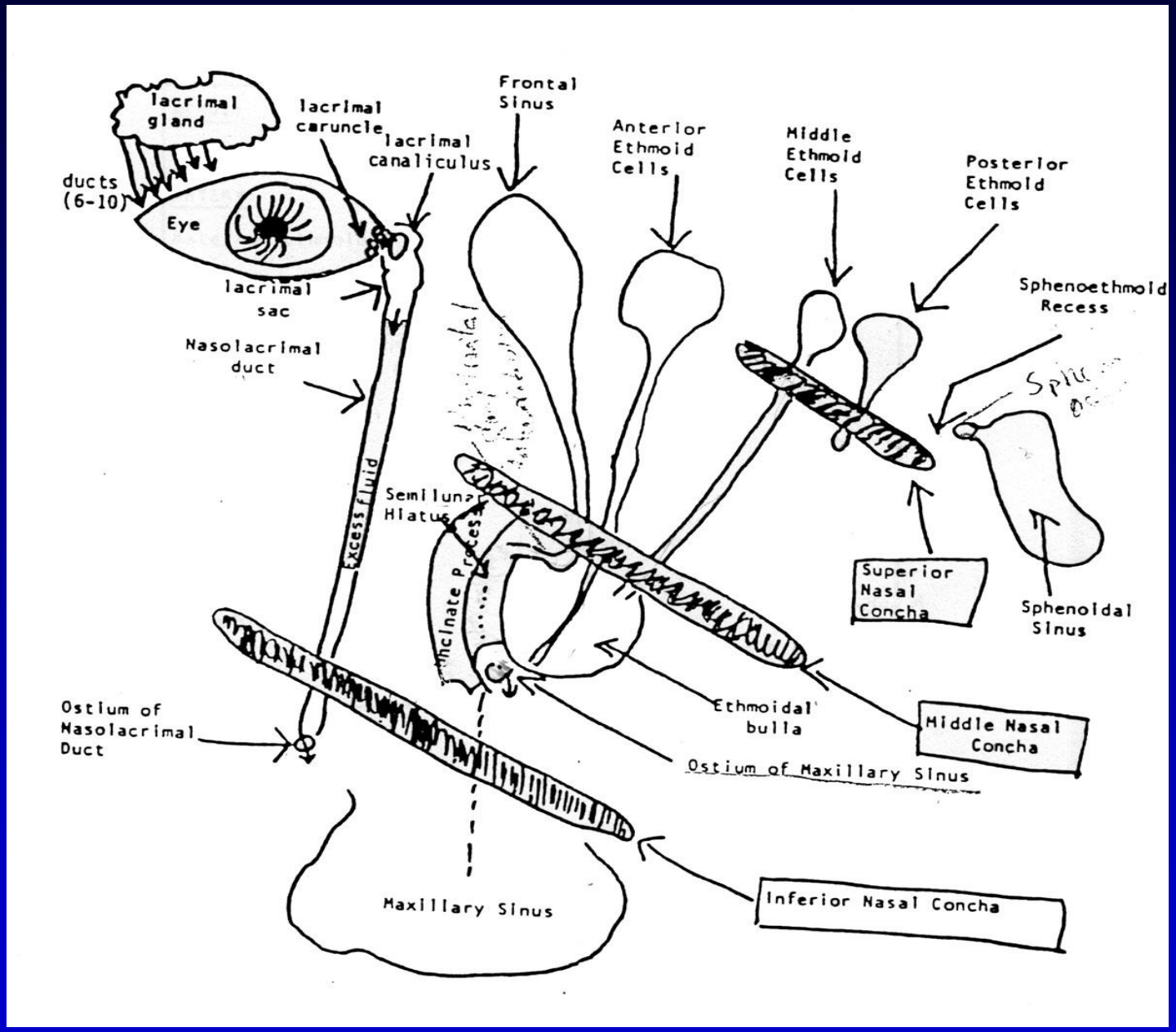

M

Opening of Paranasal Sinuses



Opening of Paranasal Sinuses




lacrimal gland
lacrimal caruncle
lacrimal canaliculus
Frontal Sinus
Anterior Ethmoid Cells
Middle Ethmoid Cells
Posterior Ethmoid Cells
ducts (6-10)
Eye
lacrimal sac
Sphenoethmoid Recess
Nasolacrimal duct
Excess fluid
Semilunar Hiatus
Superior Nasal Concha
Sphenoidal Sinus
Ethmoidal bulla
Middle Nasal Concha
Ostium of Nasolacrimal Duct
Ostium of Maxillary Sinus
Maxillary Sinus
Inferior Nasal Concha



Thank You