SKULL, THE ORBIT, FOSSAE OF THE CRANIUM

The skull presents by far the most complex skeletal anatomy of the body.

Lodging and protecting the vitally required brain with its equally important vasculature, the human head contains organs housing the special senses of sight, hearing, balance ,taste, and smell, as well as structures in the mouth and nasal cavity related to the specialized life maintaining mechanisms of feeding, respiration, and communication.

The skull is formed by 22 bones.

Six of them are single bones and eight are paired.

The bones of the skull can be divided into two groups: those of the cranium or neurocranium, which enclose the brain and consists of 8 bones,those of the skeleton of the face, viscerocranium numbering 14 bones.

THE NEUROCRANIUM

Anatomically, the **neurocranium** can be subdivided into a **roof** (known as the **calvarium**), and a **base:**

A.Calvarium: Comprised of the frontal, occipital and two parietal bones.

B.Cranial base: Comprised of six bones – the frontal, sphenoid, ethmoid, occipital, parietal and temporal bones.

The limit between the calvarium and the base of the cranium is represented by a plane that passes through the line of fusion between the squama and the orbital part of the frontal bone; along the inferior part of the parietal bones; through the upper part of the squama of the temporal bones; through the squama of the occipital bone and the internal occipital protuberance.

Calvarium consists of:

Anterior : the vertical part of the frontal bone

Lateral: parietal bones

Posterior: squama of the occipital bone

Calvarium presents an exteral table *(lamina externa)* and an interal table (lamina interna) separated by a mass of spongious tissue called diploe throuhg which passes several emissary veins that makes the connection between intracranian blood circulation and the extracranian one.

The external table of the calvarium presents:

1. **Along the median line**:

- **glabella**- a smooth prominence above the root of the nose

- **metopic suture** (inconstant). The **frontal suture** is a fibrous joint that divides the two halves of the frontal bone of the skull in infants and children. Typically, it completely fuses between 3 and 9 months of age, with the two halves of the frontal bone being fused together. It is also called the **metopic suture**, although this term may also refer specifically to a *persistent frontal suture*

- **bregma-** the point of junction of the sagital and coronal suture

- **sagittal suture**. The **sagittal suture** is a dense, fibrous connective tissue joint between the two parietal bones of the skull

- **vertex -** The vertex is the midline bony landmark at the most superior part of the calvaria in the standard anatomical position, near the midpoint of the sagittal suture

- **lambda.** The occipital angle is rounded and corresponds with the point of meeting of the sagittal and the lambdoid suture—a point which is termed the **lambda**

- external occipital protuberance

2. On the sides of the median line the external table of the calvarium presents:

- supraorbital borders of the frontal bones with the supraorbital foramen or notch. Supraorbital foramen gives passage to the supraorbital artery and the supraorbital nerve.
- superciliary arches
- frontal eminences
- coronal suture. The coronal suture is the cranial suture formed between the two parietal bones and the frontal bone
- parietal eminences
- lambdoid suture. The lamdboid suture is the junction between the superior border of the occipital bone and the posterior borders of the right and left parietal bones.
- superior and inferior temporal lines

The internal table of the calvarium presents:

1. On the median line and from anterior to posterior:

- Crest of the frontal bone (**3**)
- Groove for the superior sagittal sinus (**1**)which lodges the superior sagital sinus and its margins afford attachment to the falx cerebri

2. On the sides of the median line:

- Depressions for the convolutions of the cerebrum
- Numerous furrows for the branches of the meningeal vessels (**2**)
- On each side of the groove for the superior sagittal sinus are several granular foveolae for the arachnoid granulations
- frontal fossa- **corresponds to the frontal eminence** from the external surface
- parietal fossa- corresponds to the parietal eminence from the external surface
- parietal foramen for the passage of the emissary veins of the superior sagittal sinus

B.THE CRANIAL BASE

B.1.The internal surface of the base of the cranium

The superior surface of the base of the skull (internal surface) forms the floor of the cranial cavity and is divided into three fossae, called the **anterior**, **middle** and **posterior** cranial fossae

ANTERIOR CRANIAL FOSSA

The limits of the anterior cranial fossa are:

Anterior – the posterior wall of the frontal sinuses

Posterior- by the posterior borders of the small wings of the sphenoid and by the anterior margin of the chiasmatic groove and the anterior clinoid process.

The floor of the anterior fossa is formed by the orbital plates of the frontal, the cribriform plate of the ethmoid, the small wings and front part of the body of the sphenoid.

