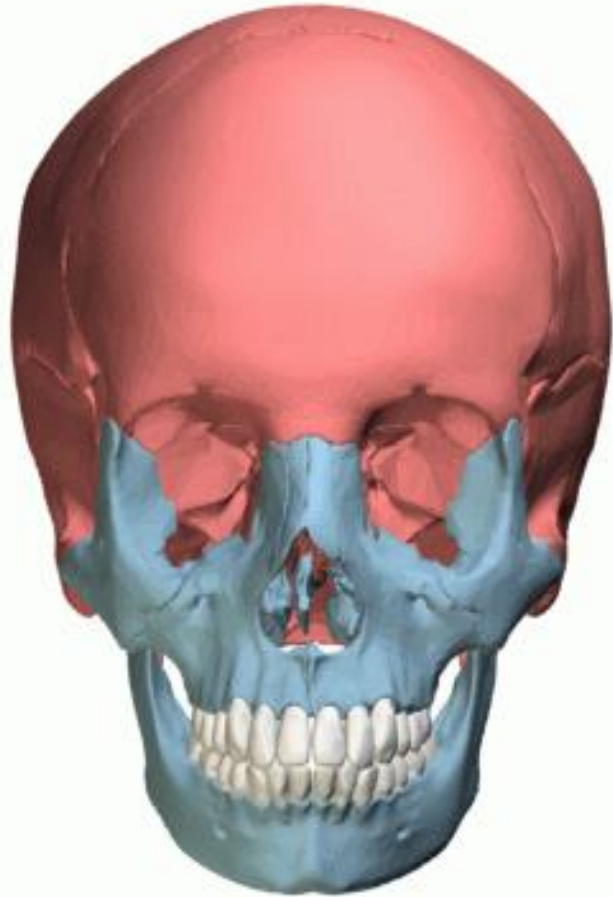




Human Anatomy - 2nd year



Normas Of Skull
Lecture (2)
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Objective learning

At the end of lecture you should be able to

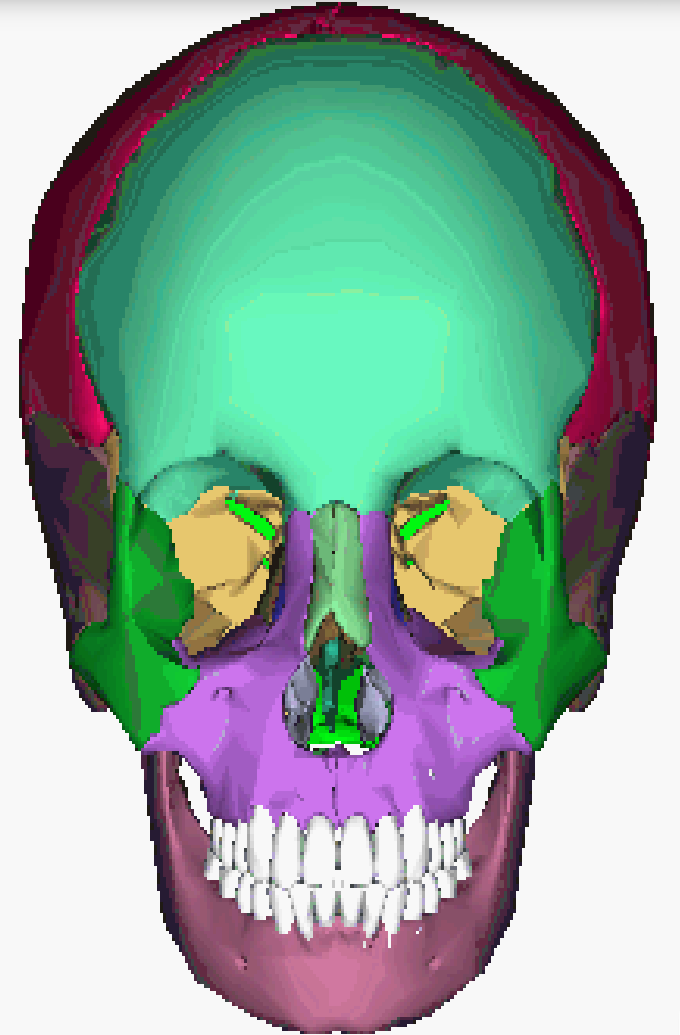
- 1. Recognize different normas of the skull(Verticalis ,occipitalis ,frontalis ,lateralis and basalis)**
- 2. Describe and list the structures seen in each Norma.**



Norma Verticalis

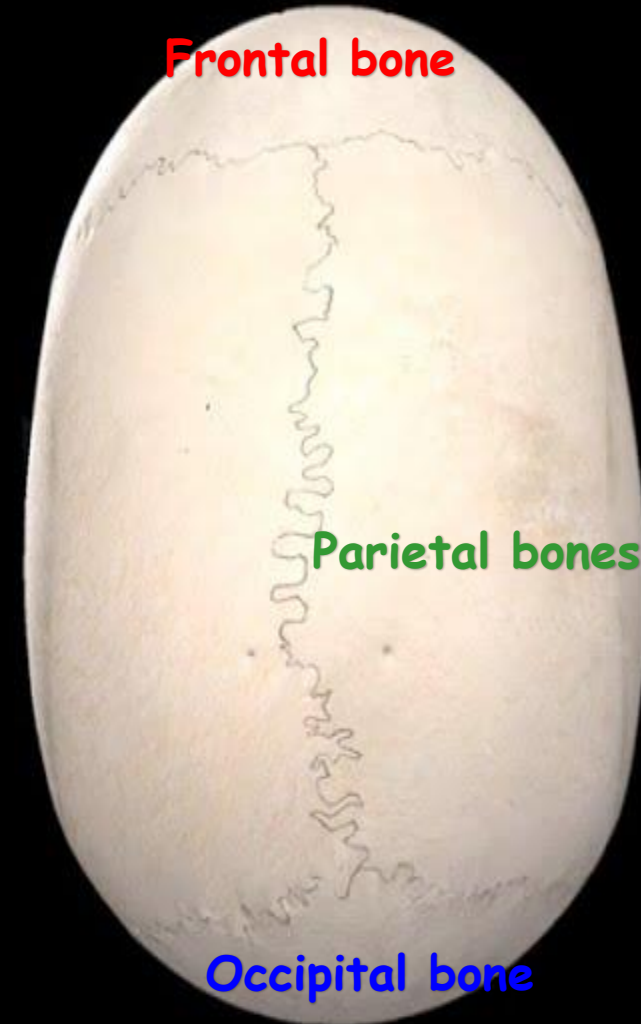
The skull as a whole may be viewed from different points, and the views so obtained are termed the **normæ** of the skull .It may be examined from

1. Above (norma verticalis)
2. Below (norma basalis),
3. Side (norma lateralis),
4. Behind (norma occipitalis)
5. Front (norma frontalis).



Norma Verticalis

- . When skull is viewed from above the outline presented varies greatly in different skulls; in some it is more or less oval, in others more nearly circular
- . **Frontal bone**: (squamous part) anteriorly.
- . **Parietal bones**: (coupled) on every side of midline.
- . **Occipital bone** :(squamous part) posteriorly.

