

**The skull
(cranium)**

I. Neurocranial skull bones (protection of the brain)

II. Splanchnocranial skull bones
(form the underlay of the face)

border – from the roof of the orbit to the external auditory canal

Neurocranium (Calvarium and basis cranii)

os frontale – frontal bone

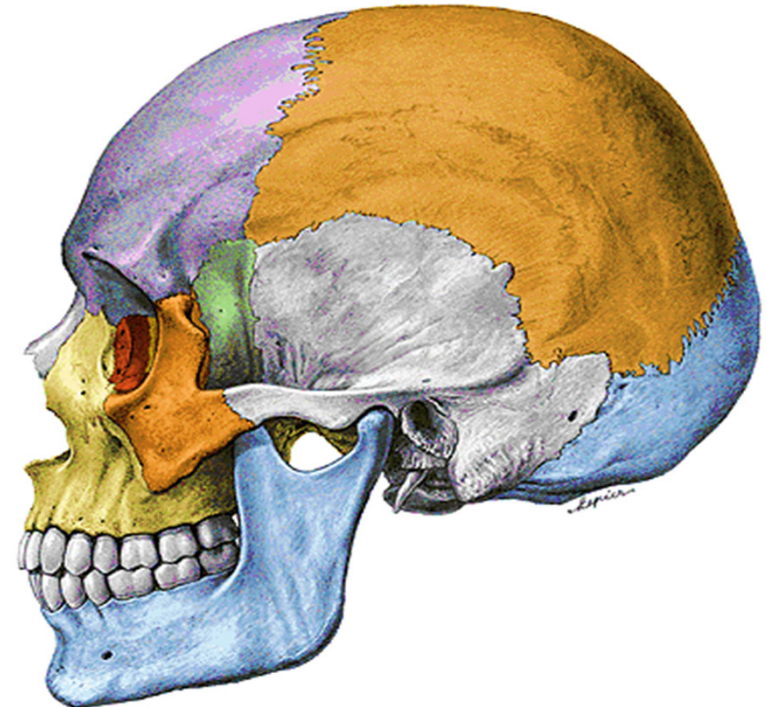
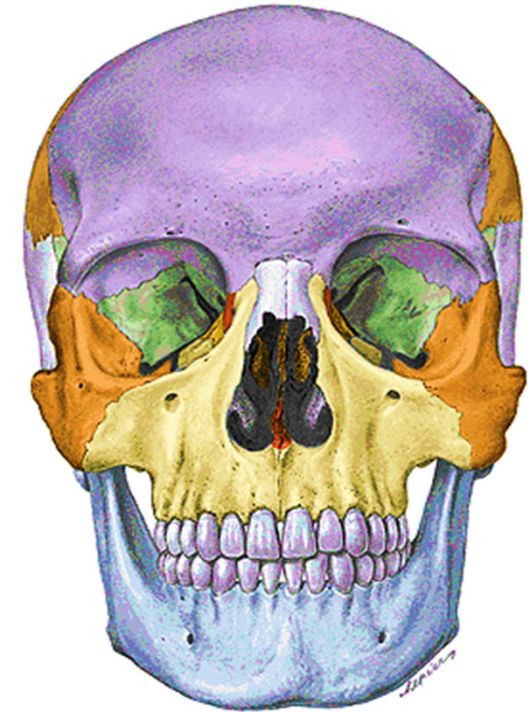
ossa parietalia – parietal bones

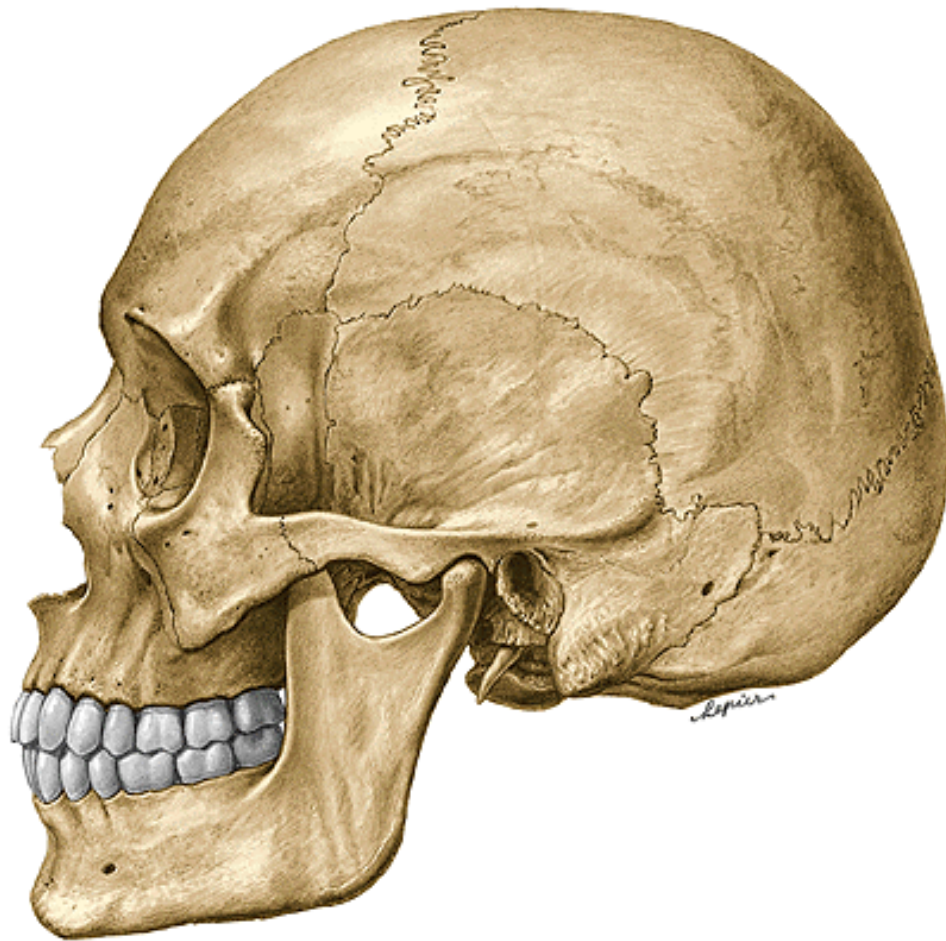
os occipitale – occipital bone

os sphenoidale – sphenoid bone

ossa temporalia – temporal bones

os ethmoidale – ethmoidal bone





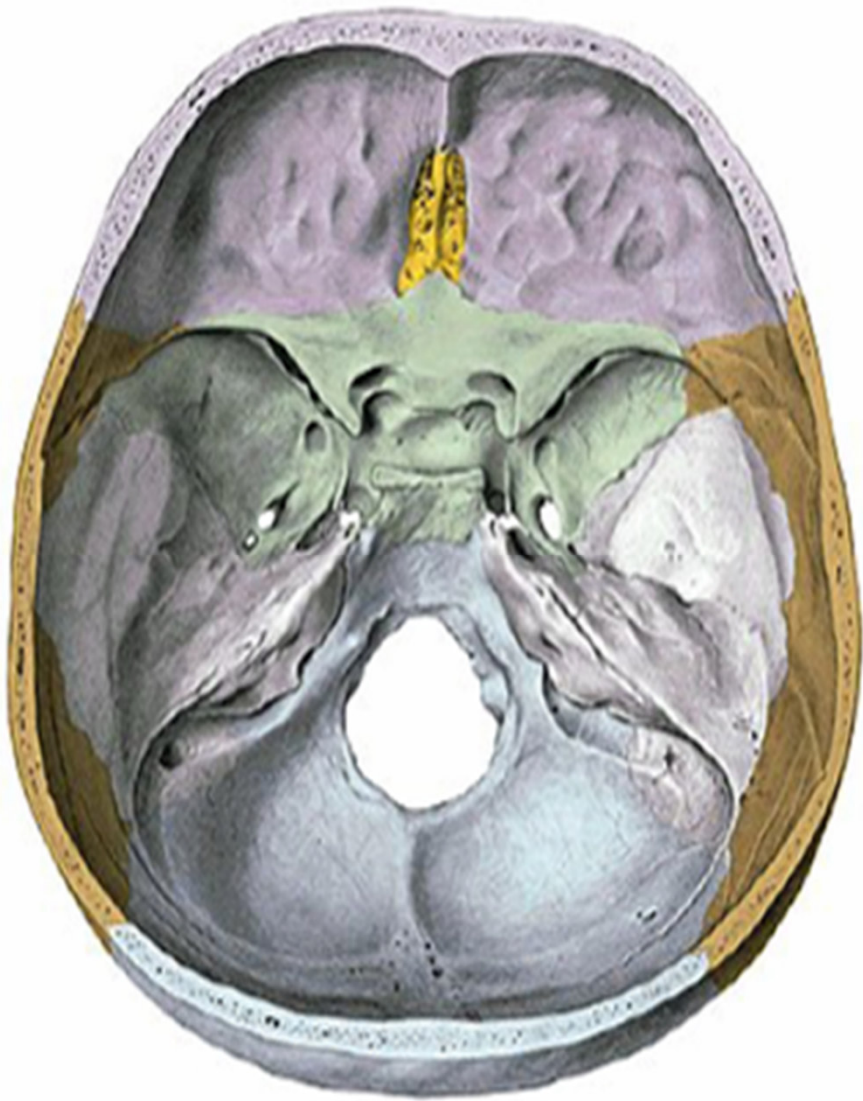
Norma lateralis



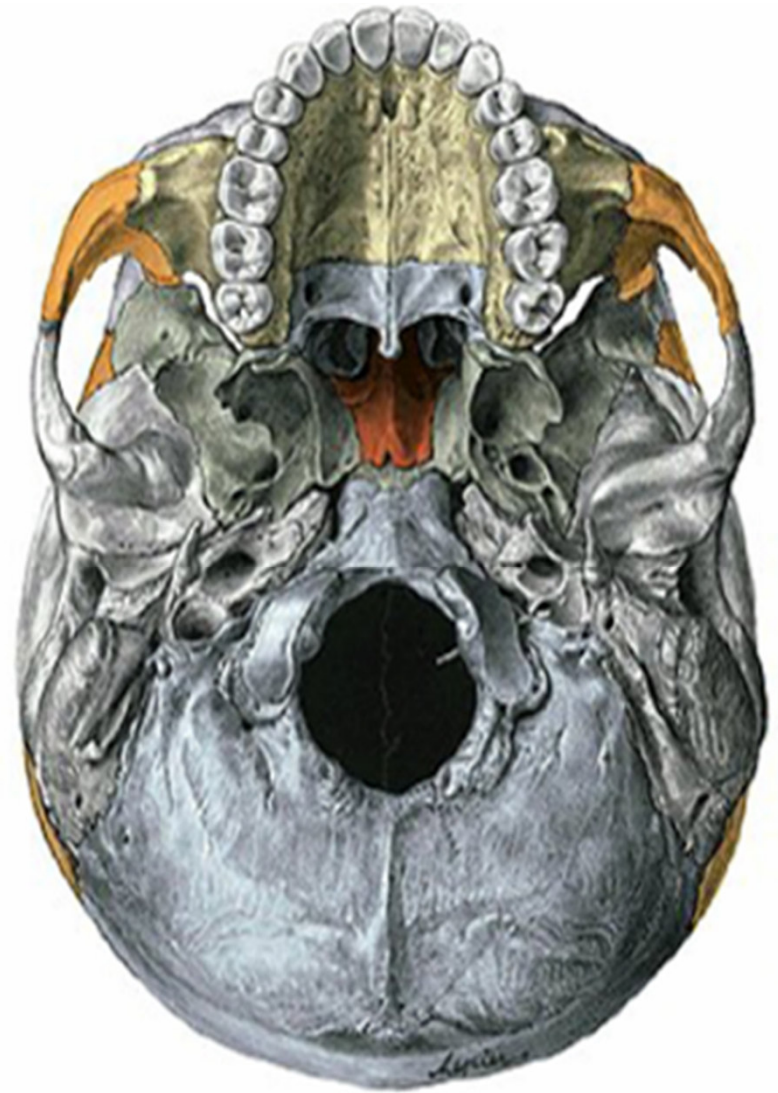
Norma frontalis



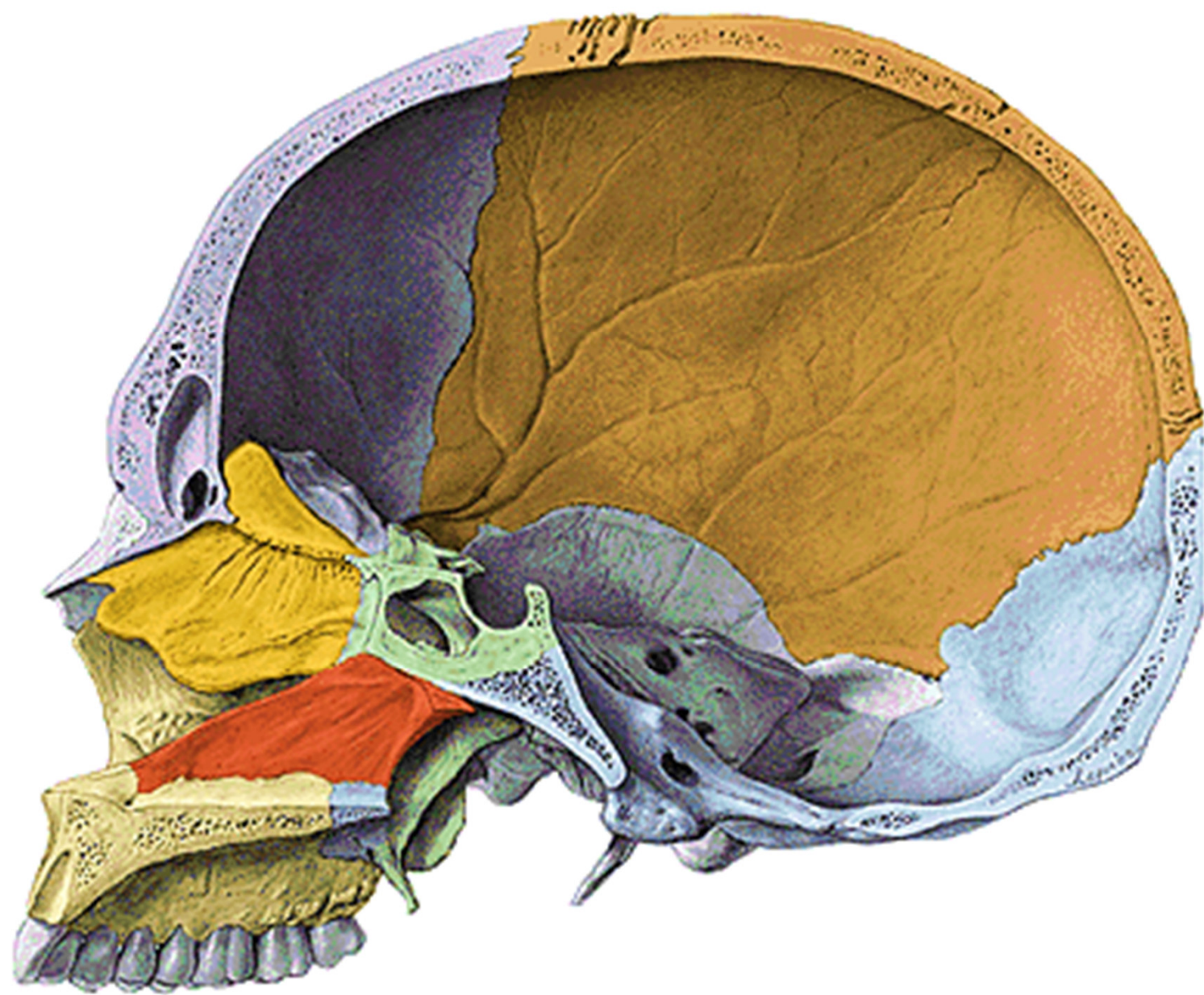
calvarium



Basis cranii interna



Basis cranii externa



Os frontale



Os frontale

Squama frontalis

sutura coronalis

tubera frontalia

margo supraorbitalis

incisura frontalis

incisura supraorbitalis

arcus superciliaris

glabella

Pars nasalis

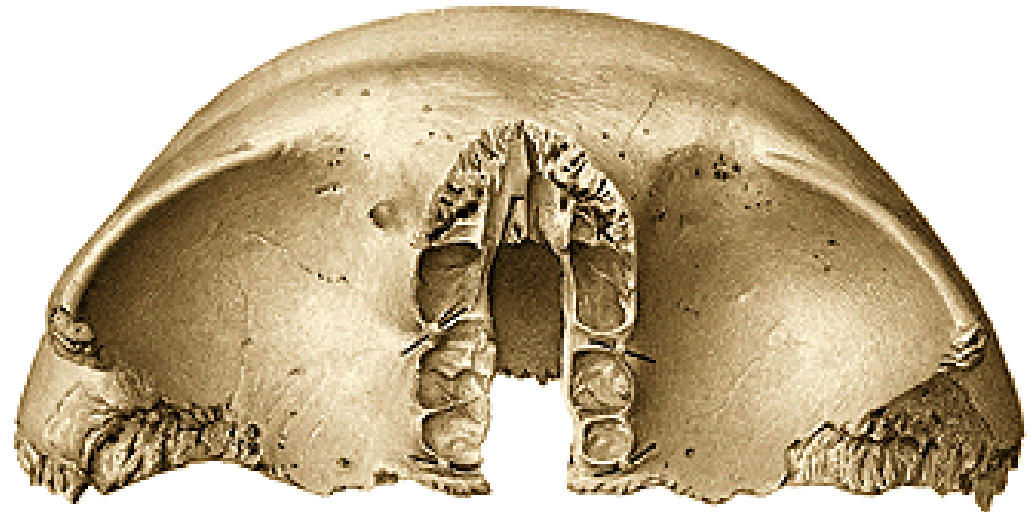
sinus frontalis

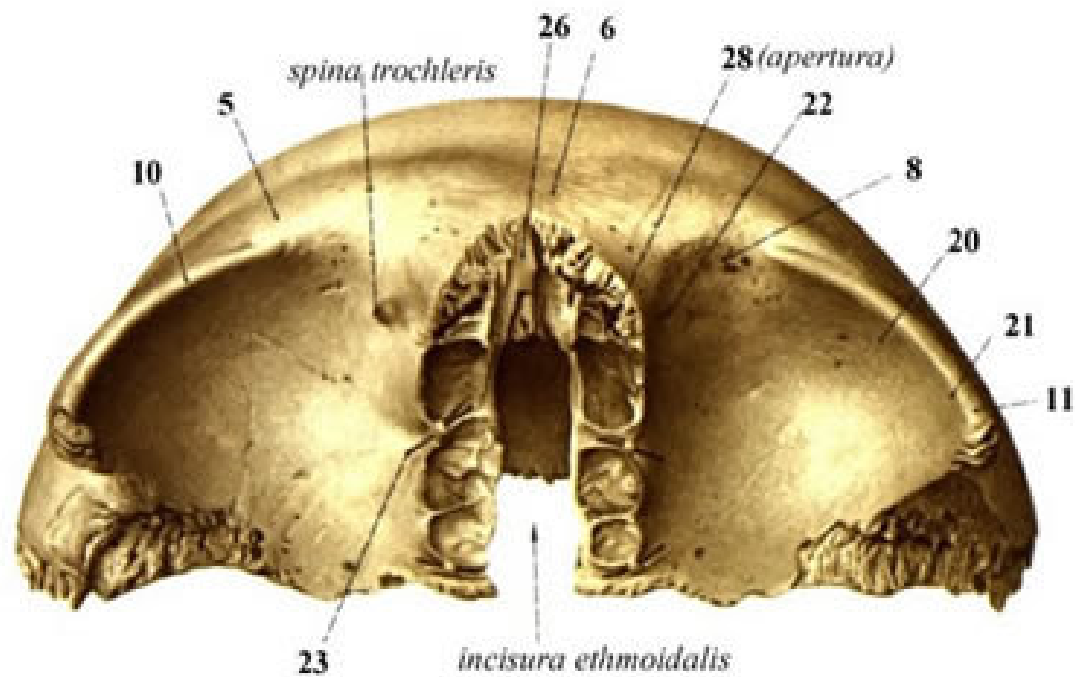
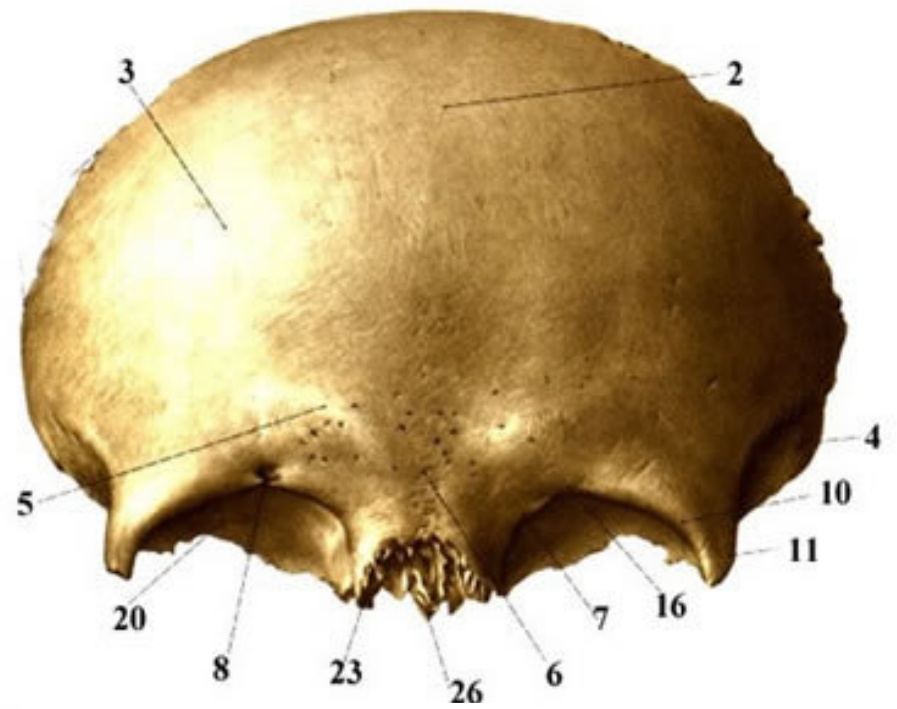
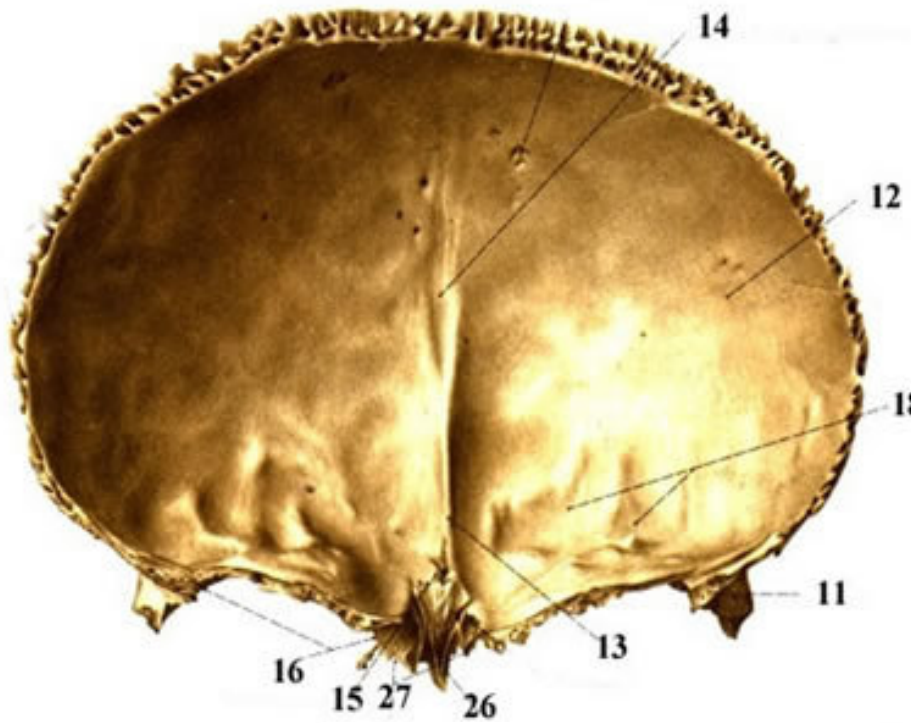
Partes orbitale

fossa glandulae lacrimalis

foramen ethmoidale anterius

et posterius





Os parietale



Ossa parietalia

sutura coronalis

sutura sagittalis

sutura lambdoidea

sutura squamosa

Angulus

frontalis, sphenoidalis, occipitalis,
mastoideus

Exocranial surface:

tubera parietalia

linea temporalis superior

linea temporalis inferior

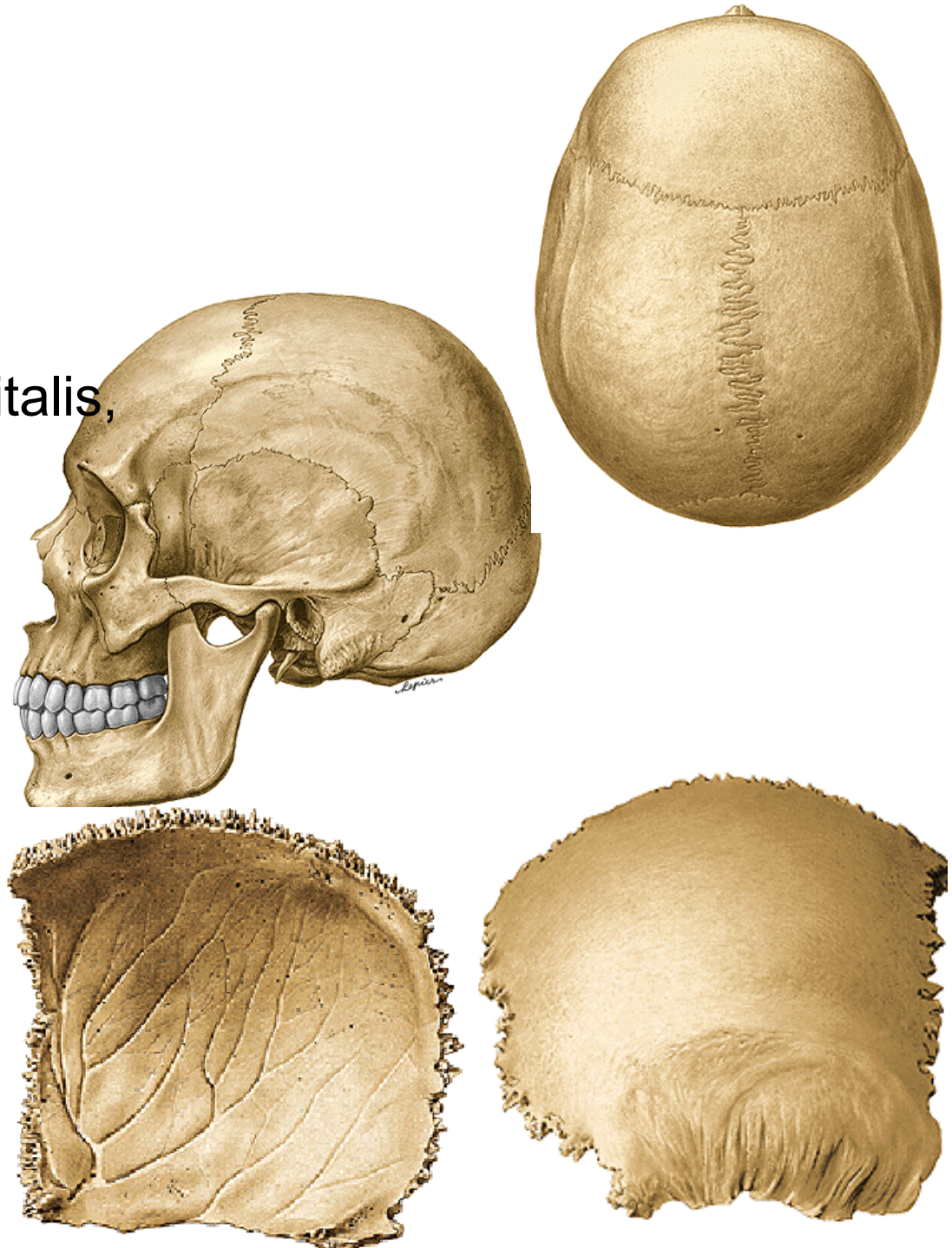
foramen parietale

Endocranial surface:

sulcus sinus sag sup

sulci arteriae meningeae

mediae



Os sphenoidale



Os sphenoidale

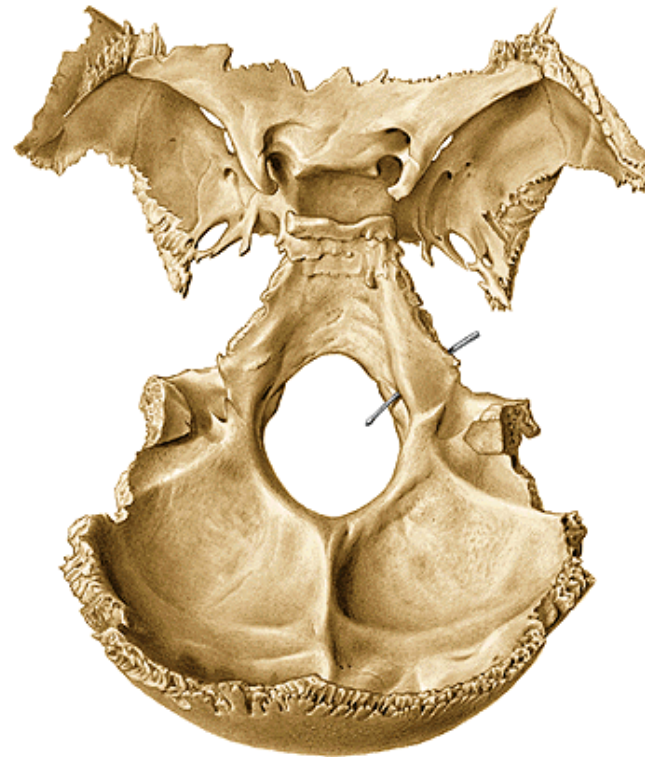
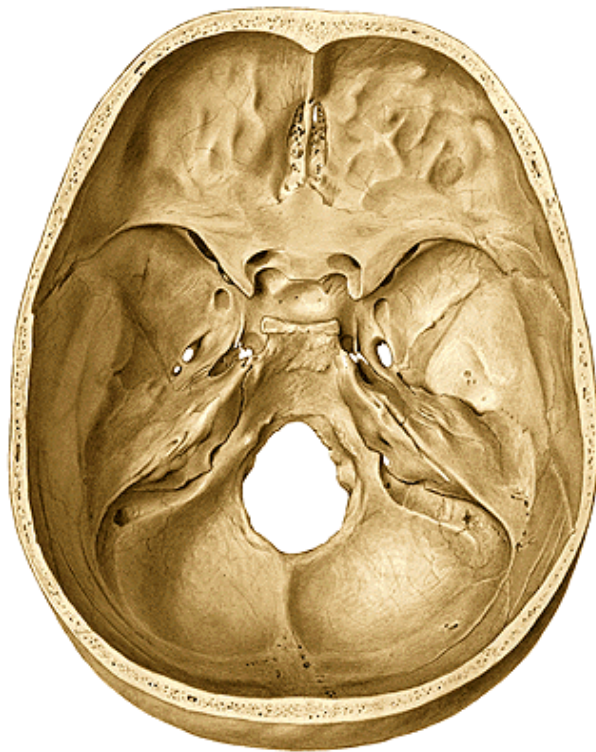


corpus

alae minores (lesser wings)

alae majores (greater wings)

processus pterygoidei



Corpus ossis sphenoidalis

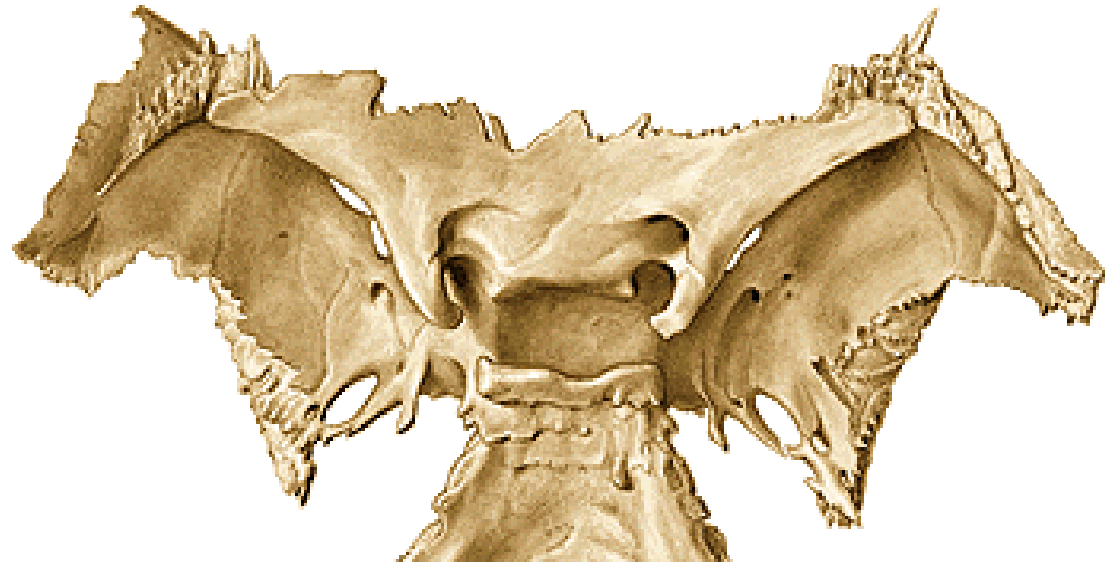
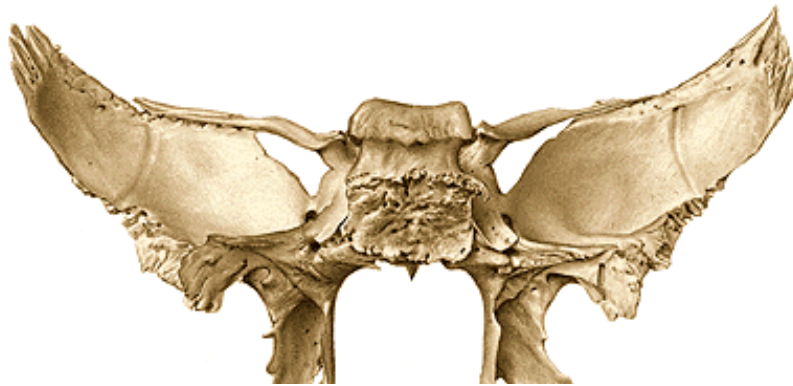
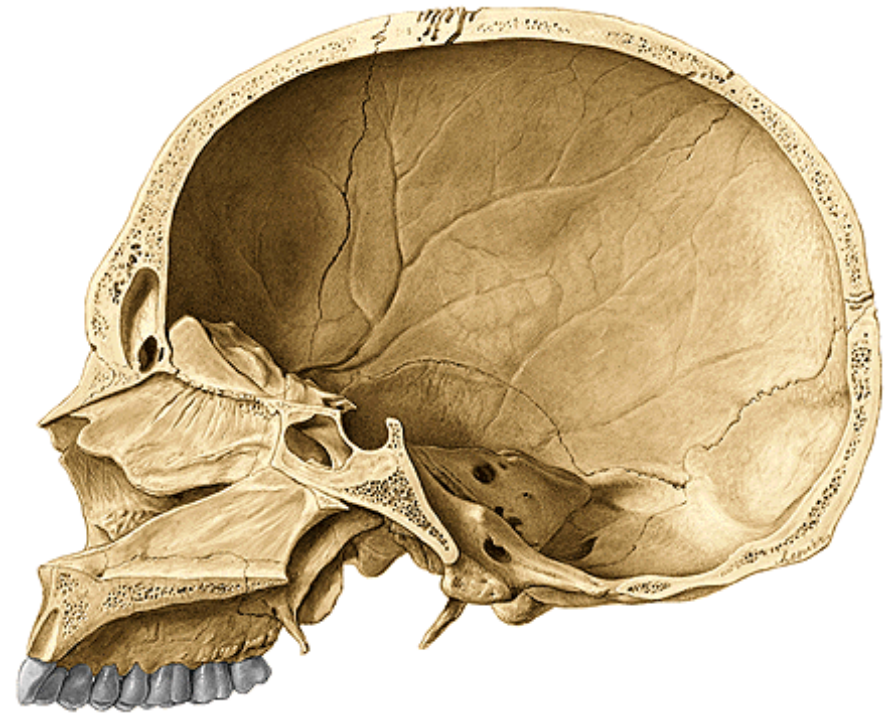
sinus sphenoidalis

sulcus praechiasmaticus

sella turcica- fossa hypophysialis

- dorsum sellae

sulcus caroticus



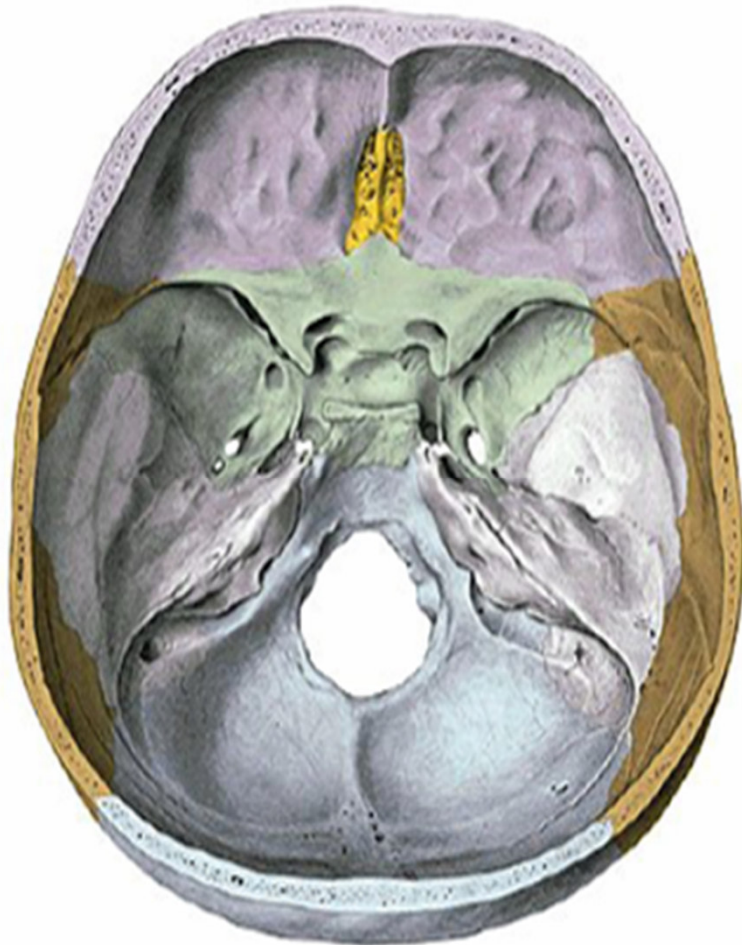
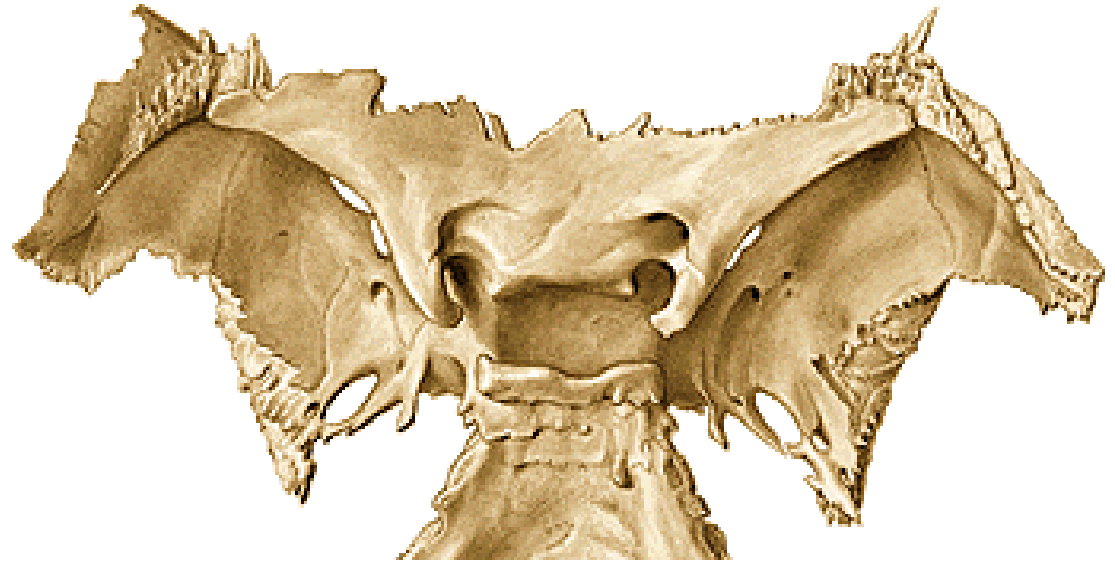
Alae minores

fissura orbitalis superior

canalis opticus

processus clinoidi

anteriores



Alae majores:

-Have five surfaces

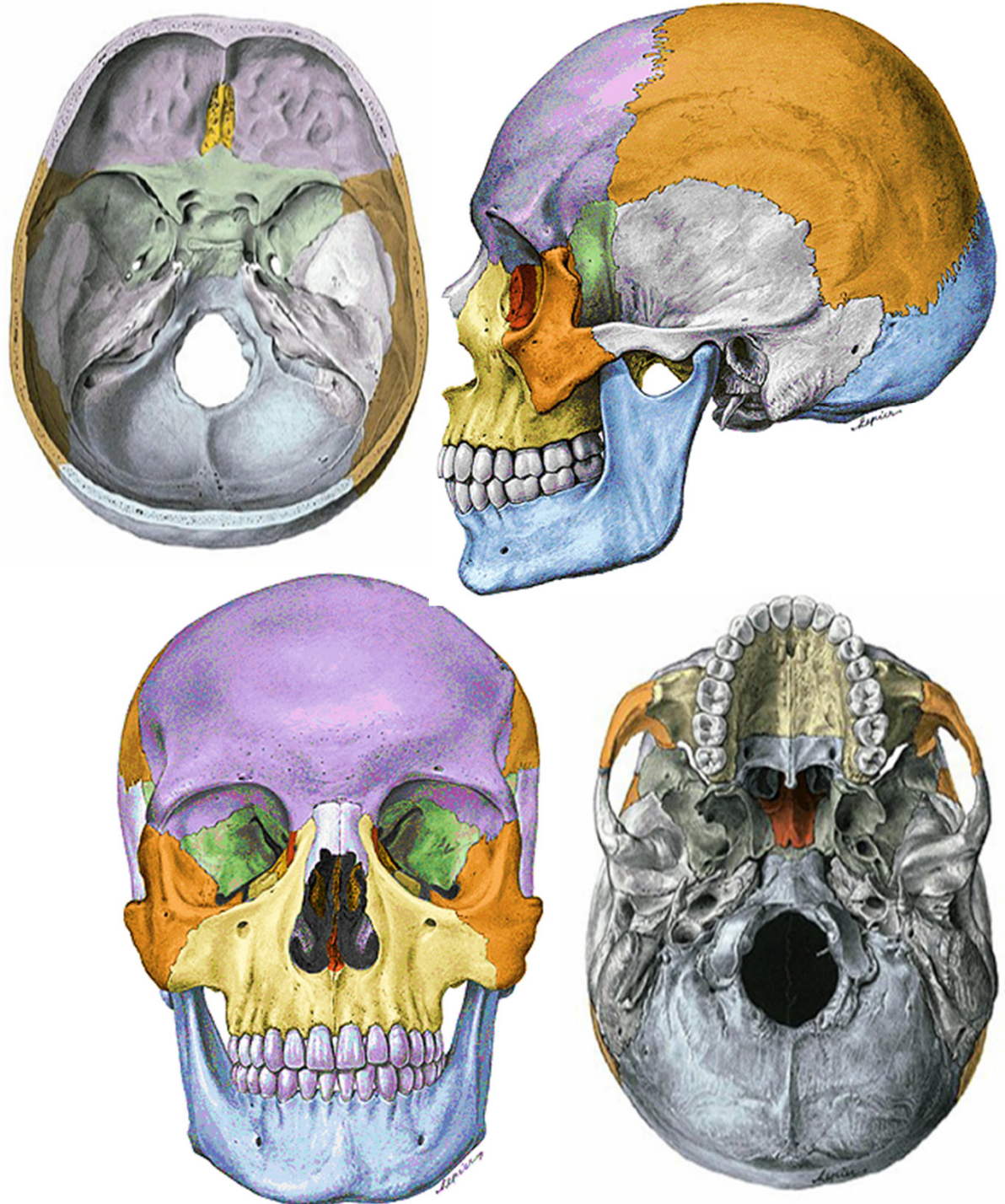
foramen rotundum

foramen ovale

foramen spinosum

fisura orbitalis superior

fisura orbitalis inferior



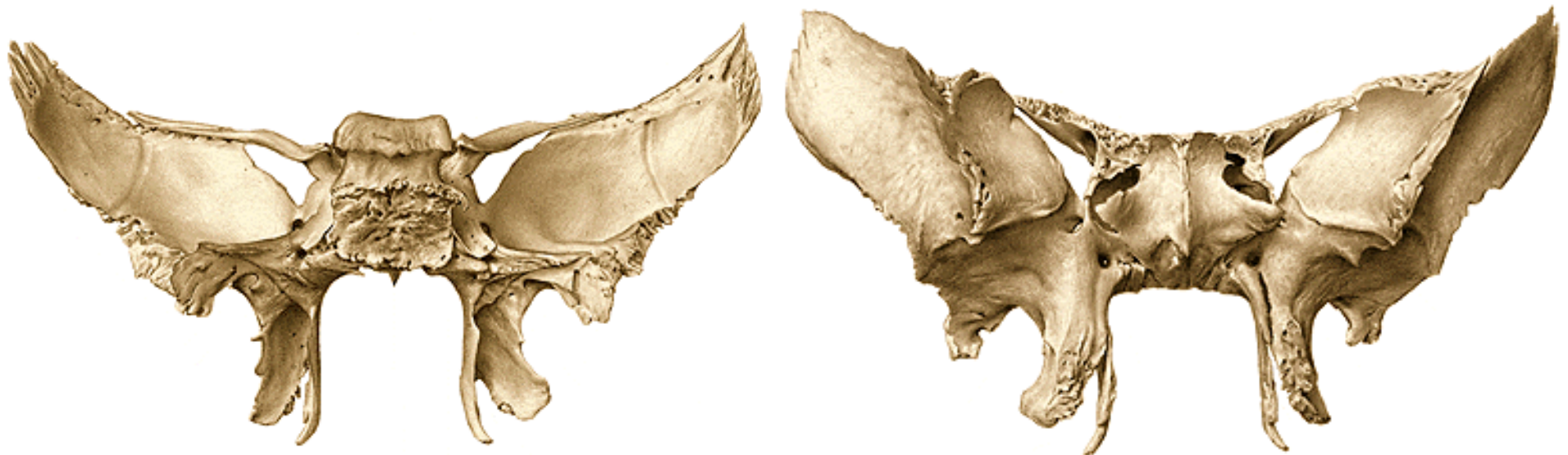
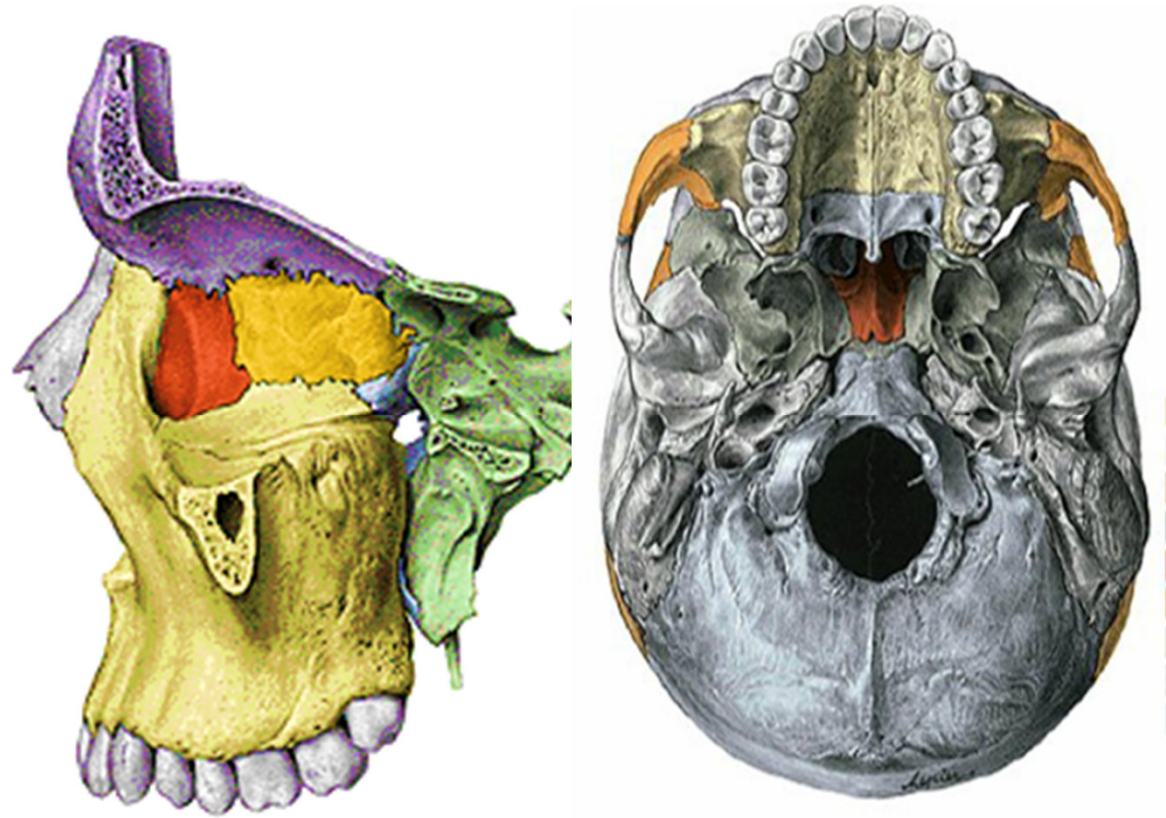
Processus pterygoidei

