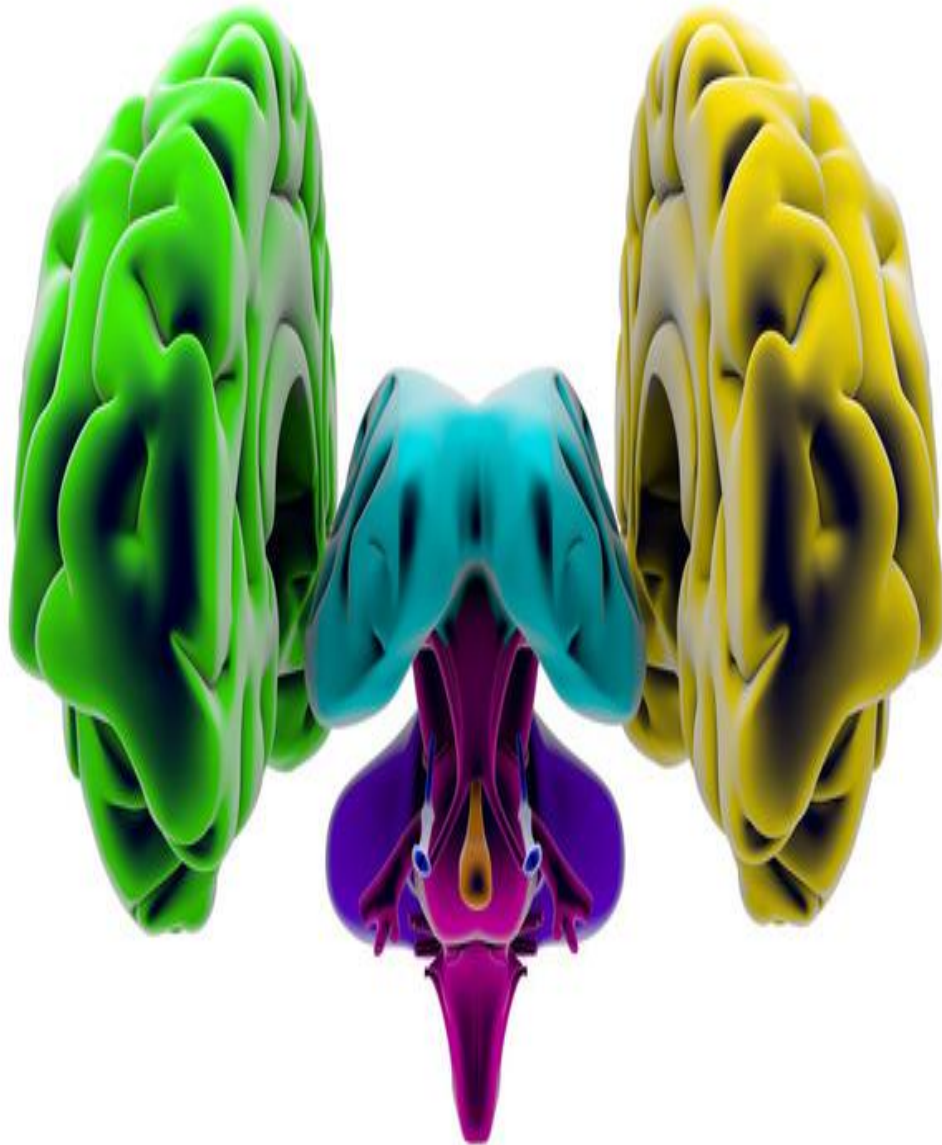


DIENCEPHALON 2



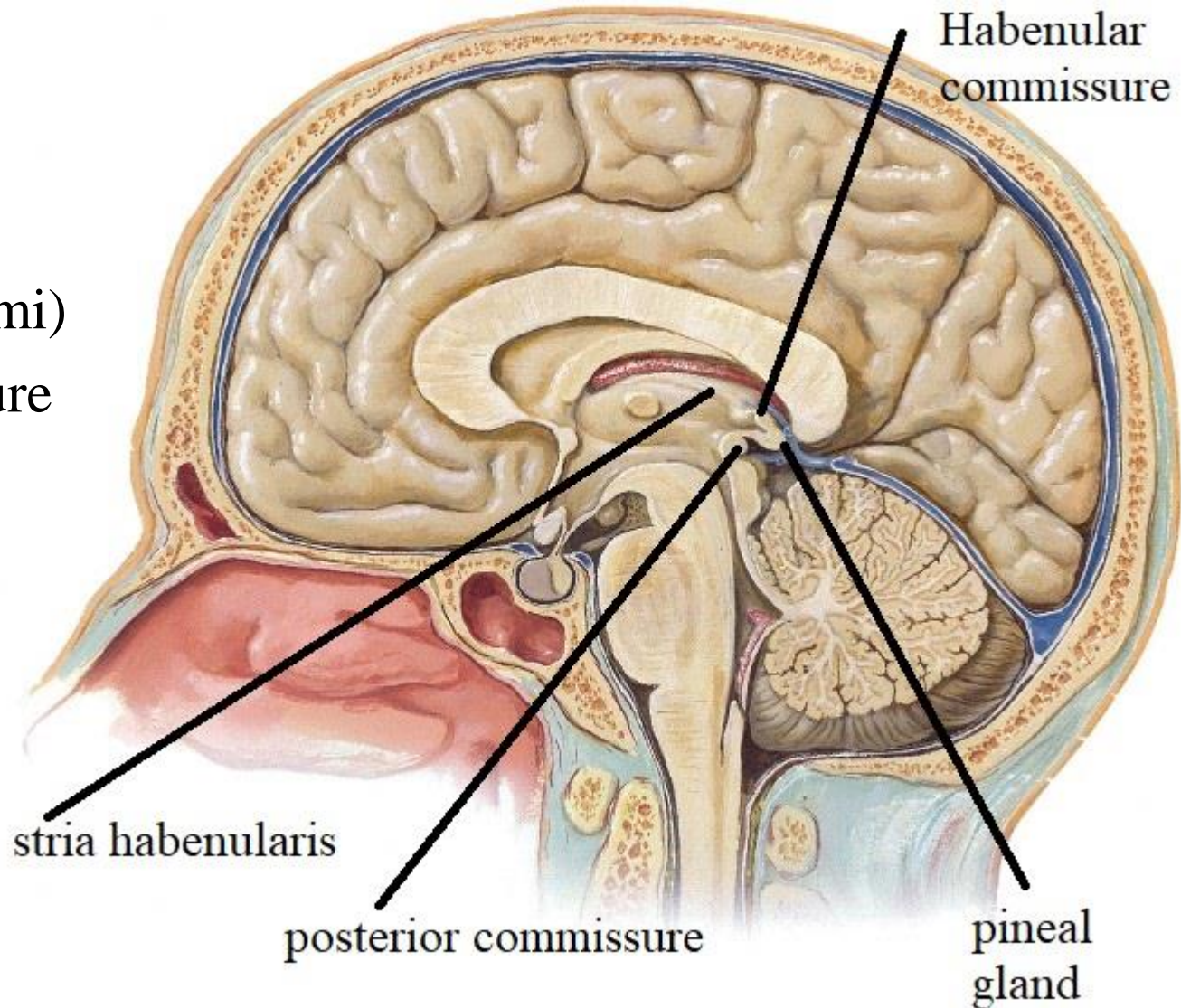
BY
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MUTAH UNIVERSITY

EPITHALAMUS

The part of diencephalon that lies medial to the Pulvinar

Parts:

- 1-pineal body (gland)
- 2-habenular nucleus
- 3- stria habenularis
(stria medullaris thalami)
- 4-habenular commissure
- 5-post. commissure



EPITHALAMUS

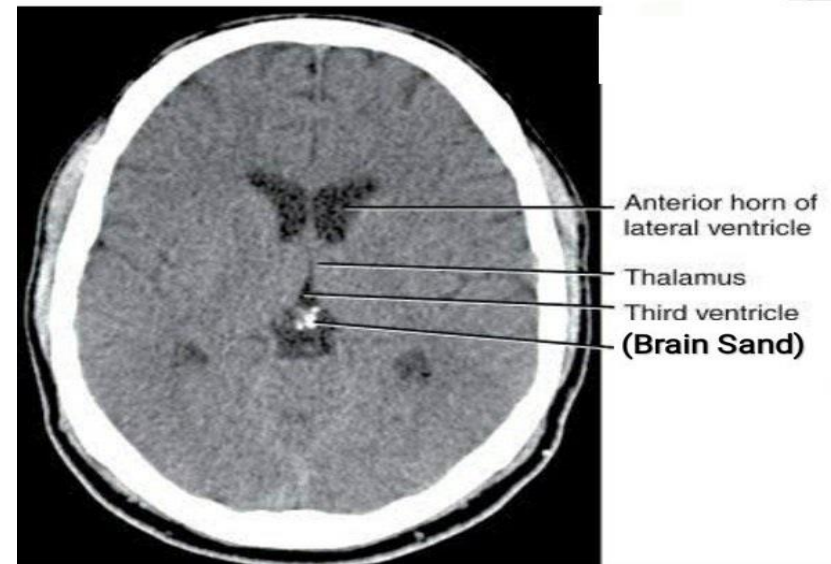
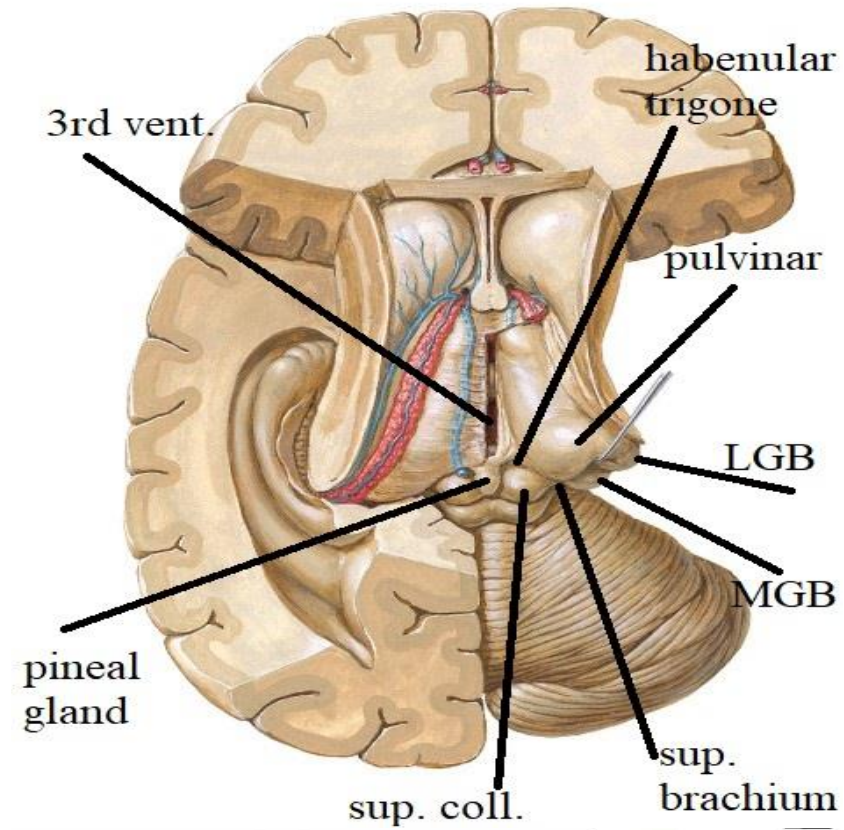
PINEAL GLAND

Def.: small piriform body which lies in median plane

N.B: It is calcified after 20 years giving opaque spot in brain CT examination called brain sand.

This opaque spot is an important landmark in centralization of brain.

If shifted to one side, diagnose space occupying lesion on opposite side e.g. tumor



EPITHALAMUS

PINEAL GLAND

Relations:

superior: splenium of corpus callosum
separated from it by transverse cerebral fissure

inferior:

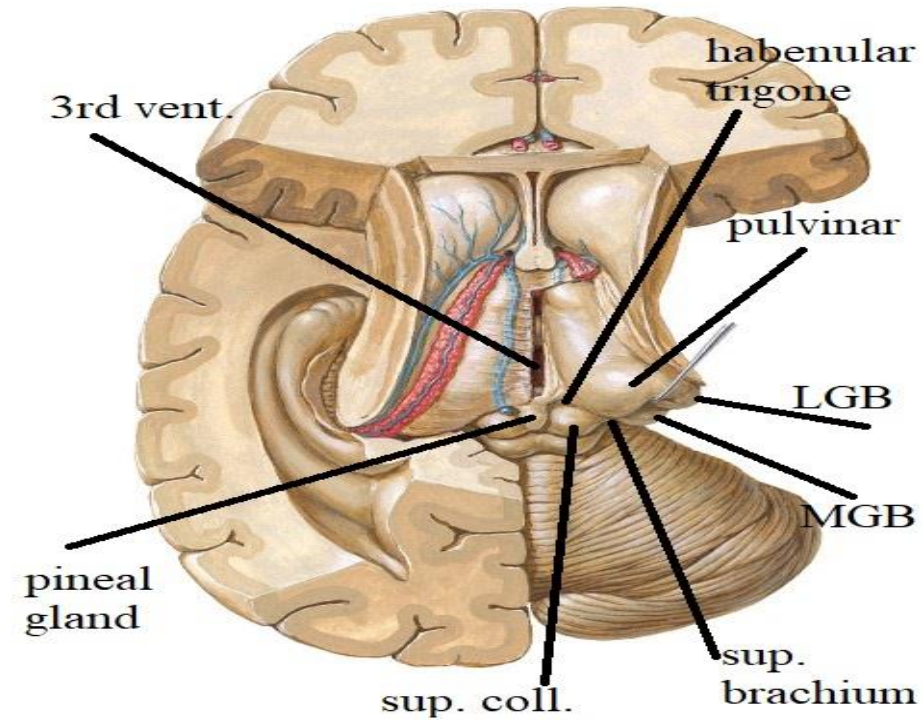
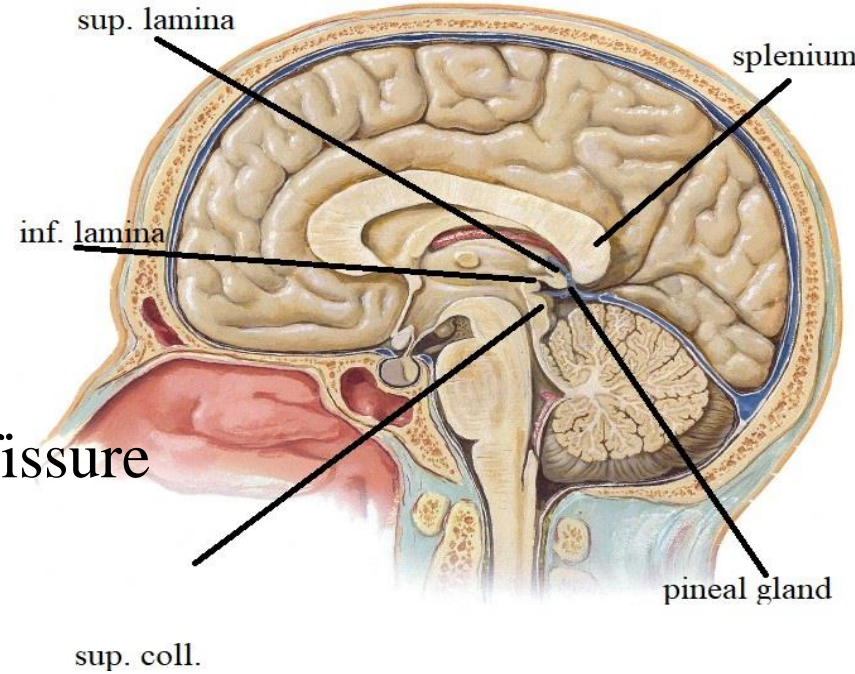
2 superior colliculi