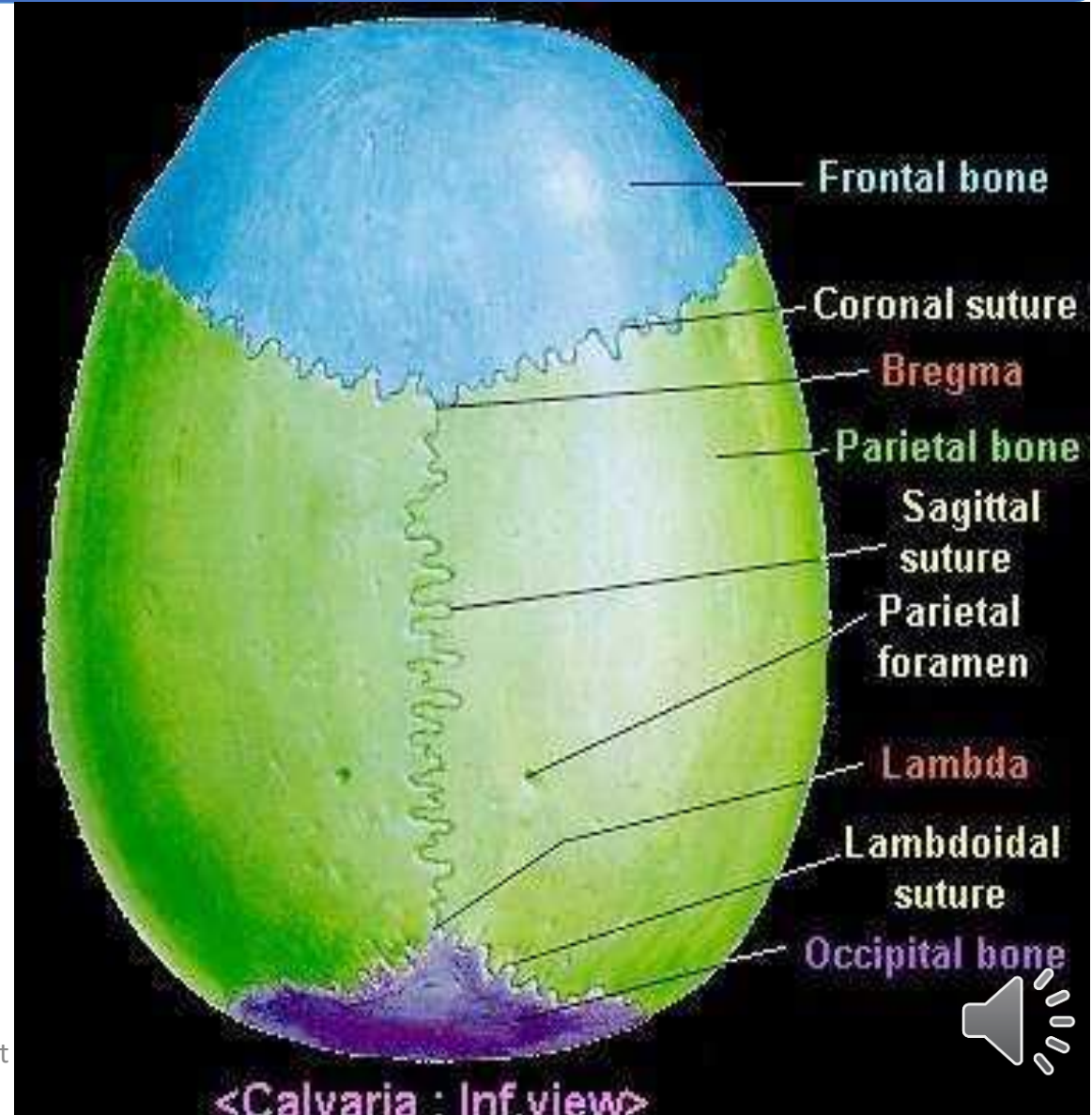


**Norma
Verticalis**



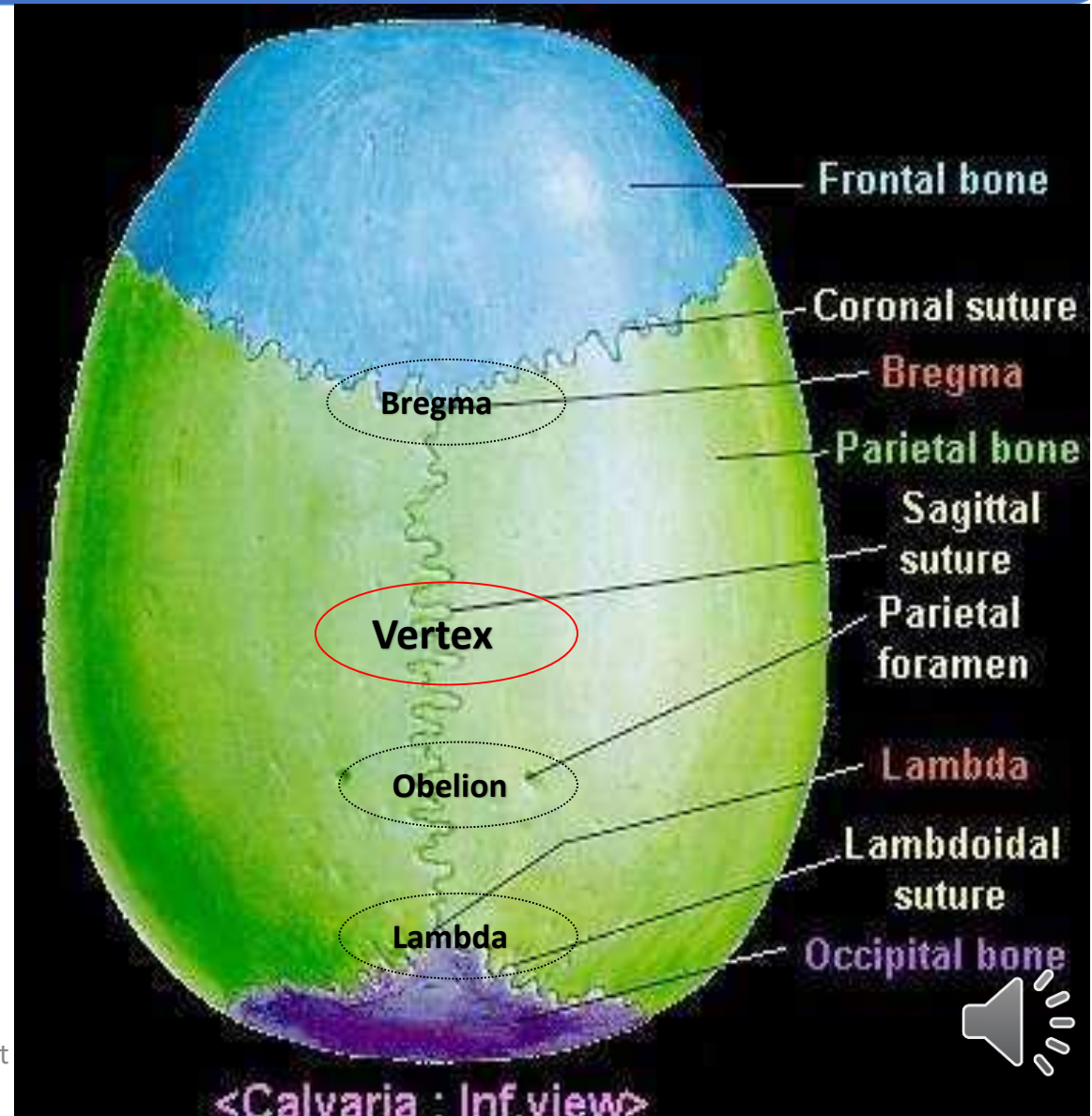
Norma Verticalis

- .
- The surface is traversed by three sutures.
- (1) **coronal suture**, nearly transverse is direction, between the frontal and parietals
- (2) **sagittal suture**, medially placed, between the parietal bones.
- (3) the upper part of the **lambdoidal suture**, between the parietals and the occipital.



Norma verticalis

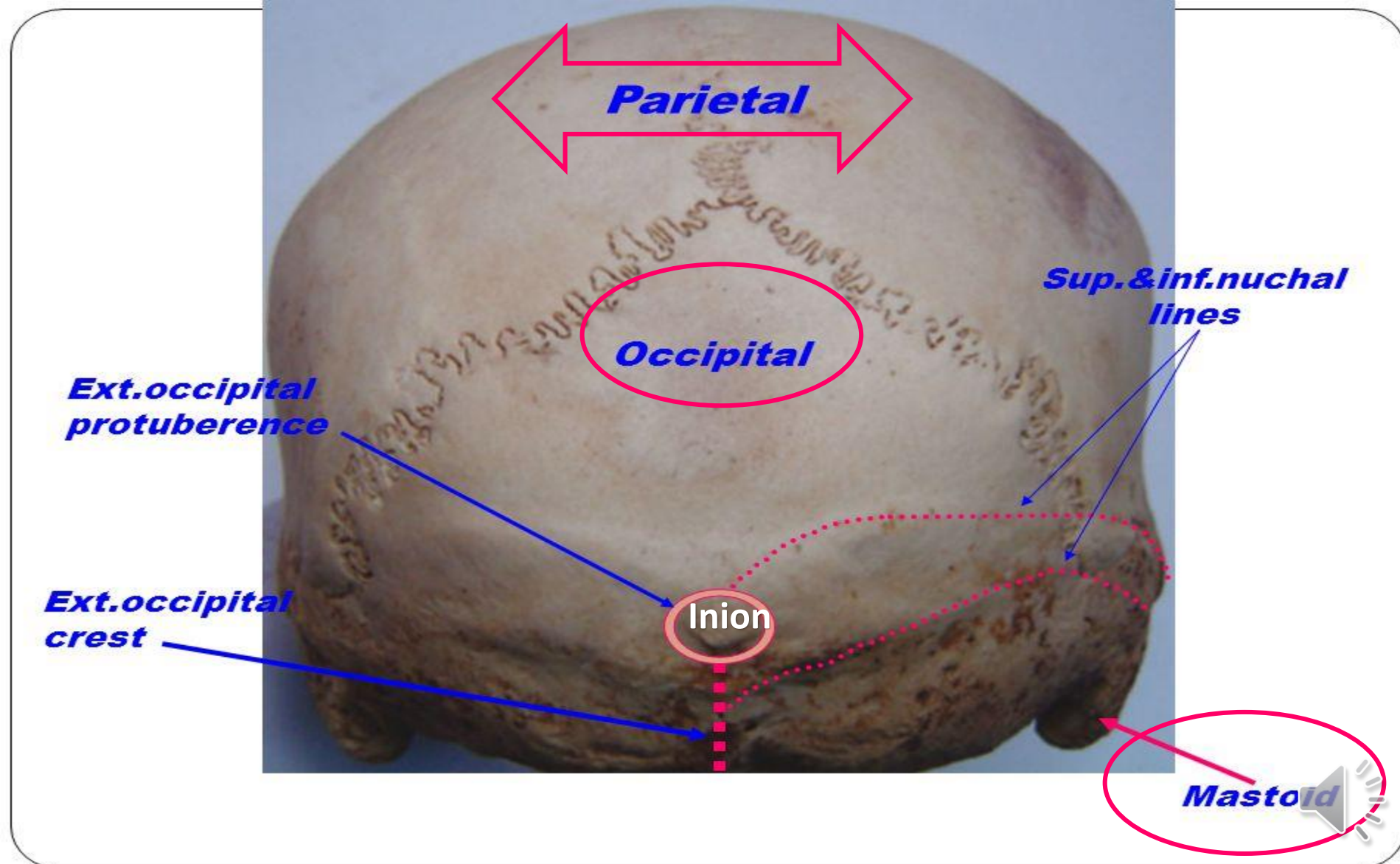
- **Bregma:** a point at which coronal and sagittal sutures are met.
- **Parietal eminence/tuber:** an area of maximum convexity of parietal bone.
- **Vertex:** the maximum point on the skull. It is located on the sagittal suture near its middle and is situated several centimeters behind the bregma.
- **Parietal foramen:** It's a small foramen in parietal bone near sagittal suture, 2.5-4 cm in front of lambda.
- **Obelion** is applied to that point of the sagittal suture which is on a level with the foramina .
- **Lambda** : a point at which sagittal and lambdoid sutures are met .