It is traversed by the **frontoethmoidal, sphenoethmoidal,** and **sphenofrontal sutures**

Its lateral portions or orbital plates are convex and form the roof of the orbital cavities and support the frontal lobes of the cerebrum; they are convex and marked by depressions for the brain convolutions, and grooves for branches of the meningeal vessels.

The central portion corresponds with the roof of the nasal cavity, and is markedly depressed on either side of the crista galli. It presents, in and near the median line, from before backward, the commencement of the **frontal crest** for the attachment of the falx cerebri; the **foramen cecum,** between the frontal bone and the crista galli of the ethmoid, which usually transmits a small vein from the nasal cavity to the superior sagittal sinus; behind the foramen cecum, the **crista galli,** the free margin of which affords attachment to the falx cerebri; on either side of the crista galli, the **olfactory groove** formed by the cribriform plate, which supports the olfactory bulb and presents foramina for the transmission of the olfactory nerves, and in front a slit-like opening for the nasociliary nerve.

Lateral to either olfactory groove are the internal openings of the **anterior** and **posterior ethmoidal foramina;** the anterior, situated about the middle of the lateral margin of the olfactory groove, transmits the anterior ethmoidal vessels and the nasociliary nerve; the nerve runs in a groove along the lateral edge of the cribriform plate to the slit-like opening above mentioned; the posterior ethmoidal foramen opens at the back part of this margin under cover of the projecting lamina of the sphenoid, and transmits the posterior ethmoidal vessels and nerve.

Further back in the middle line is the **ethmoidal spine,** bounded behind by a slight elevation separating two shallow longitudinal grooves which support the olfactory lobes.

Behind this is the anterior margin of the chiasmatic groove, running lateralward on either side to the upper margin of the optic foramen.

MIDDLE CRANIAL FOSSA

The middle cranial fossa, deeper than the preceding, is narrow in the middle, and wide at the sides of the skull.

It is limited:

Anterior: - by the posterior margins of the small wings of the sphenoid,
- the anterior clinoid processes, and the ridge forming the anterior margin of the chiasmatic groove;

Posterior: - by the superior margins of the petrous portions of the temporals
- the dorsum sellæ;

Lateral : - by the temporal squamæ,
- the sphenoidal angles of the parietals,
- the great wings of the sphenoid.

It is traversed by the **squamosal, sphenoparietal, sphenosquamosal,** and **sphenopetrosal sutures.**

The middle part of the middle cranial fossa presents, in *front,* the **chiasmatic groove** and **tuberculum sellæ;** the chiasmatic groove ends on either side at the **optic foramen**.

Behind the optic foramen the **anterior clinoid process** is directed backward and medialward and gives attachment to the tentorium cerebelli.

Behind the tuberculum sellæ is a deep depression, the **sella turcica,** containing the **fossa hypophyseos,** which lodges the hypophysis, and presents on its anterior wall the **middle clinoid processes.** The sella turcica is bounded posteriorly by a quadrilateral plate of bone, the **dorsum sellæ,** the upper angles of which are surmounted by the **posterior clinoid processes:** these afford attachment to the tentorium cerebelli

On either side of the sella turcica is the **carotid groove,** which is broad, shallow, and curved somewhat like the italic letter *f.* It begins behind at the foramen lacerum, and ends on the medial side of the anterior clinoid process, where it is sometimes converted into a foramen (*carotico-clinoid*) by the union of the anterior with the middle clinoid process; posteriorly, it is bounded laterally by the **lingula.** This groove lodges the

cavernous sinus and the internal carotid artery, the latter being surrounded by a plexus of sympathetic nerves.

The lateral parts of the middle fossa are of considerable depth, and support the temporal lobes of the brain. They are marked by depressions for the brain convolutions and traversed by furrows for the anterior and posterior branches of the middle meningeal vessels. These furrows begin near the foramen spinosum, and the anterior runs forward and upward to the sphenoidal angle of the parietal, where it is sometimes converted into a bony canal; the posterior runs lateralward and backward across the temporal squama and passes on to the parietal near the middle of its lower border.