ant.:

attached to the post. wall of
3rd ventricle by a stalk which
divide into

- superior lamina that contains
the habenular commissure
- inferior lamina that contains
the post. commissure

Lateral: Pulvinar of thalamus



EPITHALAMUS

PINEAL GLAND

Function: acts as endocrine gland

1-secretes **melatonin** that

- affect the circadian rhythm of sleep in response to light & darkness
- decrease secretion and effect of ant. pituitary hormones till puberty

2-also secrete **serotonin and noradrenalin**

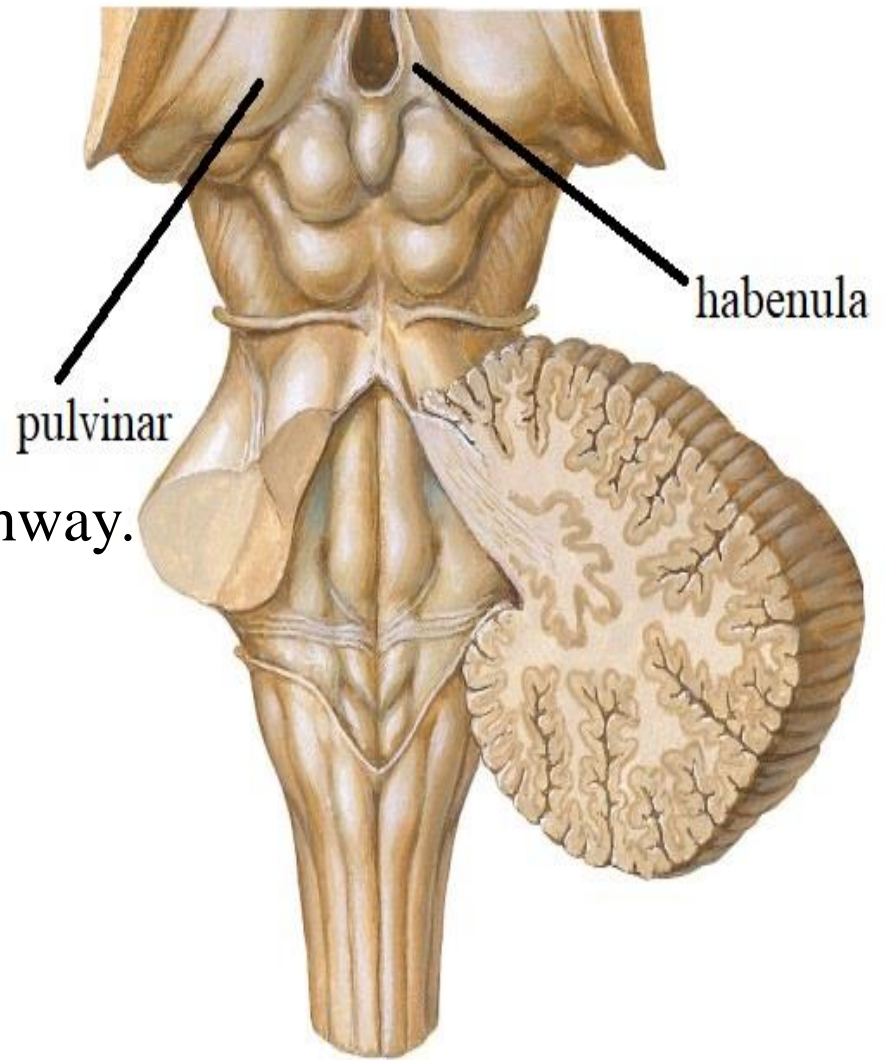
EPITHALAMUS

HABENULAR NUCLEUS

-a mass of grey matter that lies medial to Pulvinar, at a level above pineal body

-it forms a part of olfactory reflex pathway.

It is connected to olfactory pathway through afferent fibers called stria medullaris thalami

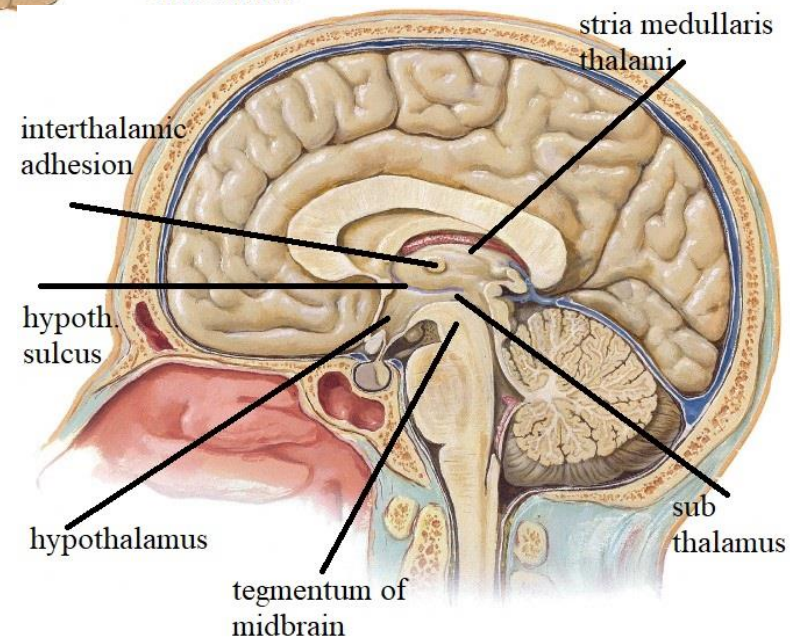
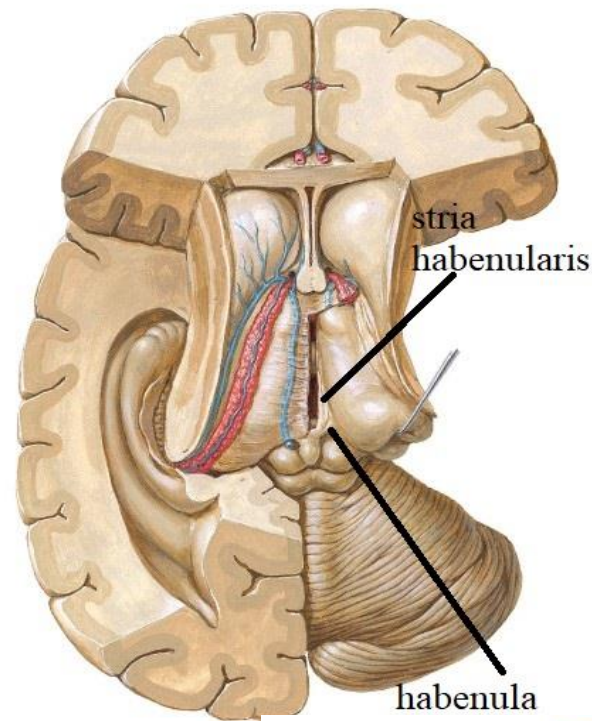