Norma Occipitalis

The bones observed in this view are :

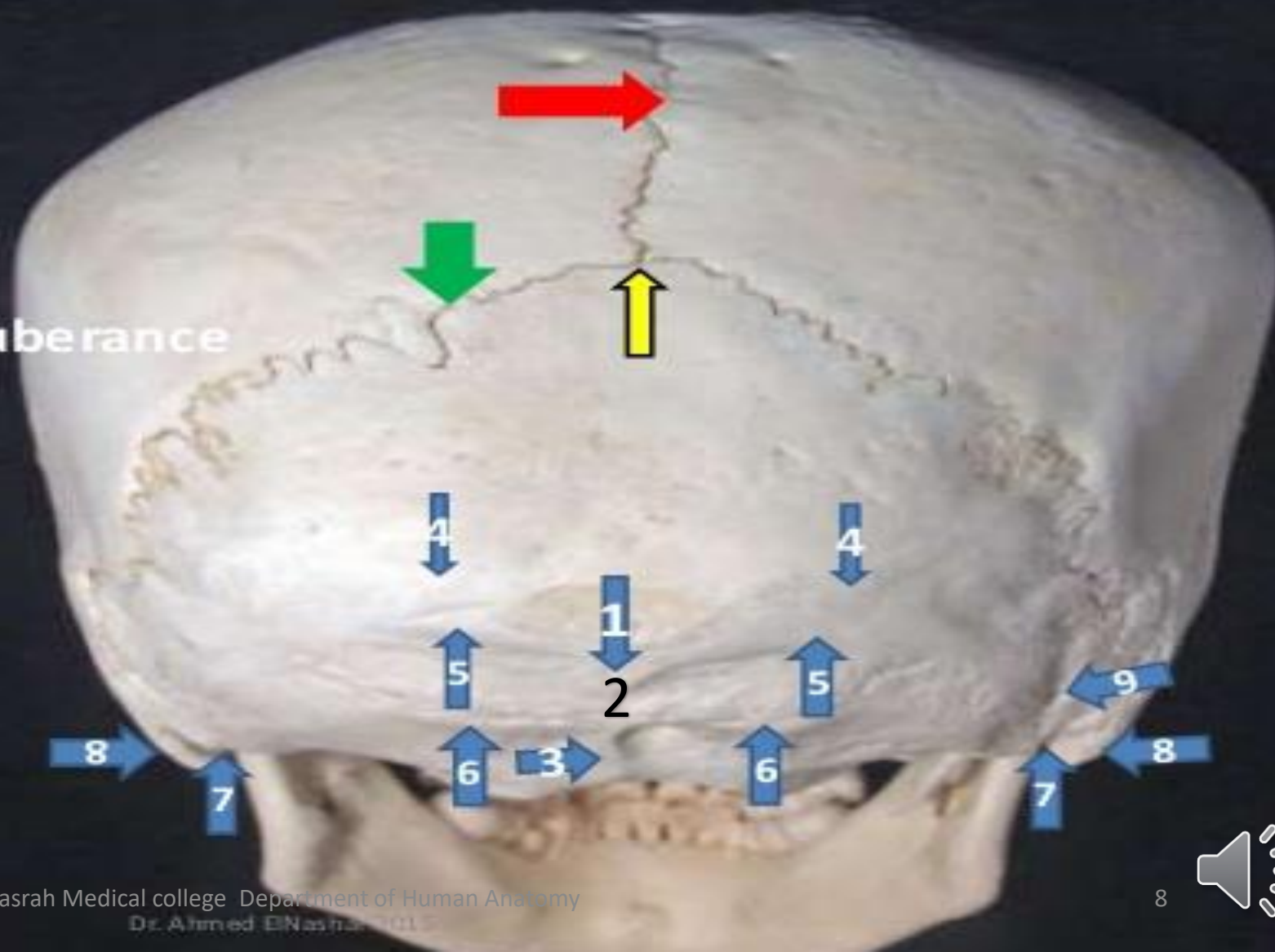
1. Parietal
2. Occipital
3. Mastoid process of temporal bone.



Norma Occipitalis

- **Sagittal suture**
- **Lambdoid suture**
- **Lambda**

1. External occipital protuberance
2. inion
3. External occipital crest
4. Highest nuchal line
5. Sup nuchal line
6. Inferior nuchal line
7. Mastoid notch
8. Mastoid process
9. Mastoid foramen



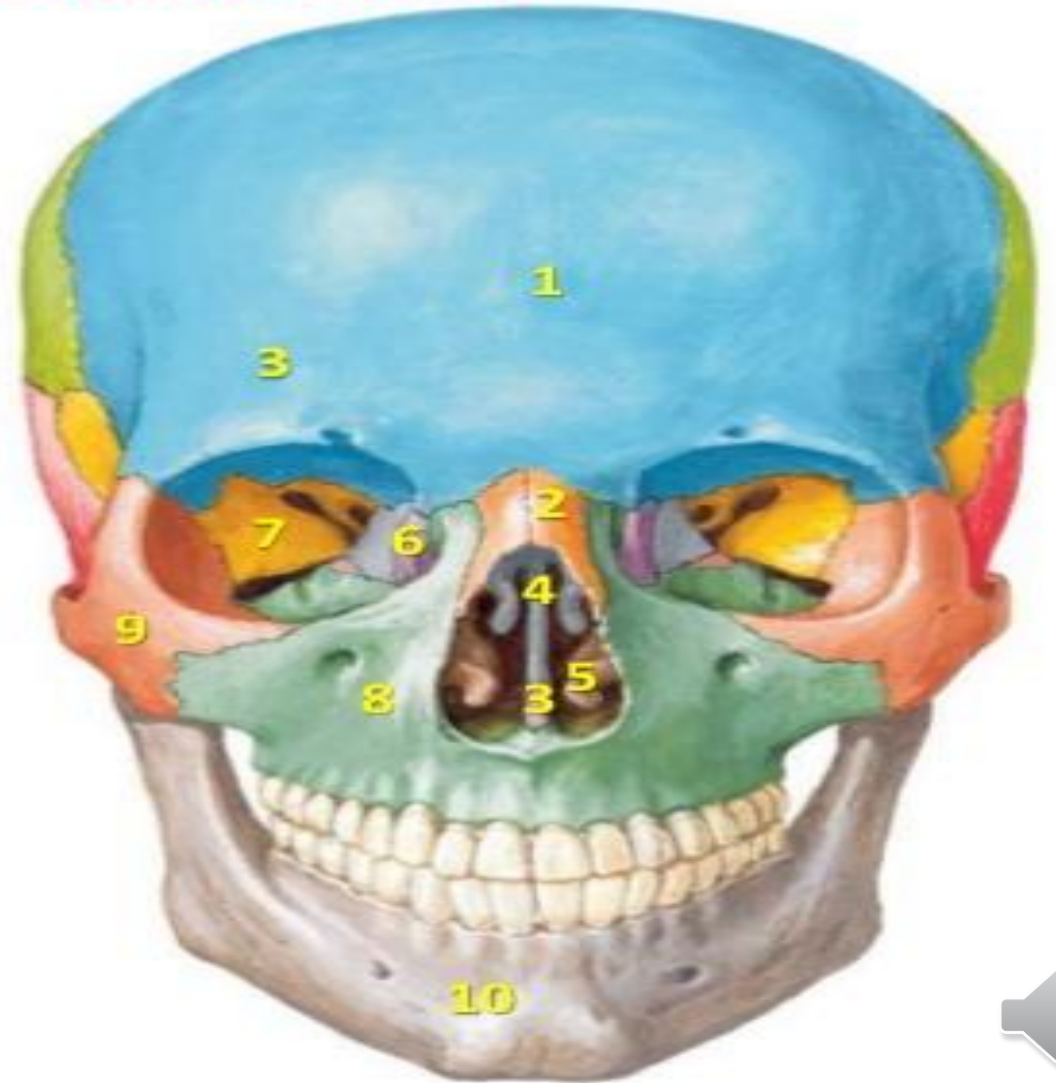
Norma Frontalis

NORMA FRONTALIS "The skull viewed from the front"

- Viewed from the front, the forehead, orbit, nasal region, maxillae & mandible are the prominent features of the skull.