The following apertures are also to be seen. In front is the **superior orbital fissure,** bounded above by the small wing, below, by the great wing, and medially, by the body of the sphenoid; it is usually completed laterally by the orbital plate of the frontal bone.
Behind the medial end of the superior orbital fissure is the **foramen rotundum**.
Behind and lateral to the foramen rotundum is the **foramen ovale**.
Medial to the foramen ovale is the **foramen Vesalii,** which varies in size in different individuals, and is often absent; when present, it opens below at the lateral side of the scaphoid fossa, and transmits a small vein.
Lateral to the foramen ovale is the **foramen spinosum**.
Medial to the foramen ovale is the **foramen lacerum;** in the fresh state the lower part of this aperture is filled up by a layer of fibrocartilage, while its upper and inner parts transmit the internal carotid artery surrounded by a plexus of sympathetic nerves.
On the anterior surface of the petrous portion of the temporal bone are seen the eminence caused by the projection of the superior semicircular canal; in front of and a little lateral to this a depression corresponding to the roof of the tympanic cavity; the groove leading to the **hiatus of the facial canal,** beneath it, the smaller groove, for the passage of the lesser superficial petrosal nerve; and, near the apex of the bone, the depression for the semilunar ganglion and the orifice of the carotid canal.

POSTERIOR CRANIAL FOSSA

The posterior cranial fossa is the largest and deepest of the three.
It is limited:

Anterior :

- near the median line by the dorsum sellæ of the sphenoid
- on either side by the superior angle of the petrous portion of the temporal bone. This angle gives attachment to the tentorum cerebelli, is grooved for the superior petrosal sinus, and presents at its medial end a notch upon which the trigeminal nerve rests

Posterior:

- by the grooves for the transverse sinuses

It is formed by the dorsum sellæ and clivus of the sphenoid, the occipital, the petrous and mastoid portions of the temporals, and the mastoid angles of the parietal bones; It is crossed by the **occipitomastoid** and the **parietomastoid sutures,** and lodges the cerebellum, pons, and medulla oblongata.
In its center is the **foramen magnum,** on either side of which is a rough tubercle for the attachment of the alar ligaments; a little above this tubercle is the hypoglossal canal, which transmits the hypoglossal nerve and a meningeal branch from the ascending pharyngeal artery. In front of the foramen magnum the basilar portion of the occipital and the posterior part of the body of the sphenoid form a grooved surface which supports the medulla oblongata and pons. This grooved surface is separated on either side from the petrous portion of the temporal by the **petro-occipital fissure,** which is occupied in the fresh state by a plate of cartilage; the fissure is continuous behind with the jugular foramen, and its margins are grooved for the inferior petrosal sinus.

B.2.EXTERNAL SURFACE OF THE BASE OF THE CRANIUM

The external surface of the base of the cranium is a complex region which is divided conventional in three zones: anterior, middle and posterior.

The anterior zone is separated from the middle one by the posterior border of the hard palate.

The anterior zone is covered by the postero-inferior surface of the viscerocranium. The middle zone is separated from the posterior by a transversal plane that passes through the anterior border of the foramen magnum.
The posterior zone

MIDDLE AREA OF THE EXTERNAL SURFACE OF THE BASE OF THE CRANIUM
Extends from the posterior border of the hard palatum to the conventional line that passes through the anterior border of the foramen magnum.
It consists of:
-A small area represented by a part of the inferior surface of the sphenoidal bone which continues with the basilar part of the occipital bone
-Pharyngeal tubercle of the occipital bone
-Vomero-rostral canal between the rostrum of the sphenoid bone and vomer
-Pterygoid processes with the medial and lateral plates; scaphoid fossa on the lateral side of the base of the medial pterygoid plate; pterygoid hamulus at the lower extremity of the medial plate; pterygoid fossa; pterygoid canal in the point of junction between the pterygoid process, greater wings and body of thr sphenoid bone,
-Palatovaginal canal situated between the vaginal process of the sphenoid bone and the sphenoidal process of the palatine bone,
-Foramen ovale of the greater wing of the sphenoid bone,
-Foramen spinosum of the greater wing of the sphenoid bone,
-Foramen venosum and foramen petrosum (inconstant),
-Sphenoidal spine postero- lateral to the foramen spinosum,
-Sulcus tubæ auditivæ, between the petrous part of the temporal and the great wing of the sphenoid. This sulcus is directed lateralward and backward from the root of the medial pterygoid plate and lodges the cartilaginous part of the auditory tube
-Foramen lacerum,