lamina lateralis

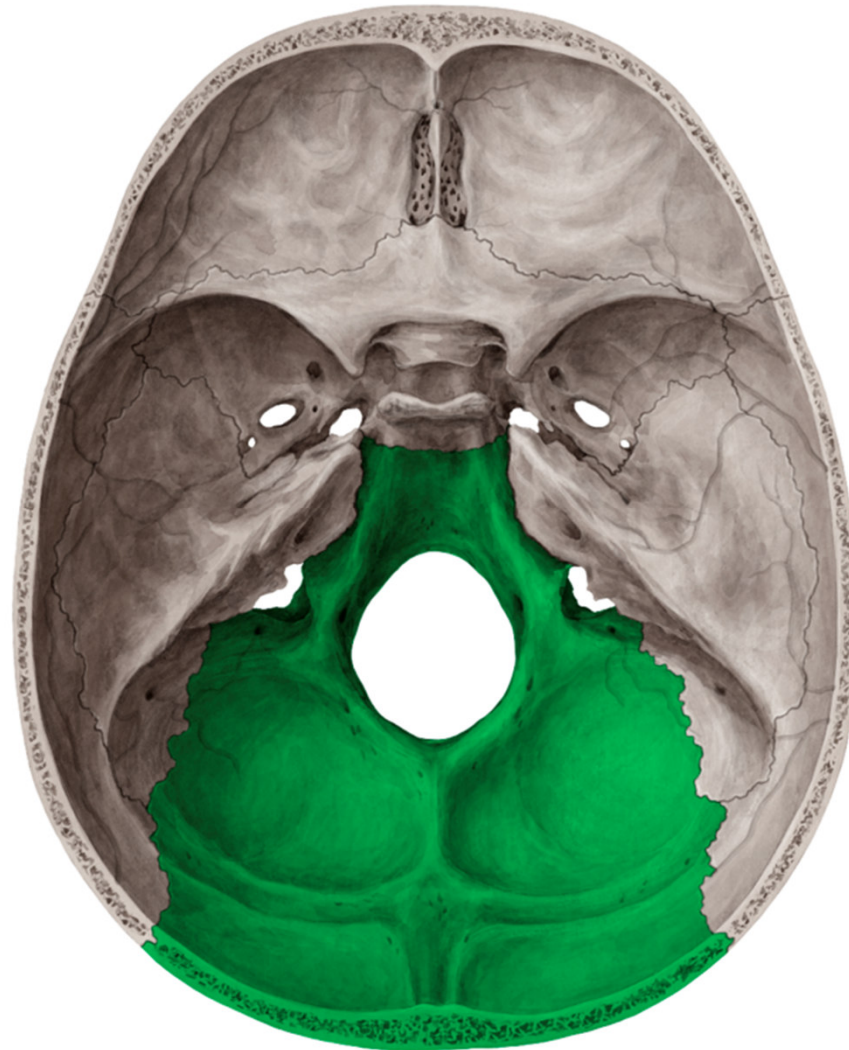
lamina medialis- hamulus

fossa pterygoidea

canalis pterygoideus



Os occipitale



Os occipitale

1. pars basilaris:

clivus

tuberculum pharyngeum

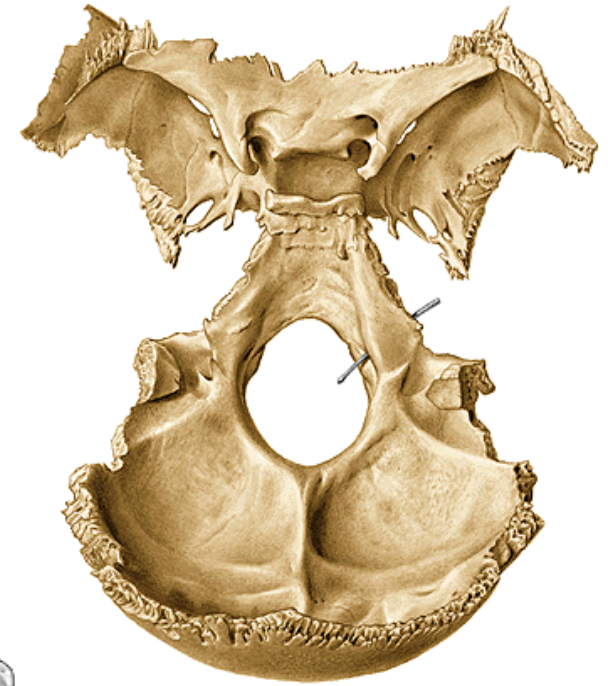
synchondrosis (synostosis) sphenoccipitalis

2. partes laterales:

condyli occipitales

incisura jugularis

canalis (nervi) hypoglossi



3. squama:

Endocranial surface:

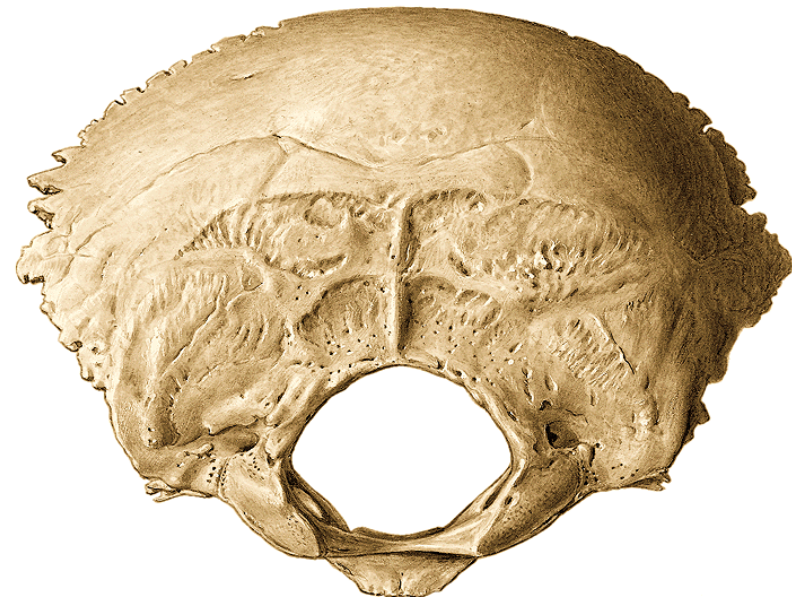
eminentia cruciformis
crista occipitalis interna
sulcus sinus sagittalis superioris
sulcus sinus transversi
protuberantia occipitalis interna

fossae cerebrales
fossae cerebellares

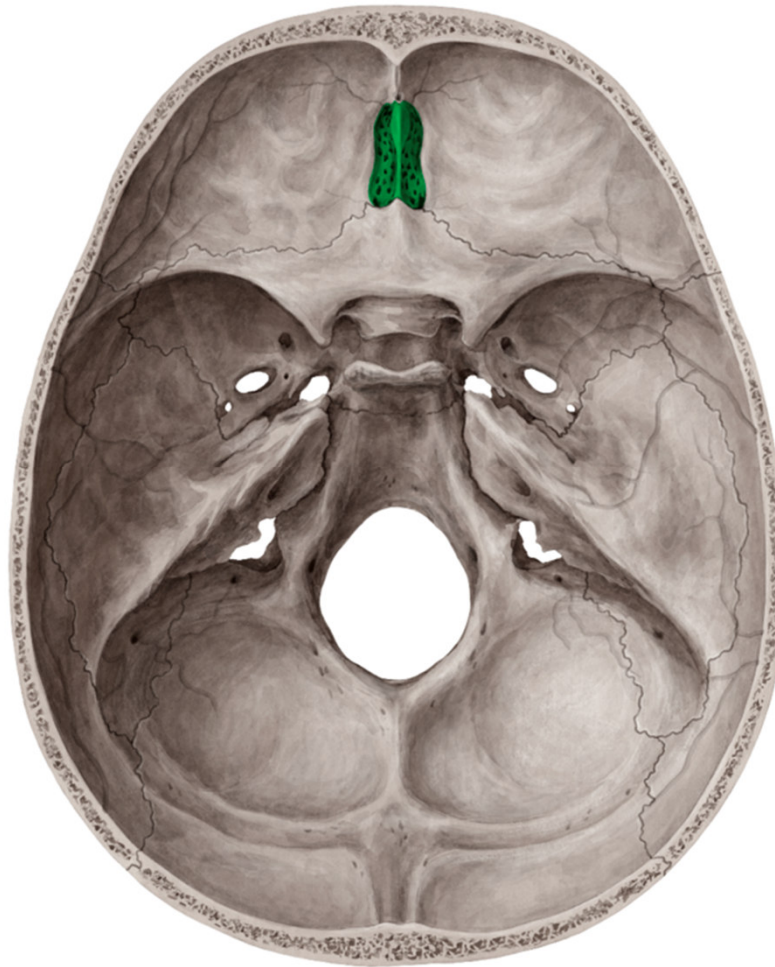
foramen magnum

Exocranial surface:

protuberantia occipitalis externa
crista occipitalis externa
linea nuchae suprema
linea nuchae superior
linea nuchae inferior



Os ethmoidale



Os ethmoidale

lamina cribrosa

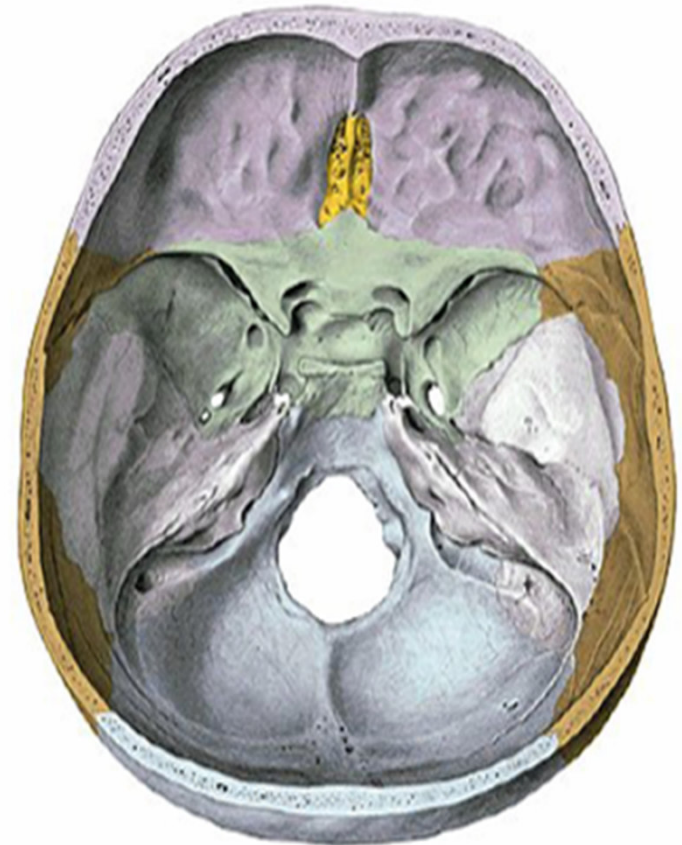
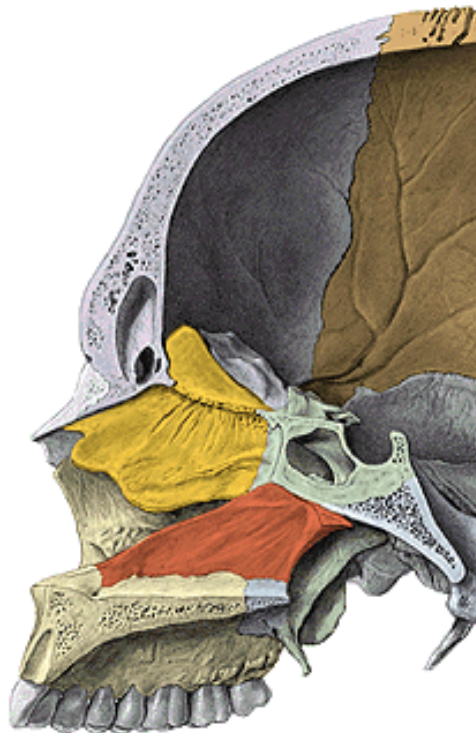
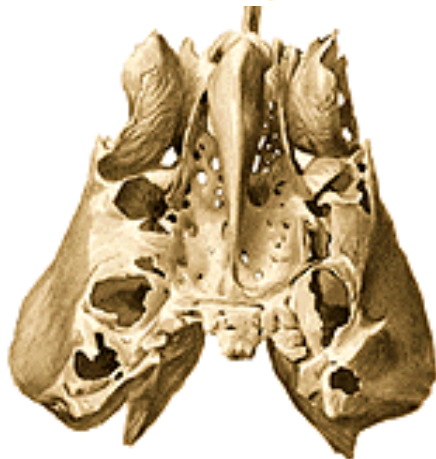
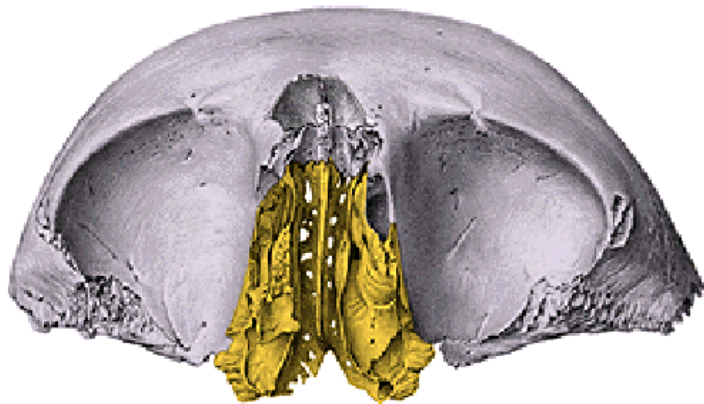
crista galli

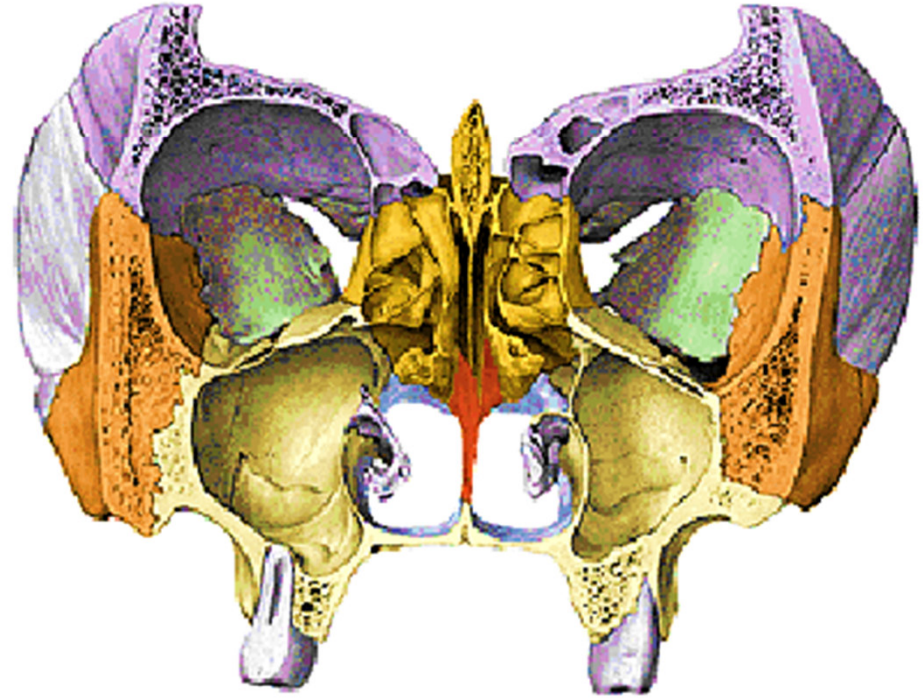
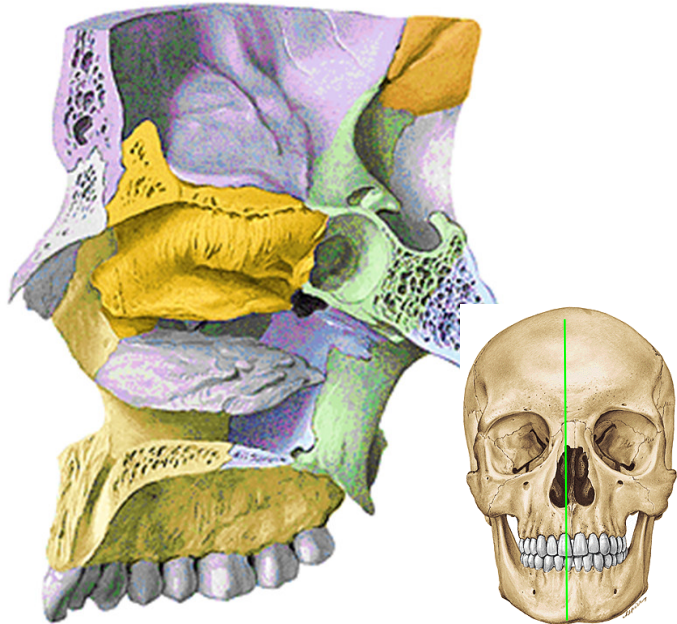
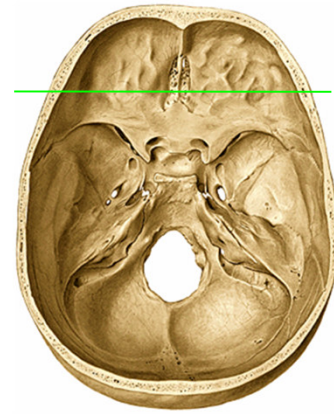
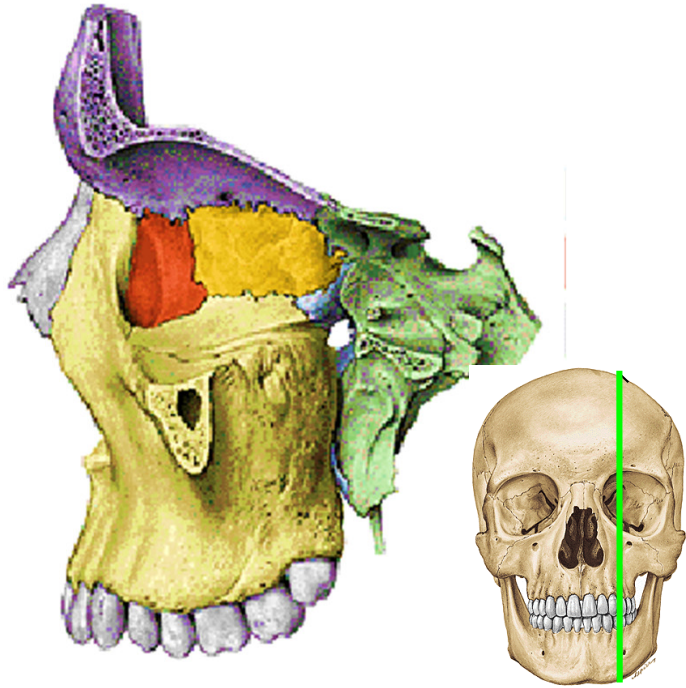
lamina perpendicularis- part of the nasal septum

labyrinthi ethmoidales (cellulae ethmoidales)

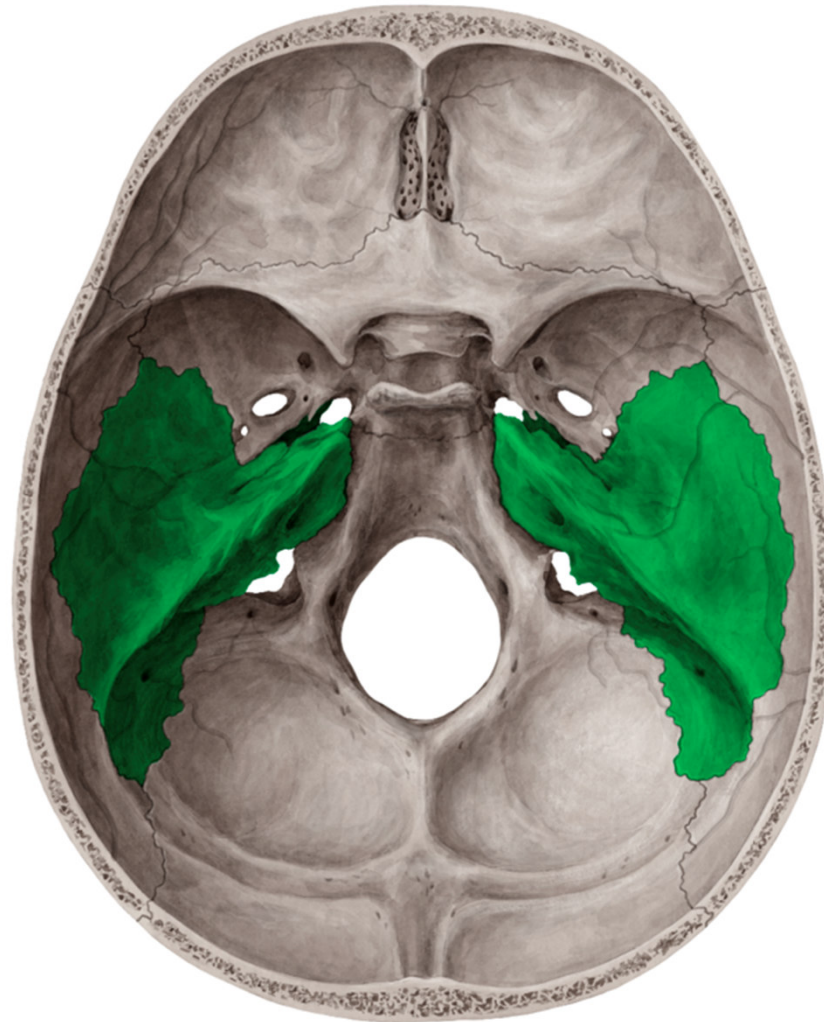
lamina orbitalis (foramen ethmoidale anterius et posterius)

concha nasalis media, superior





Os temporale



Os temporale

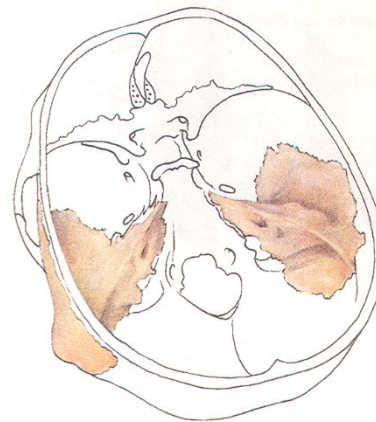
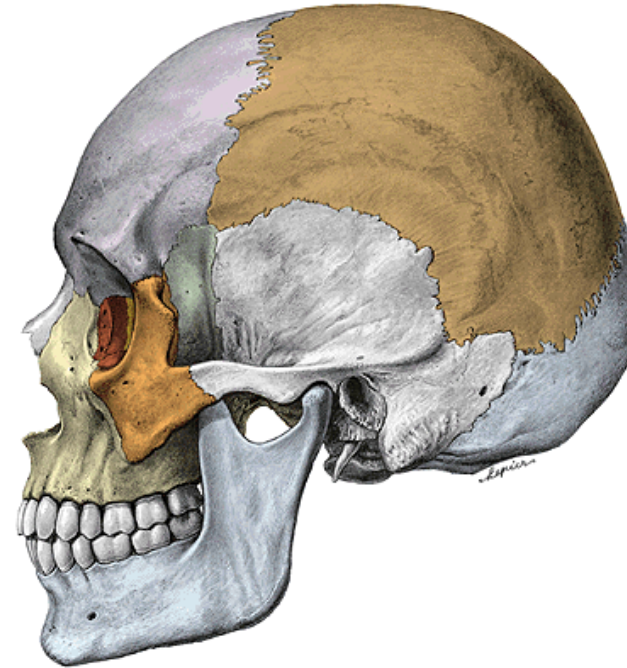
Pars squamosa

Pars petrosa (pyramis)

