

"Nose"

-> Consists of:

1) External nose

2) Nasal Cavity

> Nasal septum (has bony and cartilage parts)
divides both of these into into right and left
halves

-> External Nose

- Attached to forehead by root (bridge) of
nose
- Has two elliptical, external orifices called
nostrils (nares) which are separated from each
other by nasal septum (cartilagenous
component)
- Lateral margin is rounded and mobile called
the Ala nasi

» Bony Component:

- Bind nose superiorly
 - Nasal bones
- Frontal process of maxilla
- Nasal part of frontal bone

» Cartilagenous Component:

- Plates of hyaline cartilage

» Muscular Component:

- Compressor naris
 - Dilator naris
- Levator labii superioris alaeque nasi

> All are innervated by CN 7

» Blood Supply:

> Skin of External Nose:

- Branches of ophthalmic and maxillary arteries

> Skin of alae and lower part of septum:

- Branches of facial artery

» External Nose Sensory Innervation

> Bridge and Crest:

- Infratrochlear and External Nasal branches of ophthalmic nerve (CN V1)

> Side of Nose

- Infraorbital branch of maxillary nerve (CN V2)

→ Nasal Cavity:

» Boundaries:

> Anteriorly: Nostrils

> Posteriorly: Posterior nasal apertures (choanae) → opens into pharynx

» Nasal Vestibule:

- Area of nasal cavity lying just inside the nostril

» Nasal Septum:

- Cartilagenous component: Septal cartilage
- Bony component: Vertical plate of ethmoid and vomer

» Nasal cavity walls:

> Roof (Apex)

- Anteriorly: Nasal and frontal bones (beneath the bridge of nose)
- In the middle: Cribriform plate of ethmoid bone (located beneath anterior cranial fossa)
- Posteriorly: Downward sloping body of sphenoid

> Floor (Base)

- Superior surface of hard palate (palatine process of maxilla and horizontal plate of palatine bone)

-> Lateral Wall

» Has three bony projections

1) Superior Nasal conchae

- Part of ethmoid bone

- Sphenoethmoid recess → A small area above superior concha → receives opening of sphenoid air sinus
- Superior meatus → A space below superior concha → Receives opening of posterior ethmoid sinus

2) Middle Nasal conchae:

- Part of ethmoid bone
- Middle meatus → A space below middle conchae
- Has a rounded swelling → bulla ethmoidalis → formed by middle ethmoidal air sinus (opens on the upper border of middle meatus)
- Hiatus semilunaris → A curved opening that lies just below the bulla → Receives opening of Maxillary sinus
- Anterior end of hiatus semilunaris leads into a funnel shaped channel called → Infundibulum → Is continuous with frontal sinus and Anterior ethmoid sinus

3) Inferior Nasal concha:

- An individual bone
- Receives opening of the lower end of nasolacrimal duct → guarded by a fold of mucous membrane
- Medial Wall:
 - Formed by nasal septum
- Upper portion → Formed by vertical plate of ethmoid bone
- Lower part → Vomer
- Anterior part → Septal cartilage
- Most of the time, Nasal septum does not lie in the midline
- Hence, one half of nasal cavity is larger than other

→ Mucous Membrane of Nasal Cavity:

- Vestibule lined by modified skin and has coarse hairs
- Area above the superior conchae is lined by the olfactory mucous membrane and forms olfactory region → contains nerve endings sensitive to reception of smell
 - Lower part of nasal cavity is lined by respiratory mucous membrane → forms respiratory region

» Venous plexus in Respiratory region:

- A large plexus of veins in submucous connective tissue is present in respiratory region
- Presence of warm blood in venous plexuses serves to heat up inspired air as it enters the respiratory system
- Mucous on the surface of concha traps foreign particles and organisms in inspired air → these are then swallowed and destroyed by gastric acid

-> Nasal Cavity Nerve Supply:

- Olfactory nerve from olfactory mucous membrane ascend through cribriform plate of ethmoid bone to olfactory bulb
- Nerve supply of general sensation: Ophthalmic (V1) and Maxillary (V2) division of Trigeminal nerve

-> Blood supply to nasal cavity:

- Arterial supply to nasal cavity is from branches of the maxillary artery (one of the terminal branches of ECA)
- Most important branch of Maxillary artery
→ Sphenopalatine artery anastomoses with the septal branch of Superior labial branch of Facial artery in the region of the vestibule
- Submucosa venous plexus is drained by veins that accompany the arteries

-> Lymph Drainage:

- Vestibule: Submandibular lymph nodes
- Remainder of nasal cavity: Upper deep cervical lymph nodes

-> Review