POSTERIOR ZONE OF THE EXTERNAL SURFACE OF THE BASE OF THE CRANIUM
Is limited anterior by the conventional line that passes through the anterior border of the foramen magnum.
It consists of:
foramen magnum, bounded laterally by the occipital condyles, the medial sides of which are rough for the attachment of the alar ligaments,
In front of each condyle is the hypoglossal canal,
Behind each condyle is the condyloid fossa, perforated on one or both sides by the condyloid canal,
jugular foramen, a large aperture, formed in front by the petrous portion of the temporal, and behind by the occipital; it is generally larger on the right than on the left sideOn the ridge of bone dividing the carotid canal from the jugular foramen is the inferior tympanic canaliculus,
on the wall of the jugular foramen, near the root of the styloid process, is the mastoid canaliculus
aquæductus cochleæ, situated medial to the external orifice of the carotid canal
On the ridge of bone dividing the carotid canal from the jugular foramen is the inferior tympanic canaliculus for the transmission of the tympanic branch of the glossopharyngeal nerve
Styloid process of the temporal bone and the vagina of it

Stylomastoid foramen
-Apex of the mastoid part of the temporal bone. Medial to it there are the mastoid noch for the attachment of the posterior belly of the digastric muscle and the groove for the occipital artery
-Behind the foramen magnum is the median nuchal line ending above at the external occipital protuberance, while on either side are the superior and inferior nuchal lines; these, as well as the surfaces of bone between them, are rough for the attachment of the muscles

2.THE VISCEROCRANIUM

The viscerocranium represents the skeleton of the face and consists of:
1.an upper part which is fixed to the calvaria and to the anterior part of the base of the cranium
2.an inferior part represented by the mandible

The facial bones (viscerocranium) are:

-Zygomatic (2) – Forms the cheek bones of the face, and articulates with the frontal, sphenoid, temporal and maxilla bones.
-Lacrimal (2) – The smallest bones of the face. They form part of the medial wall of - the orbit.
-Nasal (2) – Two slender bones, located at the bridge of the nose.
-Inferior nasal conchae (2) – Located within the nasal cavity, these bones increase the surface area of the nasal cavity, thus increasing the amount of inspired air that can come into contact with the cavity walls.
-Palatine (2) – Situated at the rear of oral cavity, and forms part of the hard palate.
-Maxilla (2) – Comprises part of the upper jaw and hard palate.
-Vomer (1) – Forms the posterior aspect of the nasal septum.
-Mandible (jaw bone)(1) – Articulates with the base of the cranium at the temporomandibular joint

The viscerocranium presents 5 surfaces:

1.**Anterior surface:**

- is limited -inferior by the inferior border of the mandible
- superior by the orizontal plane that passes through the fronto-zygomatic suture
- on the median line consists of:
- fronto-nasal suture
- internasal suture
- anterior nasal aperture
- anterior nasal spine
- intermaxillary suture
- mental protuberance
- on the sides of the median line it presents:
- opening of the orbital cavities
- body of the maxilla with the infraorbital foramen, frontal process, canine fossa
- anterior surface of the body of the mandible with the mental protuberance,mental foramen and the alveolar part

2. **Postero -inferior surface** consists of:
- posterior nasal apertures (choanae)separated by the vomer
- hard palate formed by palatine processes of the maxillae and horizontal plates of the palatine bones. It presents the incisive foramen, greater and lesser palatine orifices

- incisive fossa with the inferior opening of the incisive canal is represented by two incisive orifices
- the cruciate suture formed by the junction of the two palatine processes of the maxillae and the two horizontal plates of the palatine bones
- posterior nasal spine
- posterior surface of the body of the mandible
-alveolar process of the maxilla

3.**Superior surface** is adderent to the external surface of the base of the cranium.

4.**Lateral surfaces (2):**
- are formed by the zygomatic bones and the ramus of the mandible
- consists of:
  - sutures of the zygomatic bone with the frontal, temporal and maxillary bones
  - zygomatic arch
  - lateral surface of the ramus of the mandible (coronoid process, condylar process, mandibular noch)

THE TEMPORAL FOSSA

The **temporal fossa** is a shallow depression on the side of the skull bounded by the temporal lines and terminating below the level of the zygomatic arch.

LIMITS:

-superior and posterior by the temporal lines;
-anterior by the frontal and zygomatic bones, and opening on the back of the latter is the **zygomaticotemporal foramen.**
-lateral the fossa is limited by the zygomatic arch, formed by the zygomatic and temporal bones;
-inferior, it is separated from the infratemporal fossa by the **infratemporal crest** on the great wing of the sphenoid, and by a ridge, continuous with this crest, which is carried backward across the temporal squama to the anterior root of the zygomatic process.