Pars mastoidea

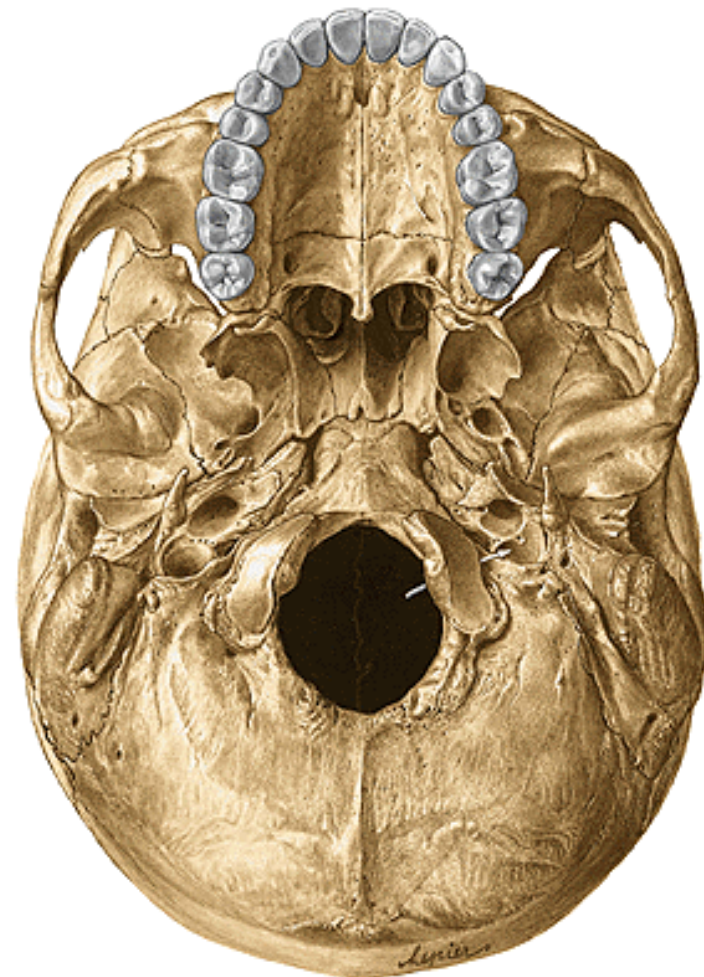
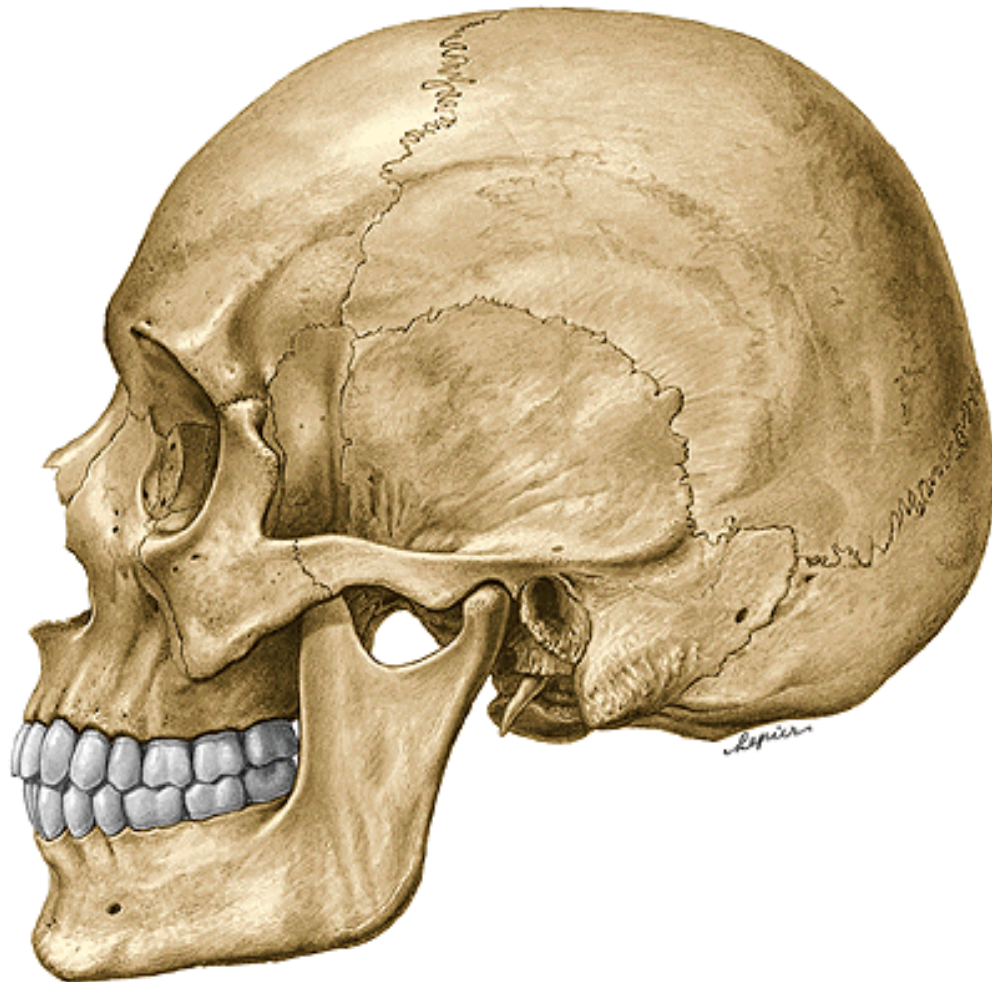
Pars tympanica

Processus styloideus



Pars squamosa:

- processus zygomaticus- arcus zygomaticus
- fossa mandibularis
- tuberculum articulare

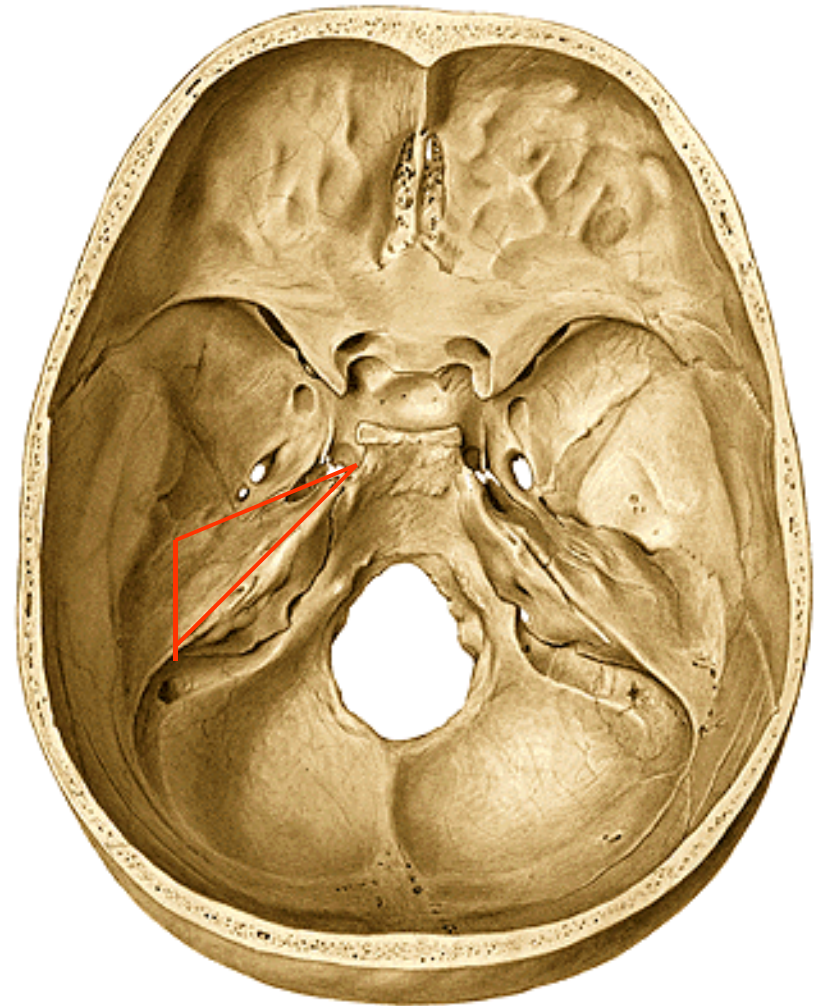


Pars petrosa (pyramis)

facies anterior pyramidis

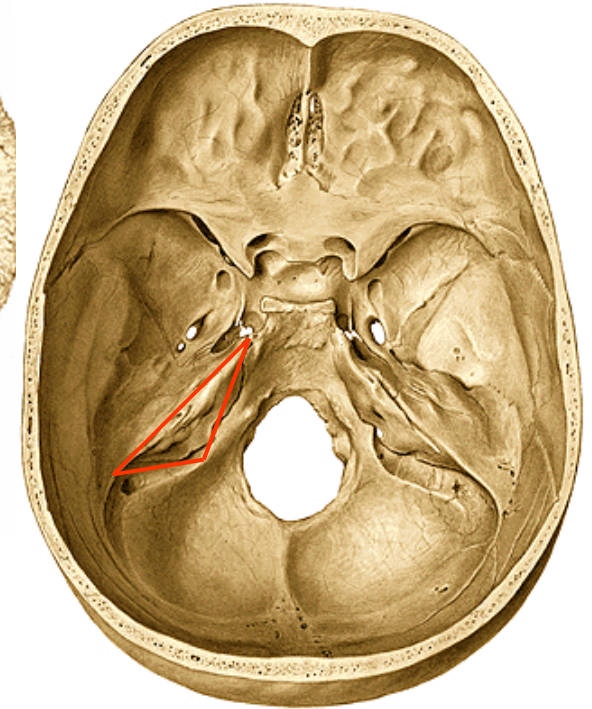
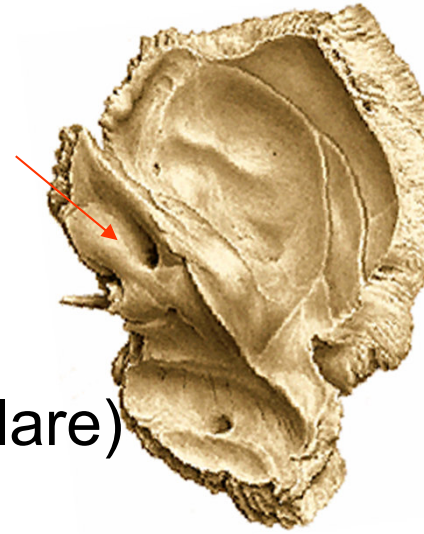
- apex pyramidis
- impressio trigeminalis

- sulcus n. petrosi majoris et minoris



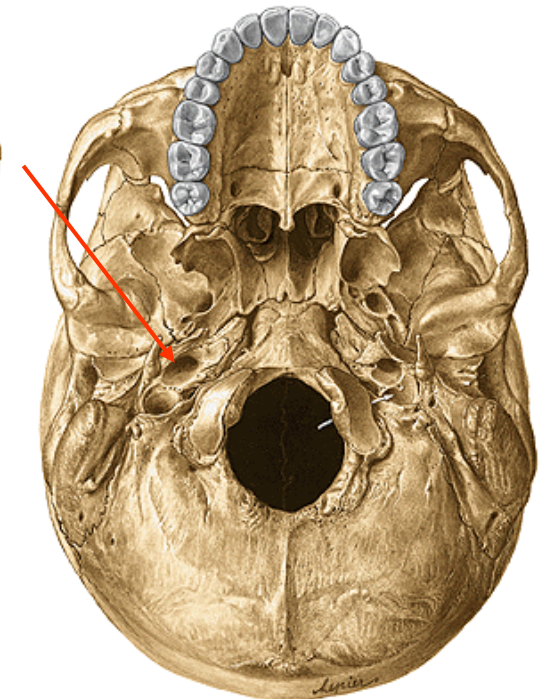
Facies posterior

- porus acusticus internus
- meatus acusticus internus
- Entrance of n. facialis
- incisura jugularis (foramen jugulare)



Facies inferior pyramidis:

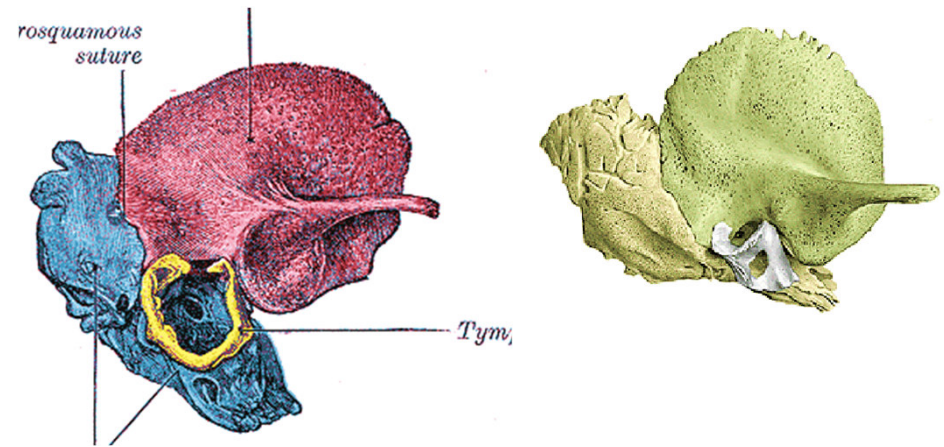
- apertura externa canalis carotici
- foramen jugulare



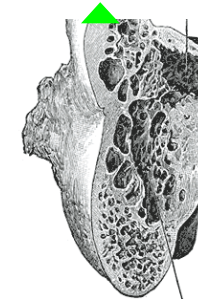
Processus styloideus

- foramen stylomastoideum

Pars tympanica:
meatus acusticus externus
porus acusticus externus



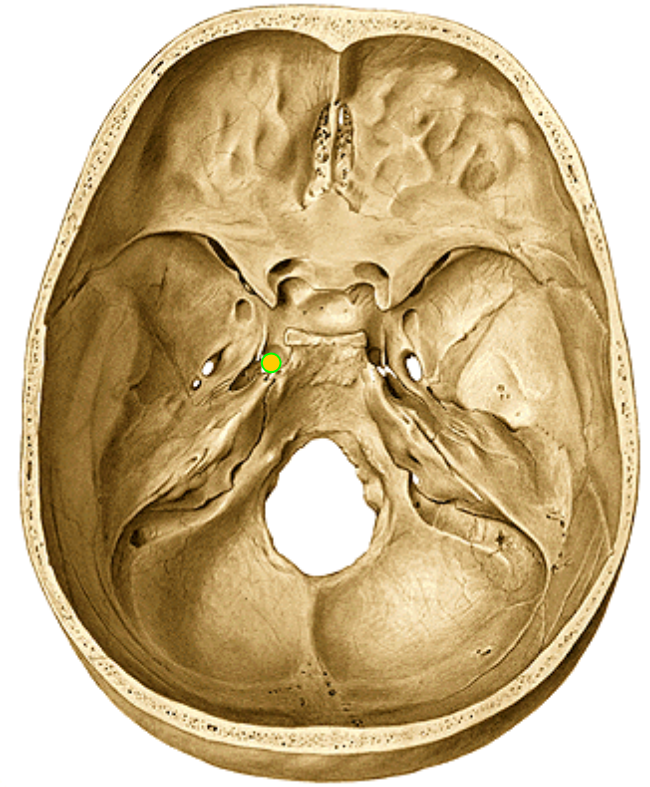
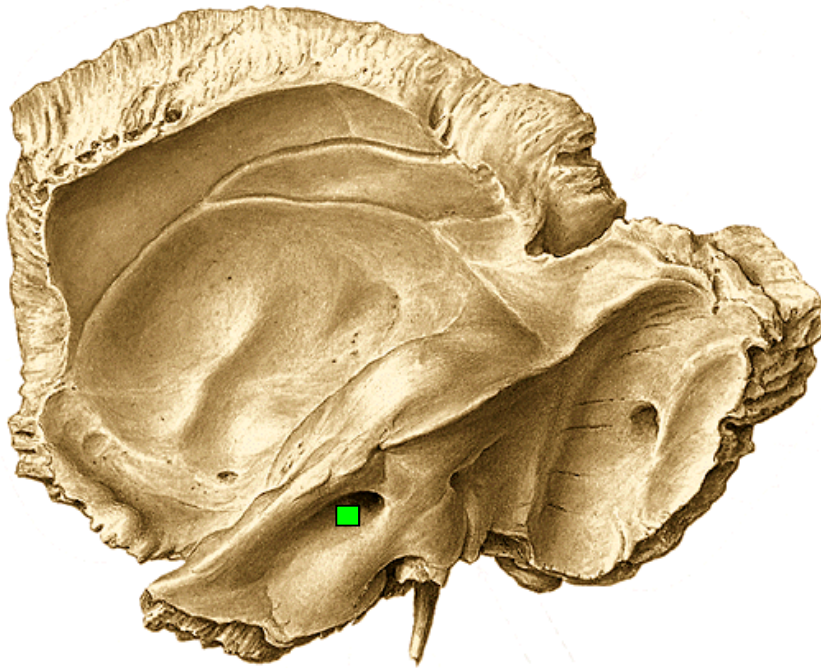
Pars mastoidea
processus mastoideus
cellulae mastoideae
incisura mastoidea, sulcus a. occipitalis



Canals in os temporale

Canalis caroticus ●

Canalis n. facialis ■



Splanchnocranium

Maxilla

Os nasale

Os lacrimale

Os zygomaticum

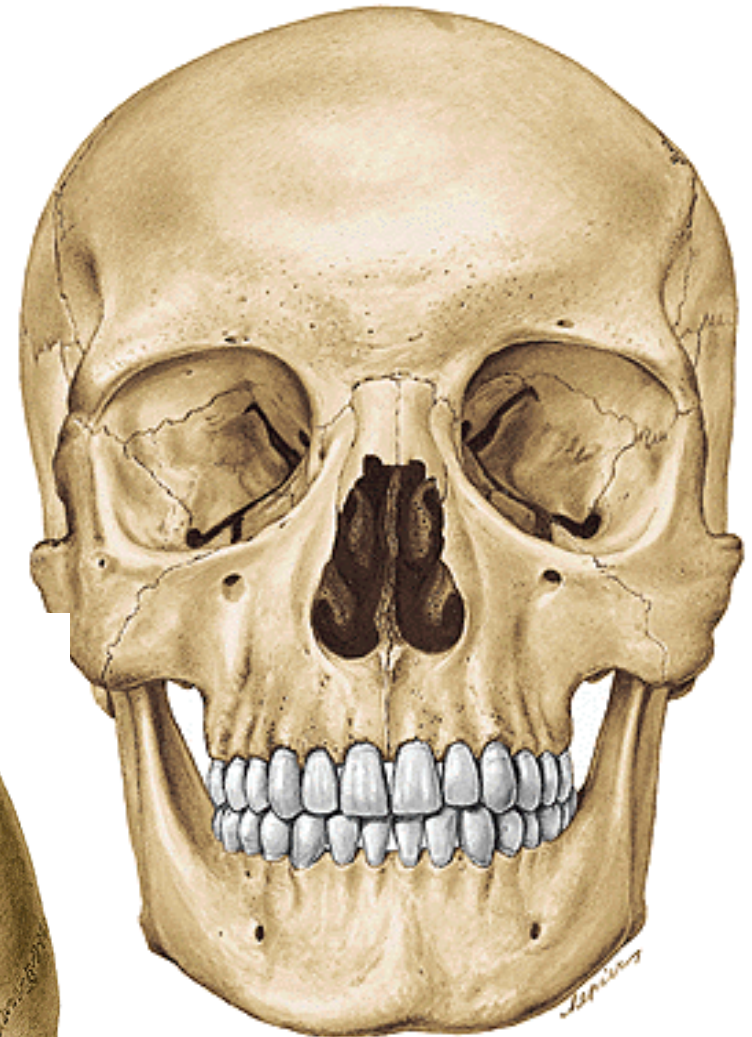
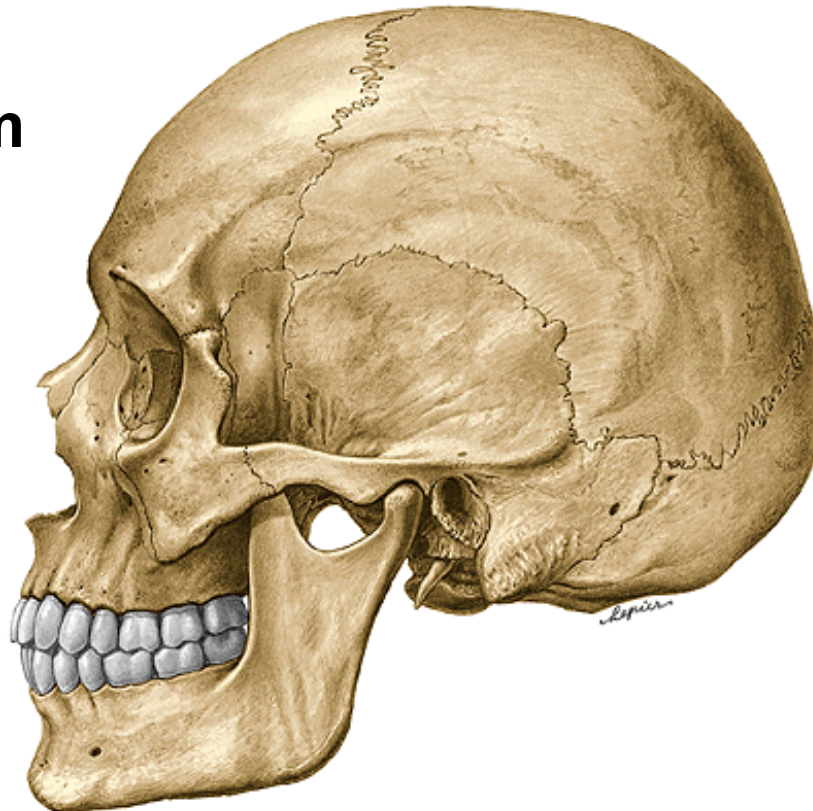
Vomer

Os palatinum

Concha nasalis inferior

Mandibula

Os hyoideum



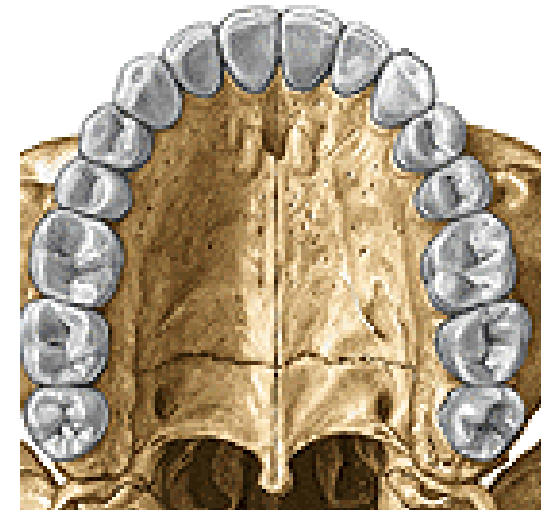
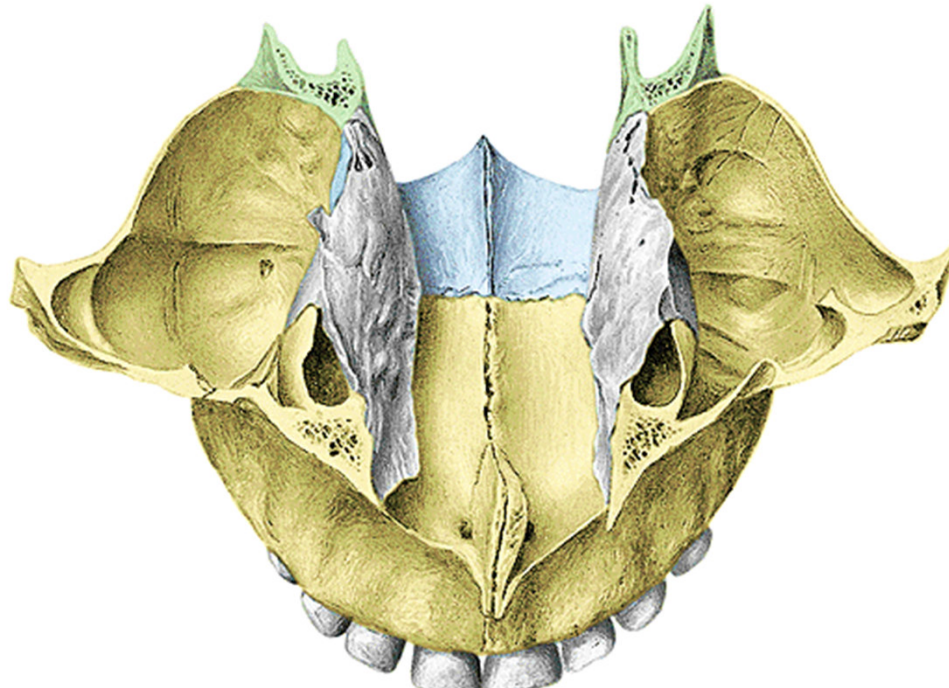
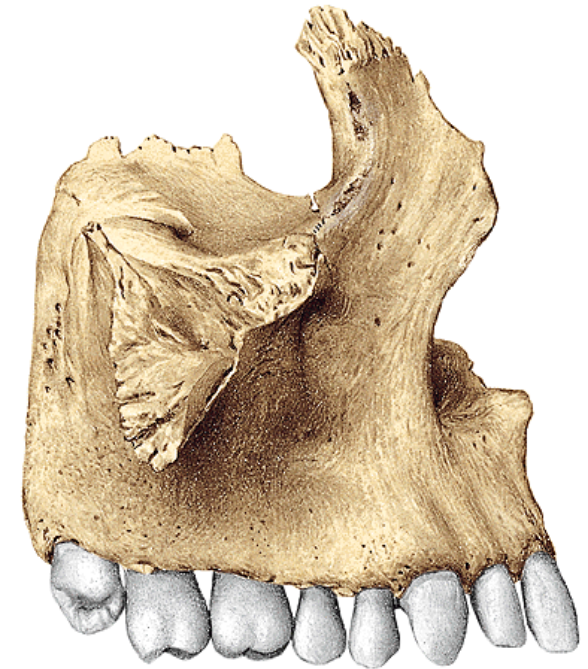
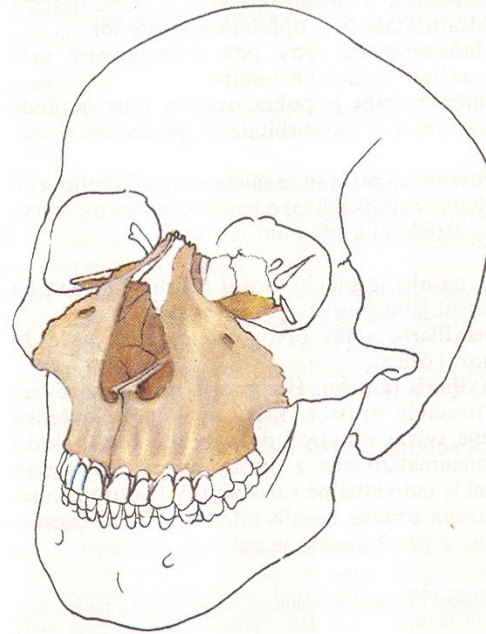
Maxilla



