

## Maxillary Sinus

### Paranasal air sinus

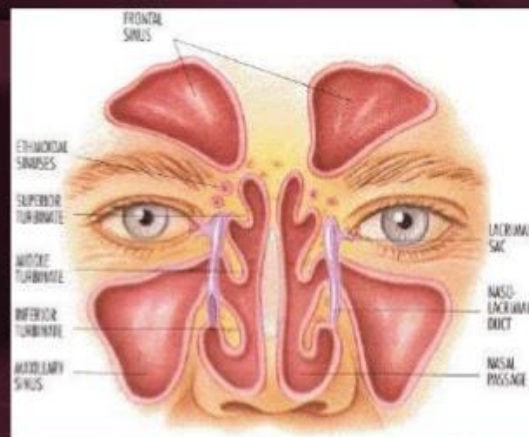
### Introduction

- Paranasal air sinuses are the air filled mucosa lined cavities which develops in the cranial and facial bones.
- These are the spaces which communicates with the nasal airway.
- These forms the various boundaries of the nasal cavity.

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- Maxillary air sinus
- Frontal air sinus
- Ethmoidal air sinus
- Sphenoidal air sinus



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## Definition of maxillary sinus

“Maxillary sinus is the pneumatic space that is lodged inside the body of maxilla and that communicates with the environment by way of the middle meatus and nasal vestibule.”

Anatomy of the maxillary sinus was 1<sup>st</sup> described by Highmore in 1651.

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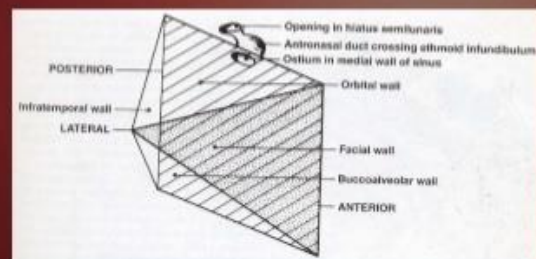
## Anatomy

- ┆ Largest of PNS, communicate with other sinuses through lateral nasal wall.
- ┆ Horizontal Pyramidal shaped

┆ Base

┆ Apex

┆ 4 walls



- Wall thickness varies with individual

### Osteum:

- Opening of the maxillary sinus is called osteum.
- It opens in middle meatus at the lower part of the hiatus semilunaris.
- Lies above the level of nasal floor.

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- ▣ In 15% to 40% of cases, a very small, accessory ostium is also found.
- ▣ Blockage of the ostium can easily occur when there is inflammation of the mucosal lining of the ostium.

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## Functions of the maxillary sinus

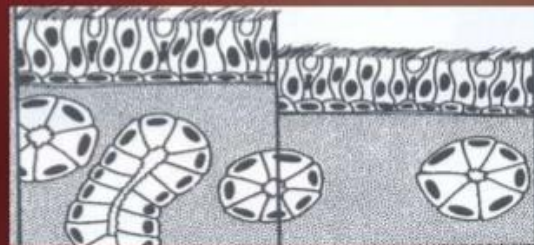
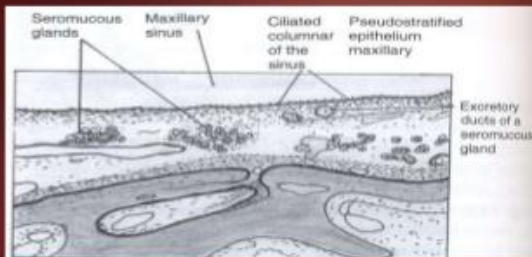
- Humidification and warming of inspired air,
- Assisting in regulating intranasal pressure,
- Lightening the skull to maintain proper head balance,
- Imparting resonance to the voice,
- Absorption of shocks to the head,
- Filtration of the inspired air.

*(Bailey 1998).*

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## HISTOLOGY

- Maxillary sinus is lined by three layers: epithelial layer, basal lamina and sub epithelial layer with periostium.
- Epithelium is pseudo stratified, columnar and ciliated.
- As cilia beats, the mucous on epithelial surface moves from sinus interior towards nasal cavity.



➤ The roots of maxillary molars usually lie in close apposition to the maxillary sinus and may project into the floor of the sinus, causing small elevations or prominences.



(White & Pharoah

2000)

Maxillary sinus septum  
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### Clinical considerations:

1. Nerves that supply maxillary teeth are those that supply the maxillary sinus accounting for dental pain from healthy teeth arising from maxillary sinusitis.
2. Bone forming the floor of the sinus can also be the bone surrounding the apex of a tooth. Consequently periapical infection of teeth can spread to maxillary sinus. The reverse can occur with maxillary sinus infection being perceived as originating from teeth.
3. Pain from carious lesion or other insults to the dental pulp may be referred to the sinus.
4. Accidental communication between the sinus and oral cavity may occur during tooth extraction or surgical procedures leading to oroantral fistula.
5. Roots of maxillary posterior teeth may have close relationship to the floor of the maxillary sinus. Molars are more related than premolars in the following order: first molar, second premolar, second and third molars, first premolar and rarely the canine.