Lesson Plan

- Lateral Wall of Nasal Cavity:
  - Formation
  - Features
  - Openings
  - Arterial Supply
  - Venous Drainage
  - Lymphatic Drainage
  - Nerve Supply
  - Applied Aspects
Lateral Wall of Nasal Cavity
Lateral Wall of Nasal Cavity - Formation

Bones:

- Nasal
- Maxilla - Frontal process
- Lacrimal.
- Ethmoid - Superior Concha
  - Middle Concha
  - Labyrinth.
- Inferior Nasal Concha.
- Palatine - Perpendicular plate.
- Sphenoid - Medial Pterygoid Plate.
**Lateral Wall of Nasal Cavity - Formation contd...**

**Cartilages -**

- Lateral Nasal Cartilage (Lateral process of Septal Cartilage).
- Major Alar Cartilage.
- Minor Alar Cartilages (3-4 in no.).
Lateral Wall of Nasal Cavity - Features

- Lateral wall of nasal cavity is divided into 3 parts:
  - Anterior part.
  - Middle part.
  - Posterior part.

Anterior part-
- Presents a small depressed area, the Vestibule.
- It is lined by skin containing short, stiff hair.

Middle part-
- It is known as ‘Atrium of Middle Meatus’.
- It is limited above by the agger nasi, which is a faint ridge of mucous membrane.
- Limen Nasi - Mucocutaneous junction between the vestibule and atrium of middle meatus.

Posterior part-
- Presents Conchae (Turbinates) and Meatuses.
Conchae

- These are curved bony projections lined by mucosa, directed downwards and medially.

- 3 in number:
  - Superior Nasal Concha.
  - Middle Nasal Concha.
  - Inferior Nasal Concha.

- Superior and middle nasal conchae are projections from medial surface of ethmoidal labyrinth.

- Inferior nasal concha is an independent bone.

- Superior concha is **smallest** and Inferior concha is largest in size.
Meatuses-

- Below and lateral to each concha is a space known as meatus.

- 3 in number:
  - Superior meatus.
  - Middle meatus.
  - Inferior meatus.

Superior meatus-

- It lies underneath the superior concha.
- It is smallest.

Middle meatus-

- It lies underneath the middle concha.
- It presents the following features:
  - Ethmoidal bulla (Bulla ethmoidalis).
  - Hiatus semilunaris.
  - Infundibulum.
Lateral Wall of Nasal Cavity- Features contd…

**Ethmoidal bulla**
- A round elevation, produced by underlying middle ethmoidal air sinuses.

**Hiatus semilunaris**
- It is a semicircular sulcus below the ethmoidal bulla.

**Infundibulum**
- It is a short passage at the anterior end of middle meatus.

**Inferior meatus**
- It lies underneath the inferior concha.
- It is the largest meatus.
## Openings in Lateral Wall of Nasal Cavity

<table>
<thead>
<tr>
<th>Site</th>
<th>Opening/Openings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spheno-ethmoidal recess</td>
<td>Sphenoidal air sinus</td>
</tr>
<tr>
<td>Superior Meatus</td>
<td>Posterior ethmoidal air sinuses</td>
</tr>
<tr>
<td>Middle Meatus</td>
<td></td>
</tr>
<tr>
<td>On Ethmoidal Bulla</td>
<td>Middle ethmoidal air sinuses</td>
</tr>
<tr>
<td>In Hiatus semilunaris</td>
<td></td>
</tr>
<tr>
<td>Anterior part</td>
<td>Frontal air sinus</td>
</tr>
<tr>
<td>Middle part</td>
<td>Anterior ethmoidal air sinuses</td>
</tr>
<tr>
<td>Posterior part</td>
<td>Maxillary air sinus</td>
</tr>
<tr>
<td>Inferior Meatus</td>
<td>Nasolacral duct (NLD)</td>
</tr>
</tbody>
</table>

![Diagram of nasal cavity](image)
Arterial Supply of Lateral Nasal Wall

Anterosuperior Part-
- Anterior Ethmoidal artery (a branch of Ophthalmic artery).

Anteroinferior Part-
- Lateral Nasal Artery (a branch of Facial artery).
- Greater Palatine Artery (a branch of Maxillary artery).

Posterosuperior Part-
- Sphenopalatine Artery (a branch of Maxillary artery).

Posteroinferior Part-
- Greater Palatine Artery (a branch of Maxillary artery).
Venous Drainage of Lateral Nasal Wall

- In lateral wall of nasal cavity, veins accompany the arteries.

- A venous plexus is formed beneath the mucosa.

- Veins drain into:
  - Facial vein.
  - Pterygoid venous plexus.
  - Pharyngeal venous plexus.
Lymphatic Drainage of Lateral Nasal Wall

**Anterior ½-**

- Drains into:
  - **Submandibular** lymph nodes.

**Posterior ½-**

- Drains into:
  - **Retropharyngeal** lymph nodes.
Nerve Supply of Lateral Wall of Nasal Cavity

Anterosuperior Part-
• Anterior Ethmoidal Nerve (a branch of Nasociliary nerve).

Anteroinferior Part-
• Anterior Superior Alveolar Nerve (a branch of Infraorbital nerve).

Posterosuperior Part-
• Posterior superior lateral nasal nerves (branches of Pterygopalatine ganglion).

Posteroinferior Part-
• Nasal branches of Greater Palatine Nerve (a branch of Pterygopalatine ganglion).

Olfactory Part (upper 1/3rd up to the superior concha)-
• Olfactory Nerves.
Applied Aspects

Rhinoscopy [Examination of Nasal Cavity]

- Anterior Rhinoscopy
- Posterior Rhinoscopy

Anterior Rhinoscopy -
- Examination of nasal cavity through the nostril.
- It is carried out by inserting a nasal speculum through a nostril.

Nasal Speculum
Structures seen on Anterior Rhinoscopy

- Following structures are seen on Anterior Rhinoscopy:

  - Middle nasal concha (turbinate).
  - Inferior nasal concha (turbinate).
  - Superior meatus.
  - Middle meatus.
  - Inferior meatus.
  - Nasal septum.
  - Floor of nasal cavity.
Posterior Rhinoscopy

- Examination of nasal cavity through the pharynx.
- It is carried out by inserting a mirror into the pharynx.

**Structures seen on Posterior Rhinoscopy:**
- Choanae.
- Conchae.
- Posterior border of nasal septum.
Thank you