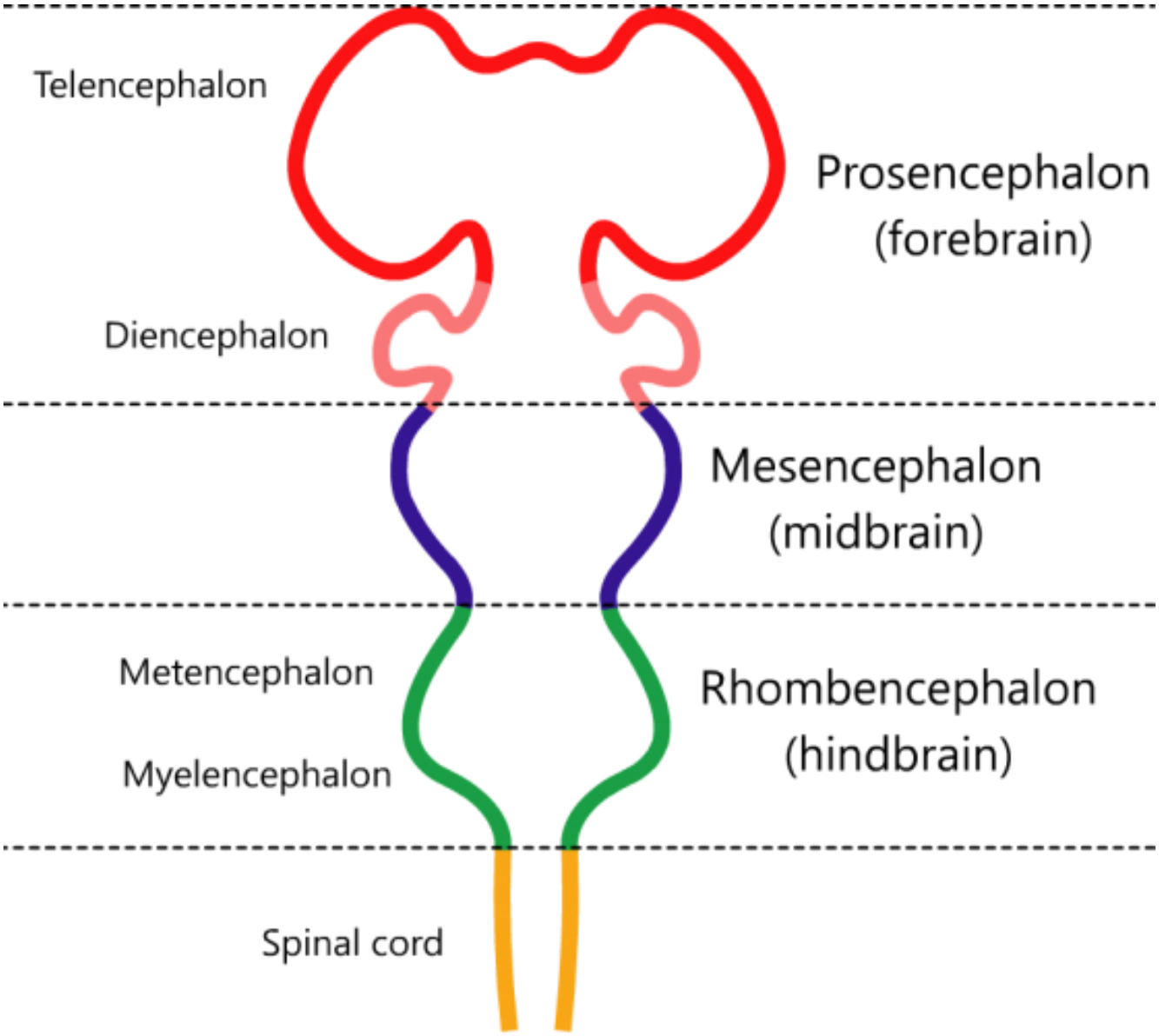
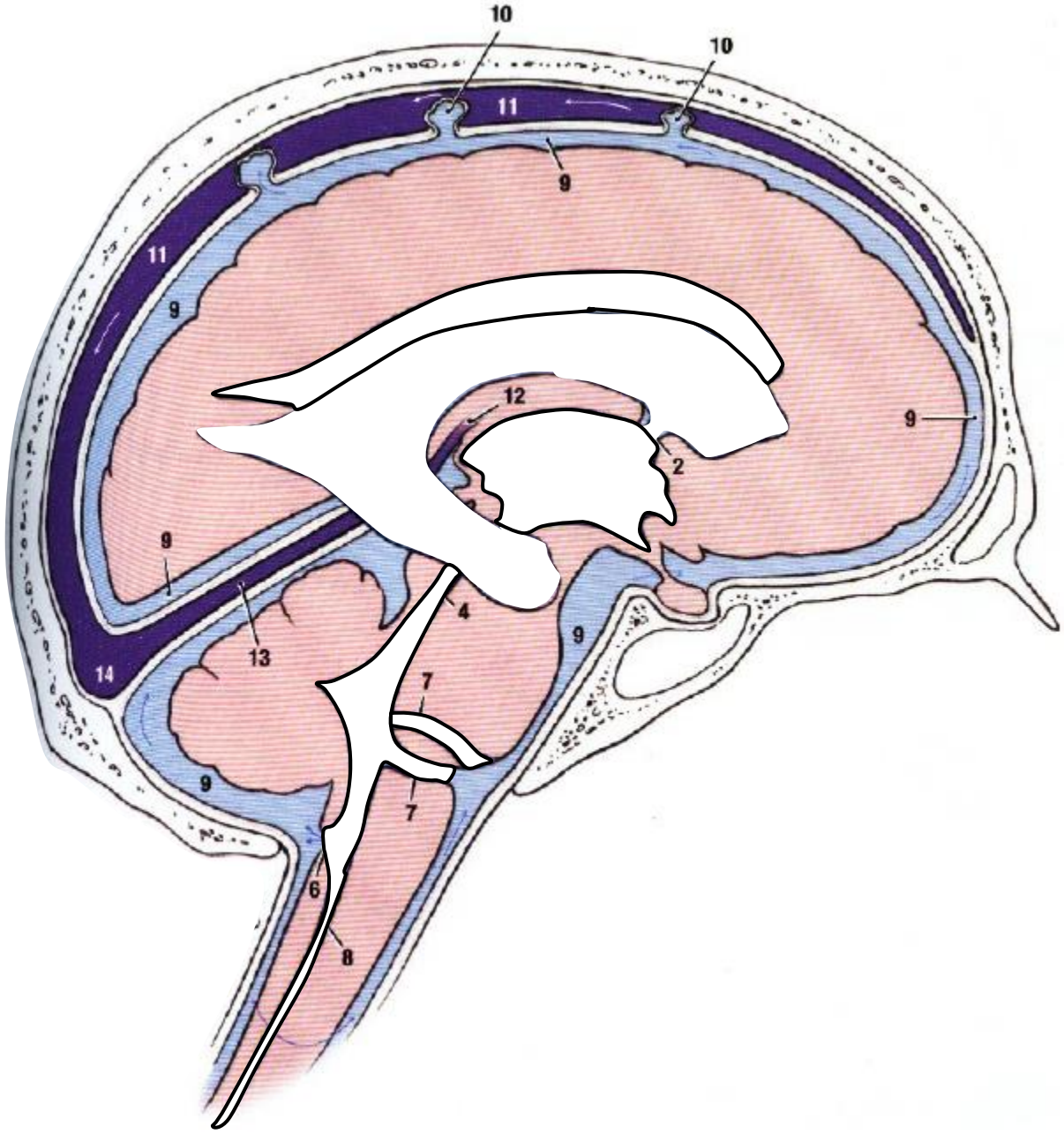
Ventricles of brain


Telencephalon
Prosencephalon
(forebrain)
Diencephalon
Mesencephalon
(midbrain)
Metencephalon
Rhombencephalon
(hindbrain)
Myelencephalon
Spinal cord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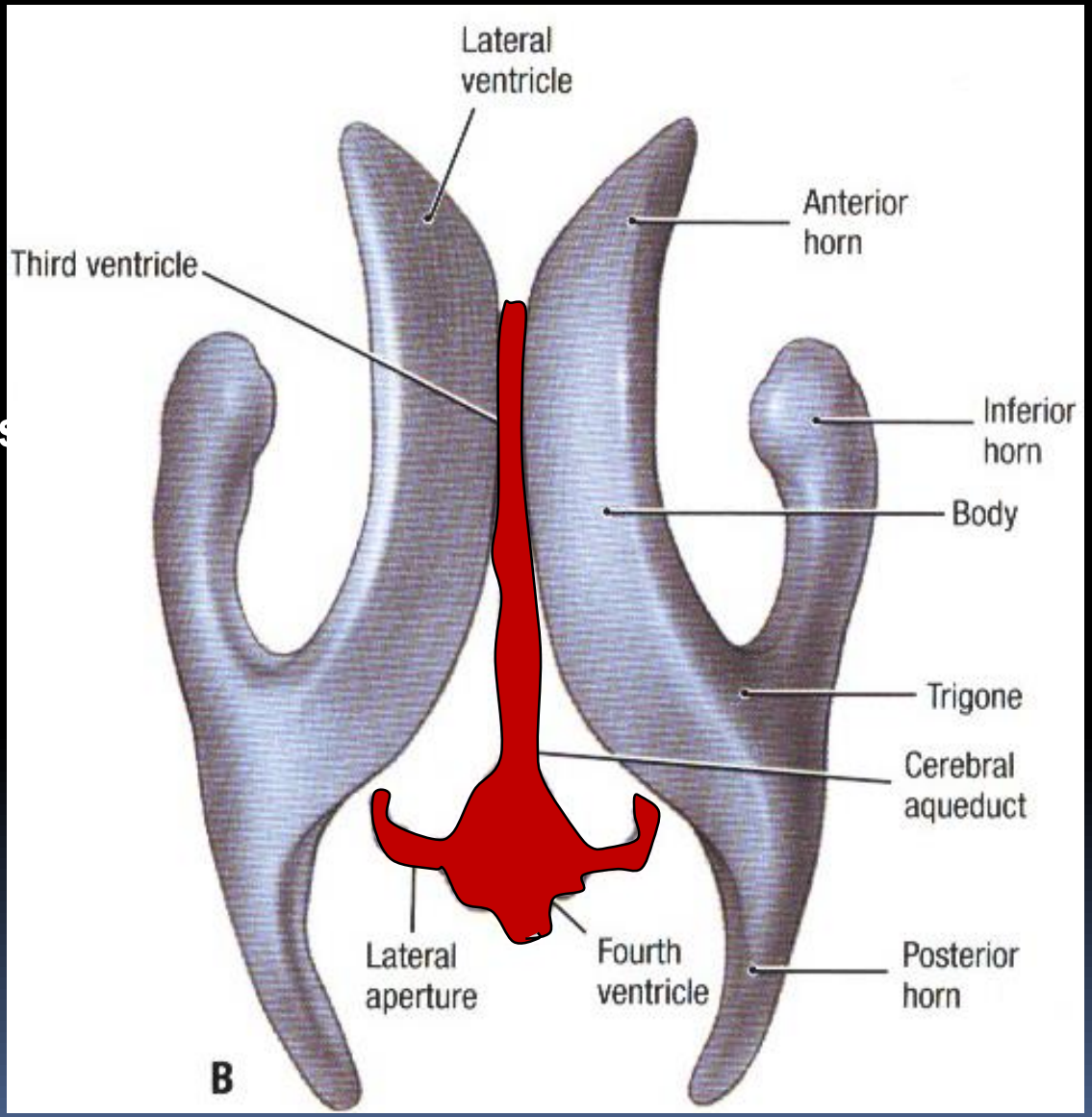
Ventricles of Brain- III and lateral ventricle

