NASAL CAVITY

Wedge shaped spaces; 5 cm in height, 5-7 cm in length

Large inferior base- 1-5 cm

Narrow superior apex- 1-2 mm

Anterior aperture- External nares- 1.5-2 cm ; 0.5-1 cm (flexible)
posterior nasal apertures (choanae)- 2.5 by 1.3 cm (rigid)

Separated from: each other- nasal septum
oral cavity-hard palate
cranial cavity-parts of frontal, ethmoid, sphenoid bones

Lateral to nasal cavity- orbit
each half- roof, floor
medial wall, lateral wall
three regions- vestibule
respiratory region
olfactory region
Skeletal framework

- **Medial wall** (nasal septum)
  - Anterior - septal cartilage
  - Vomer
  - Perpendicular plate of ethmoid
  - Minor contributions - nasal, frontal, sphenoid, maxilla, palatine bones
- Often deflected
- **Lateral wall** - Maxilla - anteroinferiorly
  - Perpendicular plate of palatine
  - Ethmoid labyrinth - superiorly & uncinate process
  - Other bones - nasal, frontal process of maxilla, lacrimal
  - Irregular projections - three conchae
  - Superior concha - shortest, shallowest
  - Middle concha - large, articulates with palatine
  - Inferior concha - independent bone, articulates with maxilla
Skeletal framework-contd.

- **Floor:**
  Smooth, concave, wider than roof
  Palatine process of maxilla
  Horizontal plate of palatine (hard palate)
  Soft tissue
- **Roof:** narrow, highest in the center
  Cribriform plate of ethmoid
  Anteriorly- nasal spine of frontal, nasal bones, septal cartilage, major alar cartilage
  Posteriorly: sphenoid, ala of vomer, palatine, medial pterygoid plate
  Roof is perforated by openings in the cribriform plate and a separate foramen for anterior ethmoidal Ns & Vs.
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
Paranasal Sinuses

• Allow equilibration of air and movement of mucous

• All open into nasal cavity

• Rudimentary/ absent at birth; Variable size, usually asymmetrical

• FRONTAL: posterior to superciliary arches, 3 cms above nasion junction of medial 1/3 and lateral 2/3 of supra orbital margin

3.2x2.6x1.8 cm

opening- ethmoidal infundibulum

arterial supply- supraorbital & anterior ethmoidal

nerve supply- supraorbital nerve
ETHMOIDAL: 3-18 in number
  anterior (infundibular)-11; middle (bullar)- 3
  posterior – 1-7
  arterial supply- sphenopalatine & anterior & posterior ethmoidal
  nerve supply- anterior & posterior ethmoidal
    orbital branch of pterygopalatine ganglion

SPHENOIDAL: Posterior to upper part of nasal cavity
  above- optic chiasma & pituitary gland
  sides- ICA, cavernous sinus
  2x 1.8x2.2 cm
  opening- sphenethmoidal recess
  arterial & nerve supply- posterior ethmoidal A & nerve
MAXILLARY: Largest, pyramidal

Base- lateral wall of nasal cavity

Apex- zygomatic process of maxilla

Roof- floor of orbit

Floor- alveolar process of maxilla (1.5cm below nasal floor)

3.5x2.5x3.2 cm

Full size- after eruption of permanent teeth

Opening- hiatus semilunaris

A. supply- facial, supraorbital, greater palatine

N. supply- Infraorbital, anterior, middle & post. Sup. alveolar
Clinical anatomy

- Sinusitis
- Spread of infection
- Drainage
- Diagnosis- touch, transillumination, radiography
- Nasal cavity: Rhinitis
  Impaction of foreign body
  Epistaxis (Little’s area)
  Deflected nasal septum
  Cleft palate