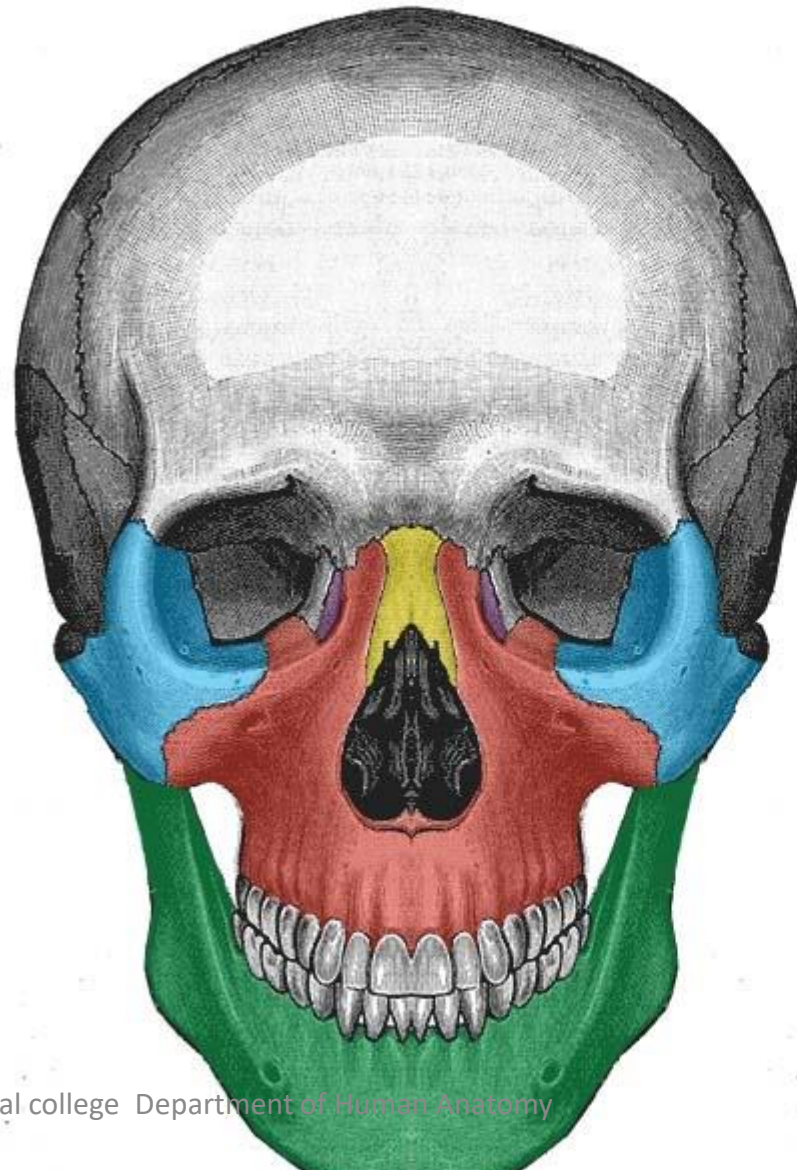
- **Visible bones:**

1. The frontal bone.
2. Nasal bone.
3. Vomer bone.
4. Ethmoid bone
5. inferior turbinates.
6. Lacrimal bone.
7. Sphenoid bone.
8. The maxillae.
9. The zygomatic bones.
10. The mandible.



Norma Frontalis(Bones)

- . Frontal bone
- . Nasal bones
- . Maxillae
- . Zygomatic
- . Mandible

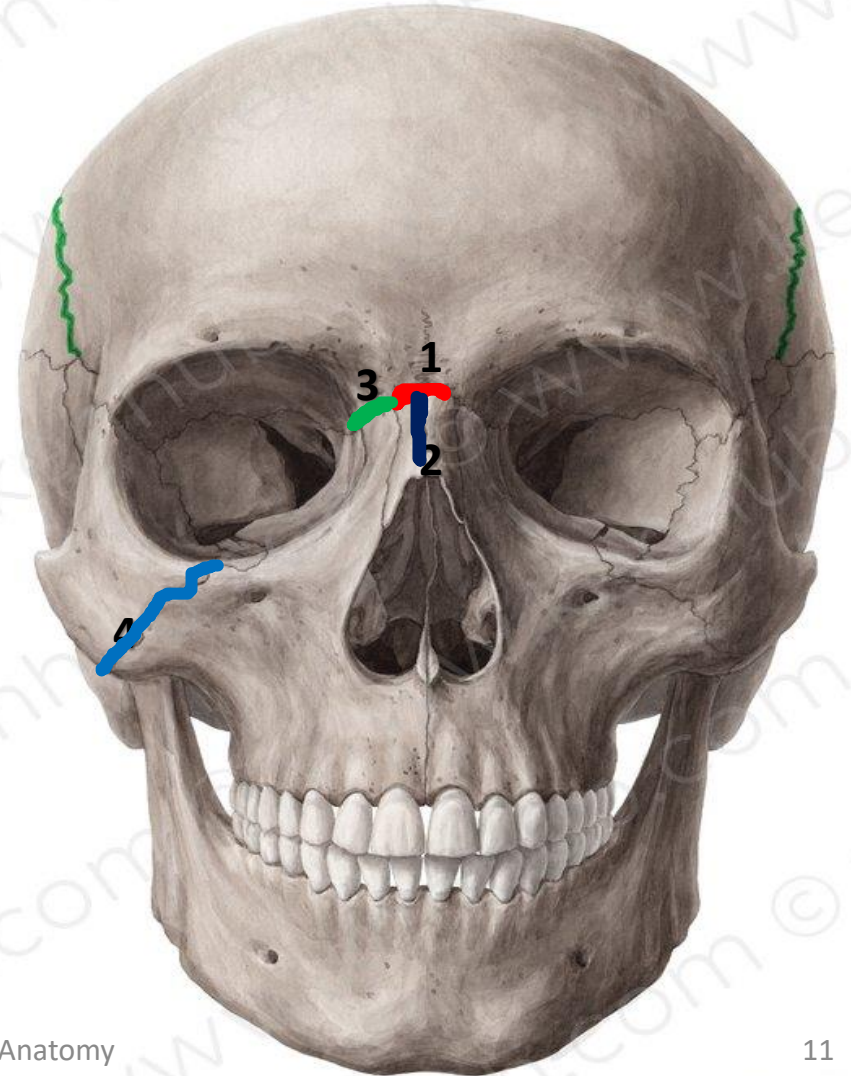


-  Zygomatic
-  Maxilla
-  Nasal
-  Lacrimal
-  Mandible



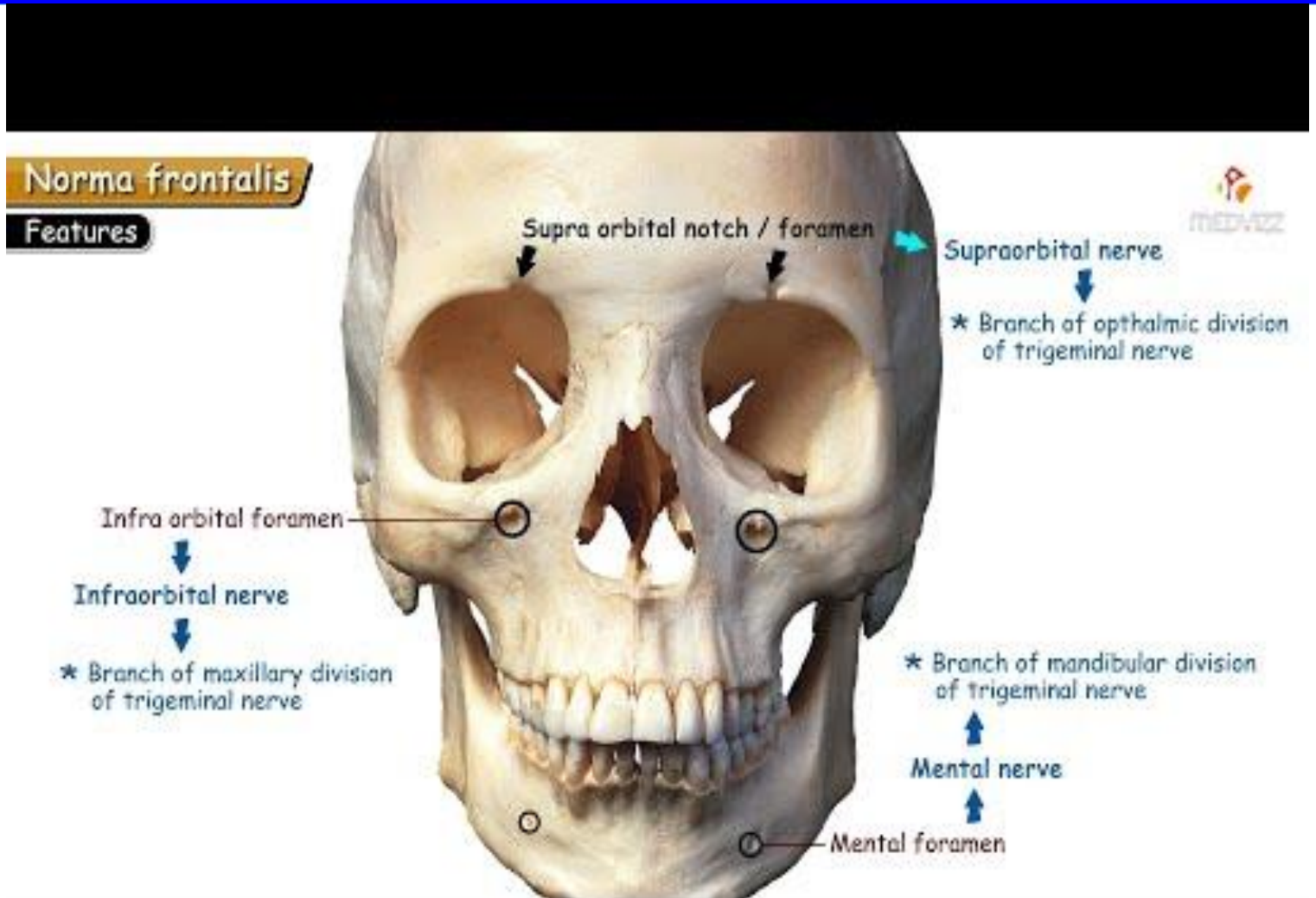
Norma Frontalis (Sutures)

1. **Frontonasal.**
2. **Internasal.**
3. **Frontomaxillary.**
4. **Zygomaticomaxillary.**



Norma Frontalis (Boney landmarks)

1. Supra orbital notch \ foramen
2. Infra orbital foramen.
3. Mental foramen



Norma Frontalis (Boney landmarks)