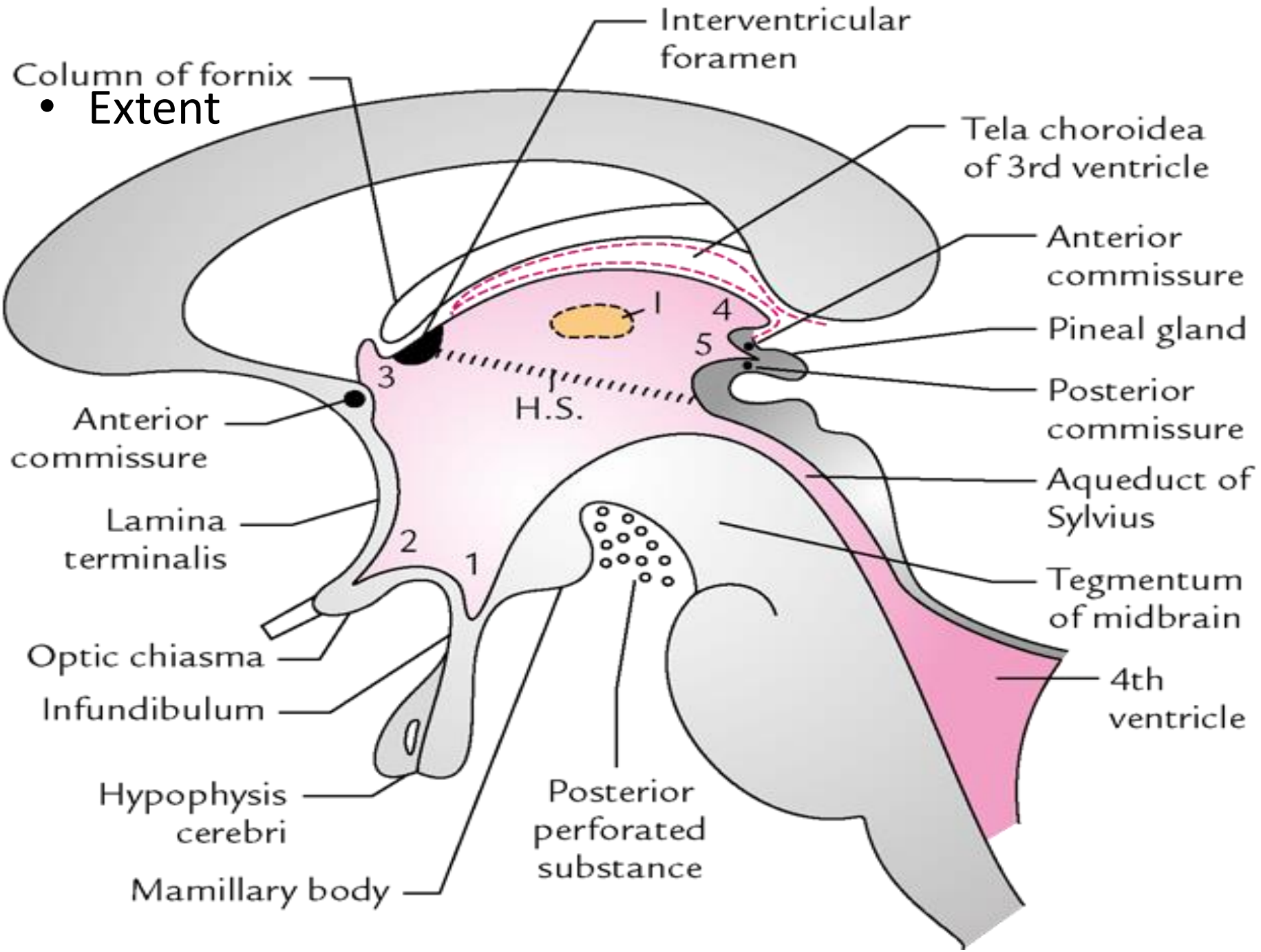
- Location
- Communications
- Boundaries & Wall
- Tela Choroidea & Choroid Plexus
- Applied aspect



Third ventricle

- Cavity of Diencephalon
- Slit like
- Situated in median plane
- Between two thalami and part of hypothalamus

- Extent


Interventricular foramen
Column of fornix
Tela choroidea of 3rd ventricle
Anterior commissure
Pineal gland
Posterior commissure
Aqueduct of Sylvius
Tegmentum of midbrain
4th ventricle
Anterior commissure
Lamina terminalis
Optic chiasma
Infundibulum
Hypophysis cerebri
Mamillary body
Posterior perforated substance
H.S.
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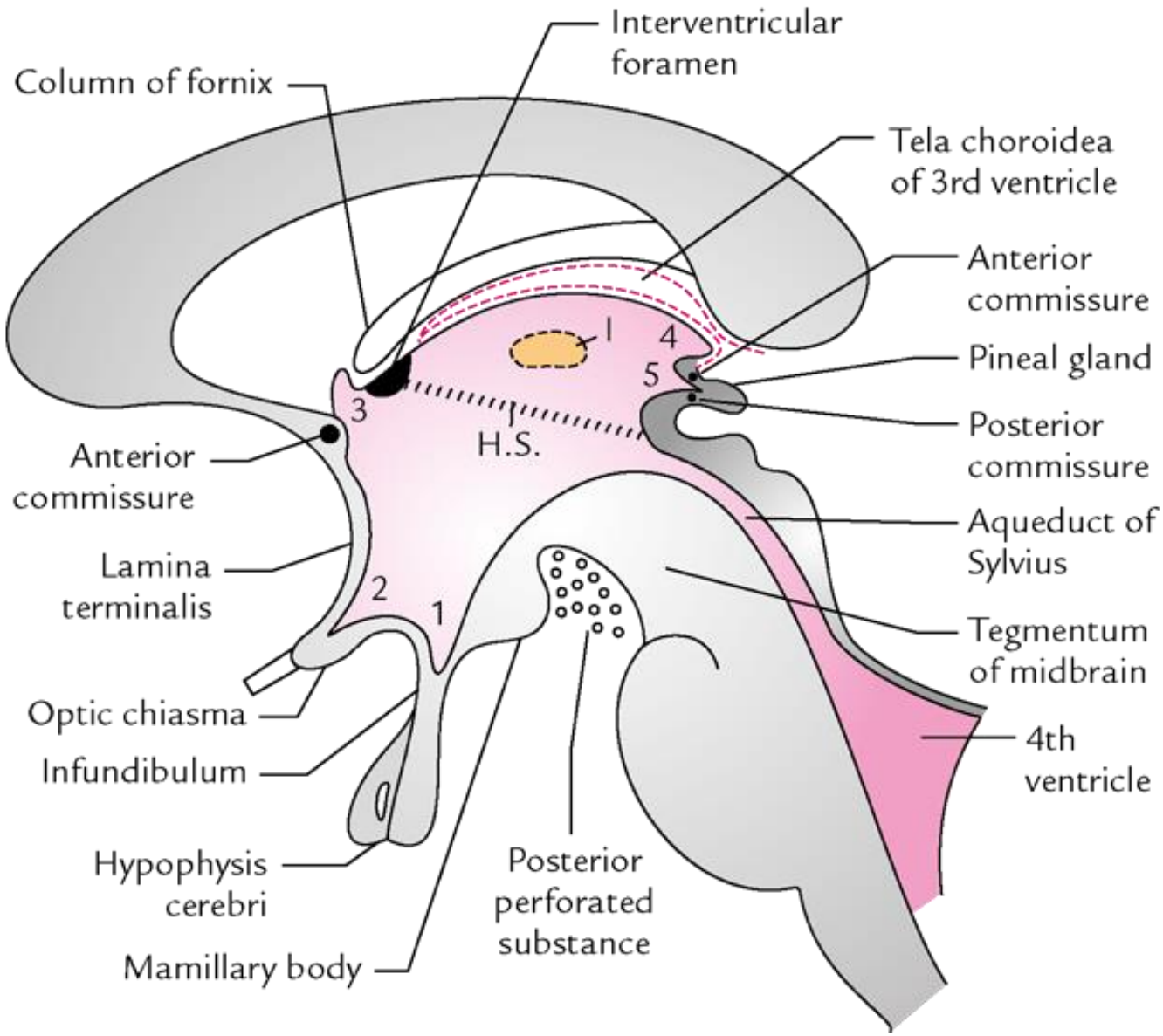
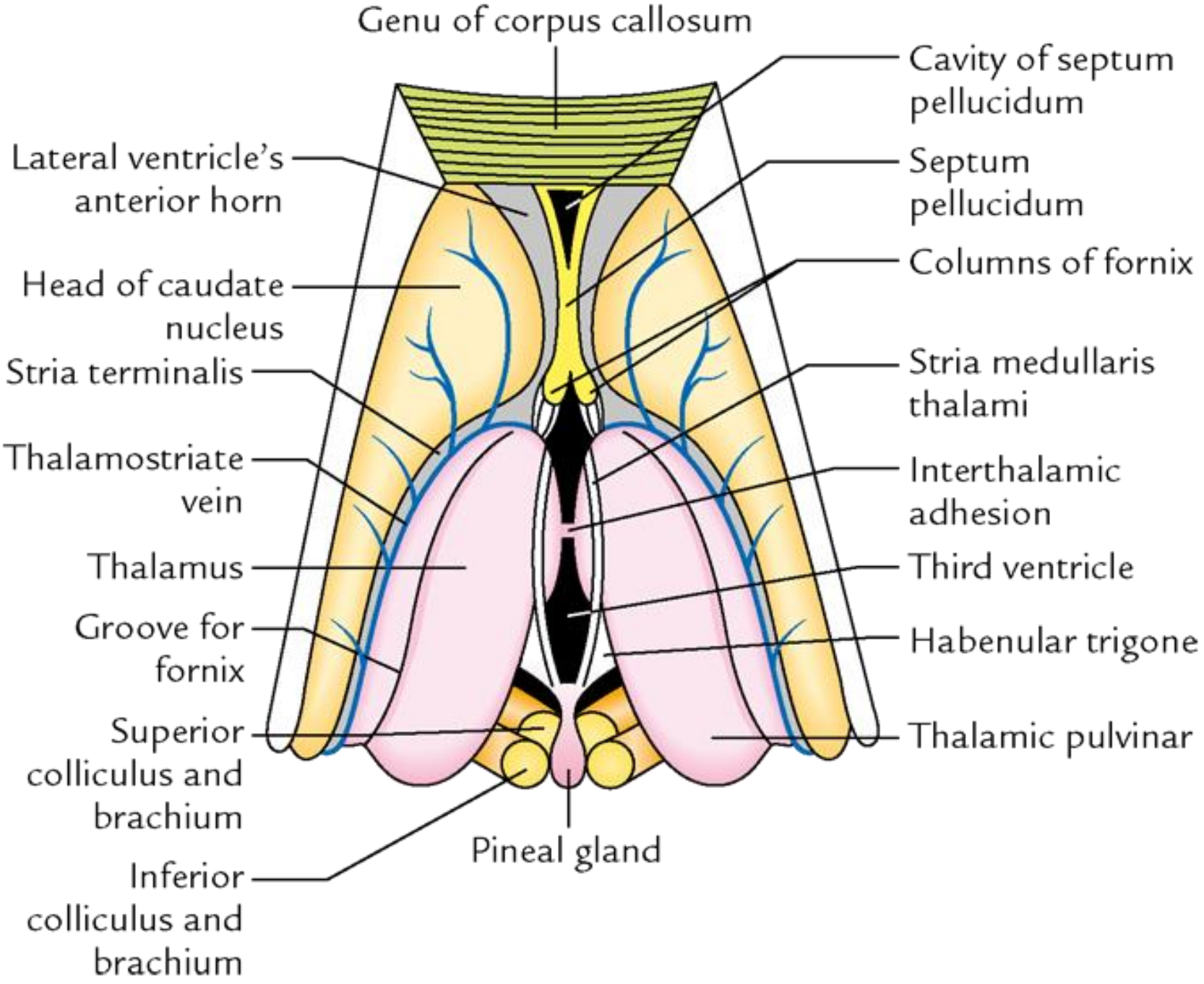
It communicates

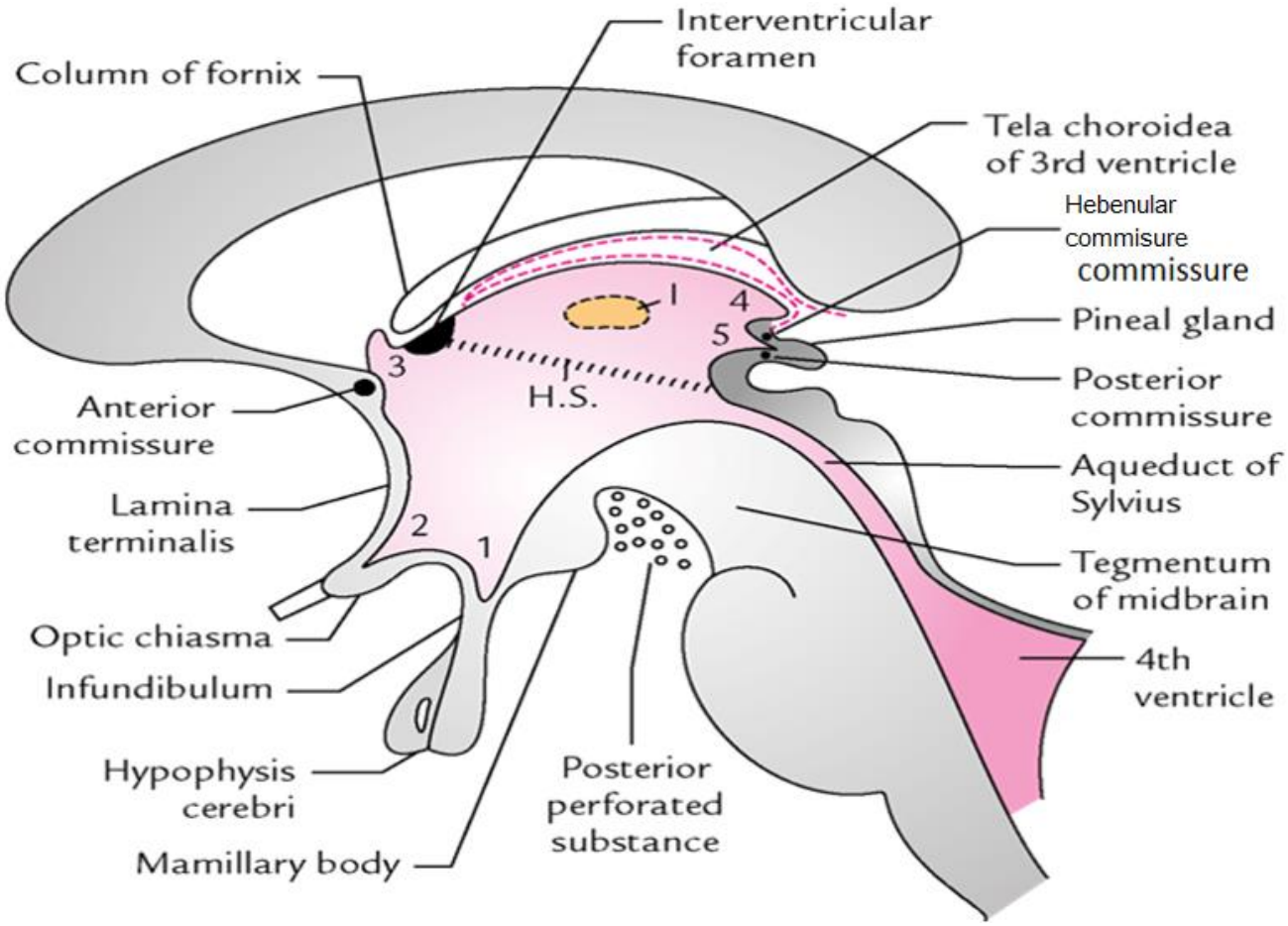
- Anteriosuperiorly lateral ventricle
- Posrerioinferiorly fourth ventricle