Maxilla

Corpus maxillae
Sinus maxillaris

Processus frontalis
Processus zygomaticu
Processus alveolaris
Processus palatinus



Corpus maxillae

Facies orbitalis

margo infraorbitalis

sulcus infraorbitalis

canalis infraorbitalis

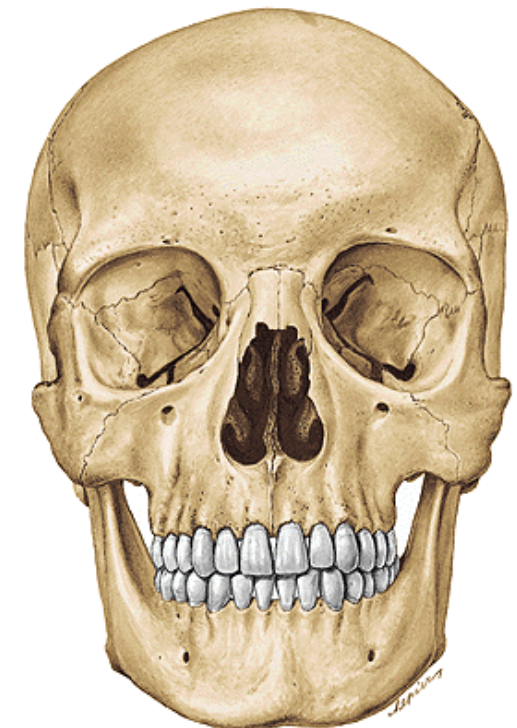
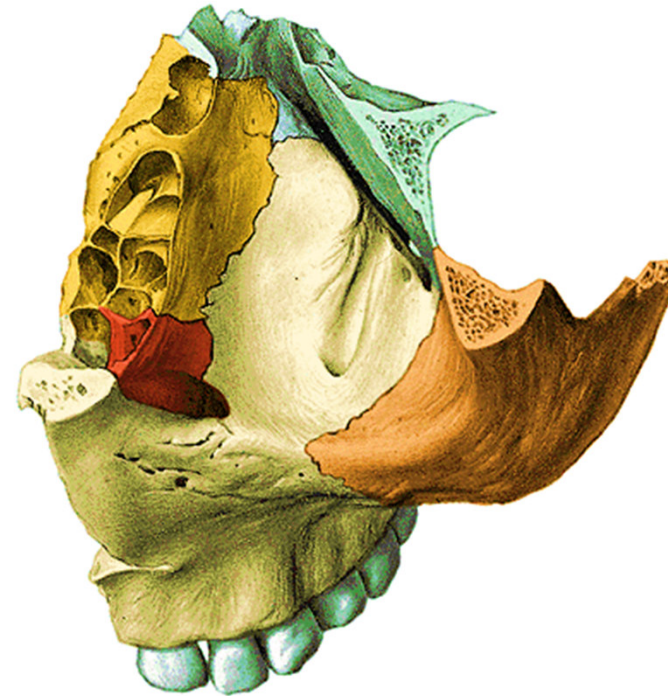
(canals for nerves and vesel
for the upper teeth)

Facies anterior

foramen infraorbitale

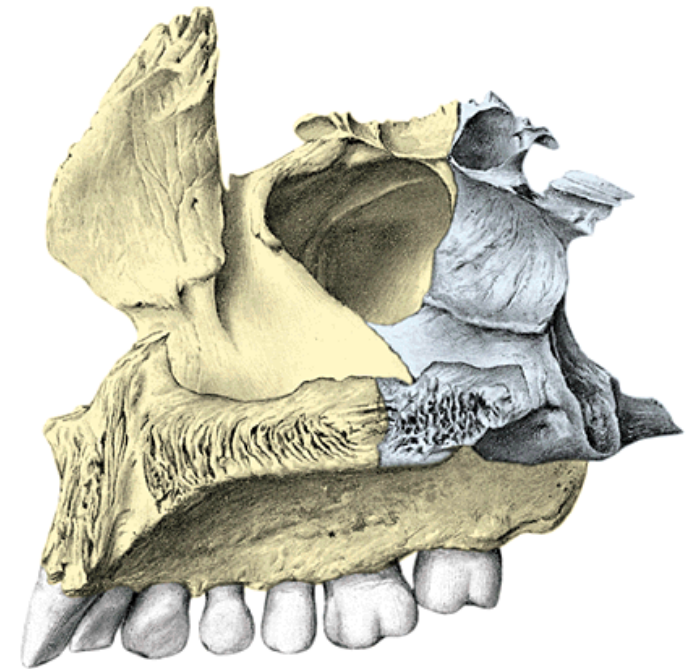
incisura nasalis

fossa canina



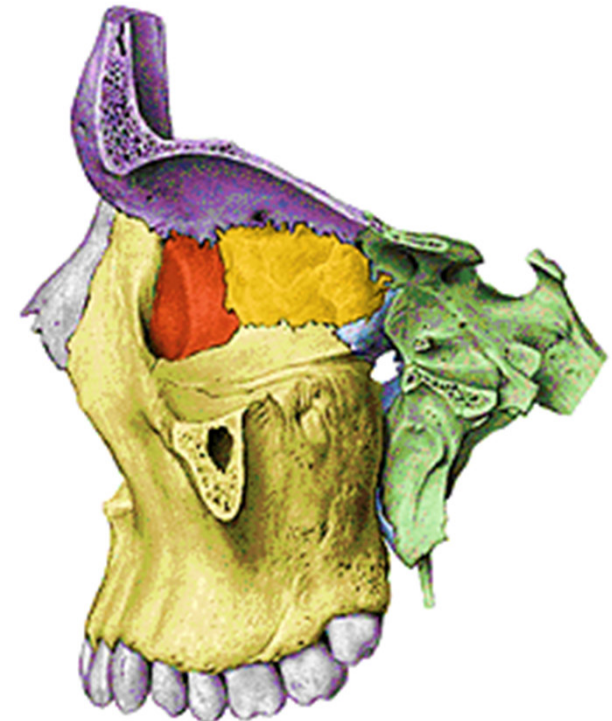
Facies nasalis

- hiatus sinus maxillaris
- sinus maxillaris



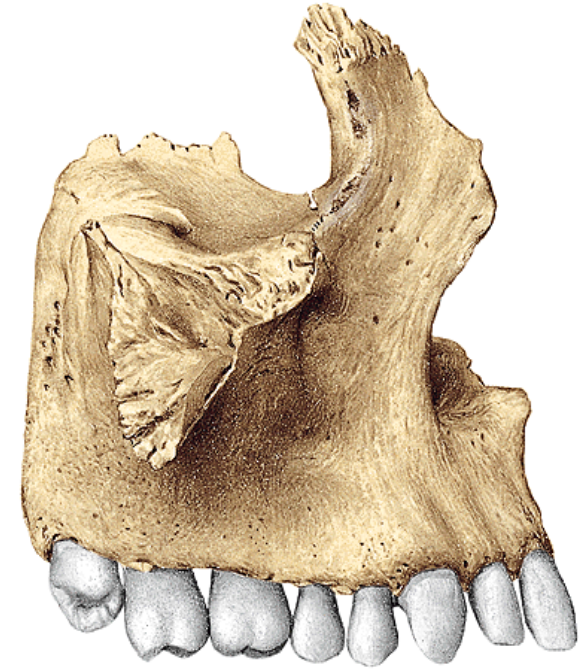
Facies infratemporalis

- tuber maxillae
(canals for nerves and vessels for the upper teeth)

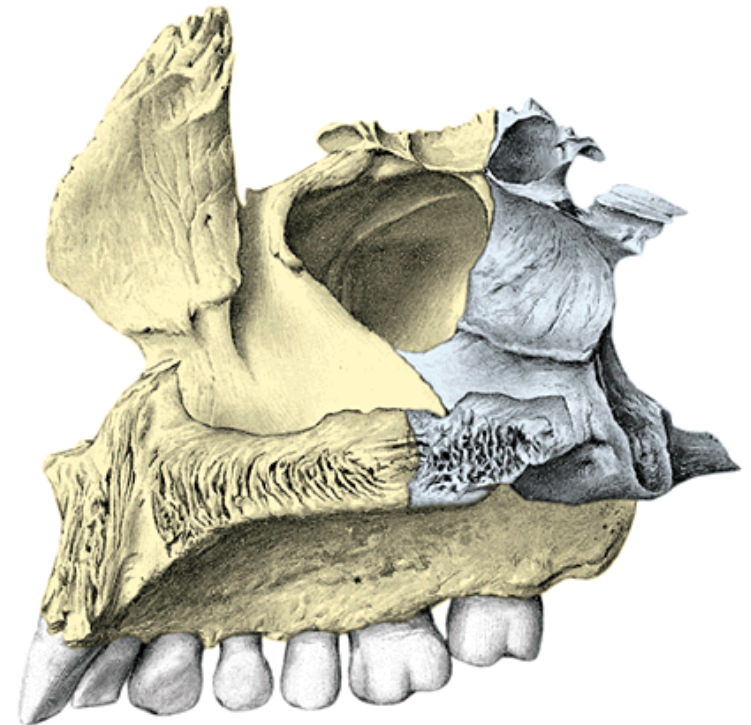
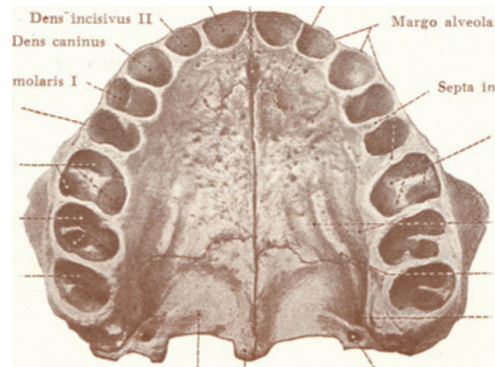


Processus frontalis maxillae

incisura nasalis (apertura piriformis)

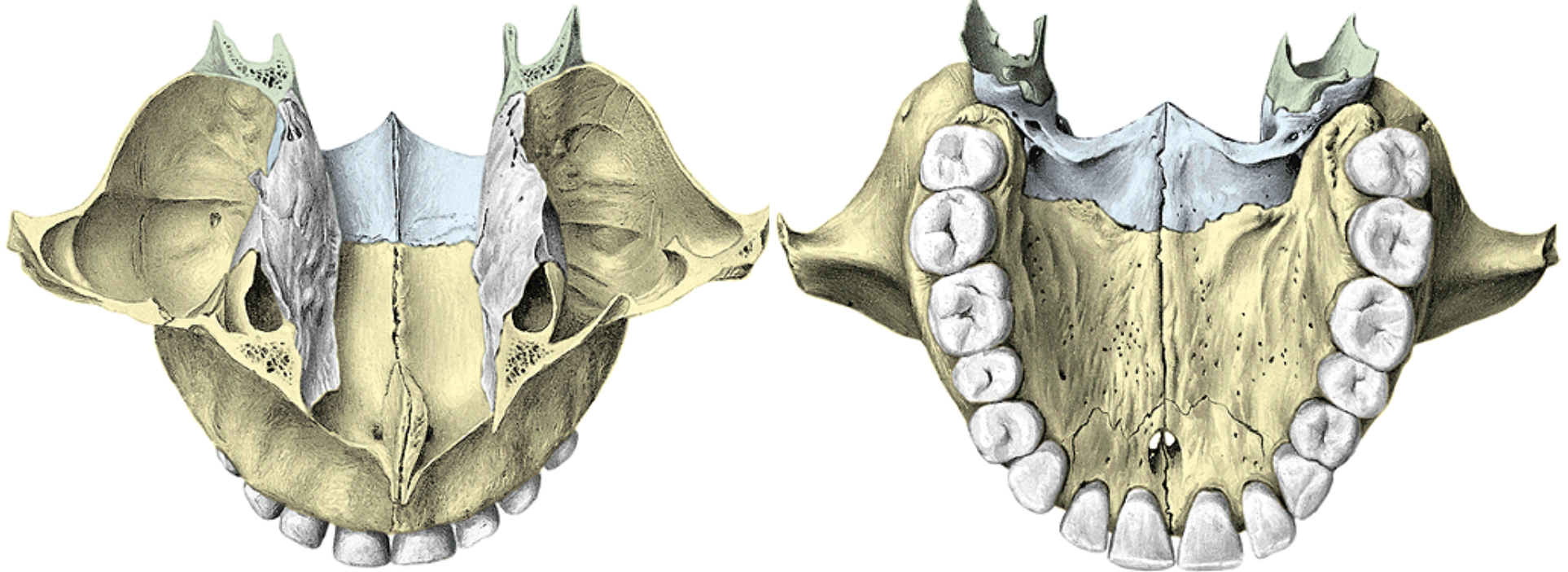
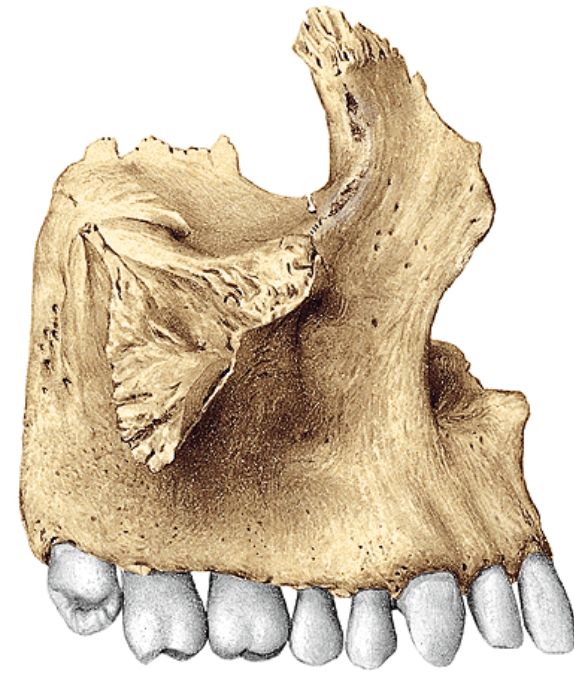


Processus alveolaris alveoli dentales

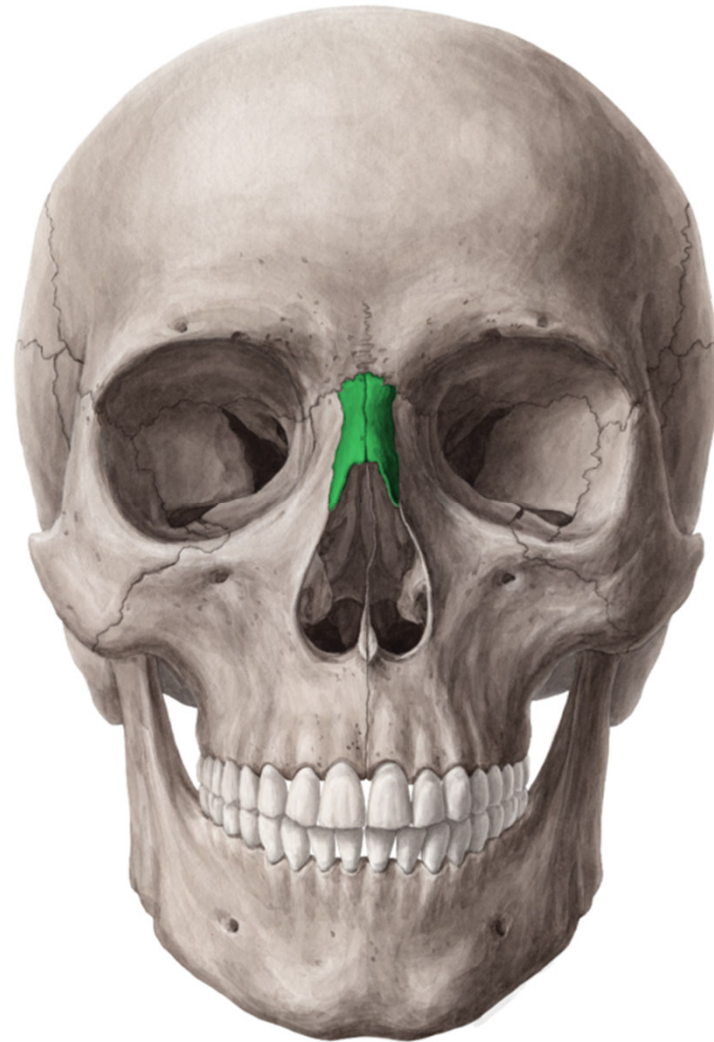


Processus zygomaticus

Processus palatinus



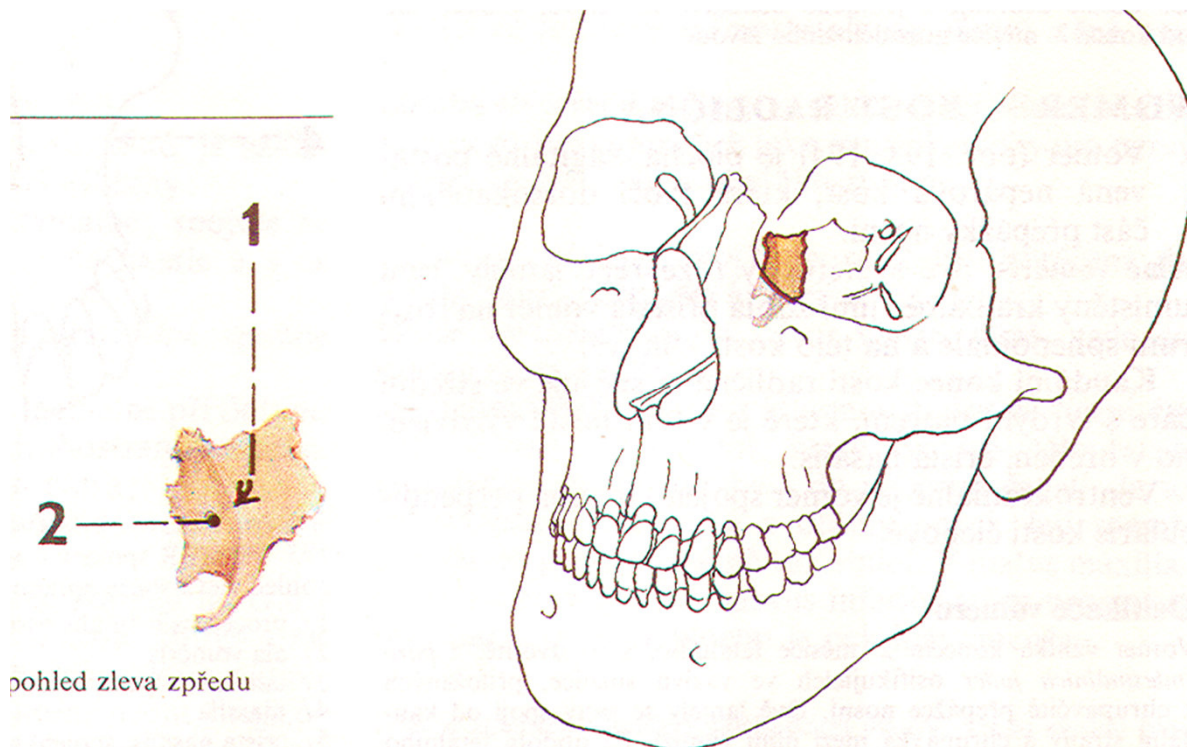
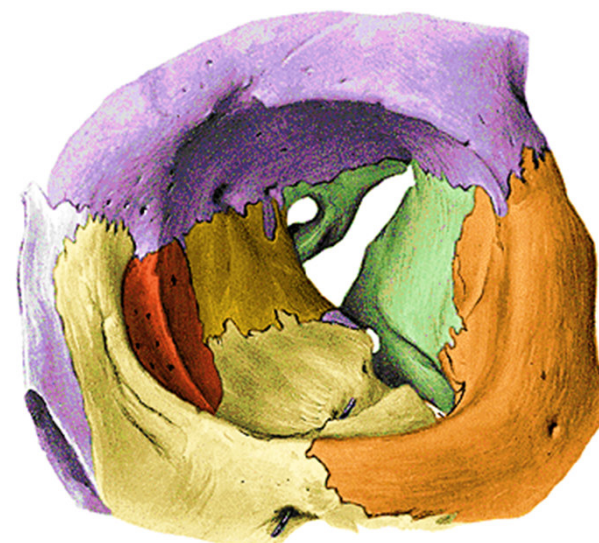
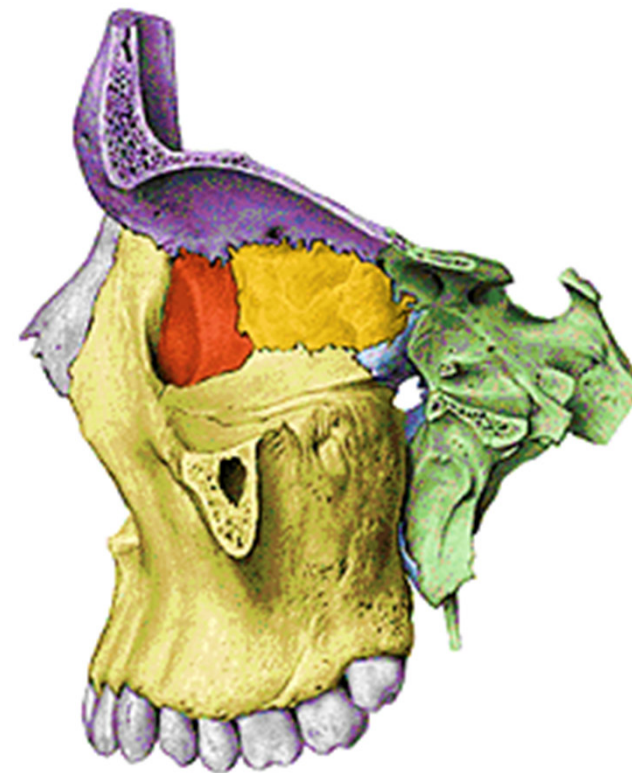
Os nasale



Os nasale
Apertura piriformis



Os lacrimale



pohled zleva zpredu

Os zygomaticum



Os zygomaticum

Corpus:

Facies lateralis

Facies orbitalis

Facies temporalis

foramen zygomaticoorbitale

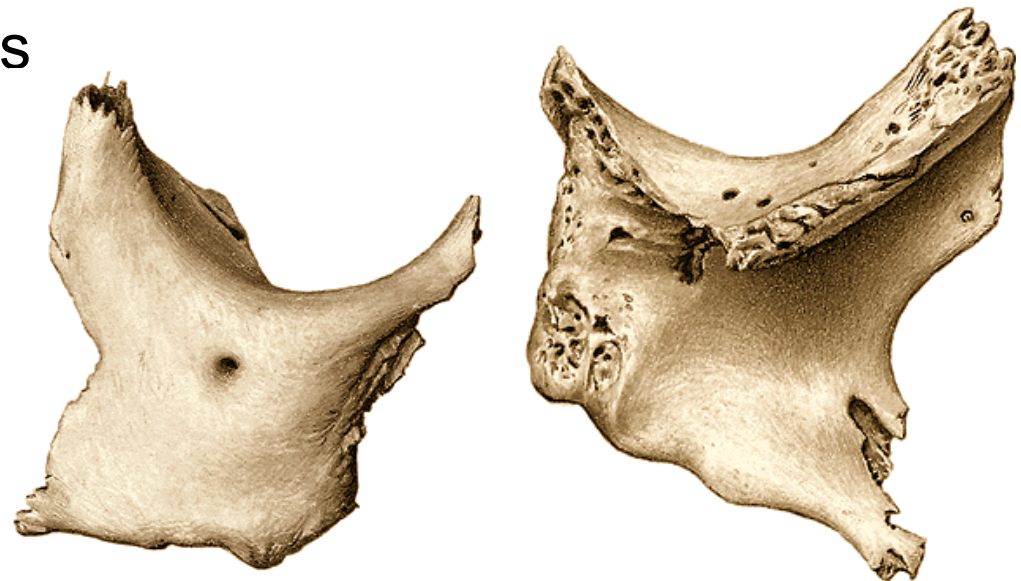
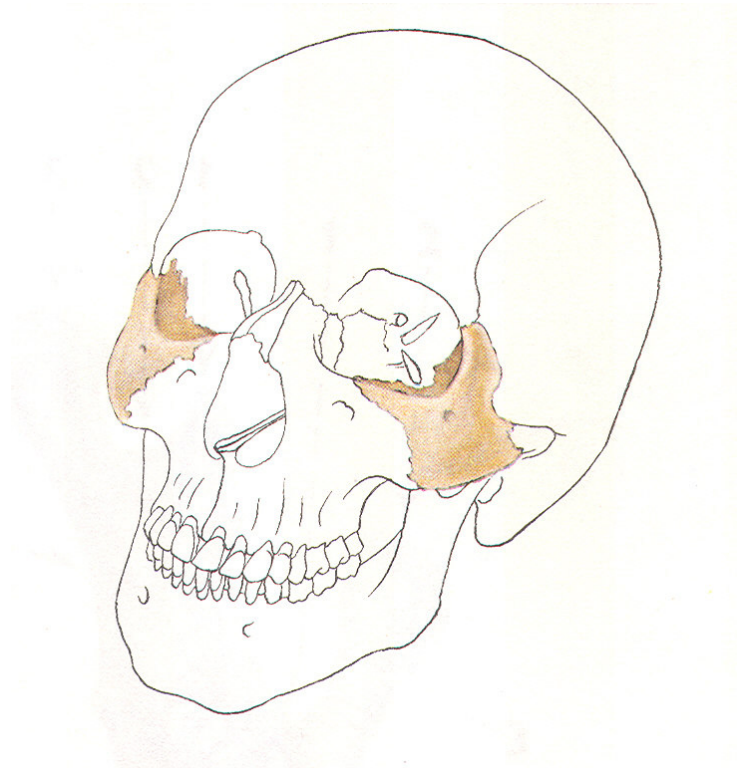
foramen zygomaticofaciale