In front and below, the fossa communicates with the orbital cavity through the **inferior orbital fissure**

The floor of the fossa is deeply concave in front and convex behind, and is formed by the zygomatic, frontal, parietal, sphenoid, and temporal bones.

The temporal fossa contains the Temporalis muscle and its vessels and nerves, together with the zygomaticotemporal nerve.

Communications of the temporal fossa:

With neighbor regions, frontal, parietal, and occipital;

With infratemporal fossa

With the orbit by the zygomaticotemporal canal.

THE INFRATEMPORAL FOSSA

The infratemporal fossa is an irregularly shaped cavity, situated below and medial to the **zygomatic arch.**
It is bounded:
anterior, by the infratemporal surface of the maxilla and the ridge which descends from its zygomatic process;
posterior, by the articular tubercle of the temporal and the spinal angularis of the sphenoid;
superior, by the great wing of the sphenoid below the infratemporal crest, and by the under surface of the temporal squama;
inferior, by the alveolar border of the maxilla;
medial, by the lateral pterygoid plate.
lateral, by the zygomatic arch, temporal surface of the zygomatic bone and the medial surface of the ramus of the mandible

-The infratemporal fossa contains the lower part of the temporalis, the pterygoidei internus and externus muscles, the internal maxillary vessels, and the mandibular and maxillary nerves.
-The foramen ovale and foramen spinosum open on its roof, and the alveolar canals on its anterior wall.
-At its upper and medial part are two fissures, which together form a T-shaped fissure, the horizontal limb being named the inferior orbital, and the vertical one the pterygomaxillary.

Communications of the infratemporal fossa with:

- neurocranium by the foramen ovale and foramen spinosum;
- the orbit by the inferior orbital fissure and zygomatic canal;
- temporal fossa by lateral part of the superior wall;
- facial regions by zygomatic canal;
- pterygopalatinal fossa by the anterosuperior part of the medial wall;
- the alveolae of superior teeth by the openings of the alveolar canals;
- alveolae of the inferior teeth by the opening of the dental canal (inferior alveolar canal);
- neighboring regions by the missing posterior and inferior walls, respectively with parotidian, mastoidian and inframandibular regions.

PTERYGOPALATINE FOSSA

The pterygopalatine fossa is a small, triangular space at the angle of junction of the inferior orbital and pterygomaxillary fissures, and placed beneath the apex of the orbit.
It is bounded:
- superior by the under surface of the body of the sphenoid and by the orbital process of the palatine bone;
- anterior, by the infratemporal surface of the maxilla;
- posterior, by the base of the pterygoid process and lower part of the anterior surface of the great wing of the sphenoid;
- medial, by the vertical part of the palatine bone with its orbital and sphenoidal processes.

Pterygopalatine fossa communicates:
-with the orbit by the inferior orbital fissure,
-with the nasal cavity by the sphenopalatine foramen,
-with the infratemporal fossa by the pterygomaxillary fissure.

Five foramina open into pterygopalatine fossa.

Of these, three are on the posterior wall, the foramen rotundum, the pterygoid canal, and the pharyngeal canal, in this order downward and medialward.
On the medial wall is the sphenopalatine foramen, and below is the superior orifice of the pterygopalatine canal. The fossa contains the maxillary nerve, the sphenopalatine ganglion, and the terminal part of the internal maxillary artery.
(Bolintineanu A et al)

THE ORBITAL CAVITIES

-The orbits are two quadrilateral pyramidal cavities, situated at the upper and anterior part of the face, on the sides of the top of the nasal pyramid.
-The orbital cavities are occupied by the eyes and associated muscles, nerves, blood vessels, fat, and much of the lacrimal apparatus.
Each orbital cavity presents for examination a **roof,** a **floor,** a **medial** and a **lateral wall,** a **base,** an **apex** and four **borders**

The **base** of the orbit, quadrilateral in shape, is formed:

-superior by the supraorbital arch of the frontal bone, in which is the **supraorbital notch** or **foramen** for the passage of the supraorbital vessels and nerve ;
- ***inferior*** by the zygomatic bone and maxilla, united by the zygomaticomaxillary suture;
-**laterally** by the zygomatic bone and the zygomatic process of the frontal joined by the zygomaticofrontal suture;
- **medially** by the frontal bone and the frontal process of the maxilla united by the frontomaxillary suture.