Genu of corpus callosum
Cavity of septum pellucidum
Lateral ventricle's anterior horn
Septum pellucidum
Head of caudate nucleus
Columns of fornix
Stria terminalis
Stria medullaris thalami
Thalamostriate vein
Interthalamic adhesion
Thalamus
Third ventricle
Groove for fornix
Habenular trigone
Superior colliculus and brachium
Thalamic pulvinar
Pineal gland
Inferior colliculus and brachium

Boundaries

- Anterior wall
- Posterior wall
- Roof
- Floor
- Lateral wall



Recesses

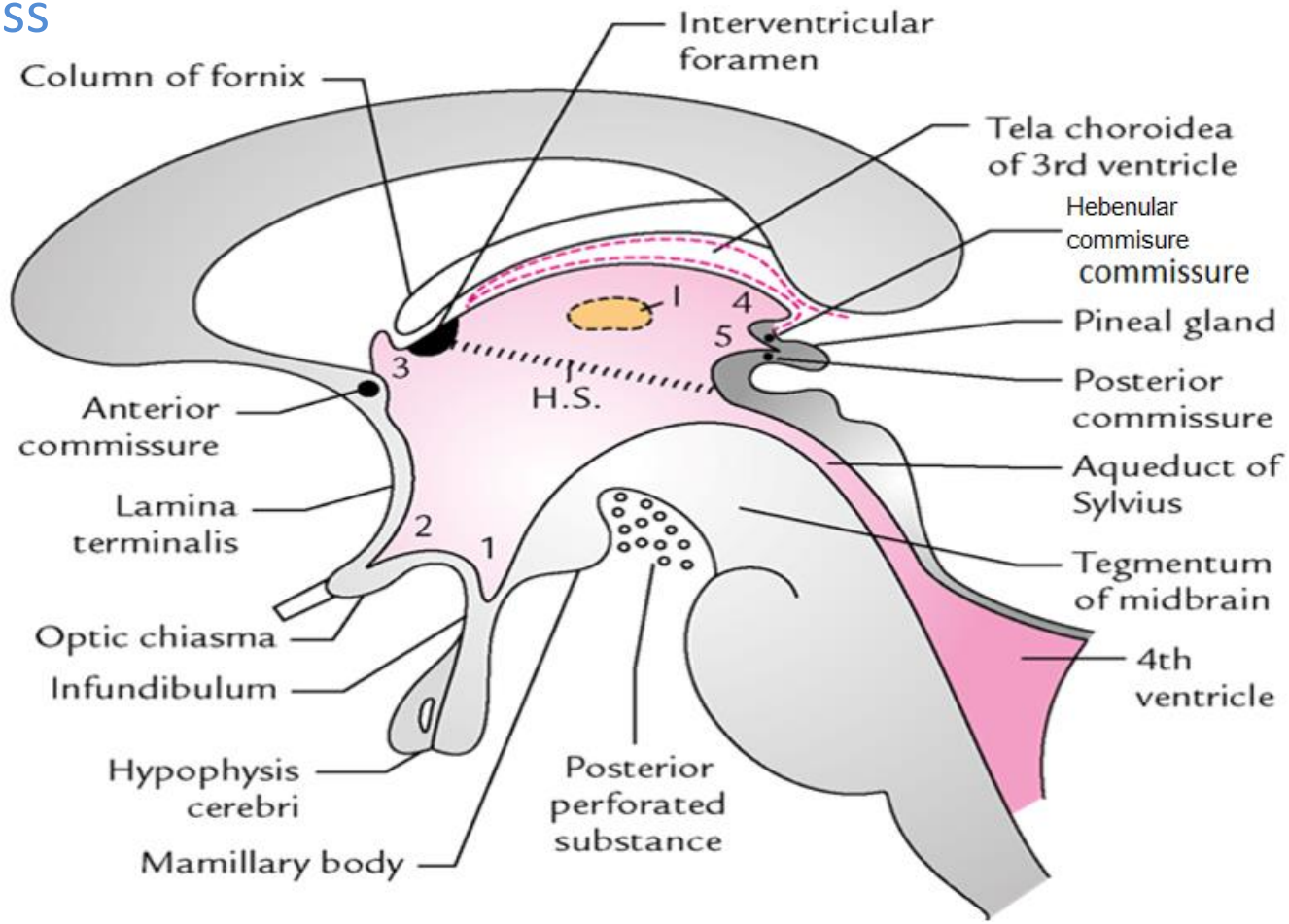
1.Infundibular recess

2.Optic recess

3.Anterior recess (vulva of ventricle)

4.Suprapineal

5.Pineal recess

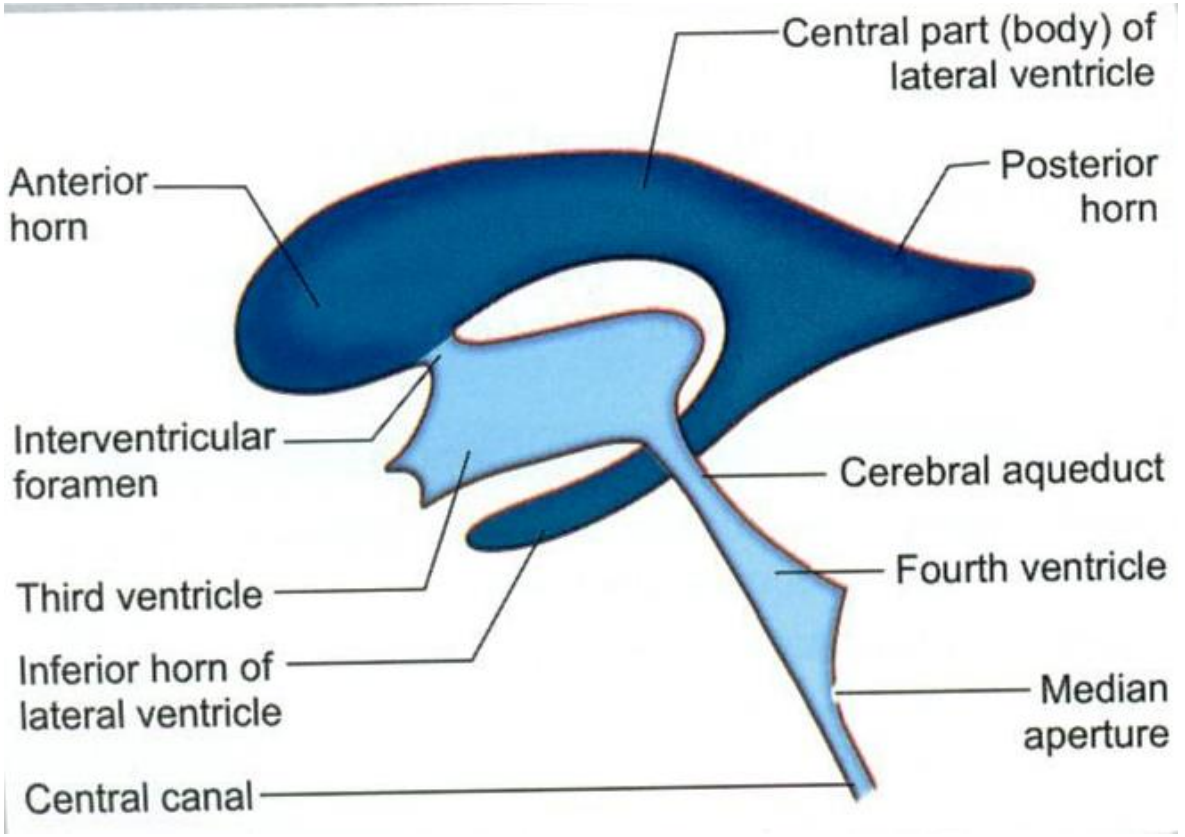


Applied

- As III ventricle is a narrow space which may get obstructed by brain tumor or by defects in development
- It may lead to raised intracranial pressure in adults and hydrocephalus in infants
- Obstruction can be found by CT scan/MRI where normally third ventricle can be seen as narrow vertical slit

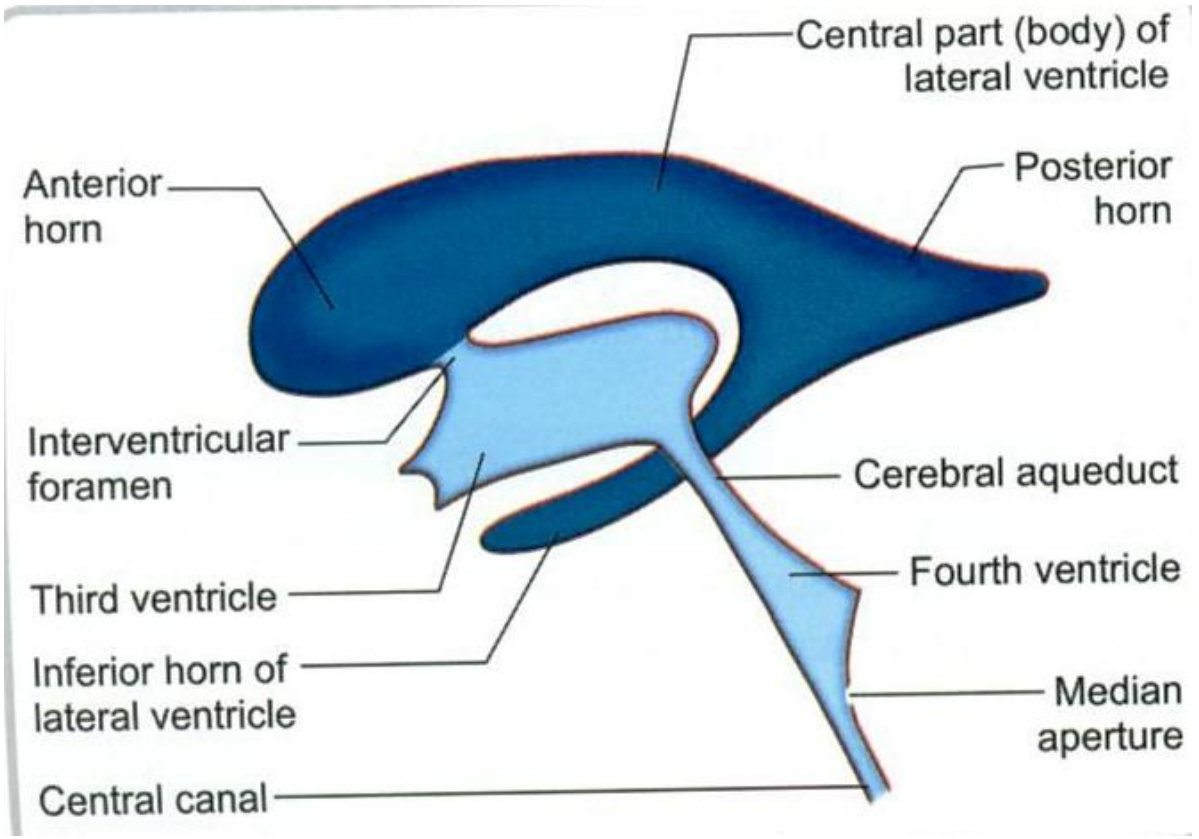
Lateral ventricles

- Location
- Communications
- Boundaries & Wall
- Tela Choroidea & Choroid Plexus
- Applied aspect