Processus:

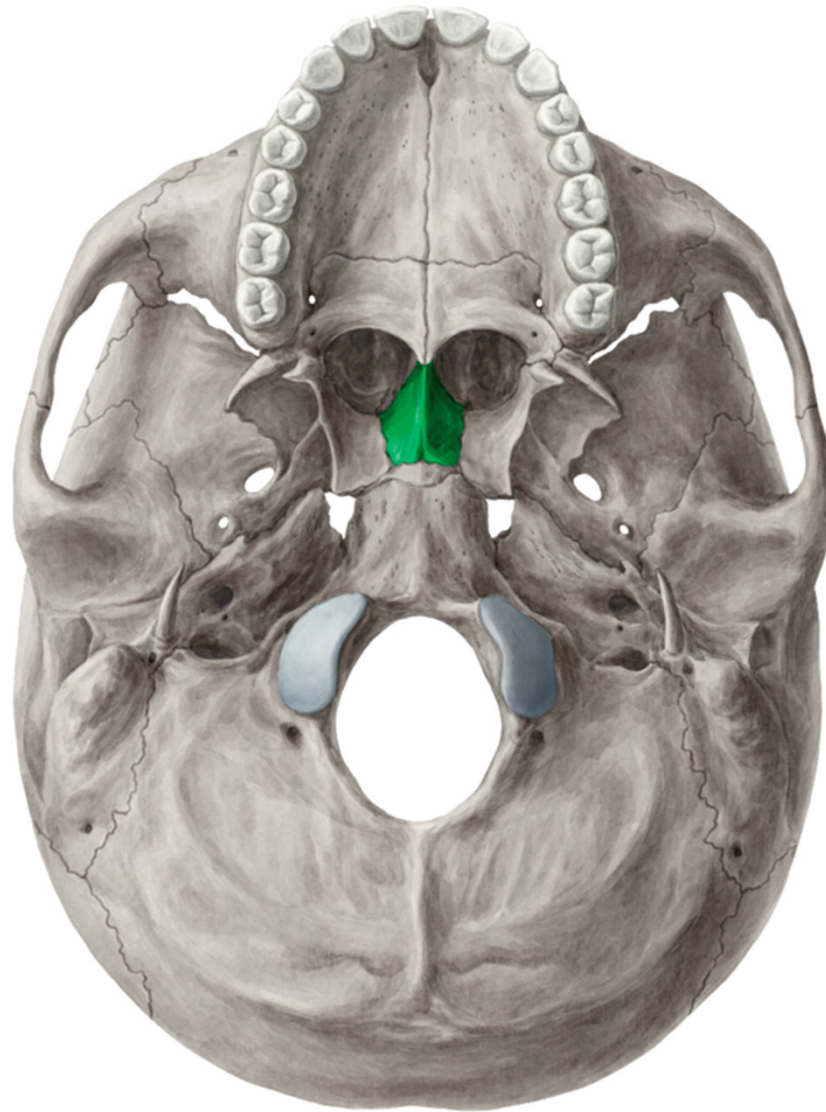
temporalis- arcus zygomaticus

frontalis

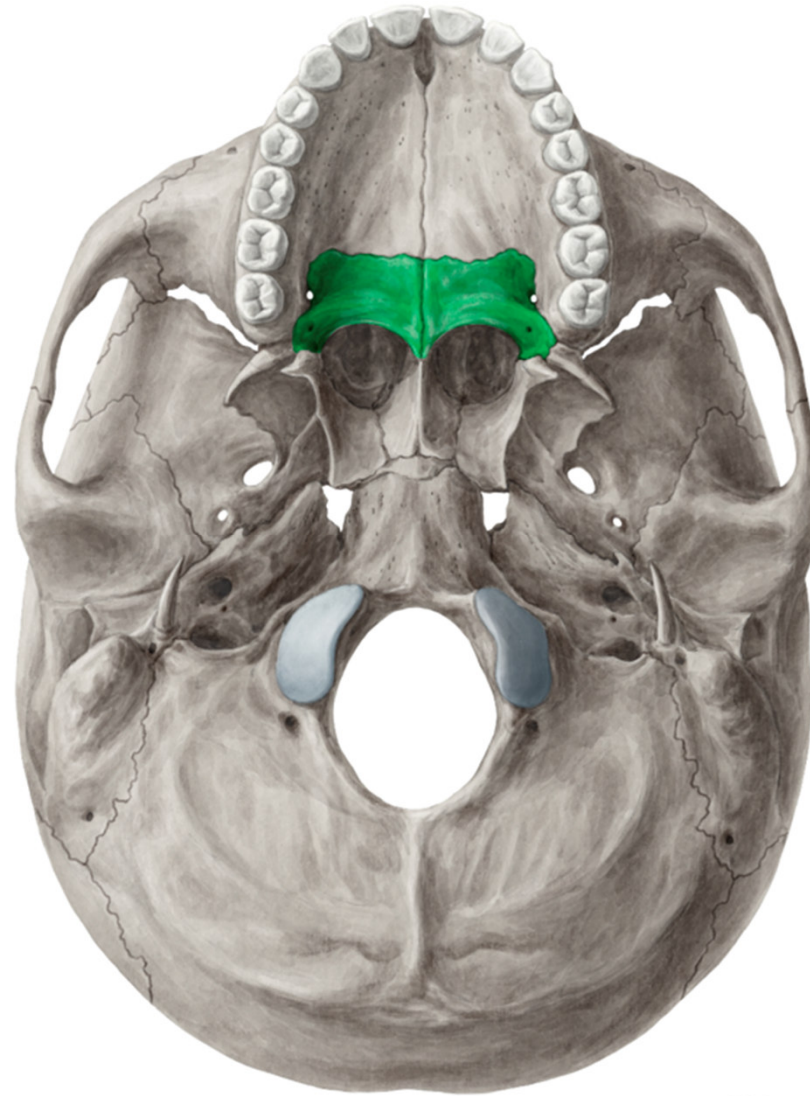
maxillaris



Vomer



Os palatinum



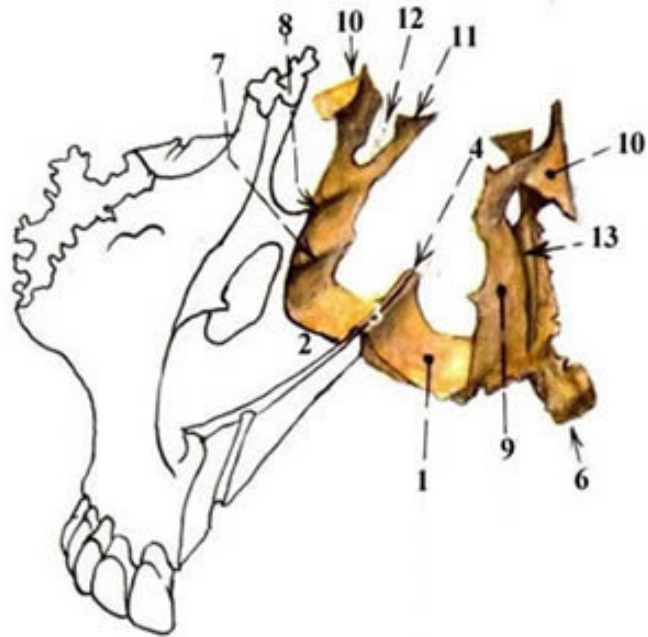
Os palatinum

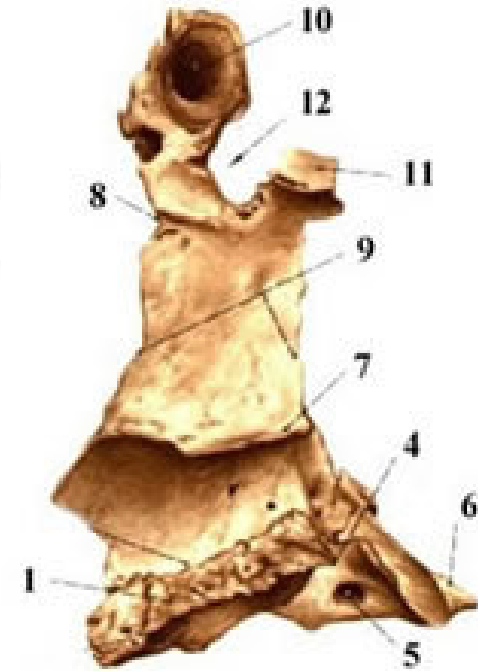
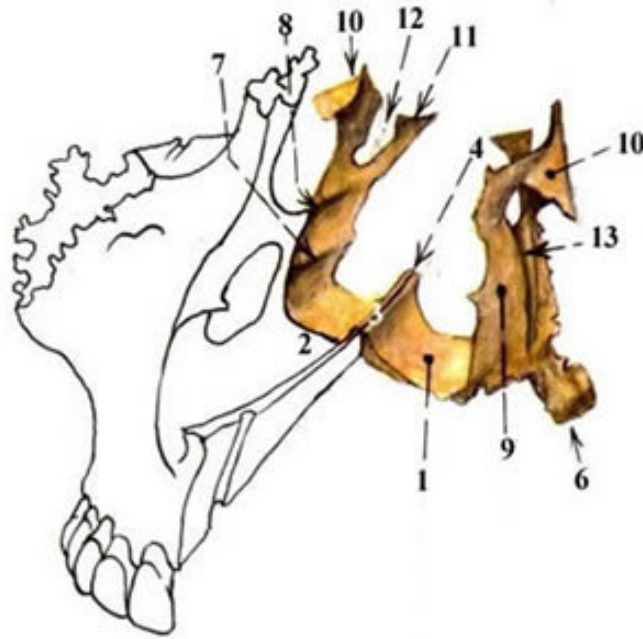
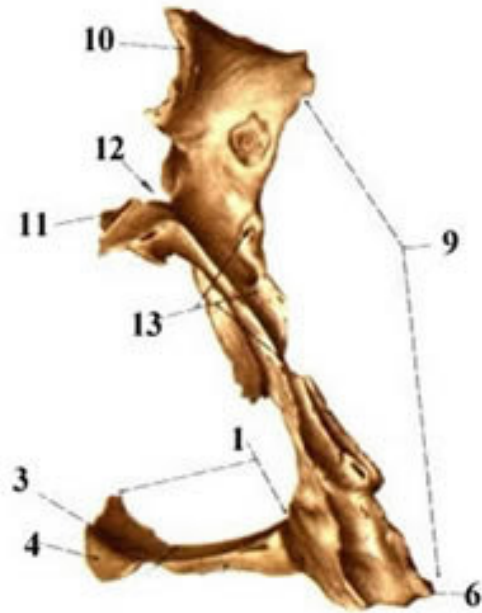
Lamina horizontalis

sutura palatina transversa

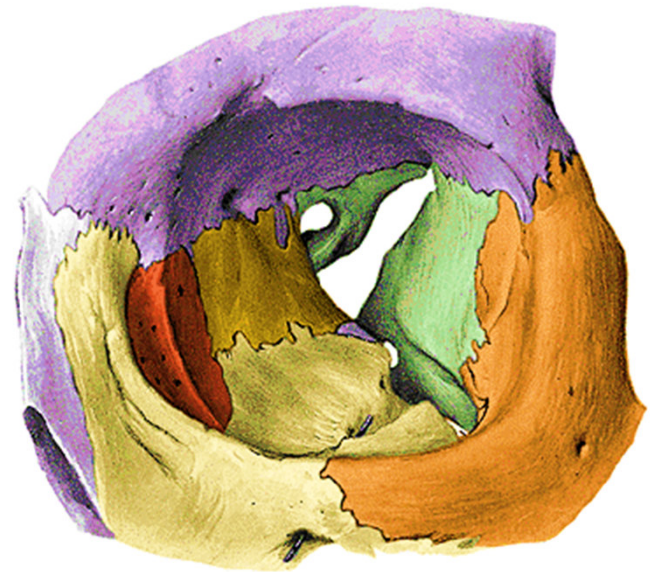
crista nasalis

foramen palatinum majus

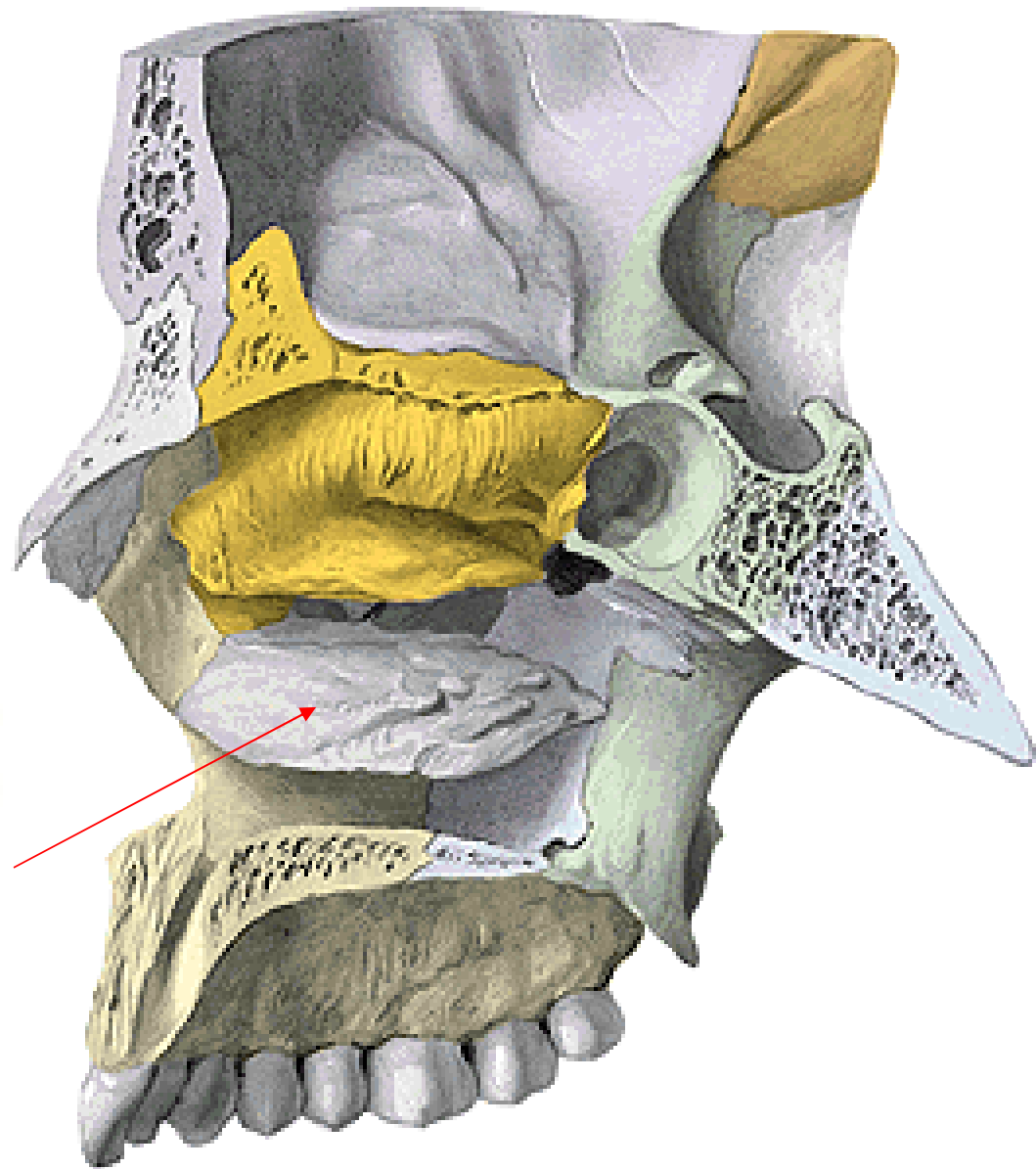
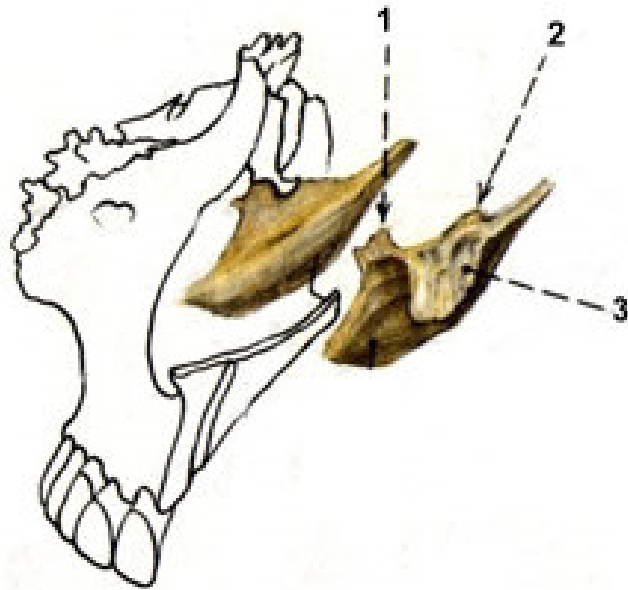




Lamina perpendicularis
 crista ethmoidalis et conchalis
 foramen sphenopalatinum
 processus orbitalis et sphenoidalis
Processus pyramidalis



Concha nasalis inferior



Mandibula



Mandibula

corpus

ramus mandibulae dx. et sin.

angulus mandibulae

Corpus mandibulae:

fossae digastricae

spina mentalis

linea mylohyoidea

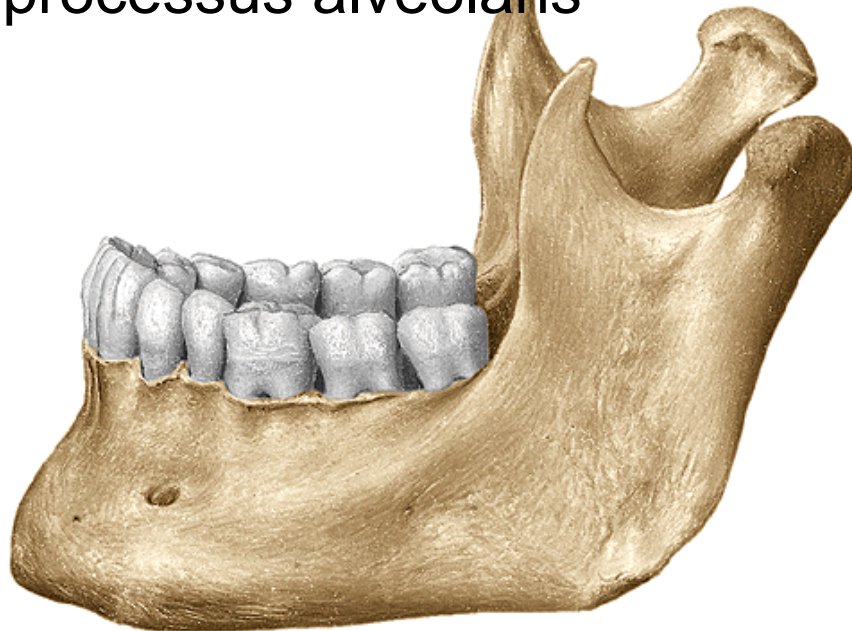
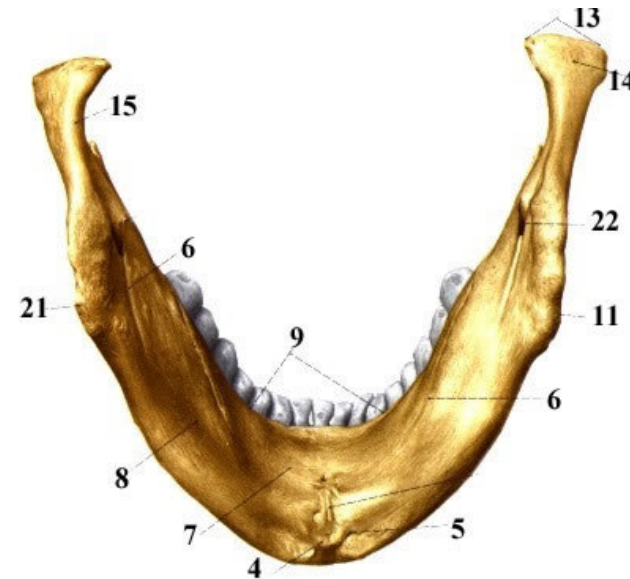
protuberantia mentalis

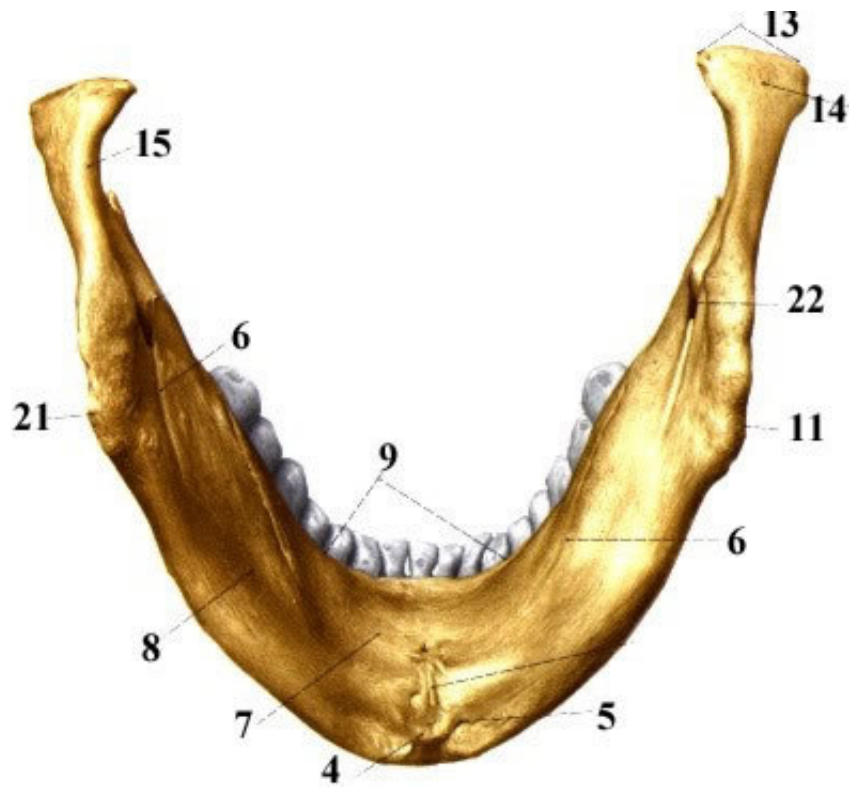
foramen mentale

processus alveolaris

fovea sublingualis

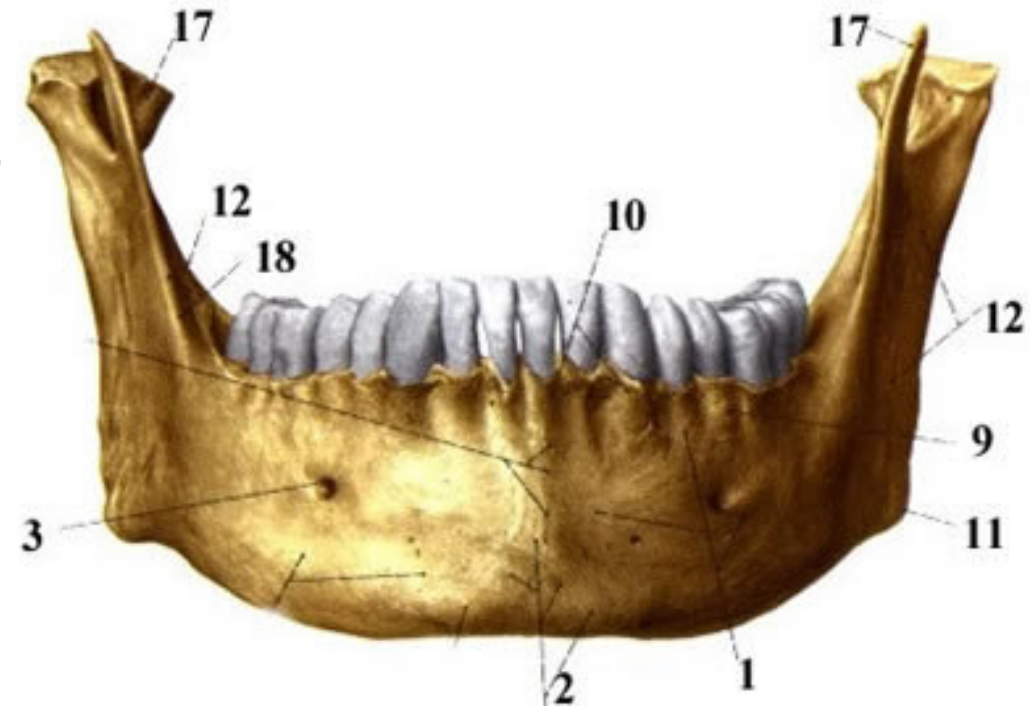
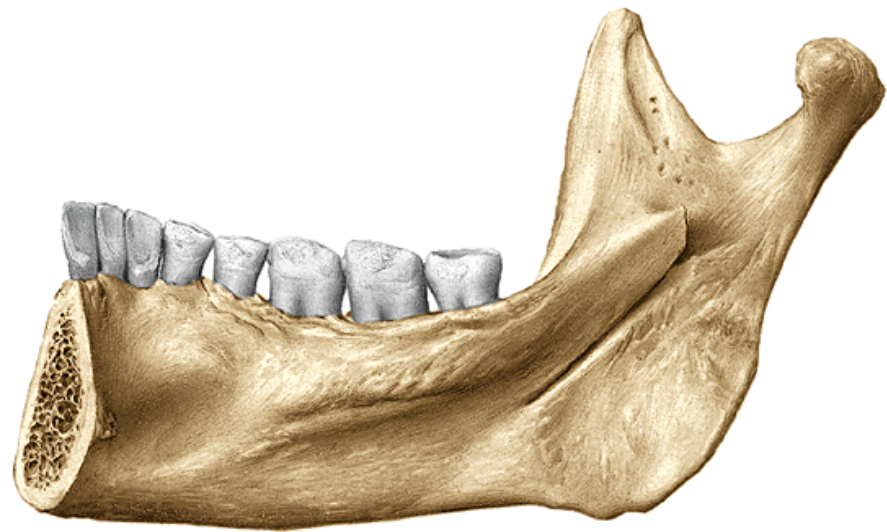
fovea submandibularis