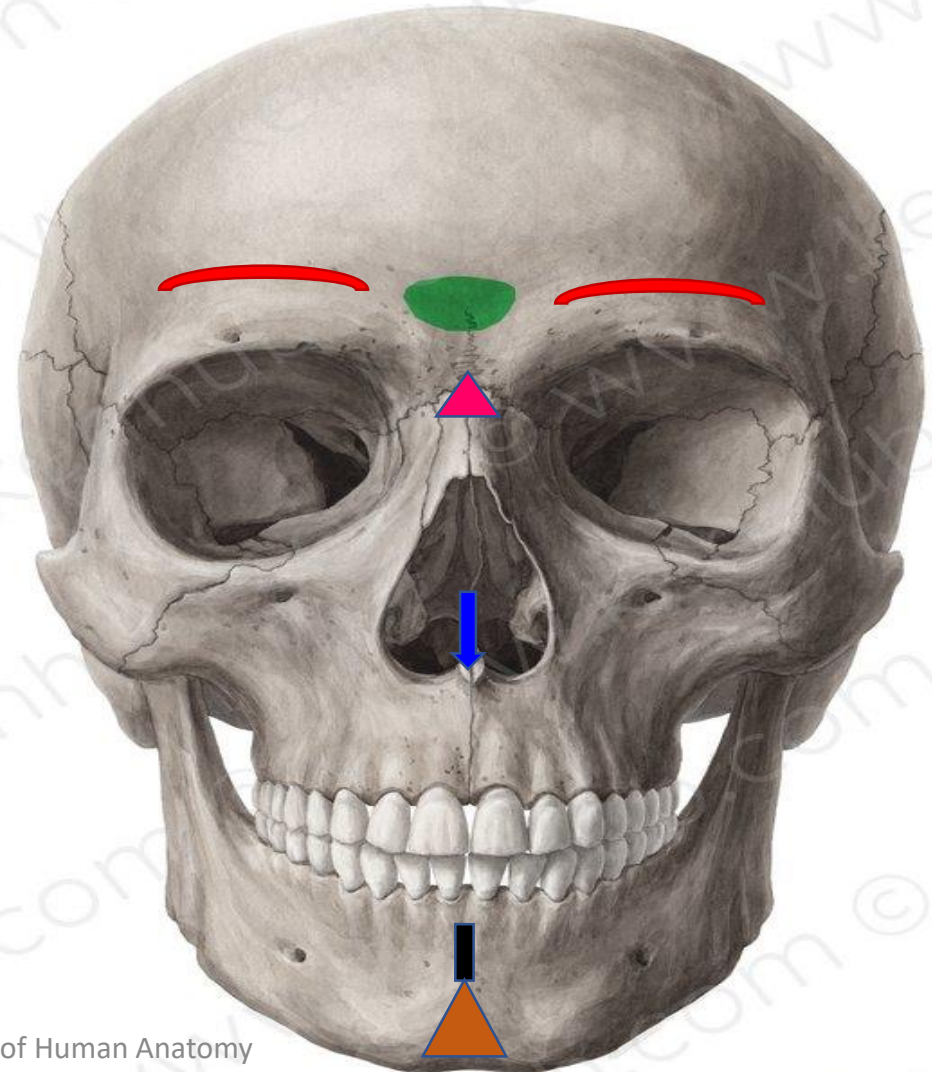
*Glabella

*superciliary arches.

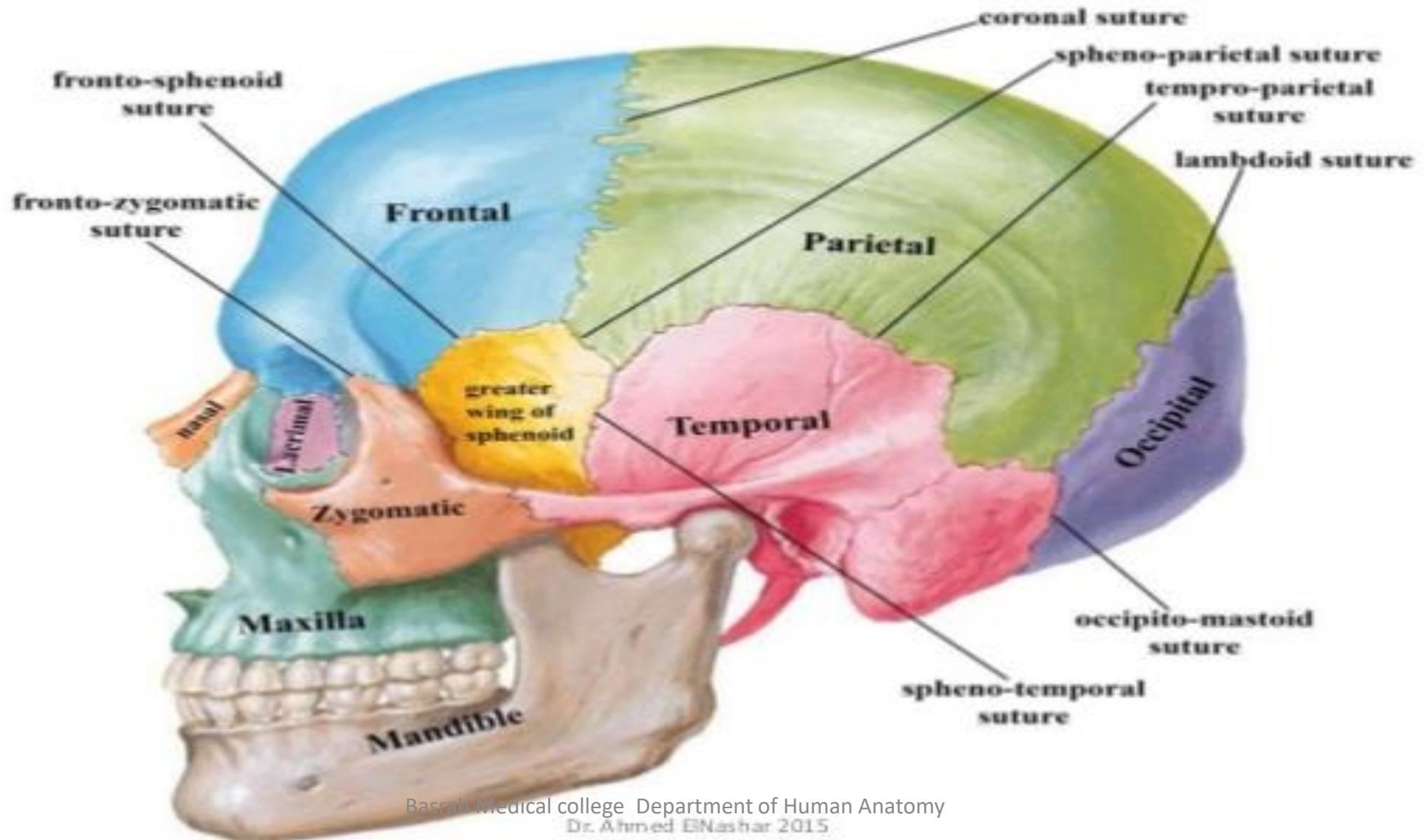
*Nasion, a median point in the root of the

*Anterior nasal spine,
Symphysis mentii

*Mental protuberance
and tubercles



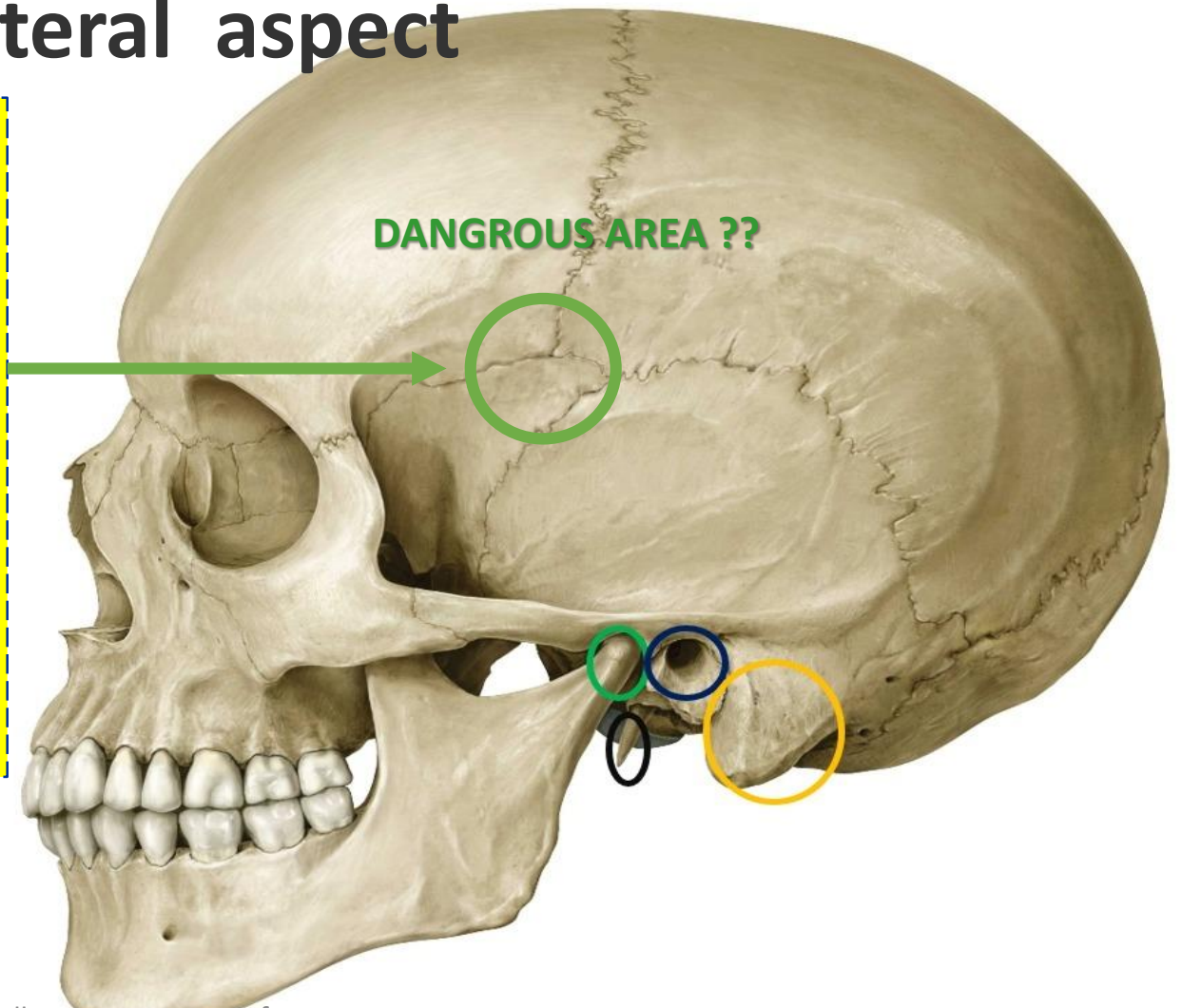
Norma Lateralis (Bones)