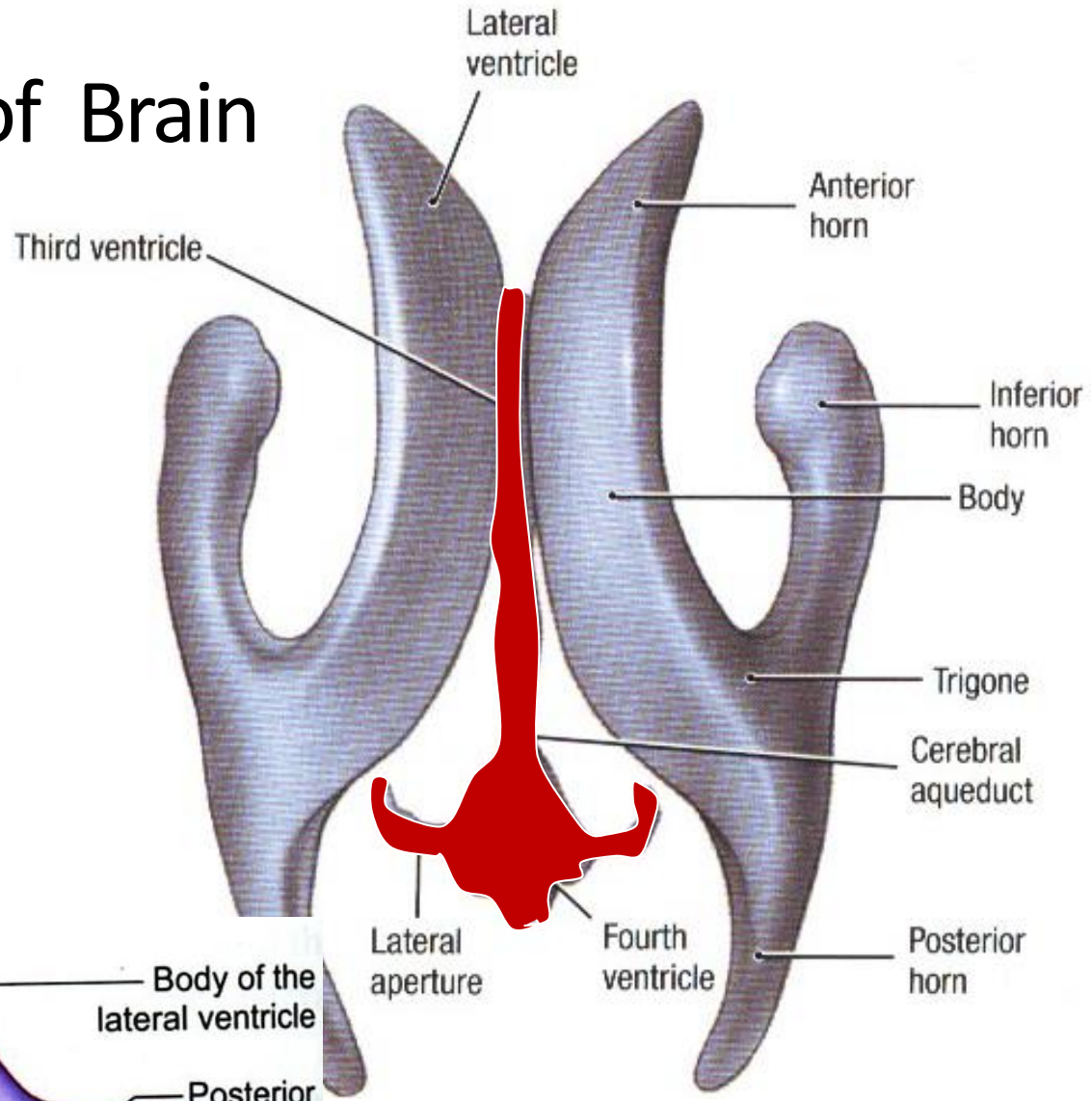
Lateral ventricles

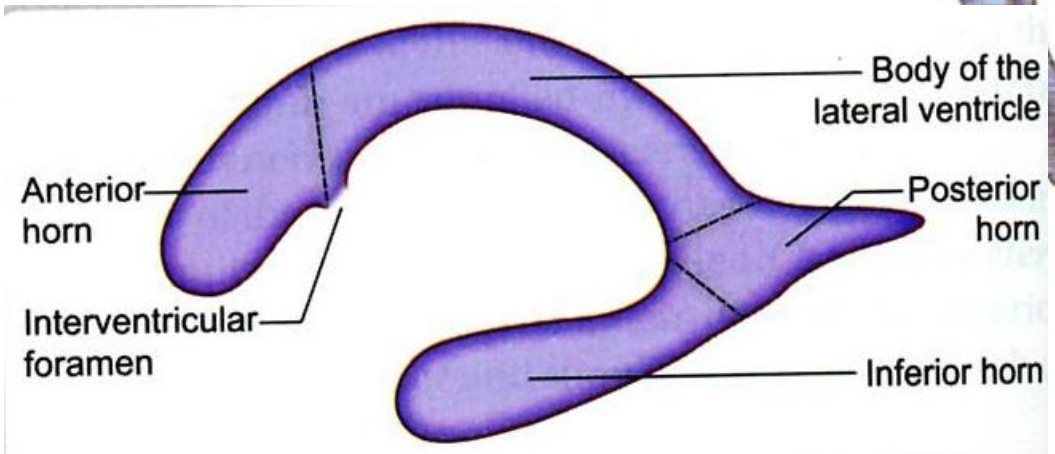
- Cavity of cerebral hemisphere
- Cavity of each hemisphere communicates at inter-ventricular foramen
- Joined with third ventricle at inter ventricular foramen

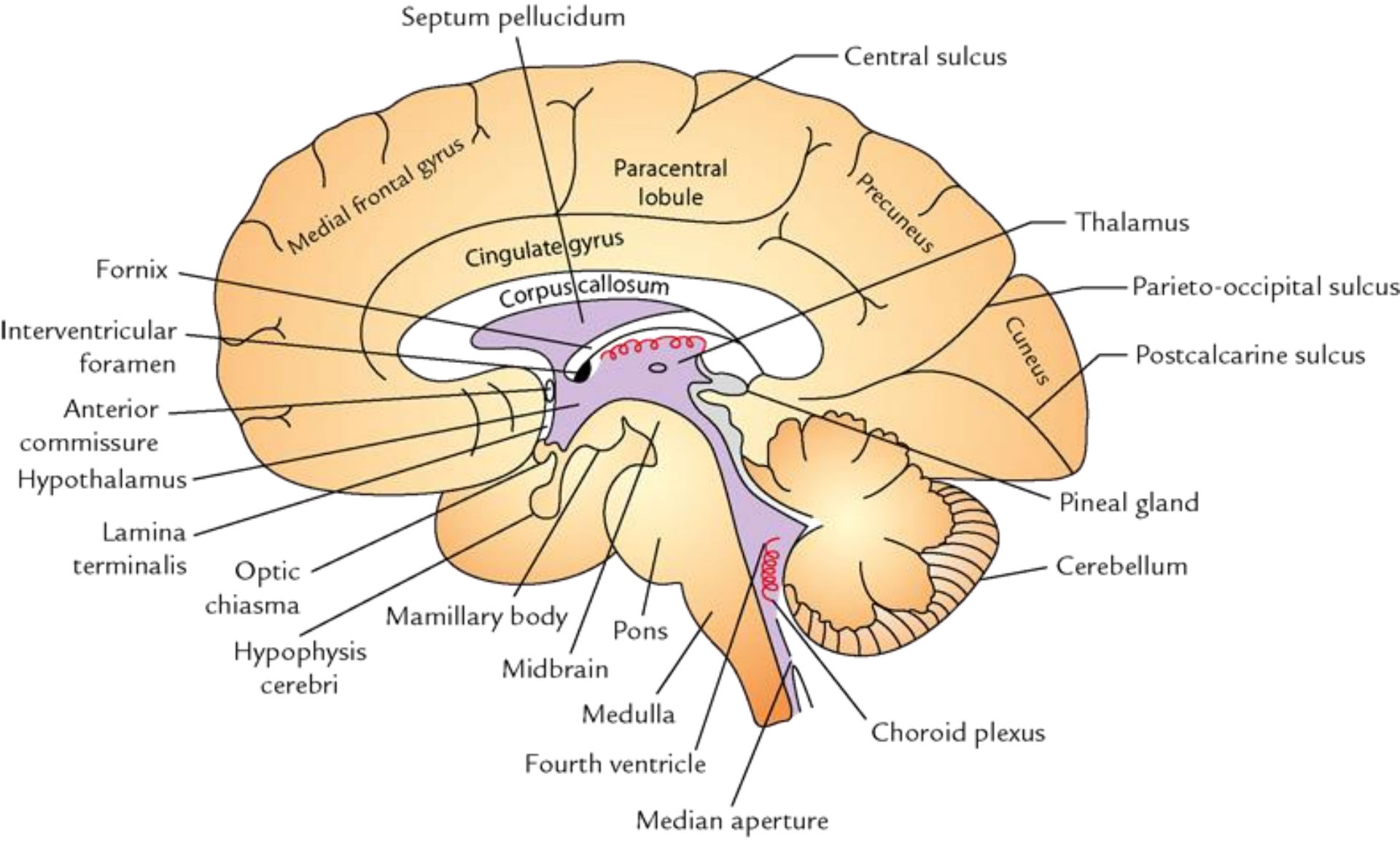


Lateral Ventricles of Brain

Each lateral ventricle consist of
C shaped cavity
Has –
Central part
Three horns
- Anterior horn
- Posterior horn
- Inferior horn

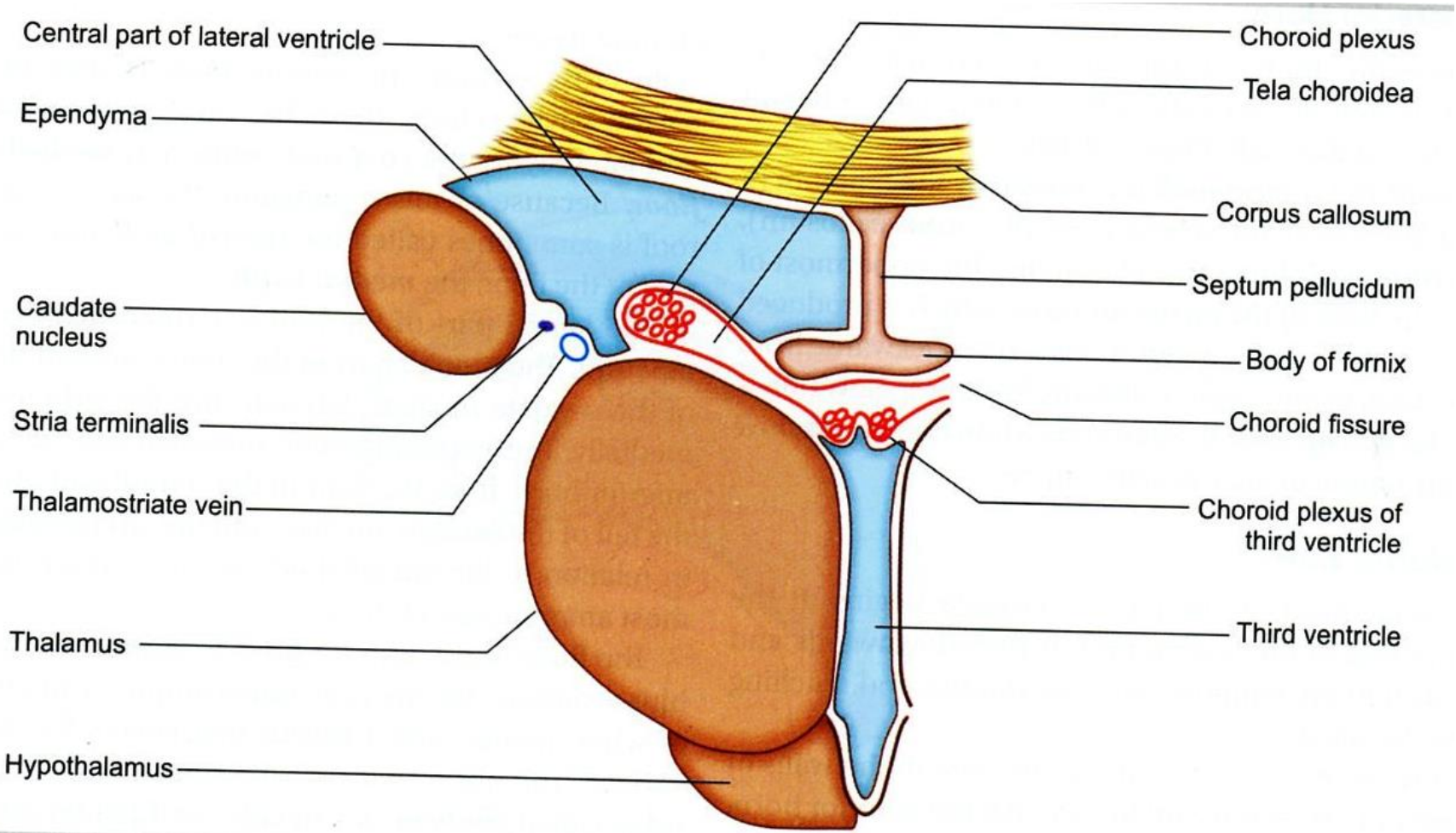





Septum pellucidum
Central sulcus
Medial frontal gyrus
Paracentral lobule
Precuneus
Thalamus
Cingulate gyrus
Fornix
Corpus callosum
Parieto-occipital sulcus
Interventricular foramen
Cuneus
Postcalcarine sulcus
Anterior commissure
Hypothalamus
Pineal gland
Lamina terminalis
Optic chiasma
Cerebellum
Mamillary body
Pons
Hypophysis cerebri
Midbrain
Medulla
Choroid plexus
Fourth ventricle
Median aperture