Ramus mandibulae:

- processus condylaris
(caput, collum s fovea pterygoidea)
- processus coronoideus
- foramen mandibulae
(canalis mandibulae)
- tuberositas masseterica
- tuberositas pterygoidea

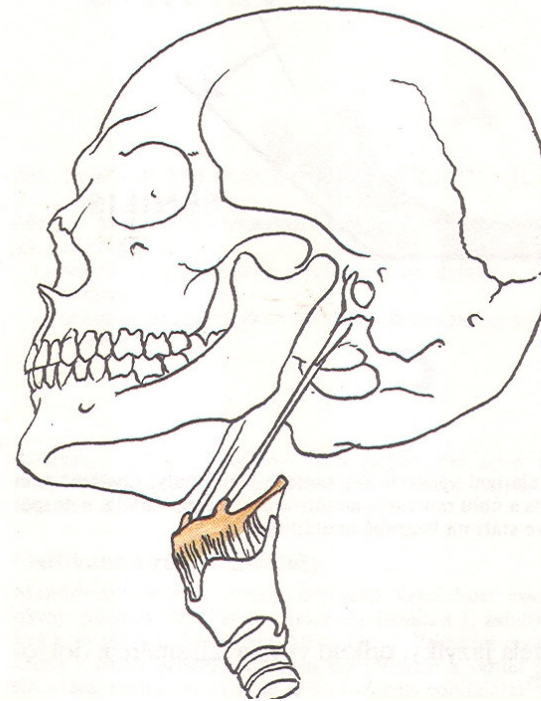
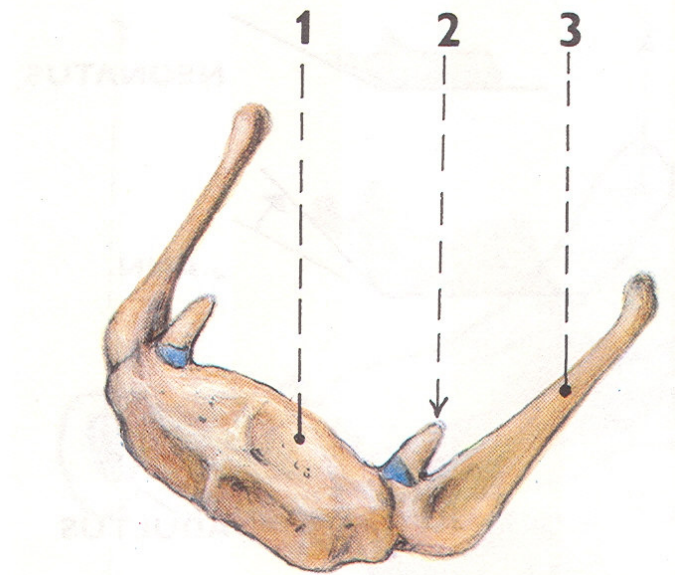


Os hyoideum

Corpus ossis hyoidei

Cornua minora ossis hyoidei

Cornua majora ossis hyoidei



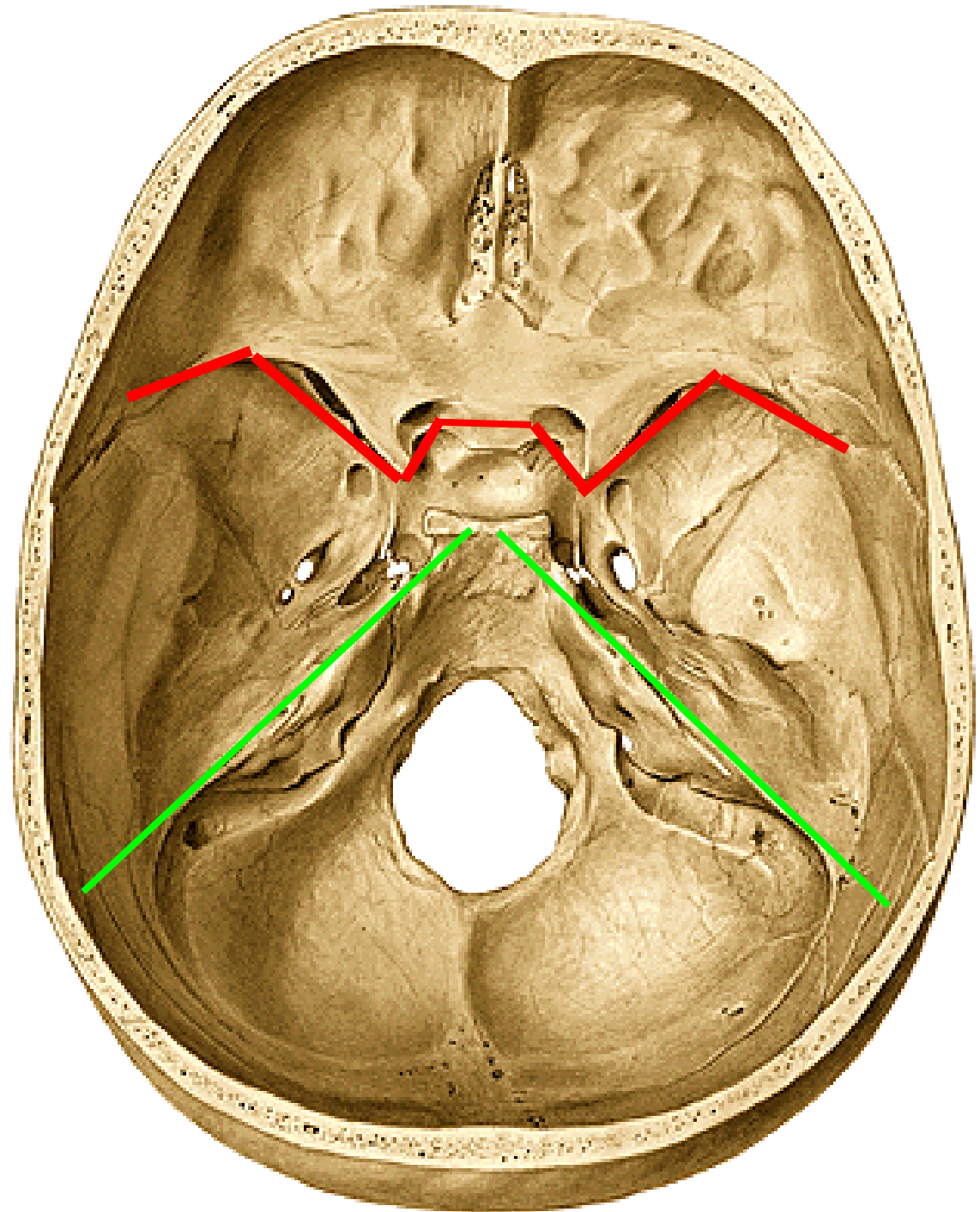
SKULL AS A WHOLE

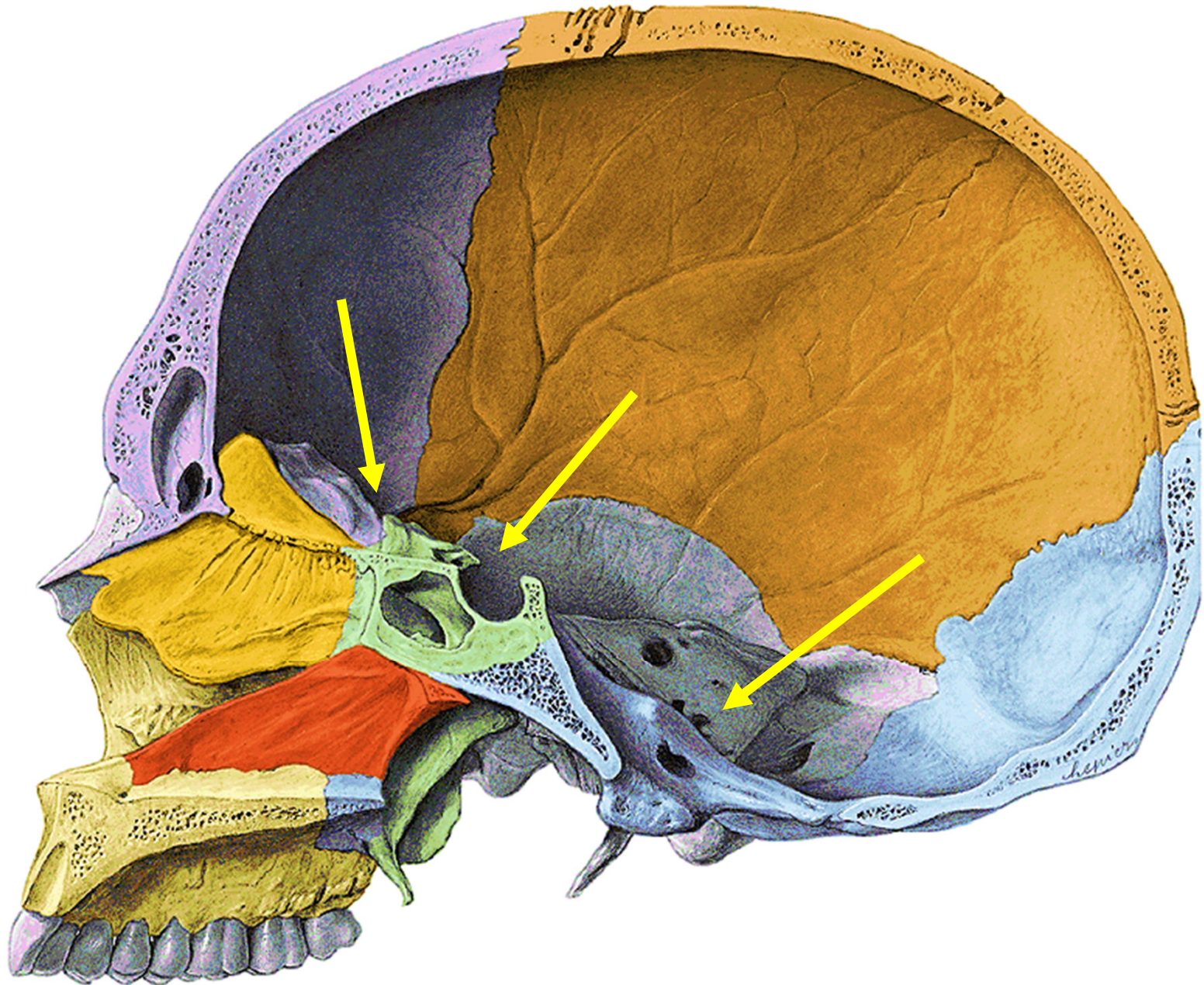
Basis cranii interna

Fossa cranii anterior

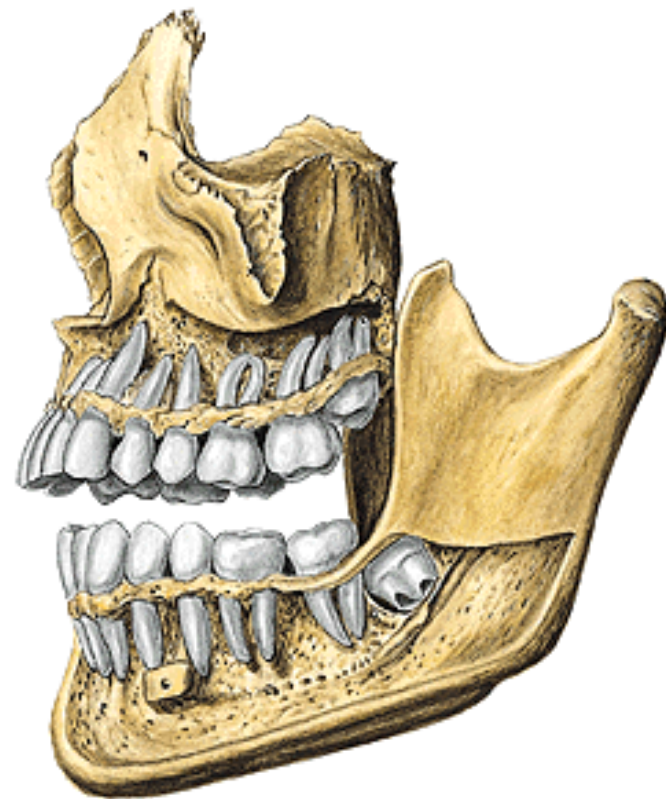
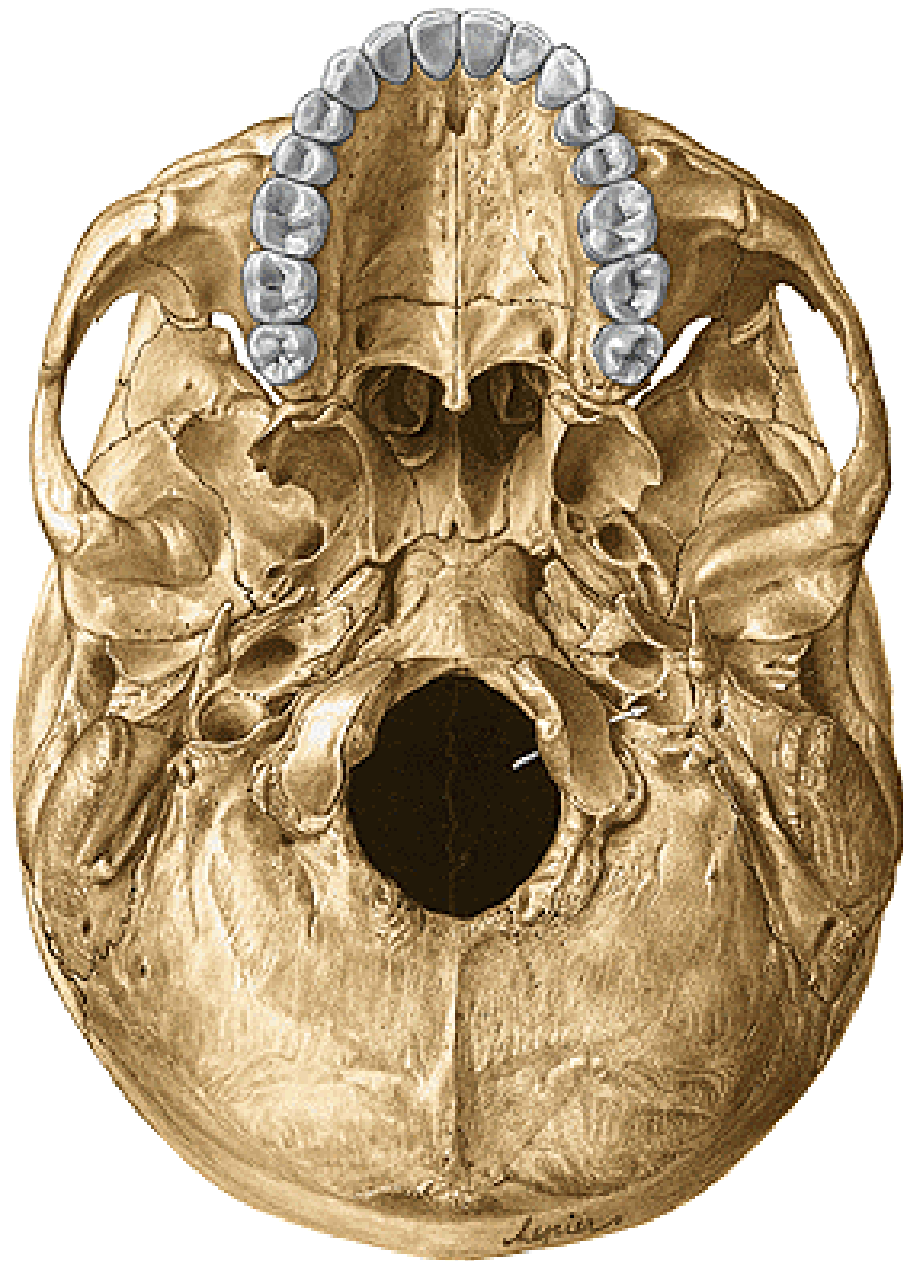
Fossa cranii media

Fossa cranii posterior





Cavum oris

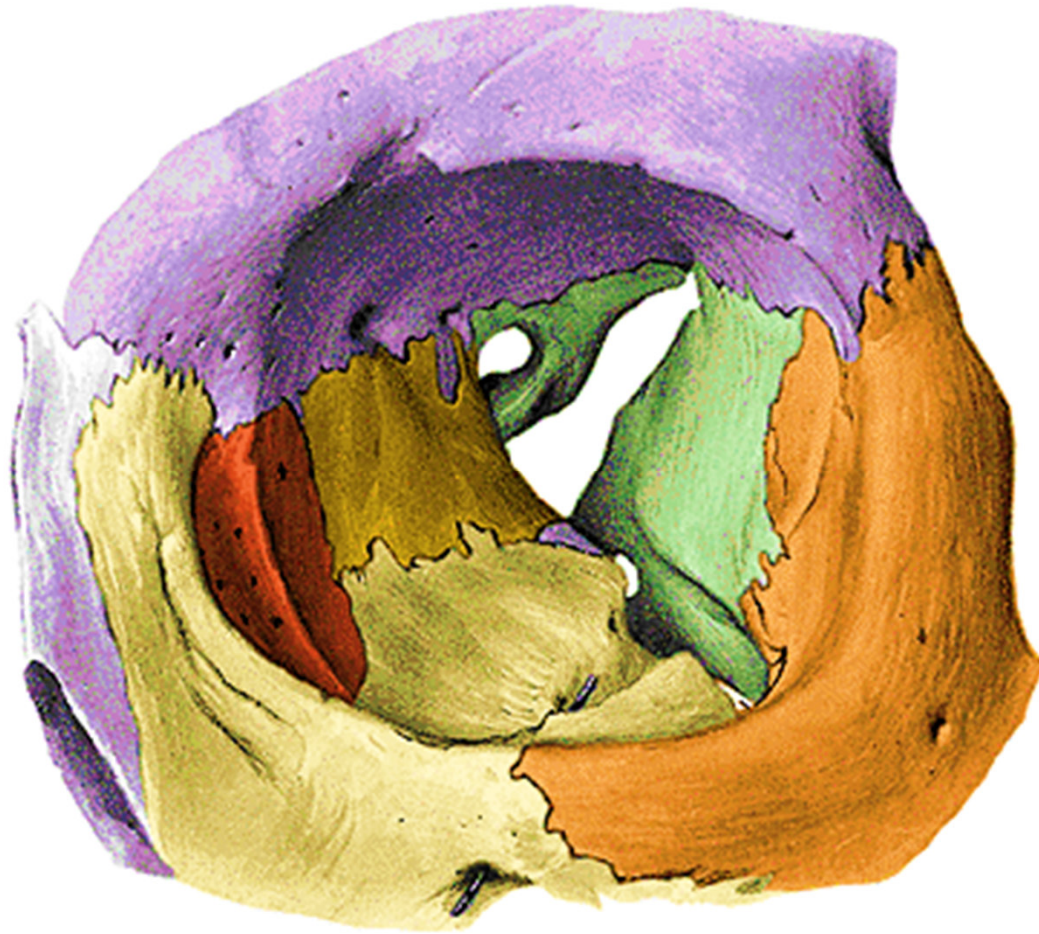


Orbita

- pyramidal shape

entrance: aditus orbitae

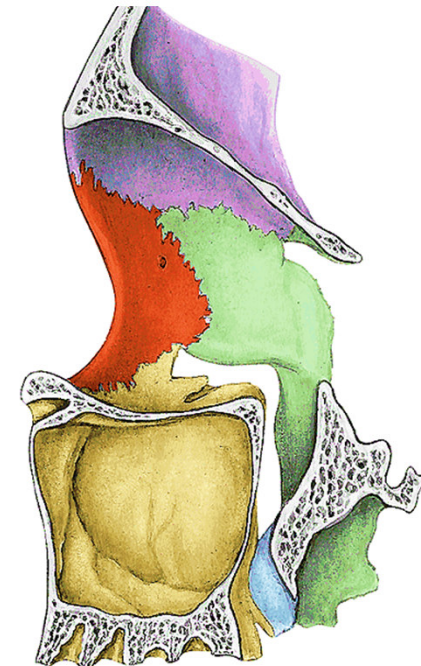
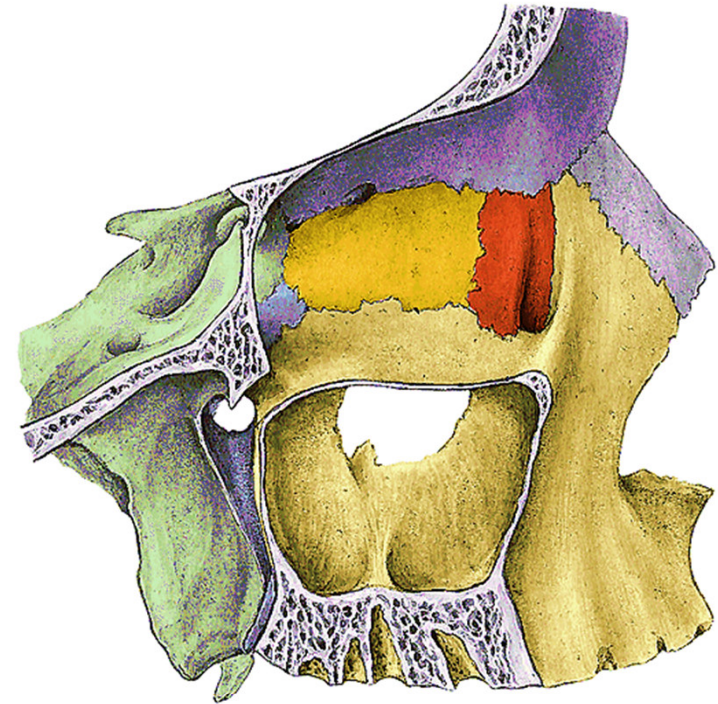
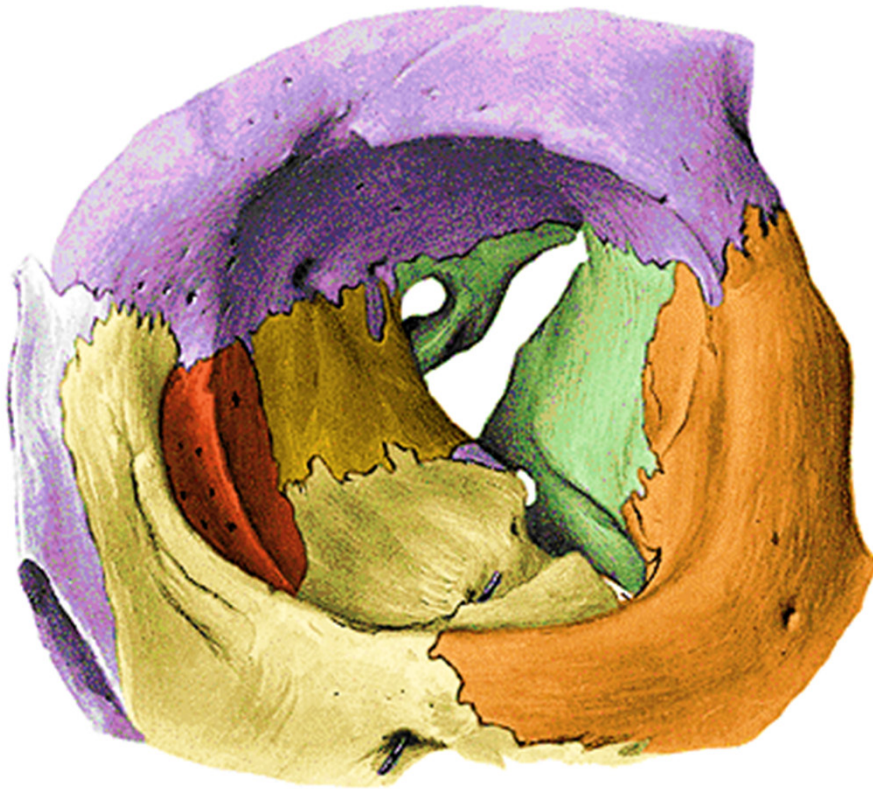
top: canalis opticus