Norma Lateralis (Boney landmarks)

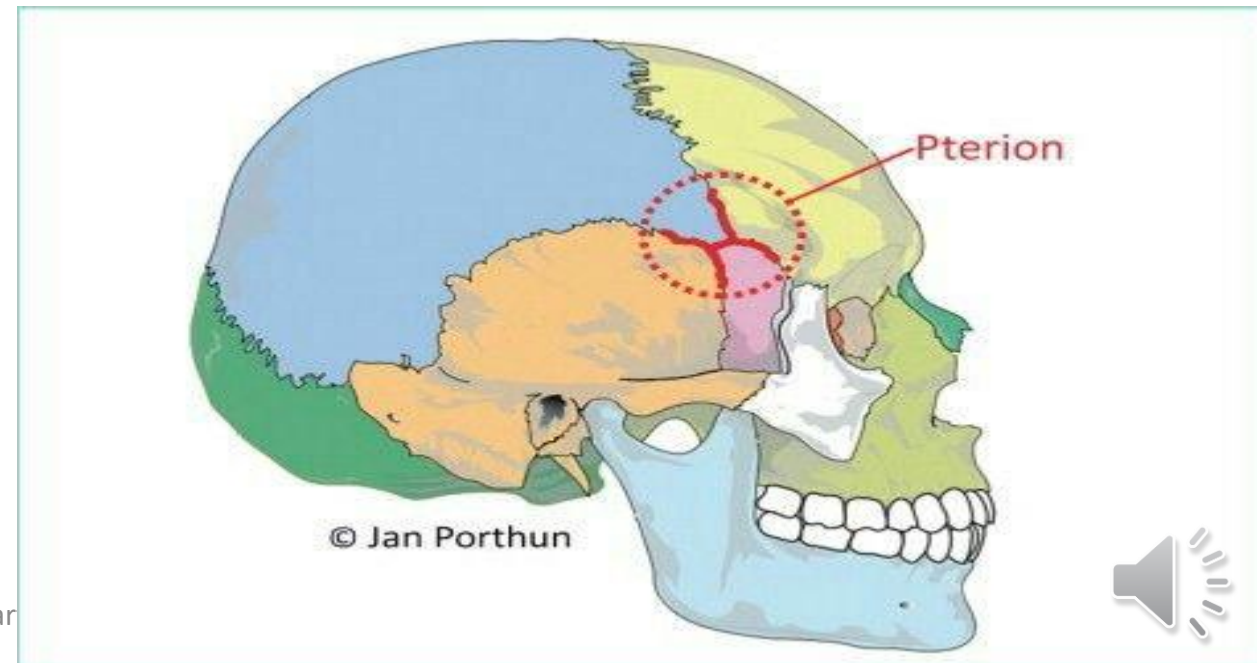
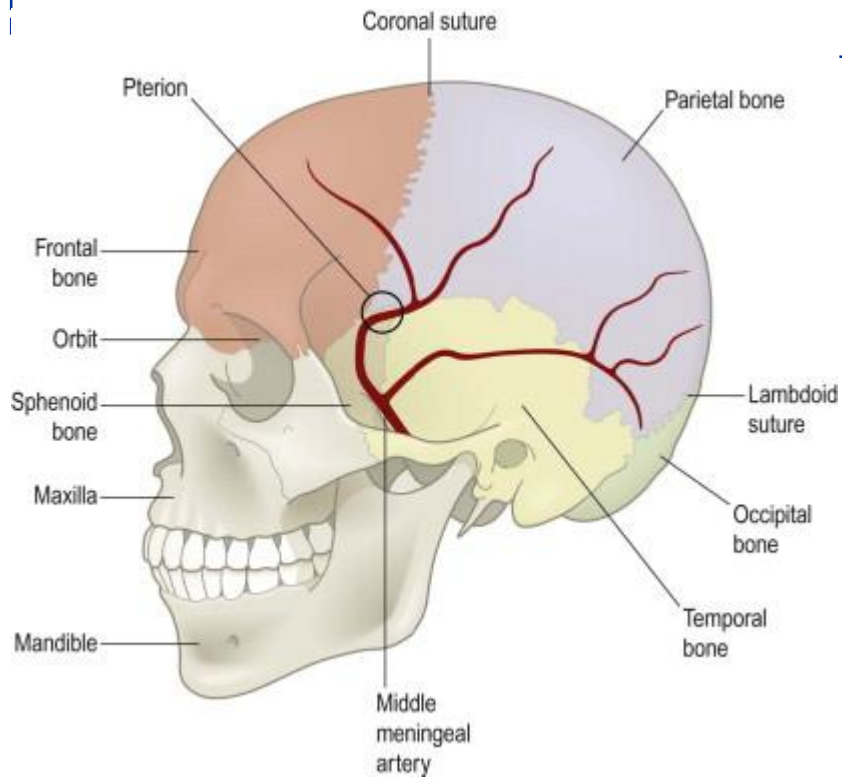
When the skull seen from lateral aspect

Pterion (H shaped) is the weakest area on skull where the parietal, temporal ,frontal and sphenoid bones come in contact .



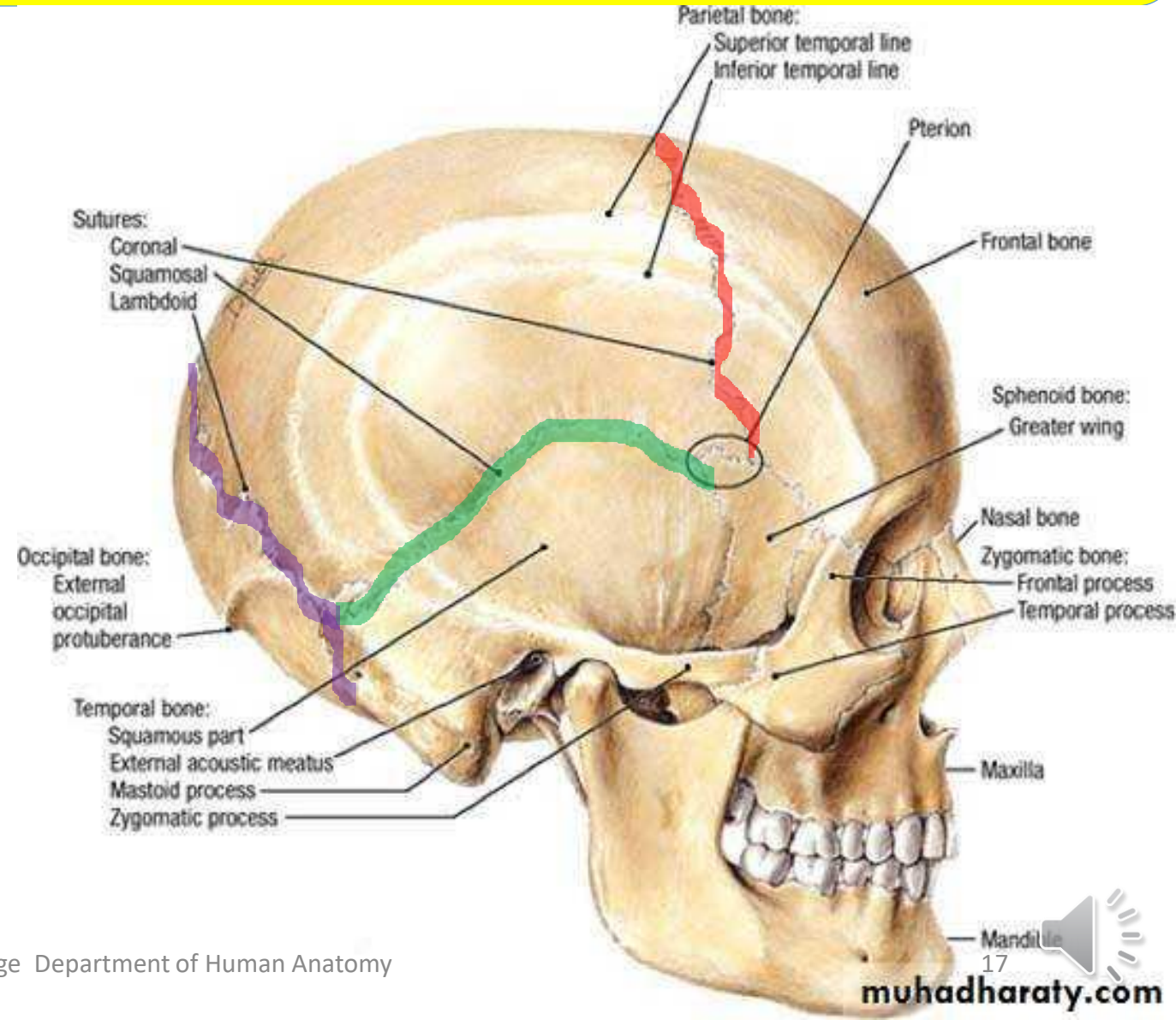
Norma Lateralis (Boney landmarks)

It is dangerous because of the presence of branches of middle meningeal artery behind it .Trauma here lead to injury of the artery intracranial bleeding.