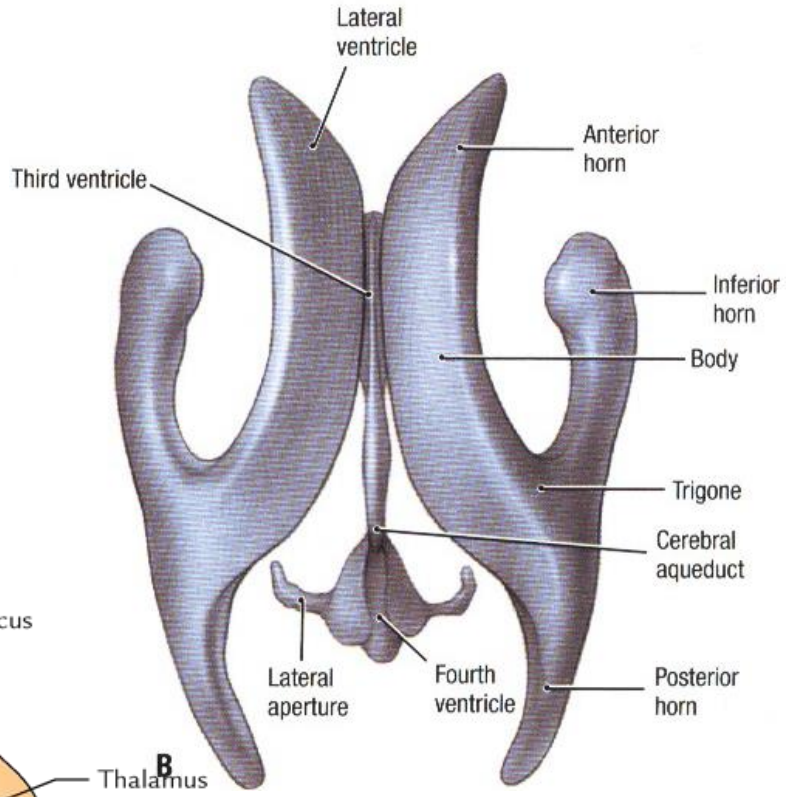
Central part

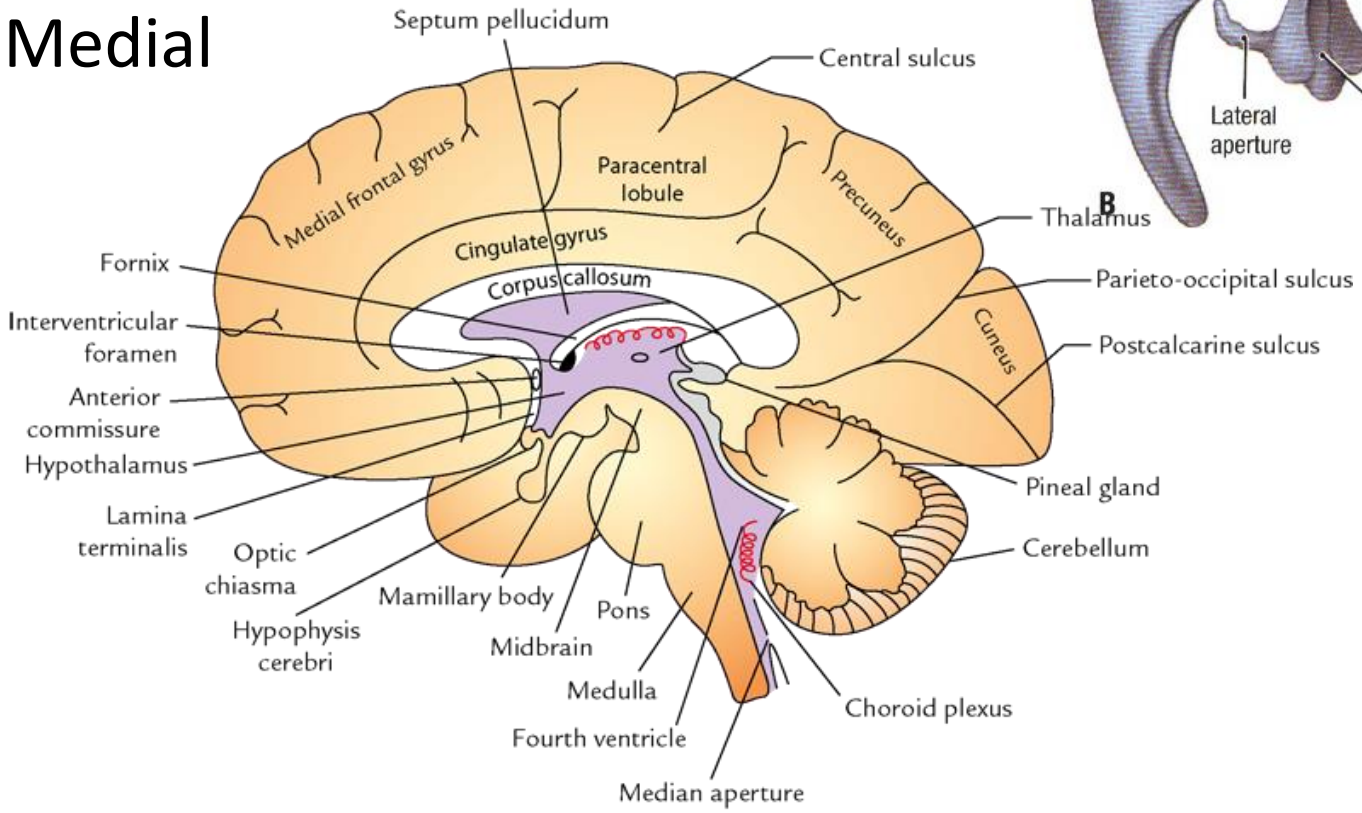
- Roof
- Floor
- Medial wall



Anterior horn-boundaries

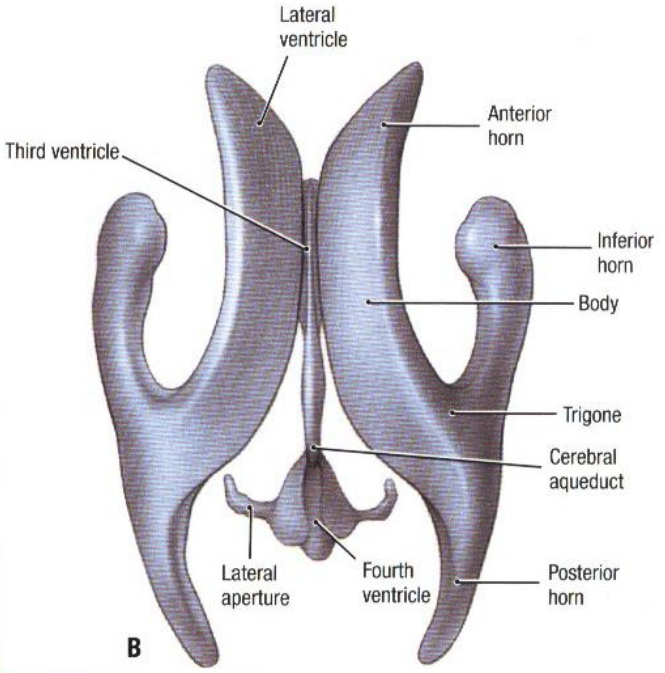
- Anterior
- roof
- Floor
- Medial

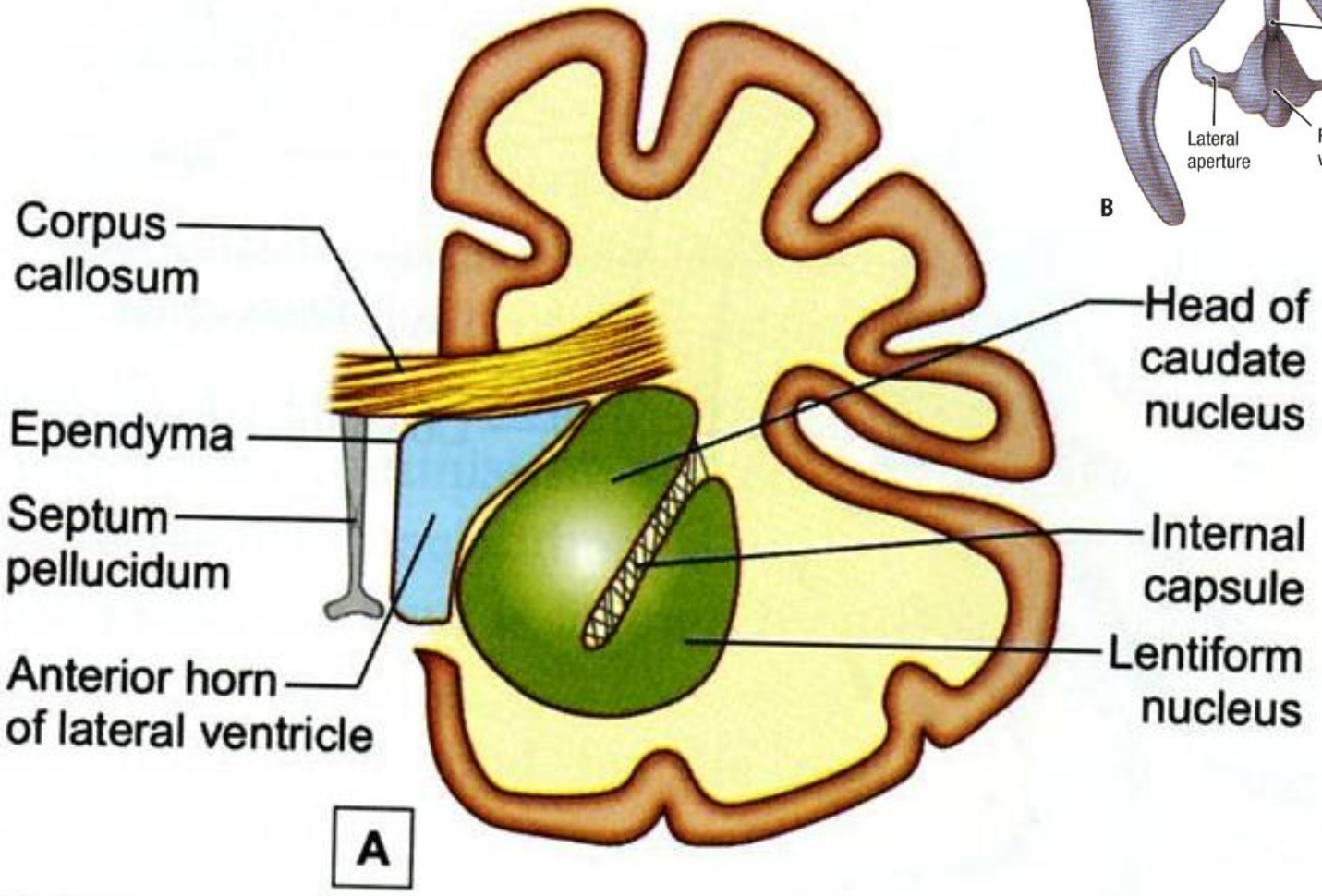




Anterior horn

- Anterior
-



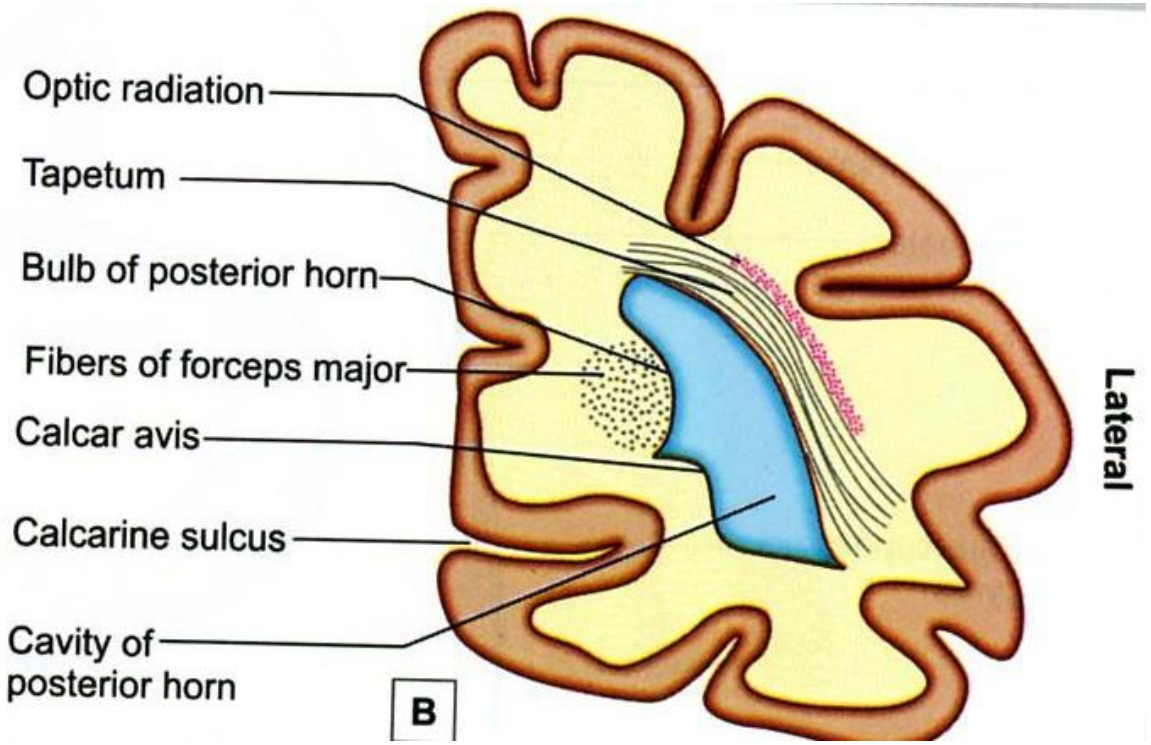


Posterior horn

Boundaries

Floor and medial wall

Roof and lateral wall

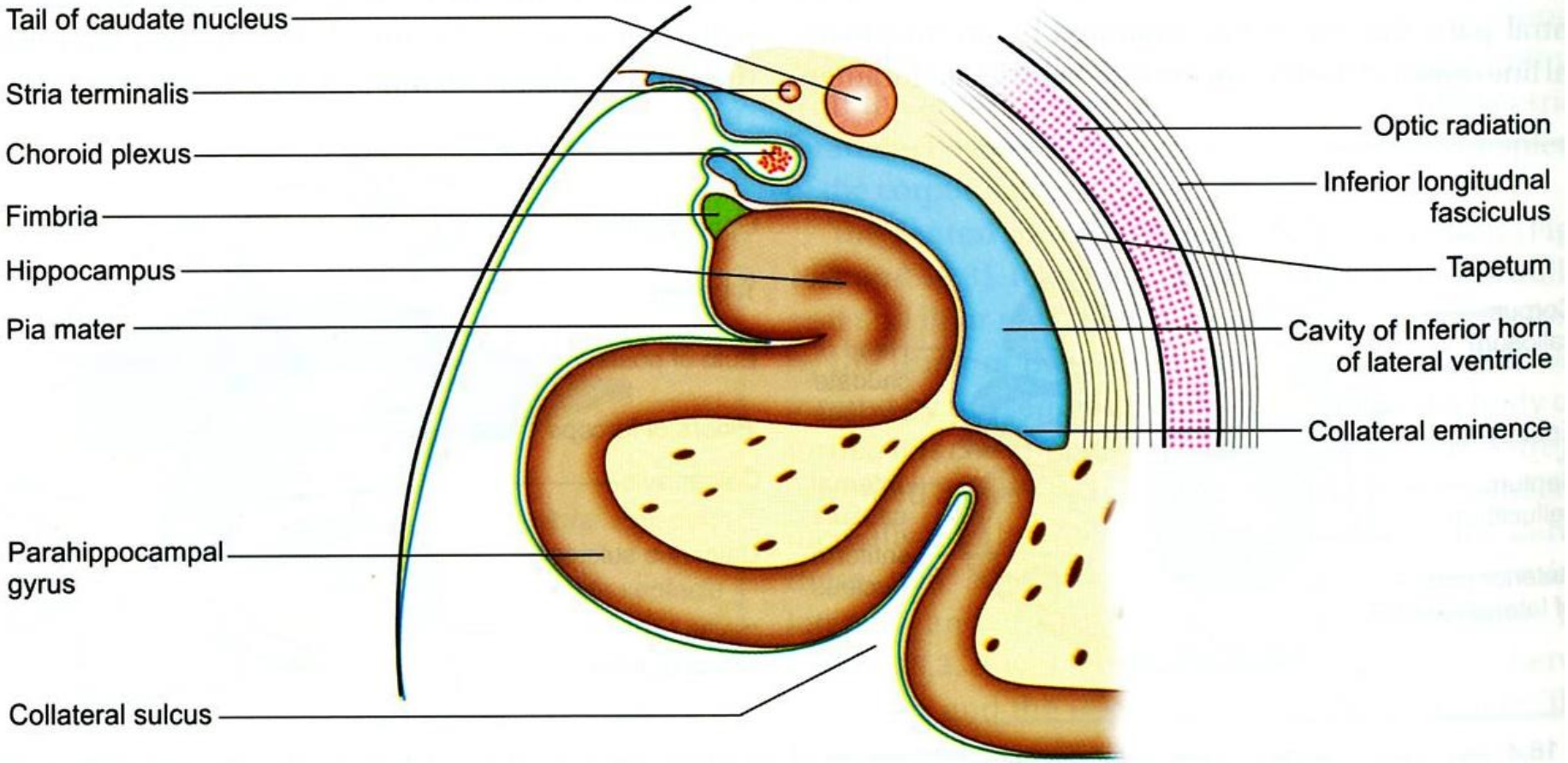


Inferior horn

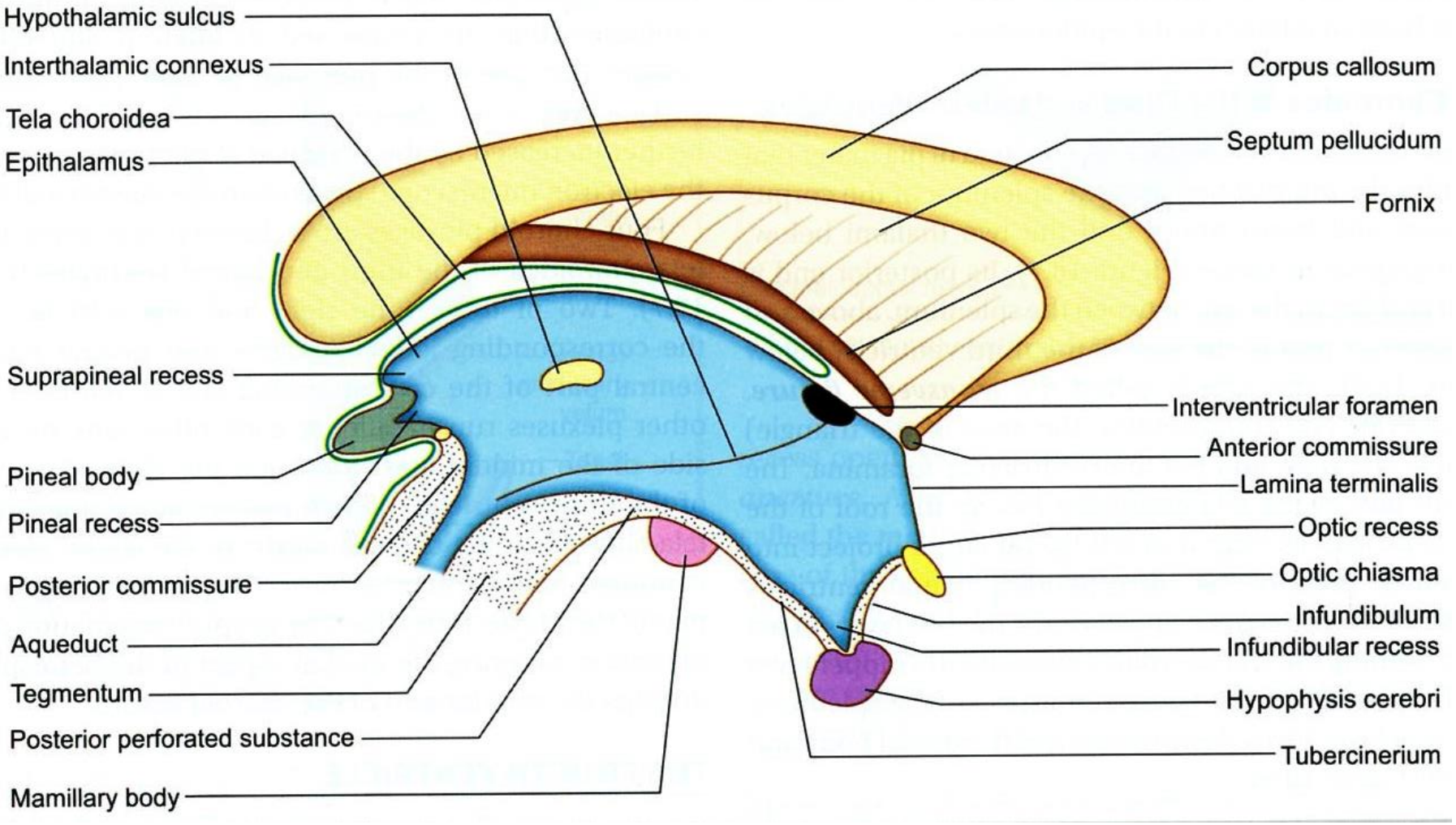