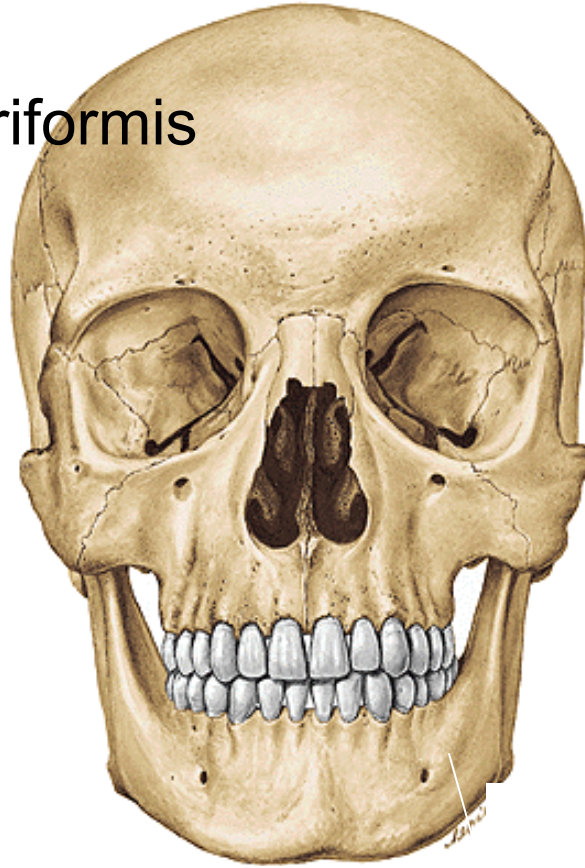
Orbita

Openings:

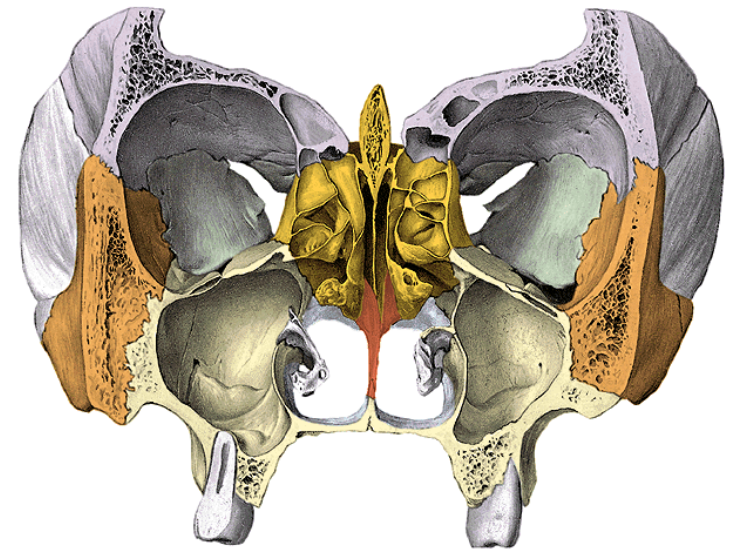
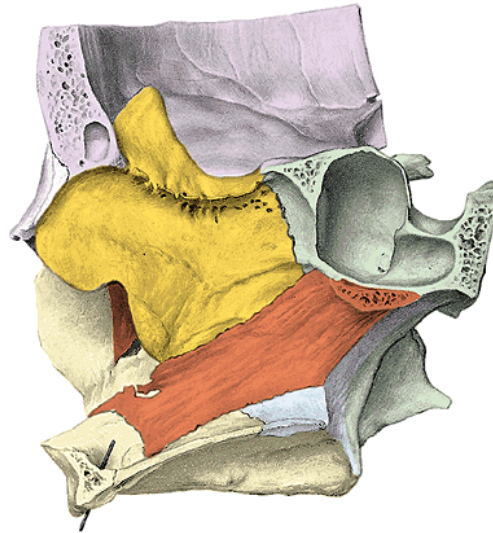
fissura orbitalis superior
fissura orbitalis inferior



Cavitas nasi ossea:
entrance: apertura piriformis
exit: choanae



Septum nasi osseum



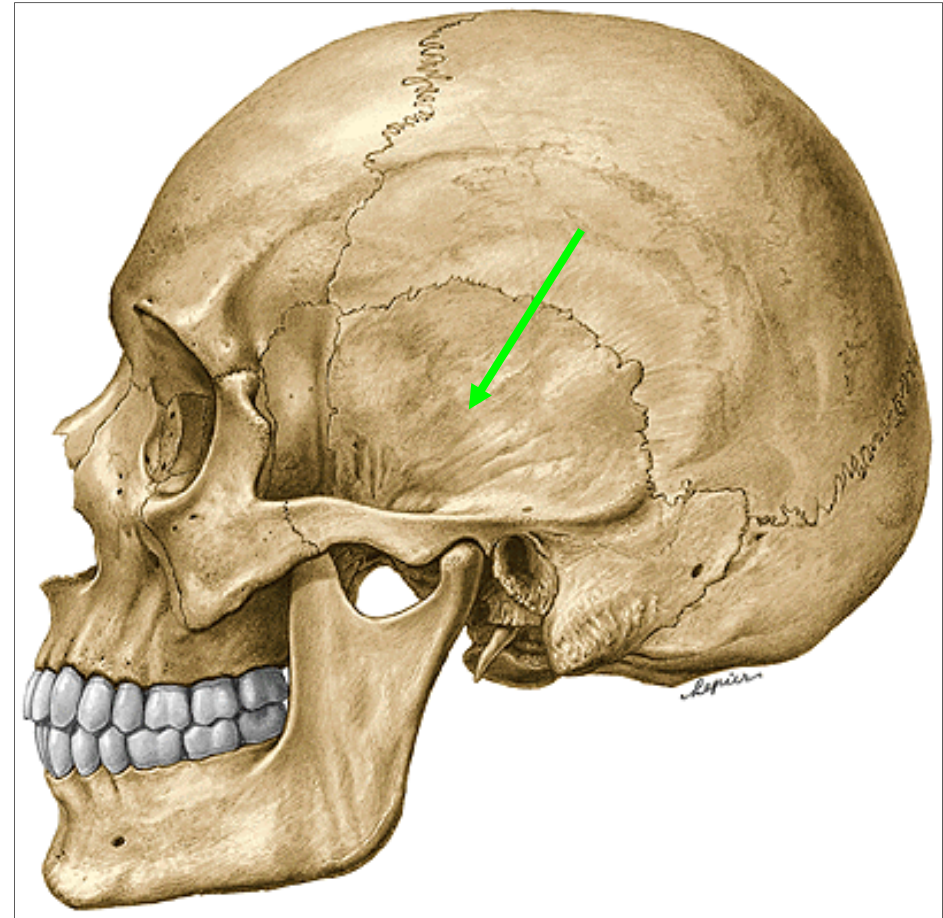
Fossa temporalis:

Connections with:

orbita - fissura orbitalis inferior
fossa infratemporalis

Content:

m. temporalis



Fossa infratemporalis:

-continuation of the temporal fossa

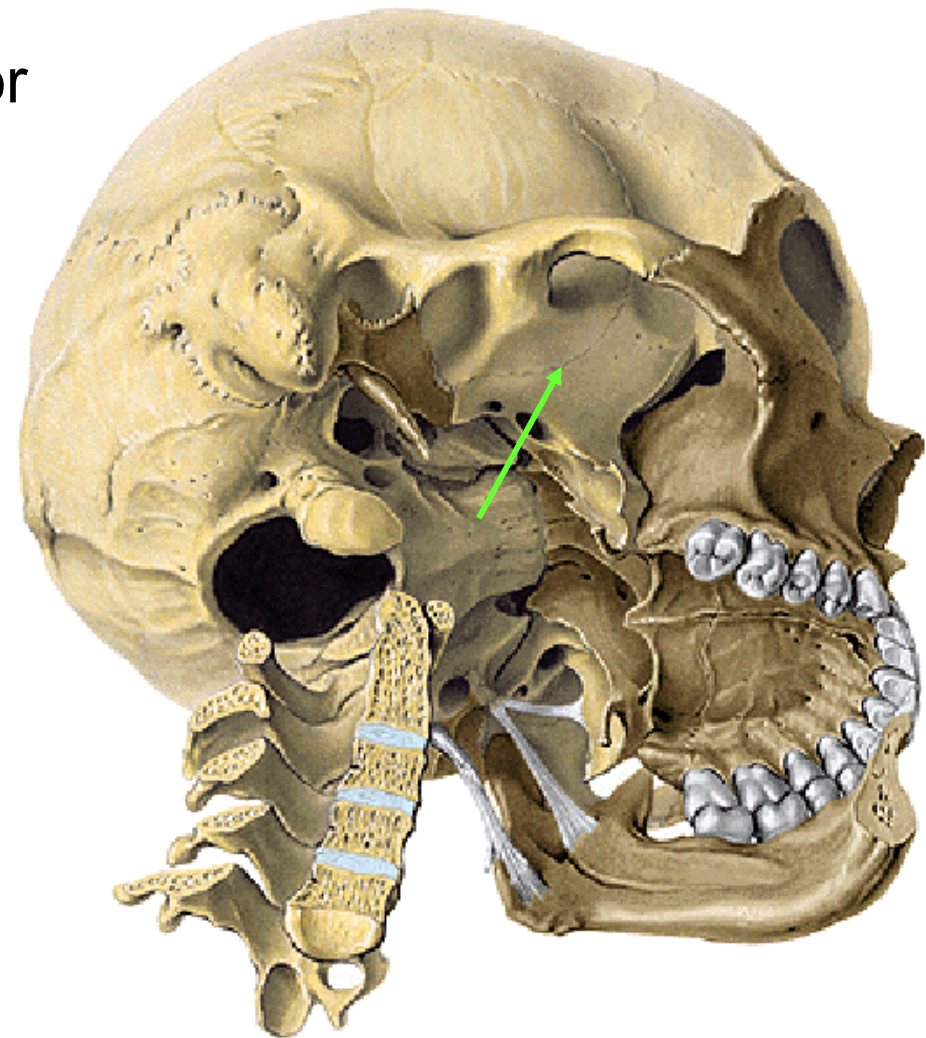
Openings: foramen ovale

foramen spinosum

foramen mandibulare

fissura orbitalis inferior

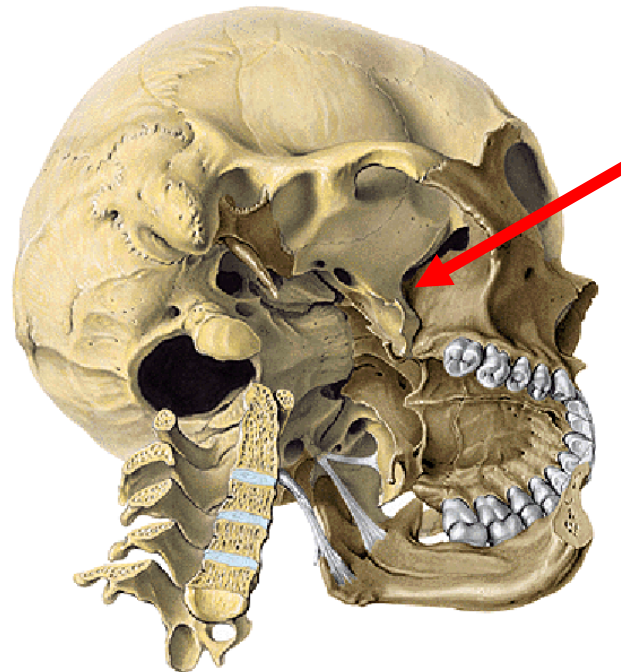
Content: mm. pterygoidei

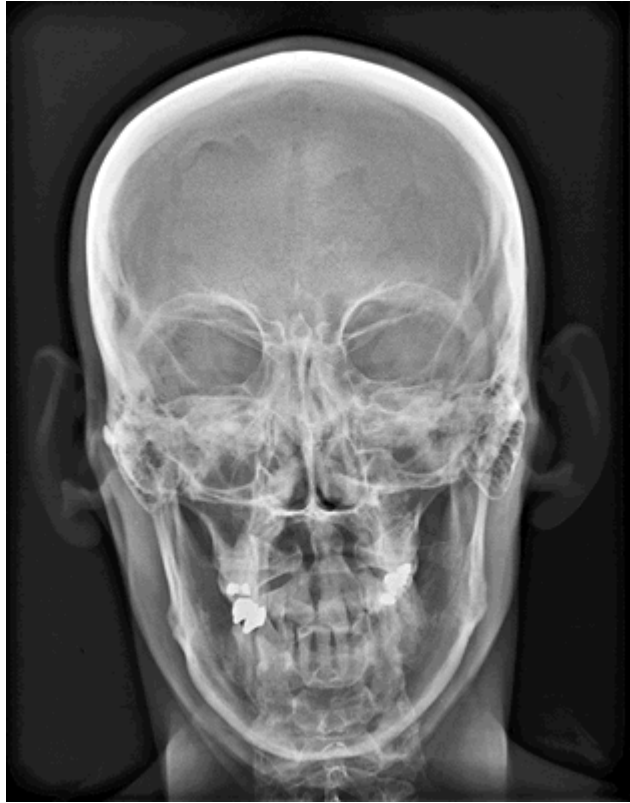


Fossa pterygopalatina:

Connections with:

Fossa cranii media
Orbita
cavum oris
fossa infratemporalis
Basis cranii externa
cavum nasi

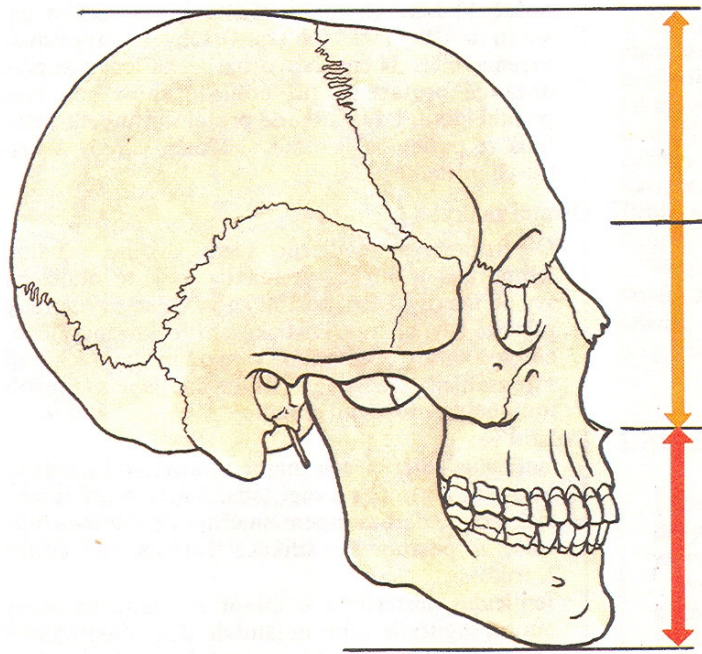




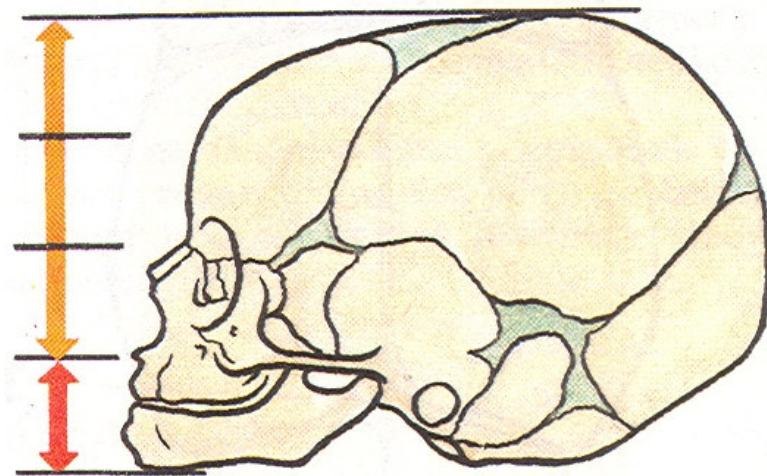
The newborn skull

Typical features of the newborn skull:

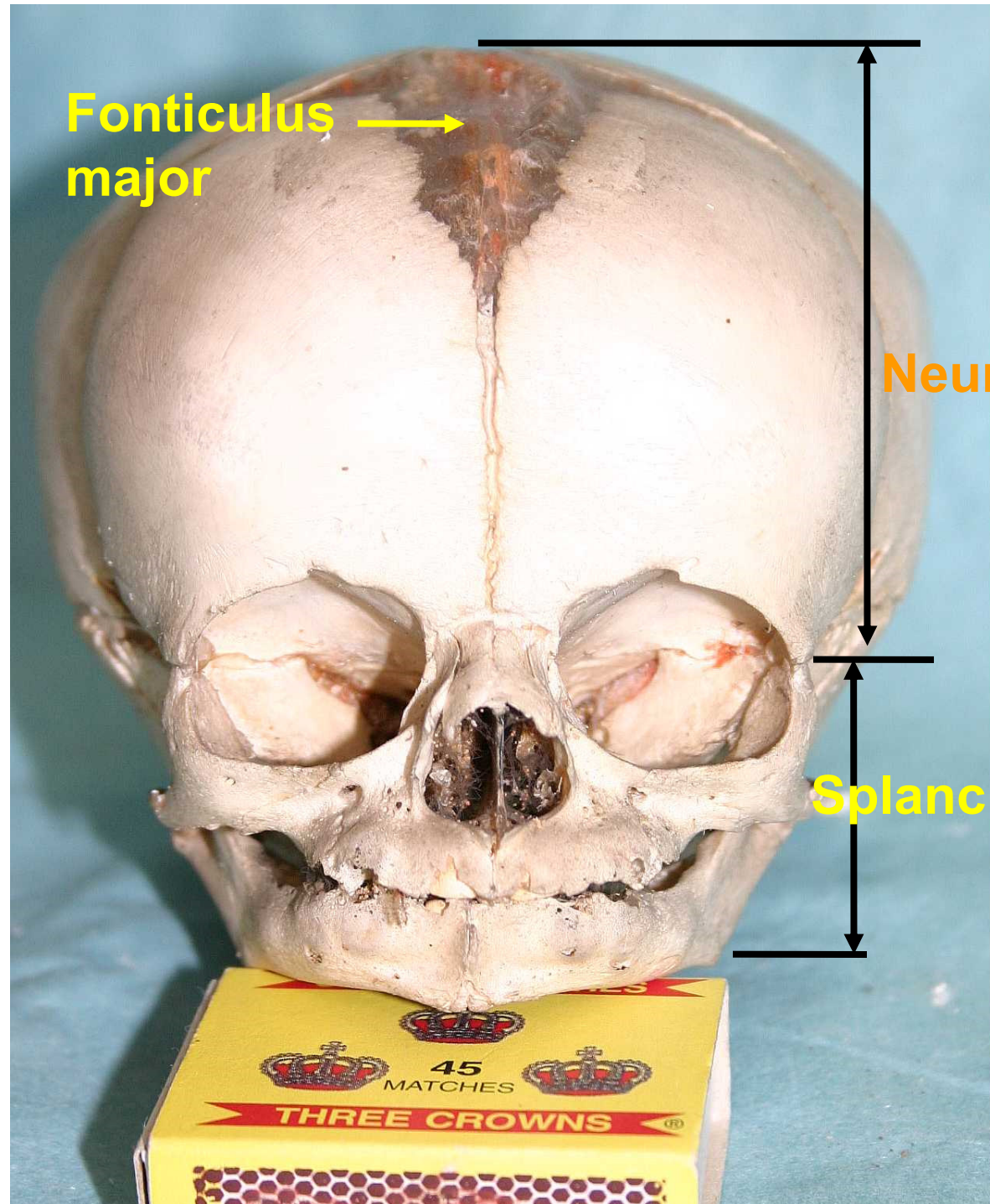
- neurocranium in comparison with splanchnocranium
- fonticuli
- length 11 cm, wide 9 cm, circumference 34 cm



2:1



8:1

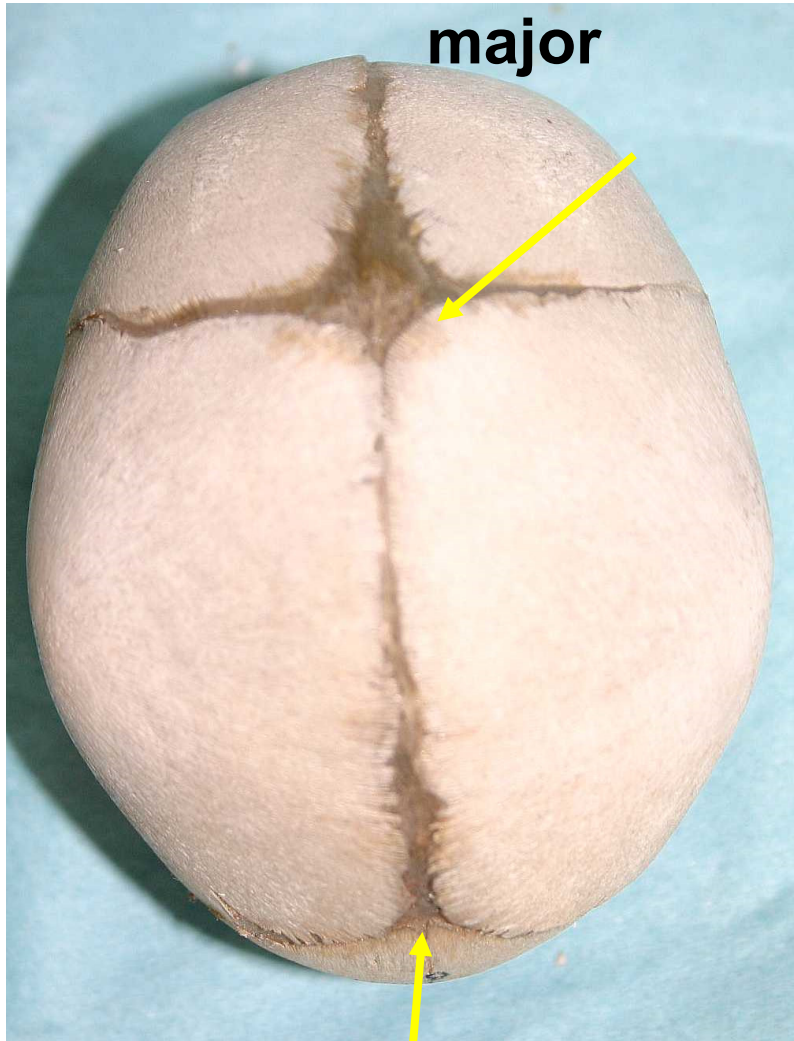


Fonticulus
major

Neurokranium

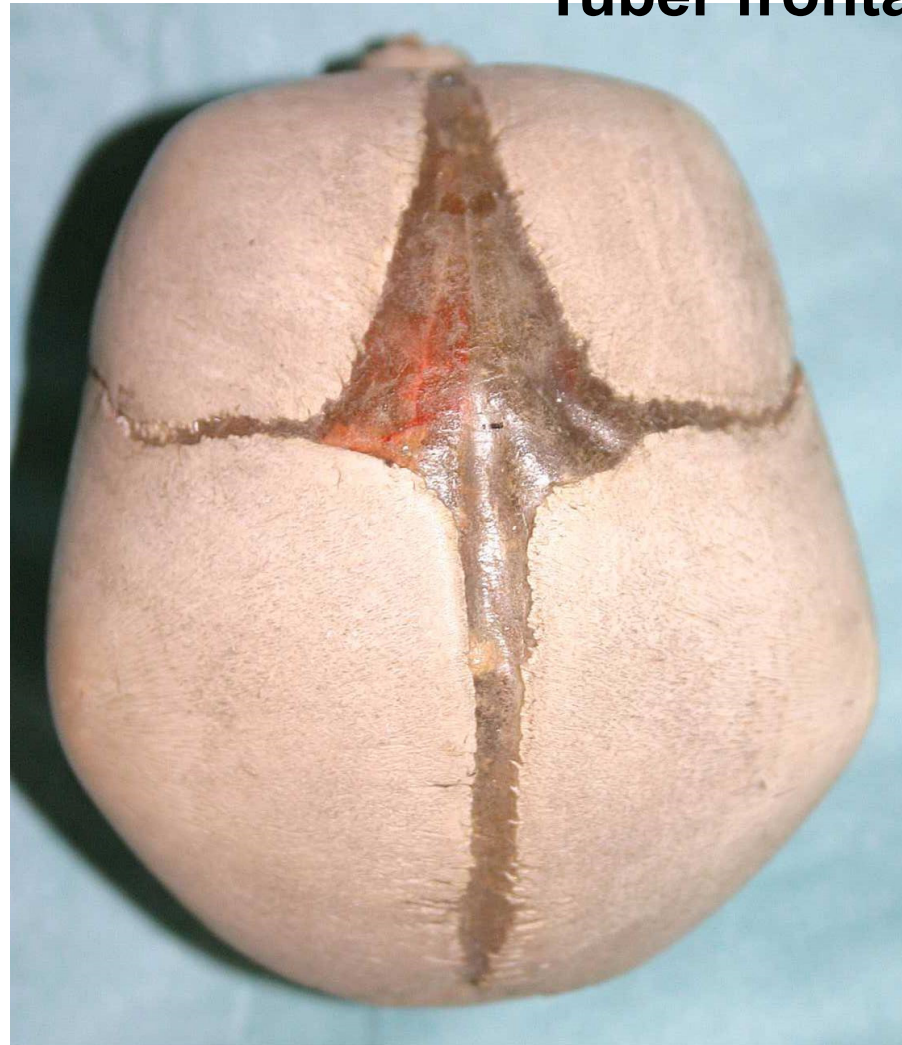
Splanchnokranium

**Fonticulus
major**



**Fonticulus
minor**

Tuber frontale



Tuber parietale

THANK YOU FOR
YOUR ATTENTION!