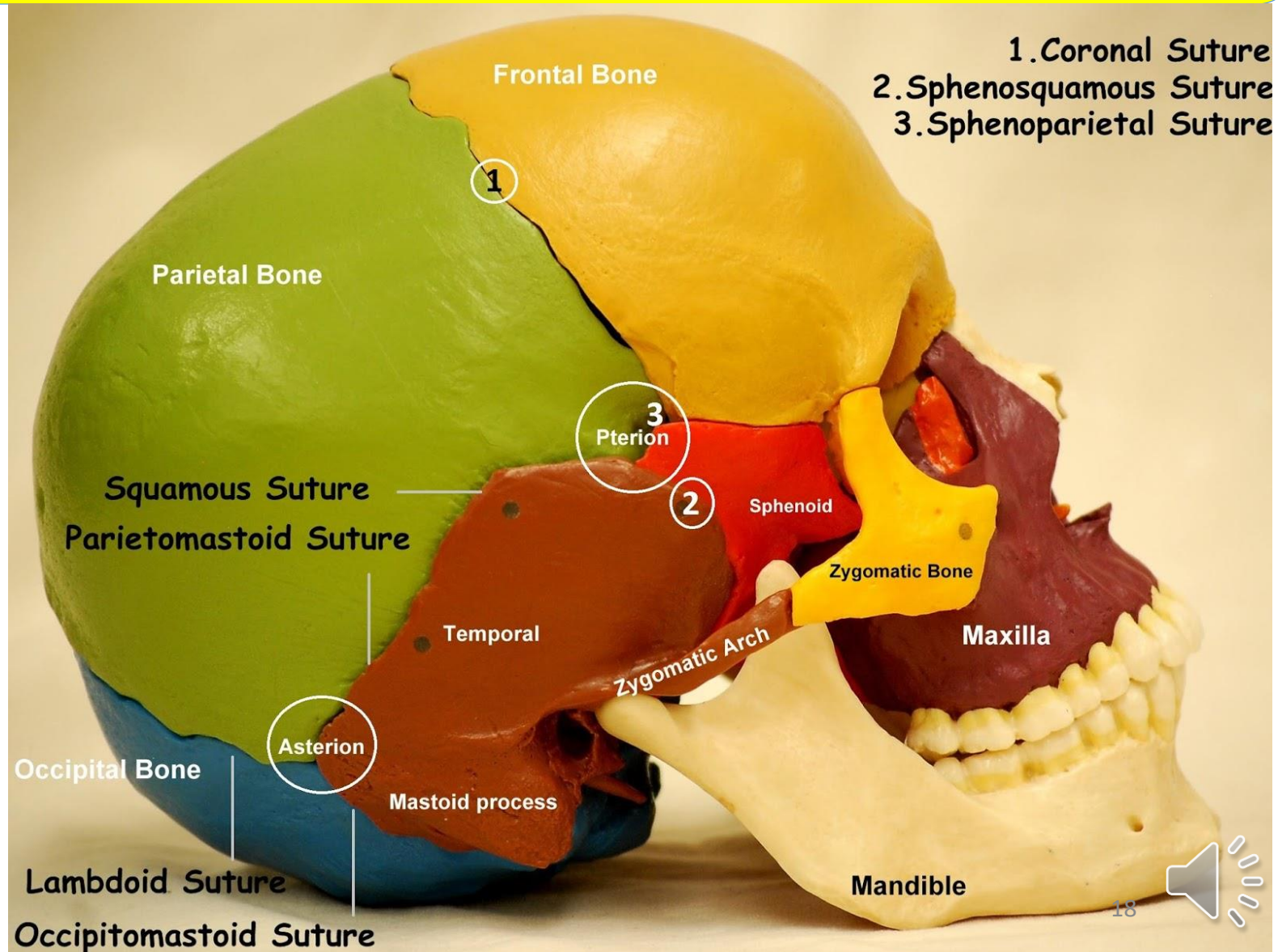
Norma Lateralis (Sutures)

- **Coronal suture.**
- **Squamosal suture**
- **Lambdoid suture.**



Norma Lateralis (Boney land marks)

1. Temporal line: superior and inferior temporal lines.
2. Zygomatic arch:
3. External acoustic meatus:
4. Mastoid process of temporal
5. Asterion: a meeting point 3 sutures between temporal, occipital and parietal bones
6. Styloid process of temporal
7. Temporal fossa
8. Infratemporal Fossa:
9. Pterion



Norma Basalis (Boney land marks)

Undersurface of the skull is split into 3 parts:
anterior, middle and posterior by 2 imaginary transverse lines

Parts

Anterior part

Middle part

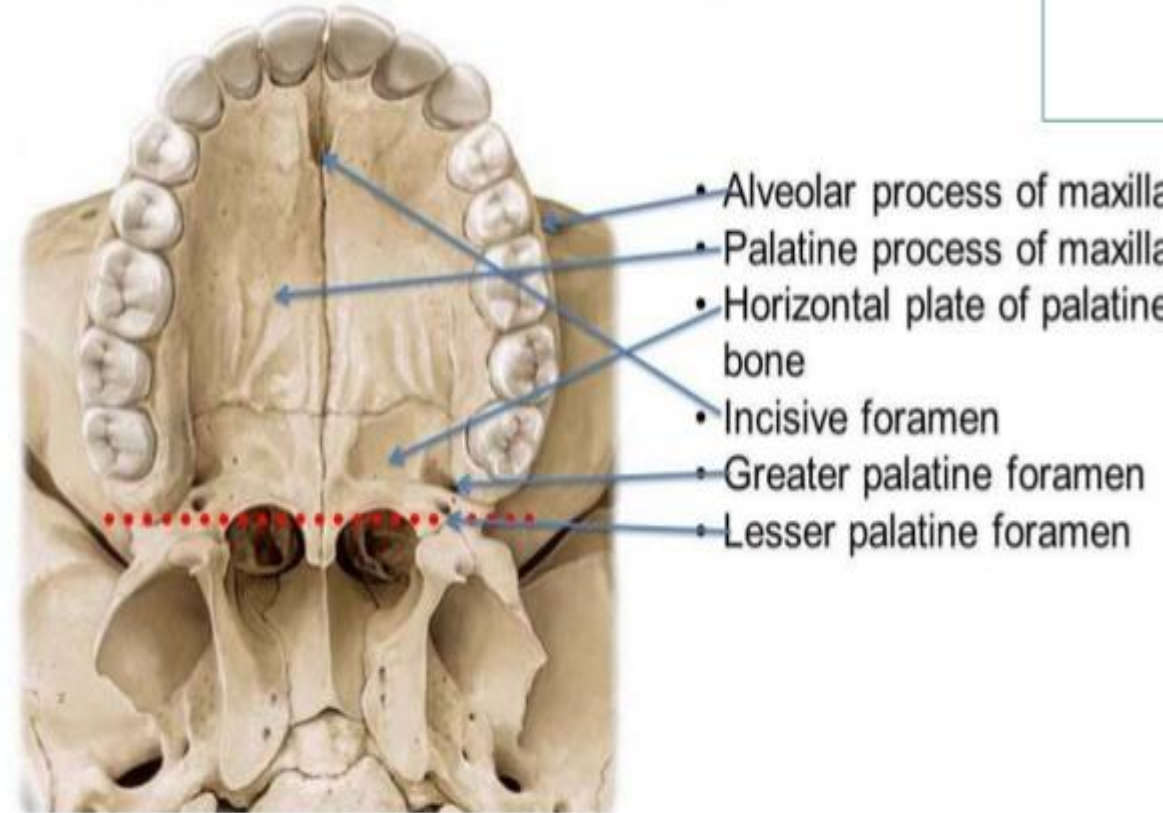
Post. part



Norma Basalis (Features of Anterior part)

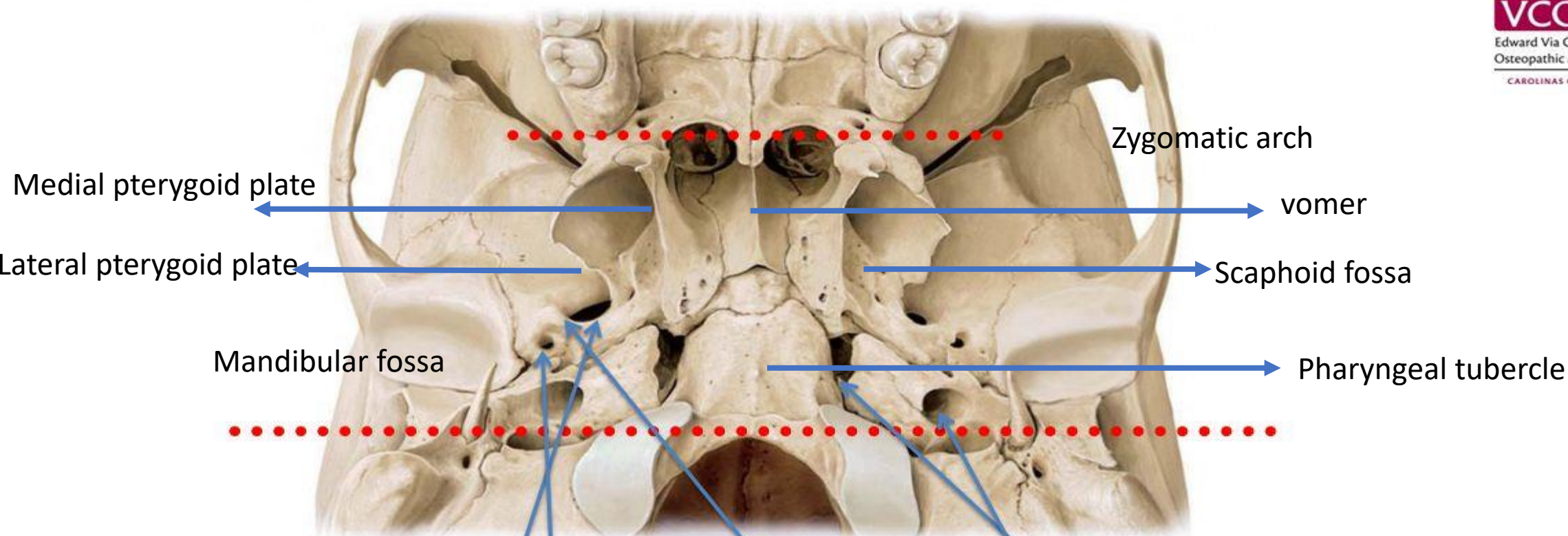
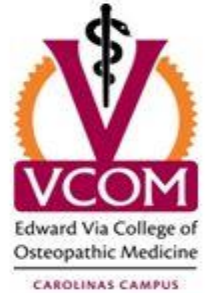
- **Alveolar process** of maxillae
- **Palatine processes** of maxillae
- **Horizontal plates** of palatine bones behind .
- **Incisive foramen** :transmits the greater palatine artery and vein and nasopalatine nerve
- **Anterior and posterior** palatine foramina.
- **Inter palatine suture**