Boundaries

Roof and lateral wall

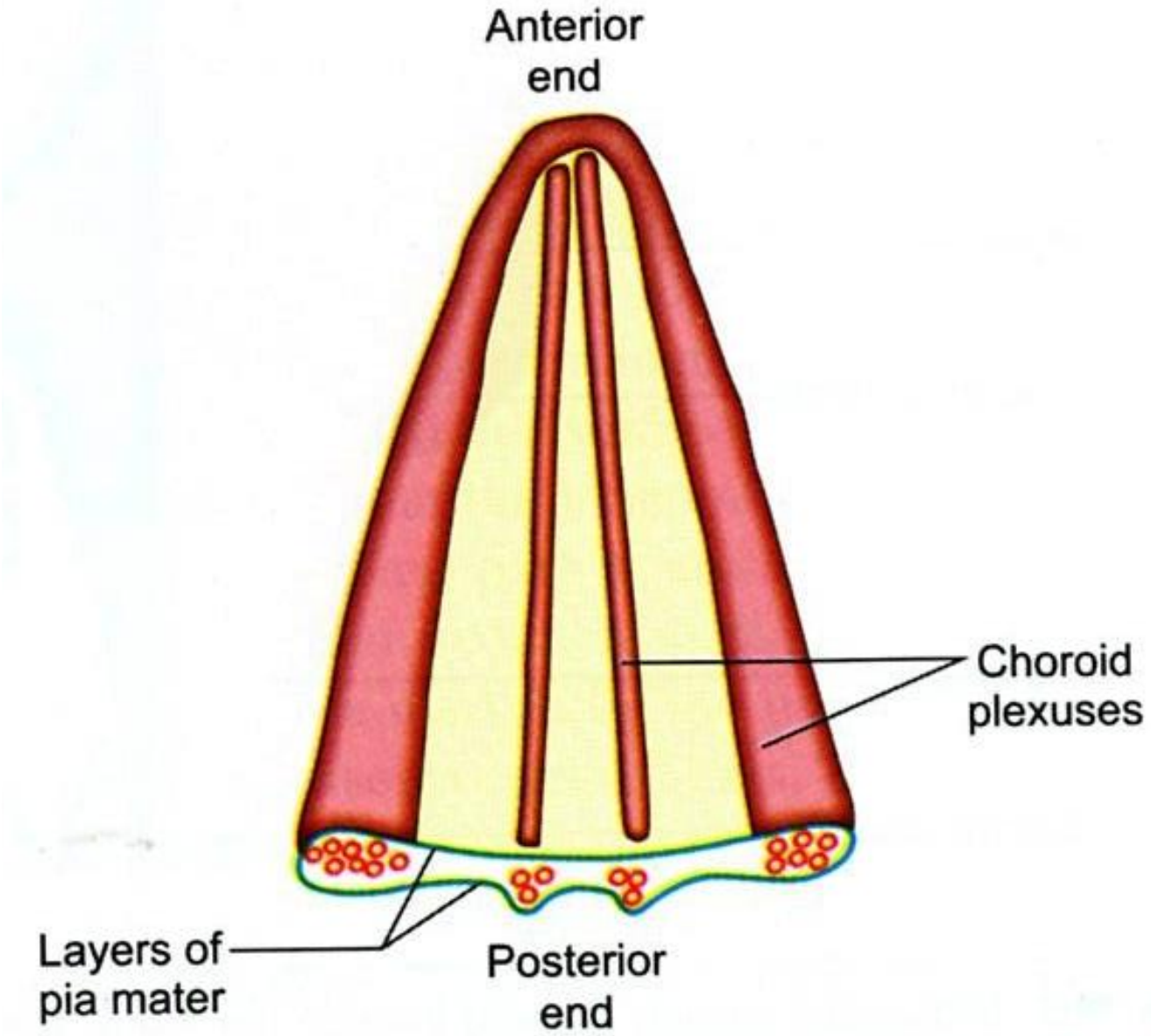
floor



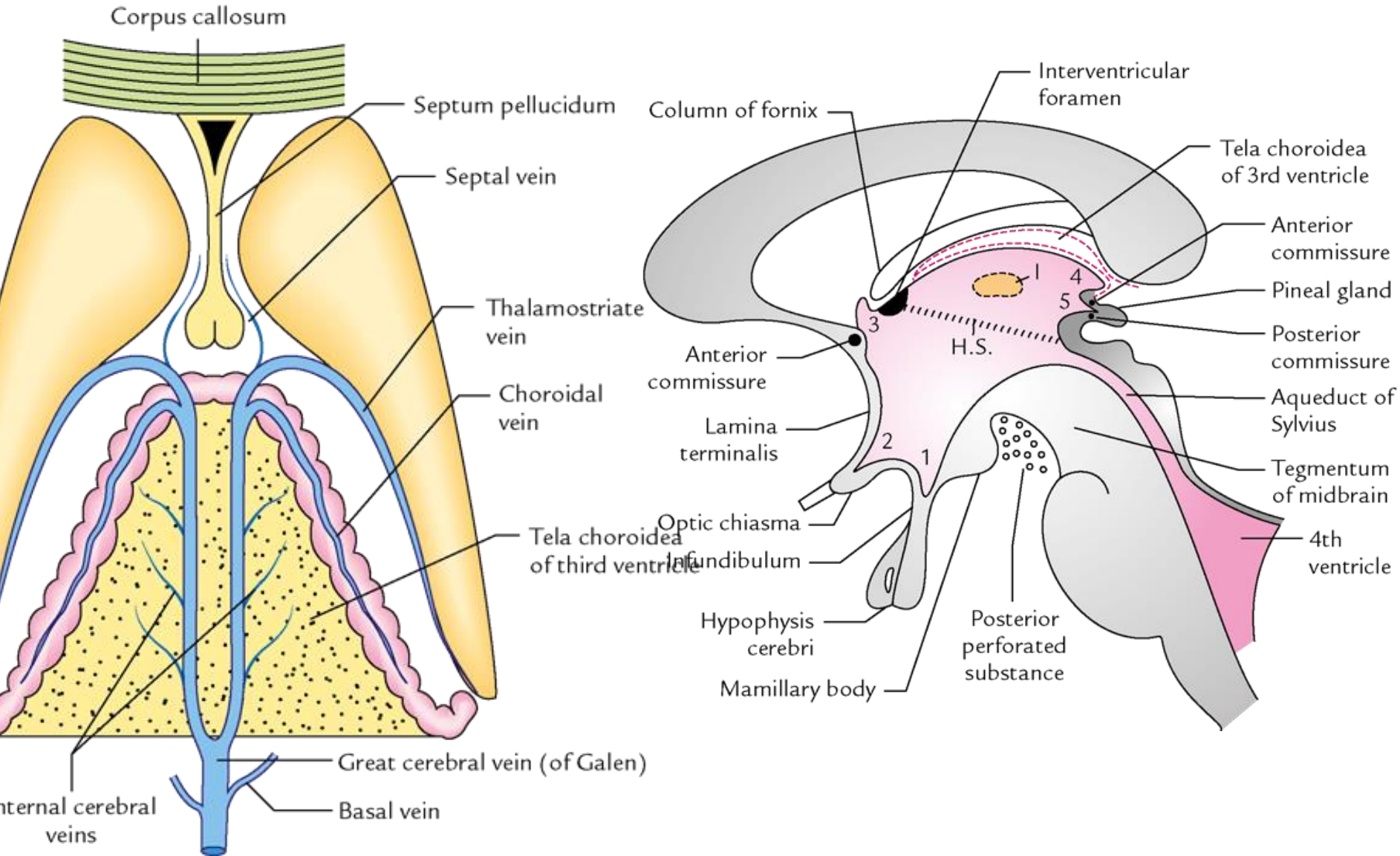
Choroid fissure

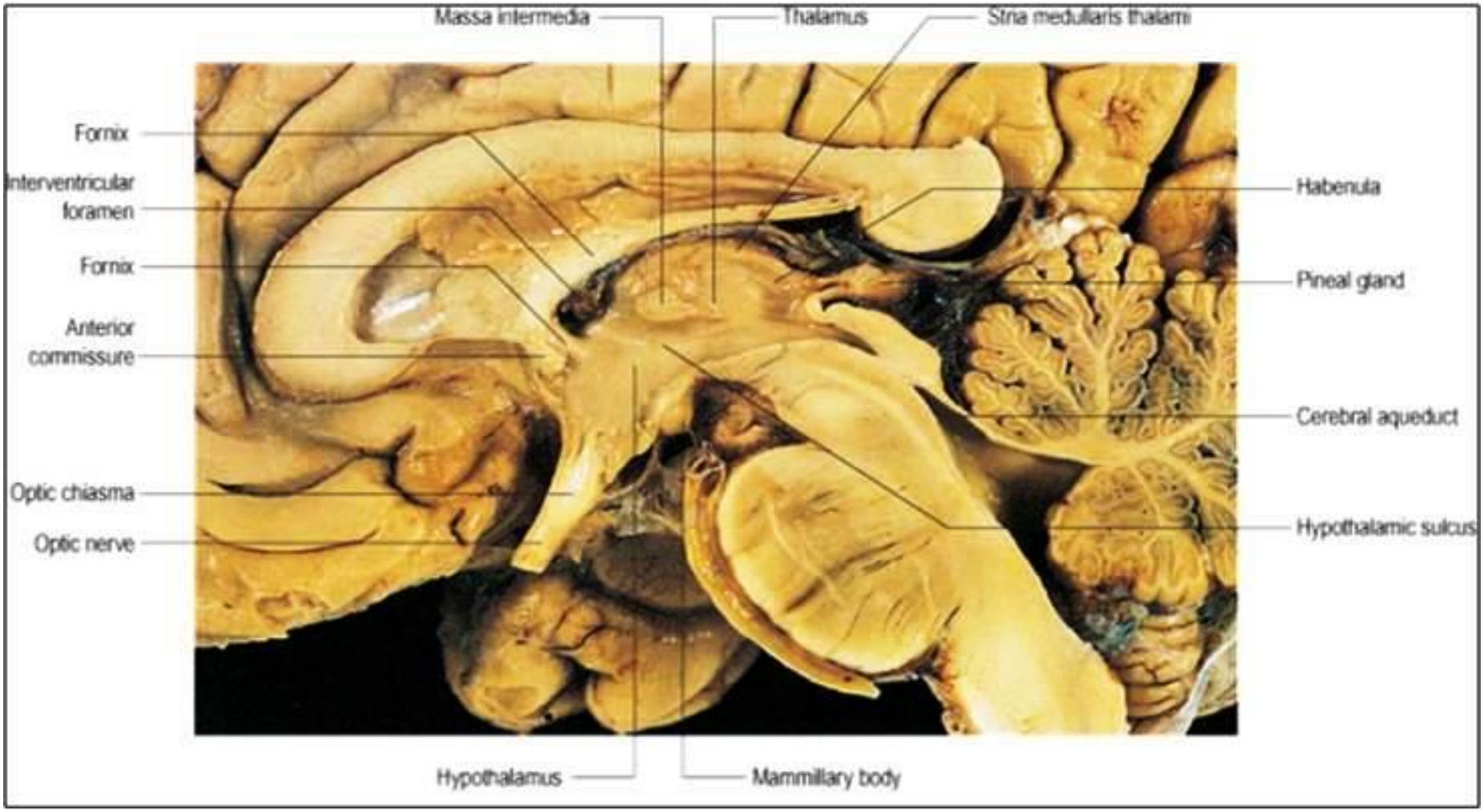


Choroid plexus

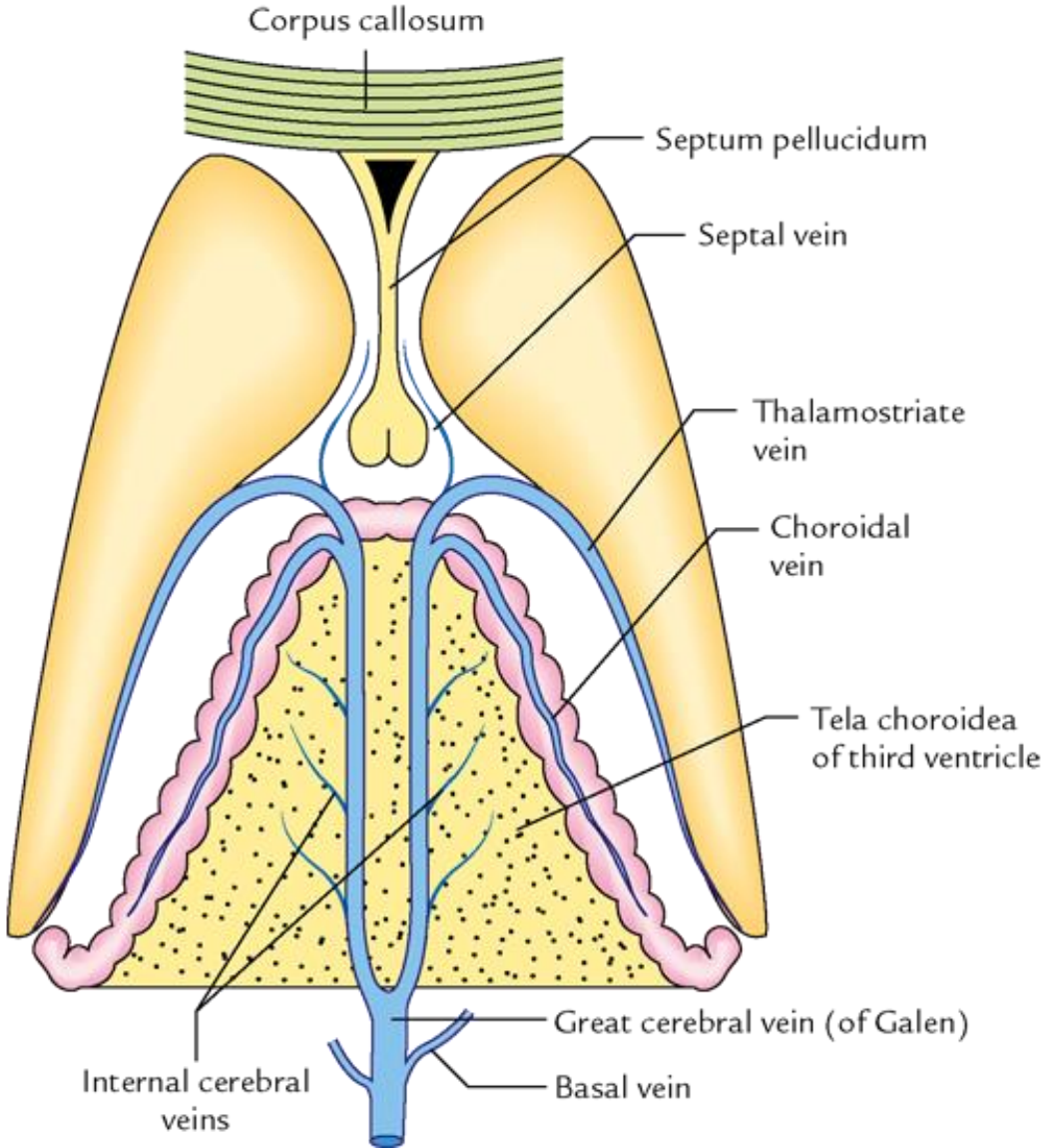


Choroid plexus and telachoroidea of third ventricle




Massa intermedia
Thalamus
Stria medullaris thalami
Fornix
Interventricular foramen
Fornix
Anterior commissure
Optic chiasma
Optic nerve
Habenula
Pineal gland
Cerebral aqueduct
Hypothalamic sulcus
Hypothalamus
Mammillary body

END