The apex is situated at the back of the orbit,
-It corresponds to the optic foramen a short, cylindrical canal, which transmits the optic nerve and ophthalmic artery.
-Around the optic foramen there is the annulus tendinious of Zinn which represents the origin of the ocular muscles, and diverge from it to the bulb of the eye

The **roof** is concave, directed downward, and slightly forward, and formed:
- anterior by the orbital plate of the frontal;
- posterior by the small wing of the sphenoid.

It presents:
- *medially* the **trochlear fovea** for the attachment of the cartilaginous pulley of the Obliquus oculi superior;
- *laterally,* the **lacrimal fossa** for the lacrimal gland;
- *posteriorly,* the suture between the frontal bone and the small wing of the sphenoid.

The roof of the orbital cavity separates the content of it from the anterior cranian fossa
Posterior, in the point of junction between the roof and the medial wall of the orbital cavity is the optic canal, which is delimited by the roots of the lesser wings of the sphenoid bone and limited medial by the body of the sphenoid bone.

The **medial wall** is nearly vertical, and is formed from before backward by:
-the frontal process of the maxilla,
- the lacrimal bone,
-the lamina papyracea of the ethmoid,
-a small part of the body of the sphenoid in front of the optic foramen.
The medial wall exhibits three vertical sutures, the lacrimomaxillary, lacrimoethmoidal, and sphenoethmoidal.

In front of the wall is seen the **lacrimal groove,** which lodges the lacrimal sac. The lacrimal groove is limited anterior by the **anterior lacrimal crest** of the maxilla and behind the groove is the **posterior lacrimal crest** of the lacrimal bone **.**

At the junction of the medial wall and the roof are the frontomaxillary, frontolacrimal, frontoethmoidal, and sphenofrontal sutures.

The point of junction of the anterior border of the lacrimal with the frontal is named the **dacryon.** In the frontoethmoidal suture are the **anterior** and **posterior ethmoidal foramina,** the former transmitting the nasociliary nerve and anterior ethmoidal vessels, the latter the posterior ethmoidal nerve and vessels.

The **lateral wall,** directed medialward and forward is formed by:
- the orbital process of the zygomatic
- the orbital surface of the great wing of the sphenoid;

These are united by the sphenozygomatic suture which terminates below at the front end of the inferior orbital fissure.
On the orbital process of the zygomatic bone are the orbital tubercle (Whitnall) and the orifices of one or two canals which transmit the branches of the zygomatic nerve.

Between the roof and the lateral wall, near the apex of the orbit, is the **superior orbital fissure.** Through this fissure the oculomotor, the trochlear, the ophthalmic division of the trigeminal with its branches (frontal, lacrimal, nasocilliary), and the abducent nerves, sympathetic branches from the ophthalmic ganglion, superior ophthalmic vein and branches from the middle meningeal artery.
The lateral wall and the floor are separated posteriorly by the **inferior orbital fissure** which transmits the maxillary nerve and its zygomatic branch, the infraorbital vessels, and the ascending branches from the sphenopalatine ganglion and inferior ophthalmic vein.

The **floor** is directed upward and lateralward, and is of less extent than the roof.
It is formed by:
- *anterior*, chiefly by the orbital surface of the maxilla;
- *lateral,* by the orbital process of the zygomatic bone,
- *posterior and medial* by the orbital process of the palatine.

At its medial angle is the upper opening of the nasolacrimal canal.
On its lateral part is the suture between the maxilla and zygomatic bone, and at its posterior part that between the maxilla and the orbital process of the palatine.
Running forward near the middle of the floor is the **infraorbital groove,** ending in front in the infraorbital canal and transmitting the infraorbital nerve and vessels.
Posterior, between the floor and the lateral wall of the orbital cavity is the inferior orbital fissure through the orbital cavity communicates with the pterygopalatine fossa.

BORDERS OF THE ORBITAL CAVITY

1. **Supero-medial border** is located between the superior wall and the medial wall of the orbital cavity and represents the suture between the orbital plate of the frontal bone with the frontal process of the maxilla, the lacrimal bone and the orbital plate of the ethmoid bone. Corresponding to the posterior part of this border there is the optic foramen.
2. **Supero-lateral border** is located between the superior and the lateral walls and presents posterior the superior orbital fissure.
3. **Infero-medial border** is situated between the inferior wall and the medial one. This border presents anterior the superior orifice of the nasolacrimal canal.
4. **Infero-lateral border** is situated between the inferior and the lateral walls. This border presents posterior the inferior orbital fissure.

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