Norma Basalis - Anterior



Norma Basalis (Features of Middle part)

Norma Basalis - Middle



Medial pterygoid plate

Lateral pterygoid plate

Mandibular fossa

Zygomatic arch

vomer

Scaphoid fossa

Pharyngeal tubercle

- Foramen ovale
- Foramen lacerum
- Foramen spinosum / Spine
- Carotid canal of sphenoid



Norma Basalis (Features of Posterior part)

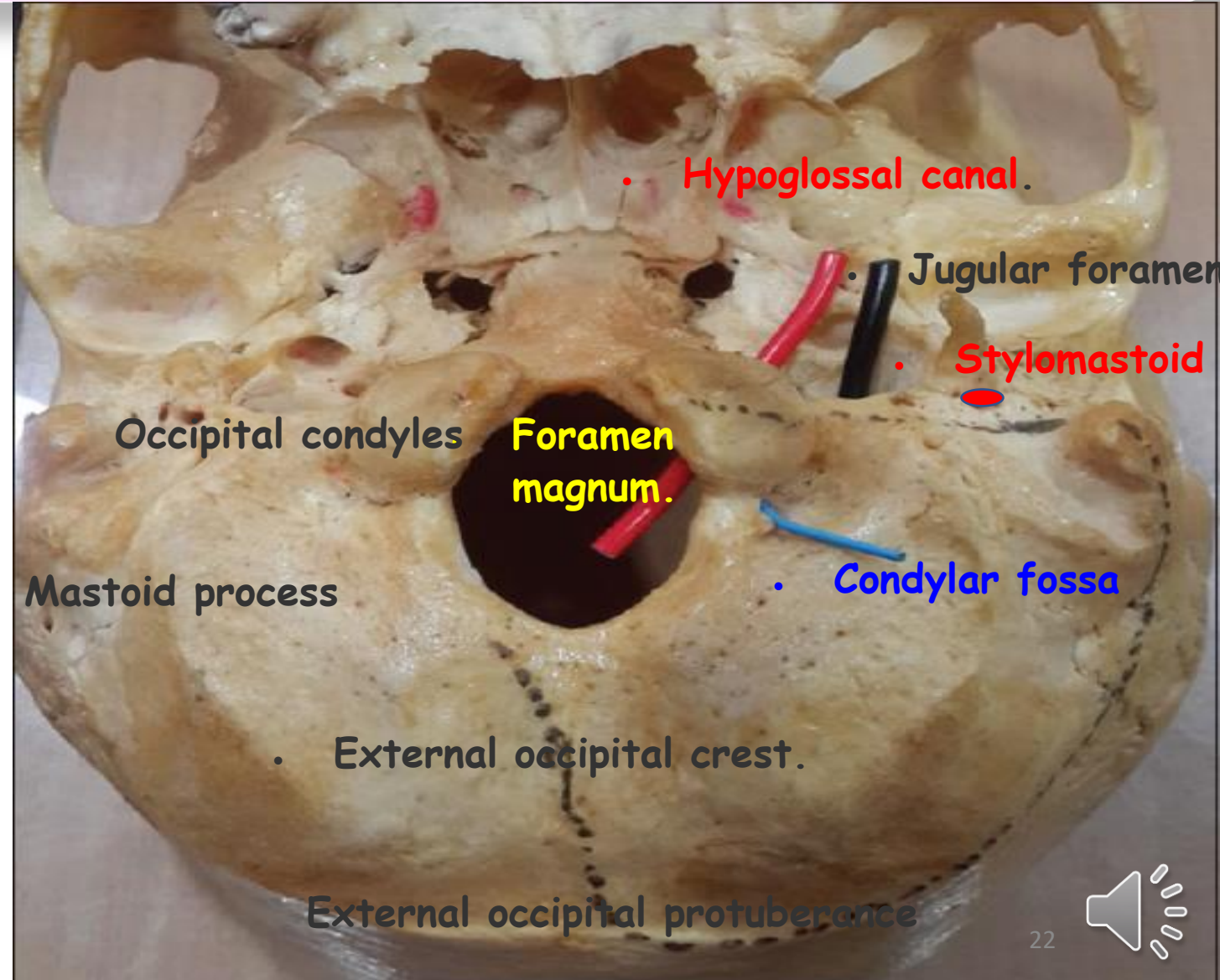
The median area presents these structures

- Foramen magnum.
- External occipital crest.
- External occipital protuberance.

The lateral area

Occipital condyles:

- Hypoglossal canal.
- Condylar fossa
- Jugular foramen:
- Stylomastoid foramen
- Mastoid process
- Styloid process
-



• Male and Female Skull Differences

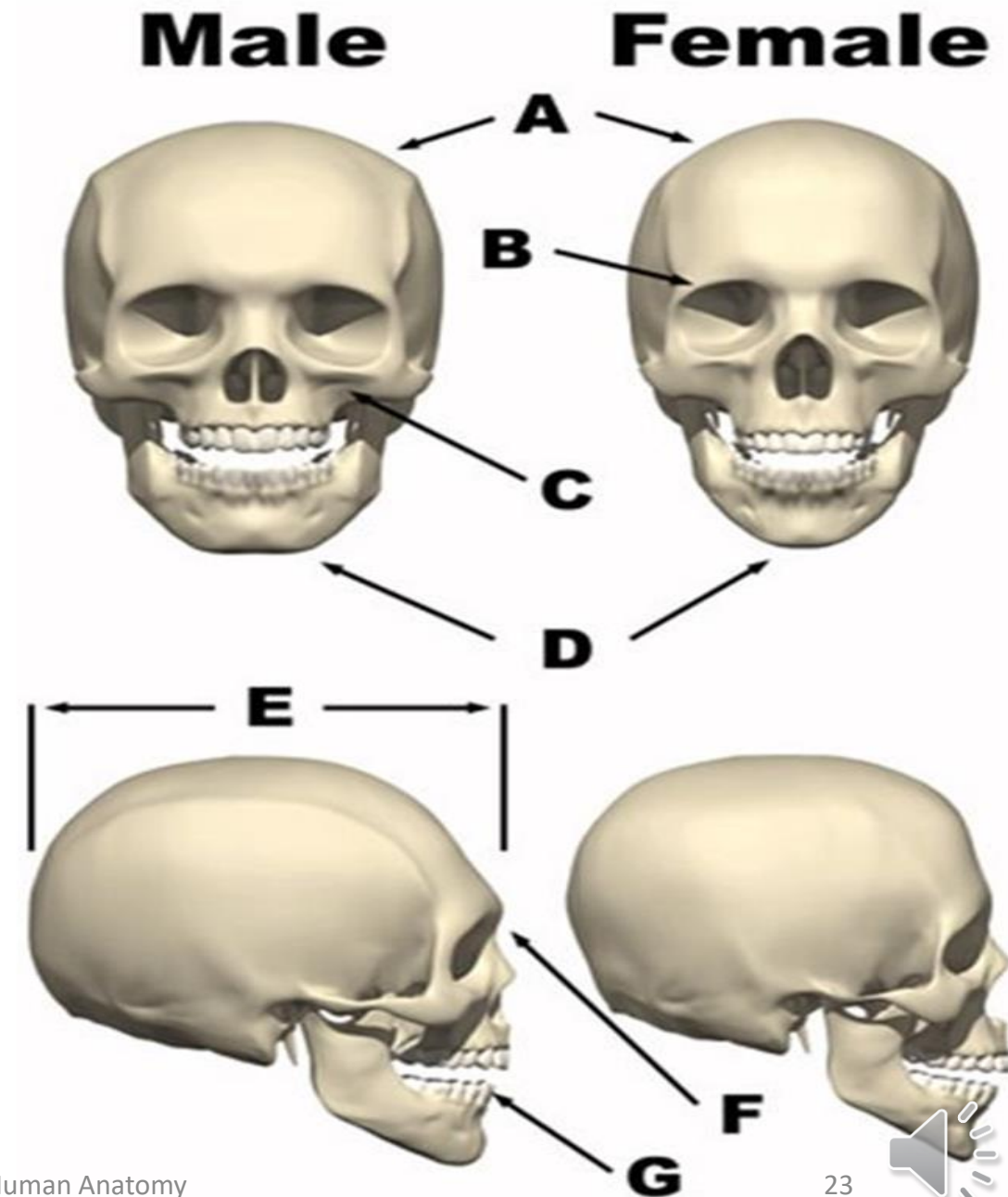
A- The male cranial mass is more blocky and massive compared to the females which more rounder and tapers at the top.

B- The females Supraorbital margin is sharper while the males is rather round and dull.

C- The Zygomatic bone is more pronounced on the male skull.

D- The Mandible of a female is more rounded while the male's is squared.

E. Supercilliary arch is large and pronounced in male



Thanks