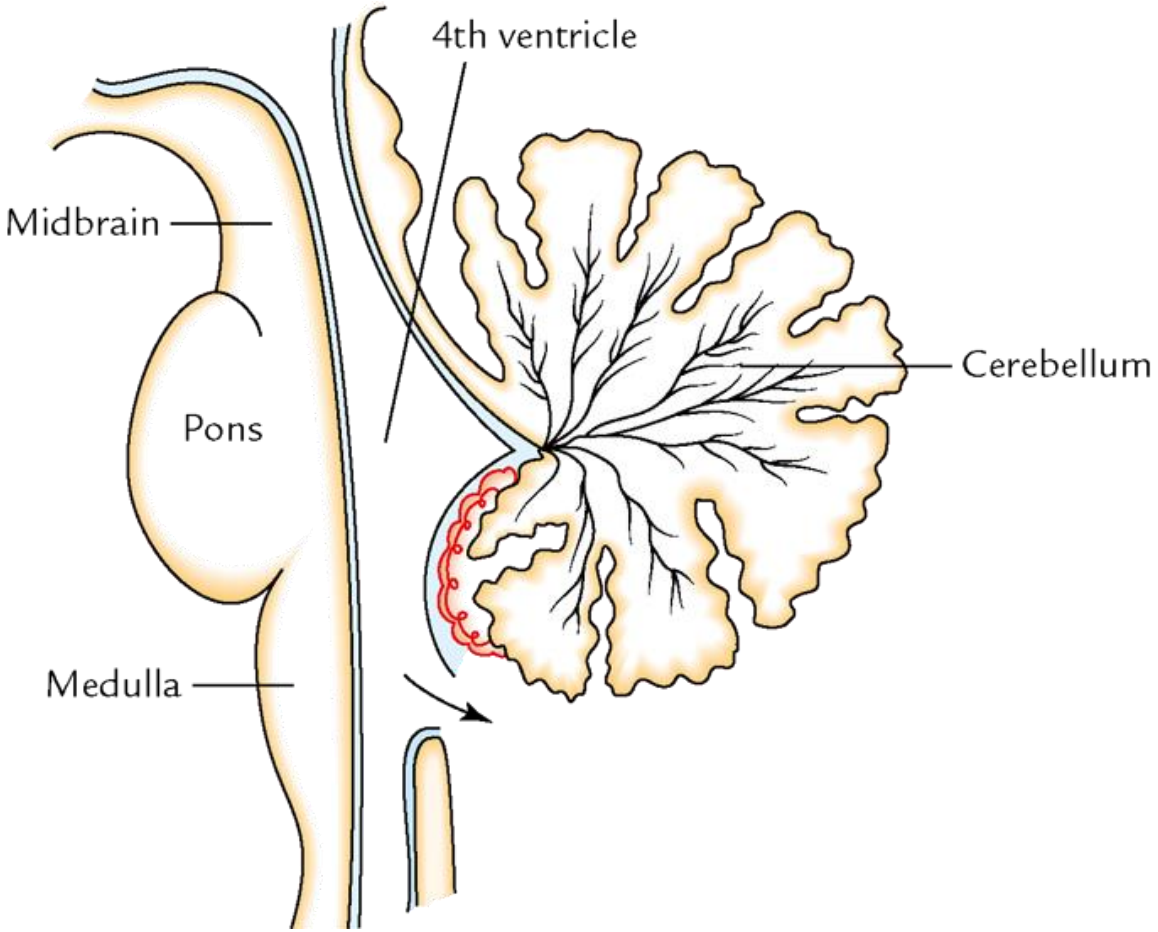

Corpus callosum
Septum pellucidum
Septal vein
Thalamostriate vein
Choroidal vein
Tela choroidea of third ventricle
Great cerebral vein (of Galen)
Basal vein
Internal cerebral veins

END

Fourth ventricle

- Tent like cavity of hind brain
- Situ in posterior cranial fossa
- In front of cerebellum and behind the pons and upper open part of medulla
- It is the only site where ventricular system communicates with the subarachnoid space through the apertures in roof and lateral recess

