

Frontal Cells

Kuhn classification



- **Type 1:** Most common, single cell above agger nasi.
- **Type 2:** Multiple cells (tier) above agger nasi.
- **Type 3:** Single large cell extending into the frontal sinus.
- **Type 4:** Completely isolated cell within the frontal sinus.

Kuhn classification

Type	Description	Prevalence (approximate)
Type 1	A single air cell above the agger nasi cell (does not pneumatize into the frontal sinus) 2 3 5 6 .	15–22%
Type 2	Two or more air cells (a tier) above the agger nasi cell (may or may not pneumatize into the frontal sinus) 2 3 5 6 .	1–7%
Type 3	A single large cell above the agger nasi cell that extends through the frontal ostium into the frontal sinus 2 3 5 6 .	6–12%
Type 4	An isolated cell entirely within the frontal sinus, without connection to the frontal recess 2 3 5 6 .	2–8%

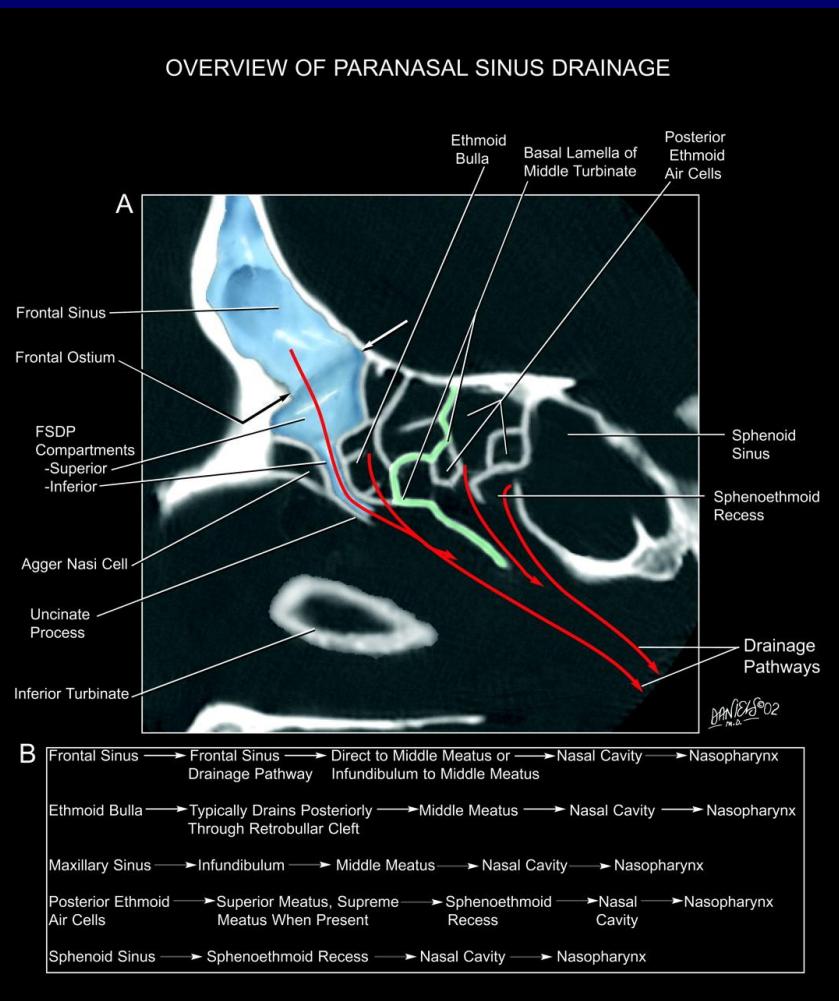
Frontal Cells

- Type I (cell above the agger nasi)
- Type II (or more cells above the agger nasi, but below the level of the frontal infundibulum and orbital roof),
- Type III (at least 1 cell extending supraorbitally)
- Type IV (independent cell within the frontal sinus and not in contiguity with the other cells). They can be seen anywhere from 25% to 40% of the population and are located superior to the agger nasi cell.
- The surgeon needs to be aware of the sequence of cells that are opened to ensure a wide and clear frontal recess without the crushing of these cells of the persistent or obstructive inflammatory disease of the frontal outflow tract.
- These cells are best evaluated on coronal and sagittal cuts

International Frontal Sinus Anatomy Classification (IFAC)

- Agger nasi cell (ANC)
- Supra agger cell (SAC)
- Supra agger frontal cell (SAFC)
- Supra bulla cell (SBC)
- Supra bulla frontal cell (SBFC)
- Supraorbital ethmoid cell (SOEC)
- Frontal septal cell (FSC)

Frontal sinus drainage pathway (FSDP)



- The **frontal ostium** forms the upper border of the superior compartment of the FSDP.
- The **superior compartment** of the **FSDP** drains posteroinferiorly into a narrow inferior compartment situated always anterior to the ethmoid bulla.
- The **inferior compartment** of the **FSDP** is formed by the ethmoid infundibulum when the superior portion of the uncinate process attaches to the skull base but is formed instead by the middle meatus when the uncinate process attaches to the lamina papyracea.
- The **basal lamella of the middle turbinate** (colored green) divides the ethmoid air cells into anterior and posterior groups.
- The agger nasi air cell is classified as an extramural ethmoid air cell, because it projects anterior to the ethmoid bone.
- This cell frequently extends to the lacrimal bone and the frontal process of the maxilla.
- B**, Summary of the typical drainage pathways of the paranasal sinuses, including the drainage pathway of the maxillary sinus.
- Ultimately, all sinus drainage is directed toward the nasopharynx