EPITHALAMUS

STRIA HABENULARIS =(stria medullaris thalami):

Band of fibers that

- arise from olfactory centers
- run on upper margin of medial surface of thalamus
- end in habenular nucleus



HYPOTHALAMUS

Extent:

anteriorly

optic chiasma,
lamina terminalis and
ant. commissure

posteriorly

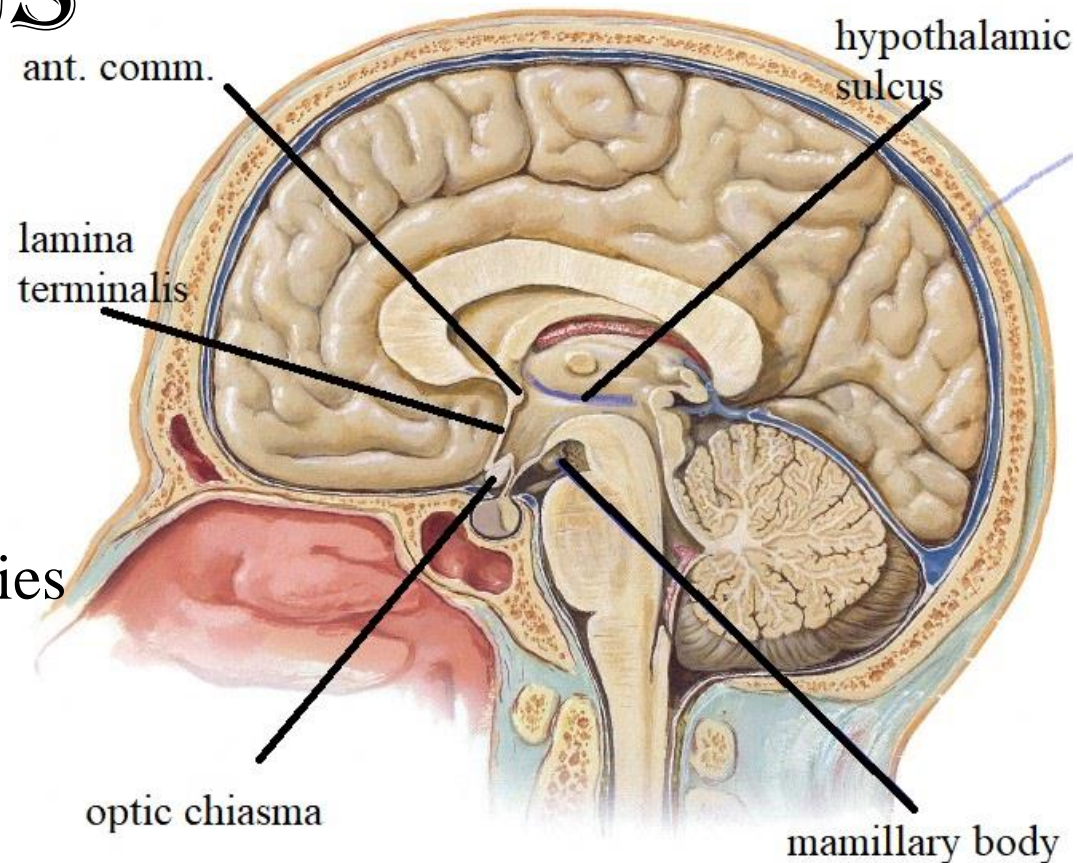
just behind the mammillary bodies

superiorly

hypothalamic sulcus

inferiorly

at the base of brain beneath the 3rd ventricle



HYPOTHALAMUS

Position: it has 2 parts

1-vertical part:

Forms the lower part of lateral wall of 3rd ventricle, below thalamus

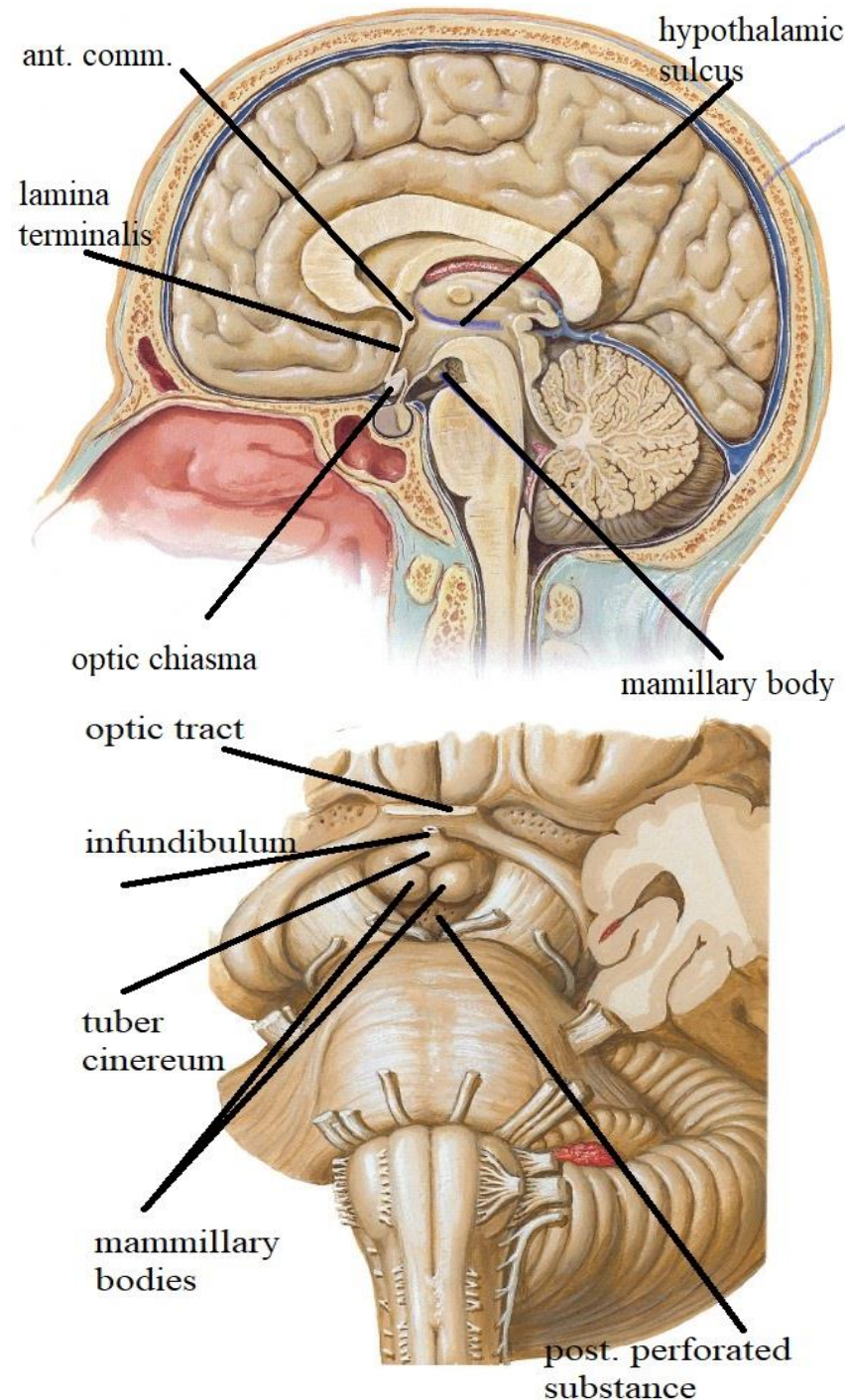
2-horizontal part:

Forms the floor of 3rd ventricle.

It **consists of**

- tuber cinereum and infundibulum
- mammillary bodies
- post. perforated substance

N.B: the components of horizontal part of hypothalamus can be seen from the base of brain forming the contents of interpeduncular fossa



HYPOTHALAMUS

Functions:

- 1- controls the ant. and post. lobes of pituitary. Through its control on ant. pituitary, it controls other endocrine glands
- 2-control autonomic nervous system through which ,it has a role in regulation of blood pressure , heart rate, sweating, blood vessels and other sympathetic and parasympathetic activities
- 3-as a part of limbic system it controls
 - food habits (it contains a hunger and satiety centers)
 - reproduction
 - emotions
 - behavior & motivation
- 4- temperature regulation
- 5- control of water balance

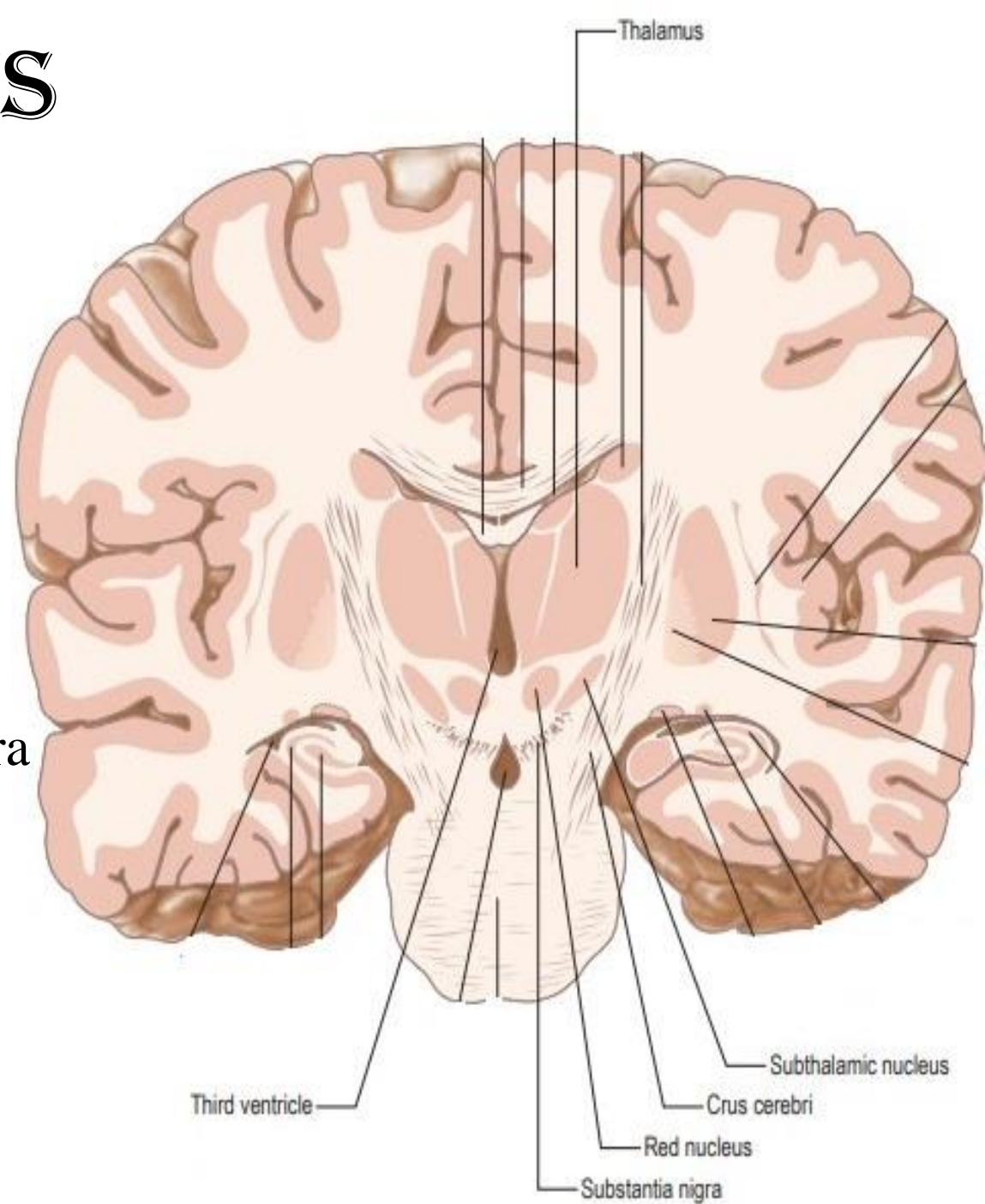
SUBTHALAMUS

Position:

-It lies below thalamus, intervening () it and tegmentum of midbrain

Structure:

- contains some extrapyramidal nuclei
- the subthalamic nucleus
 - upper part of substantia nigra
 - upper part of red nucleus



3RD VENTRICLE

Def.:

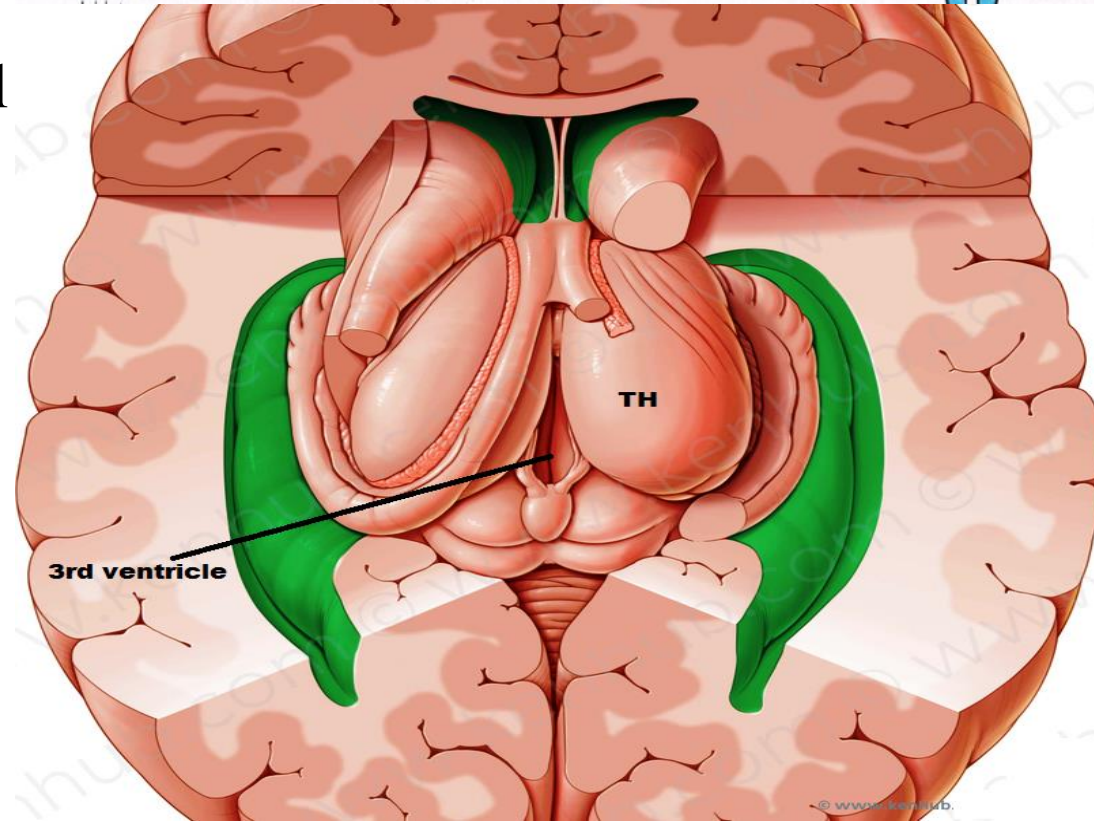
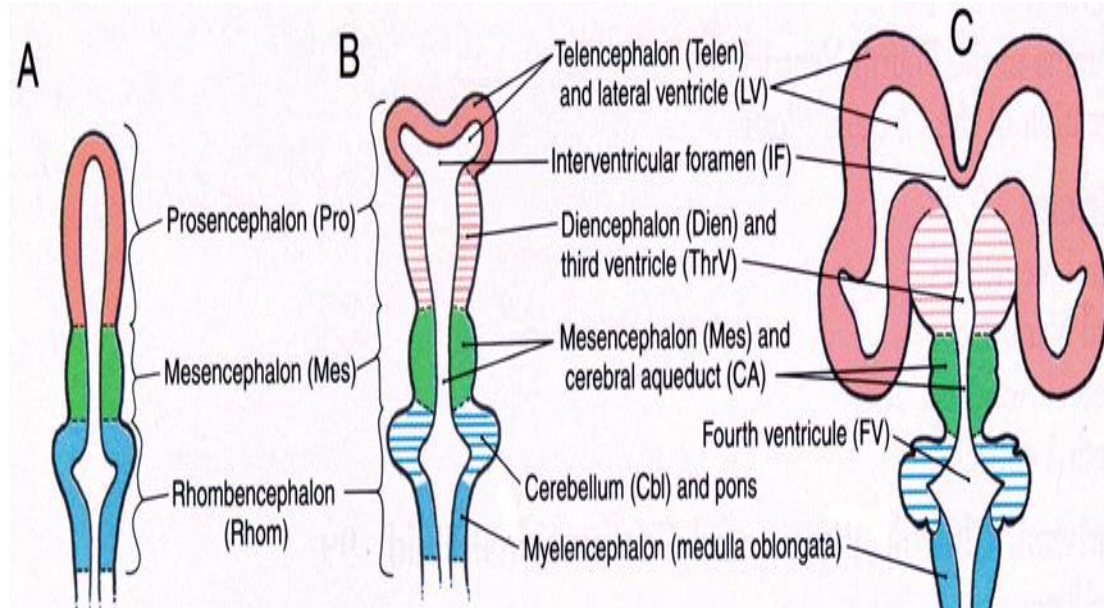
cavity of diencephalon

Communications:

1- with each lateral ventricle
by an interventricular foramen
of Monro

2- with 4th ventricle by cerebral
aqueduct

Shape:- appears as a median
cleft between thalamus and
hypothalamus of both sides.



3RD VENTRICLE

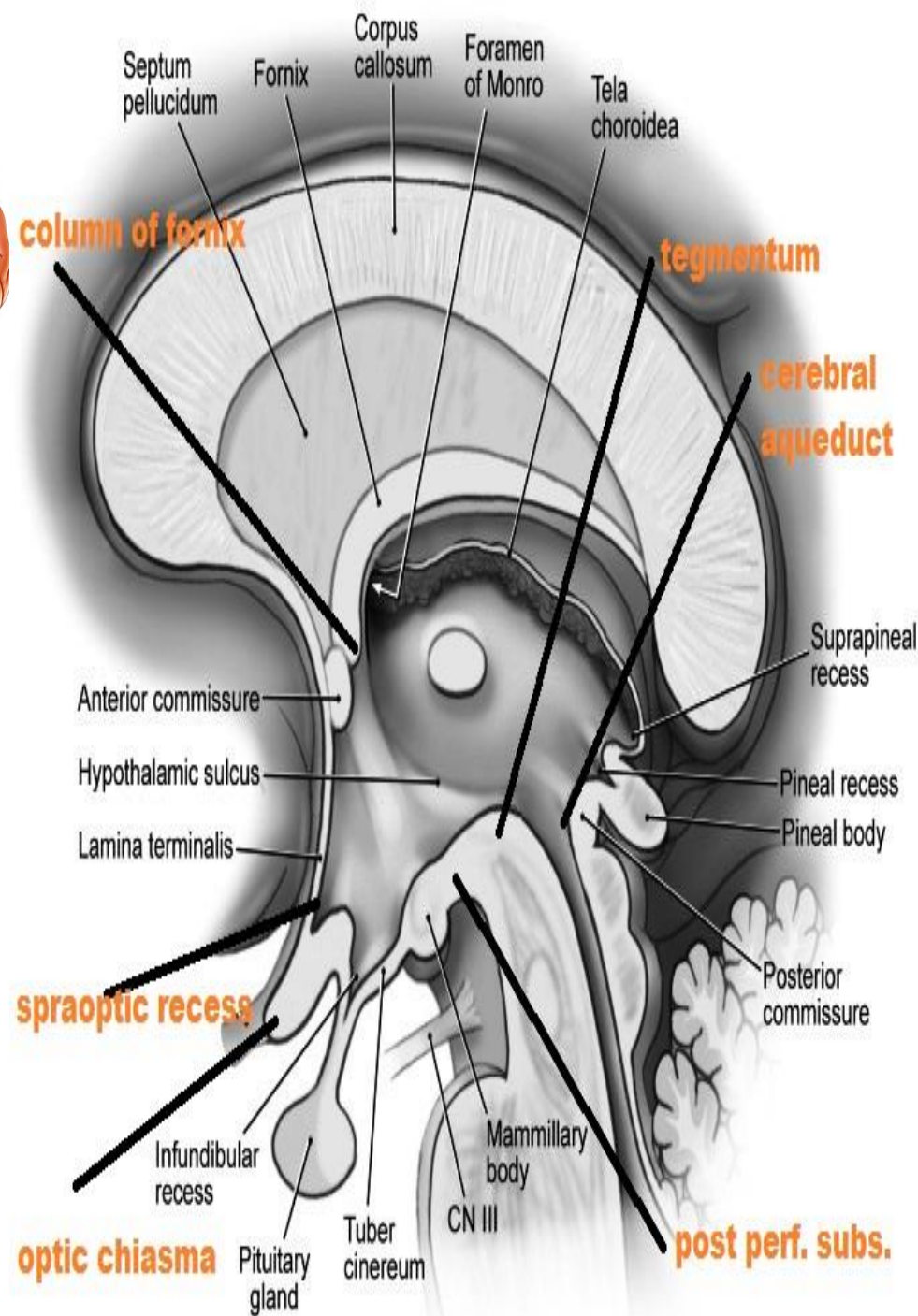
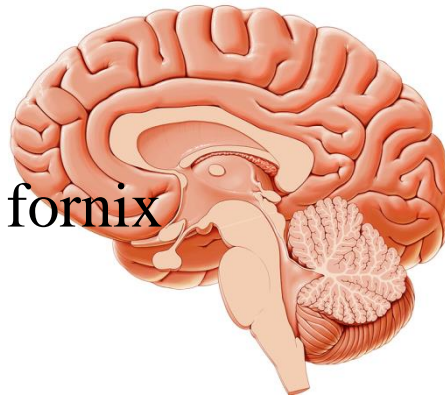
Walls

ant. wall:

- 2 ant. columns of fornix
- ant. commissure
- lamina terminalis
- Supraoptic recess

floor: from before backwards

- Supraoptic recess & optic chiasma
- infundibulum recess
- tuber cinereum
- 2 mamillary bodies
- post. perforated substance
- tegmentum of mid brain
- cerebral aqueduct



3RD VENTRICLE

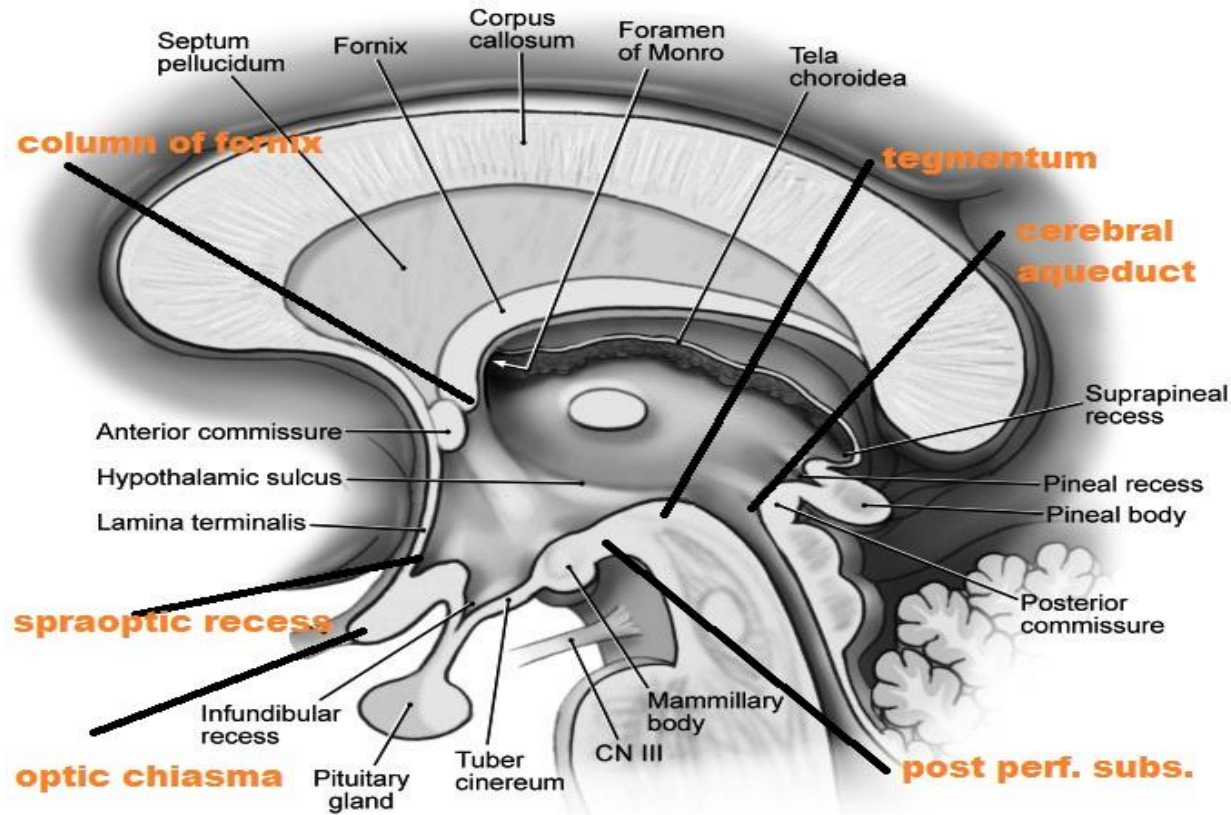
Walls

post. wall:

- cerebral aqueduct
- post. Commissure
- pineal recess
- habenular commissure
- Supra pineal recess

lateral wall

- interventricular foramen of Monro
 - medial surface of thalamus :above
 - vertical part of hypothalamus: below
 - hypothalamic sulcus :
- between thalamus & hypothalamus



3RD VENTRICLE

Walls

Roof: Structure:

1-ependyma: stretches() the 2 stria medullaris thalami

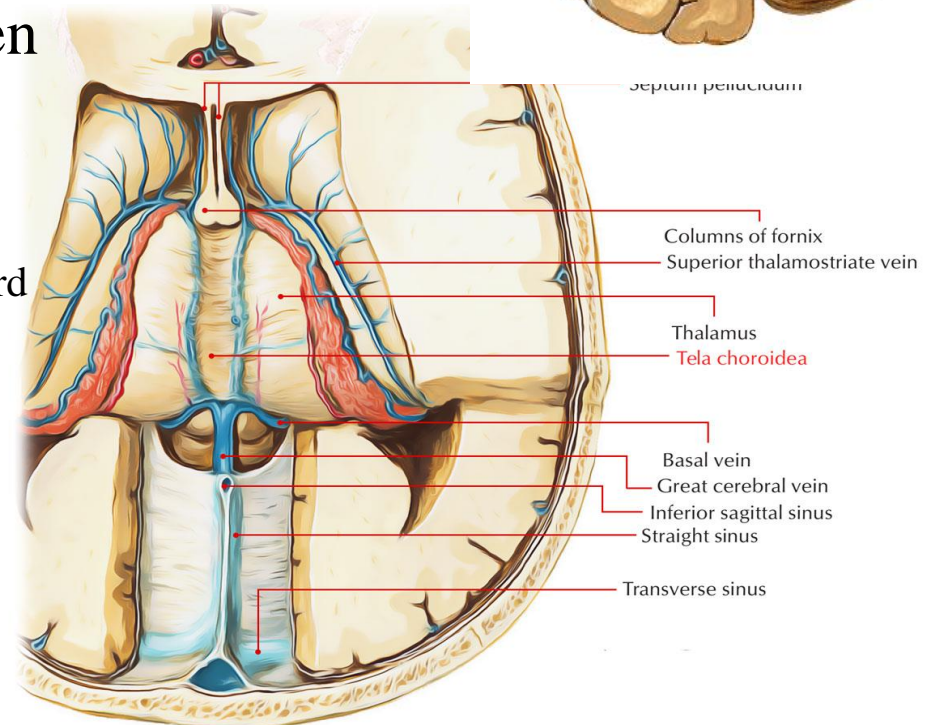
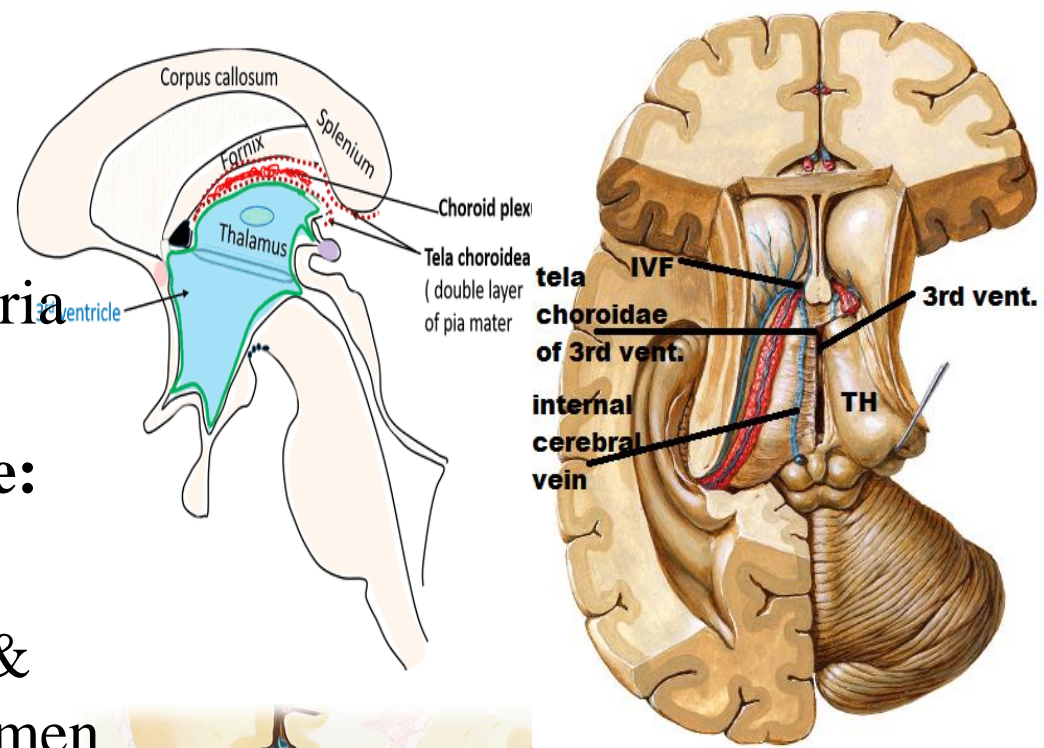
2-tela choroidea of 3rd ventricle:

2 layers of pia, applied on the Ependymal roof of 3rd ventricle & reach till the interventricular foramen

The 2 layers contain:

-2 post. choroid arteries (of PCA) that form the choroid plexuses of 3rd & central part of lateral ventricles

-2 int. cerebral veins that start at interventricular foramen & run backward to end by union together forming great cerebral v.



3RD VENTRICLE

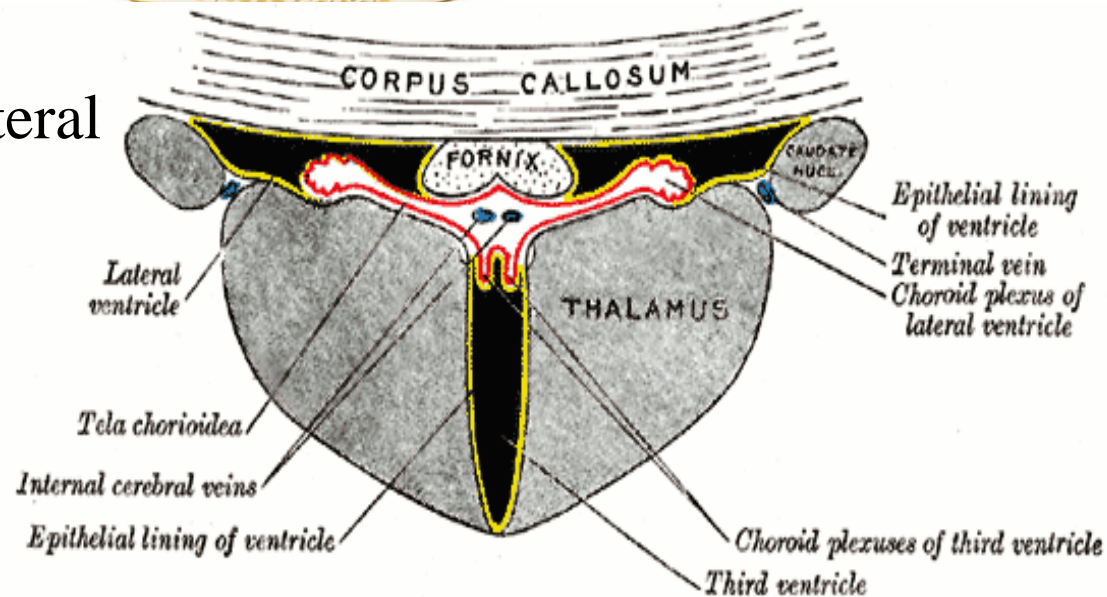
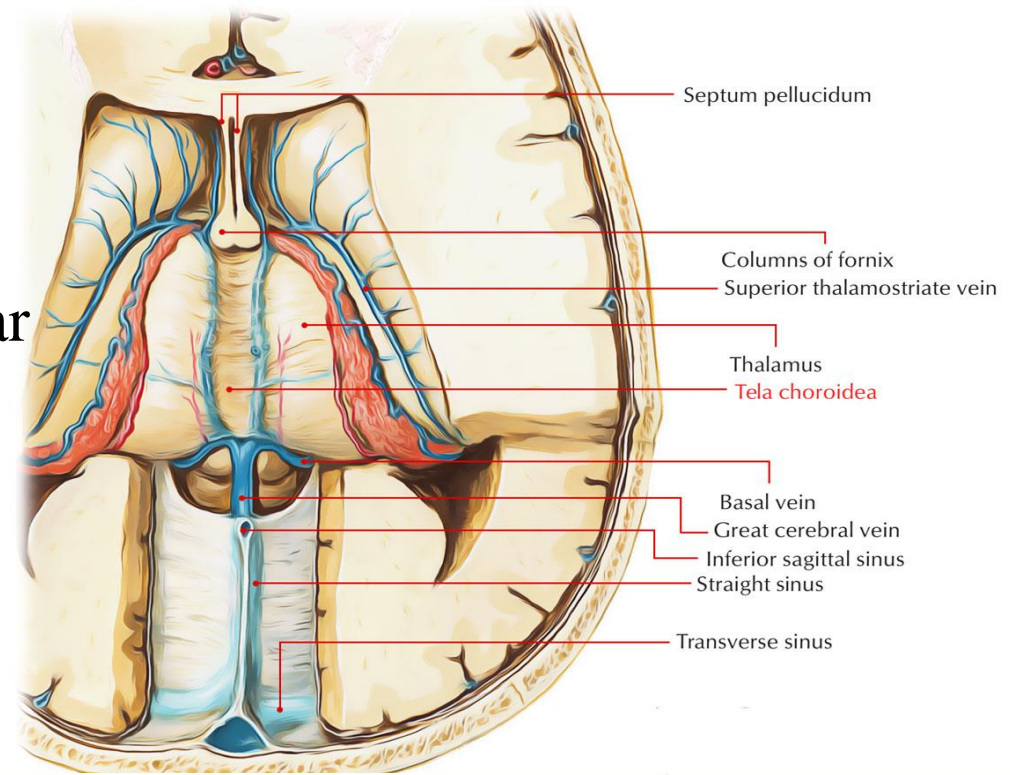
Extent of tela choroidea :

it is triangular in shape

Apex : closed, at interventricular foramina

Base: open, above pineal body

Sides: in choroid fissure ()
superior surface of thalamus &
body of fornix Where,
telachoroidae of 3rd ventricle
protrude into central part of lateral
ventricle



THANQ