Fourth ventricle

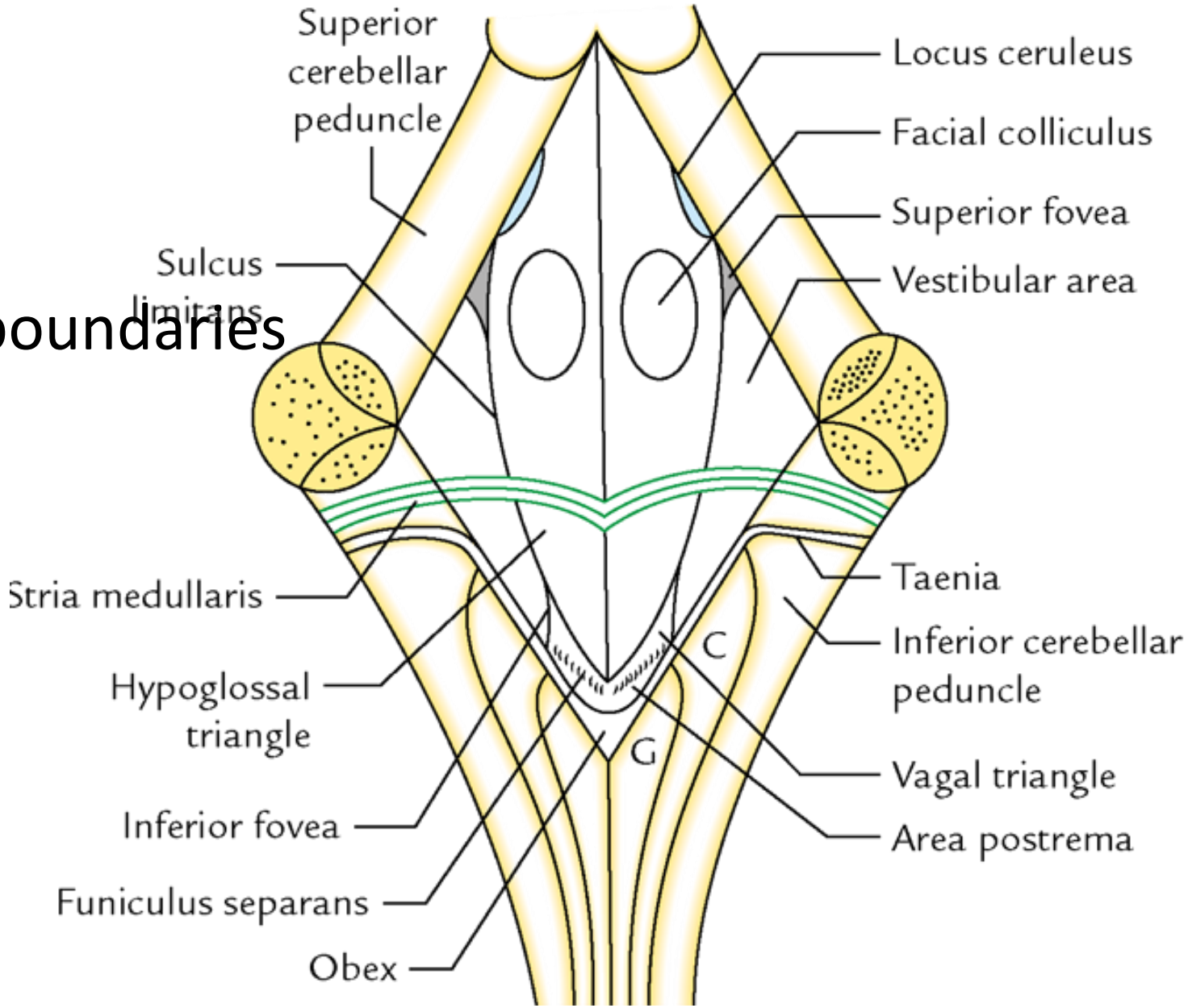


Features of fourth ventricles

It has

- Floor
- Lateral boundaries
- Angles
- Roof or dorsal wall
- Recesses
- apertures

Floor
Lateral boundaries

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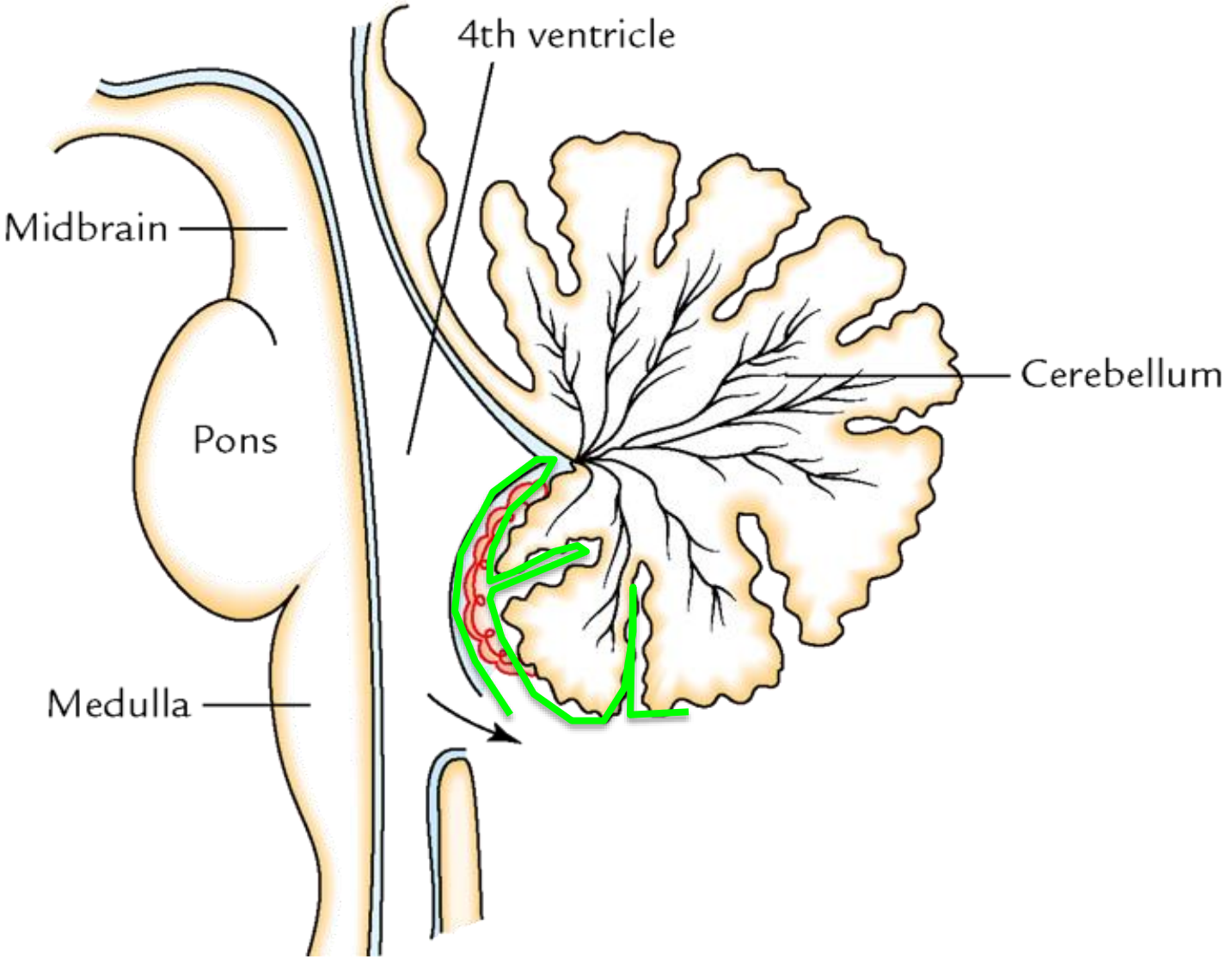
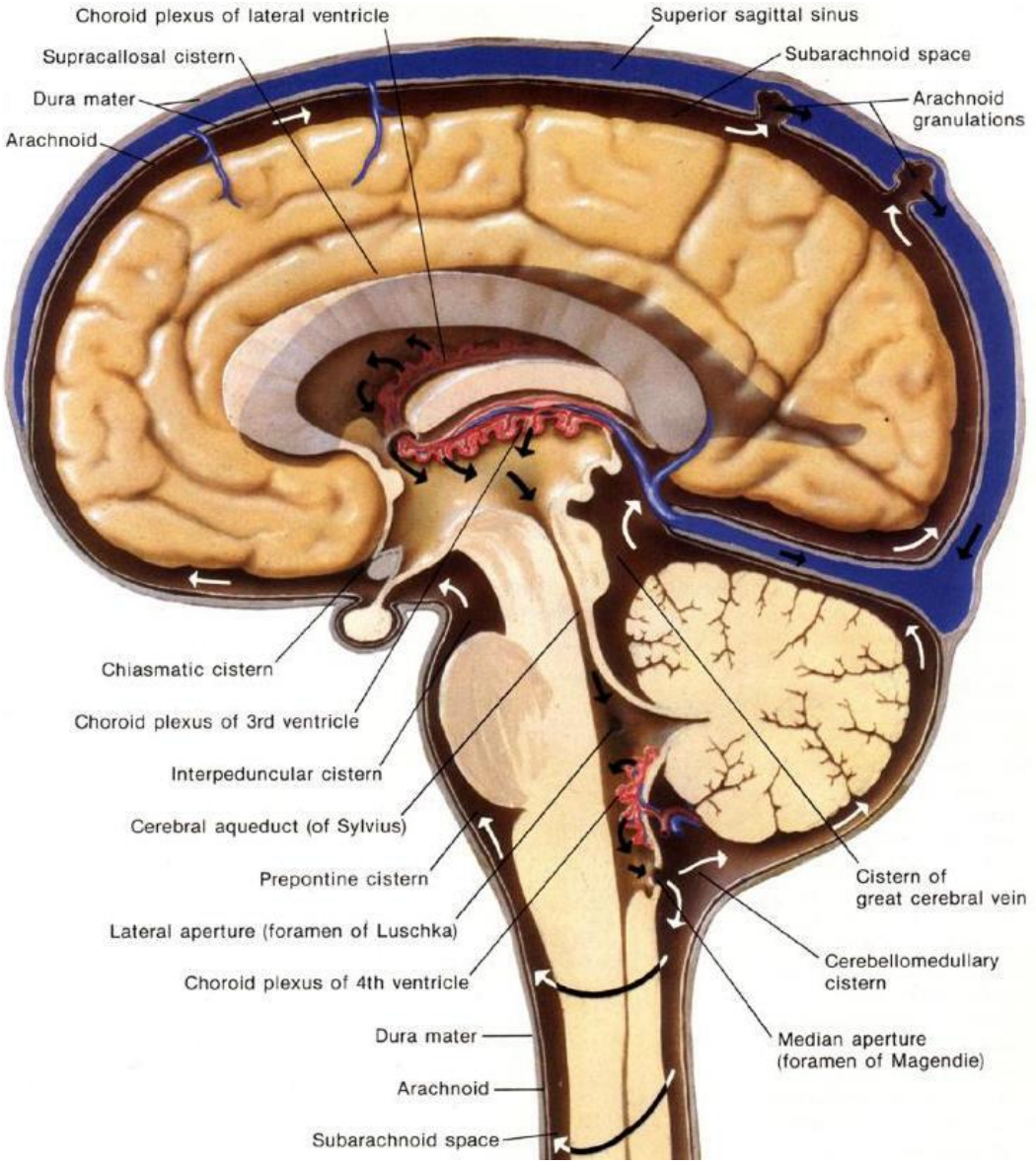
Copyright 1997 The Anatomy Project

Roof Angles



- Apertures
- Recesses



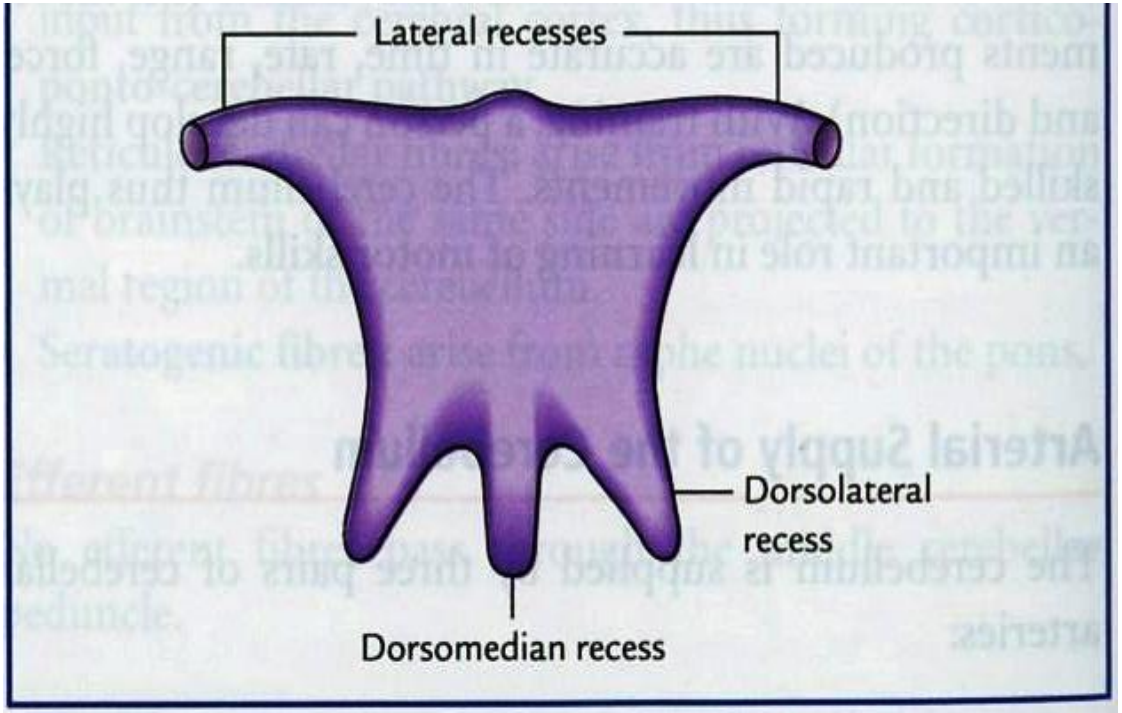
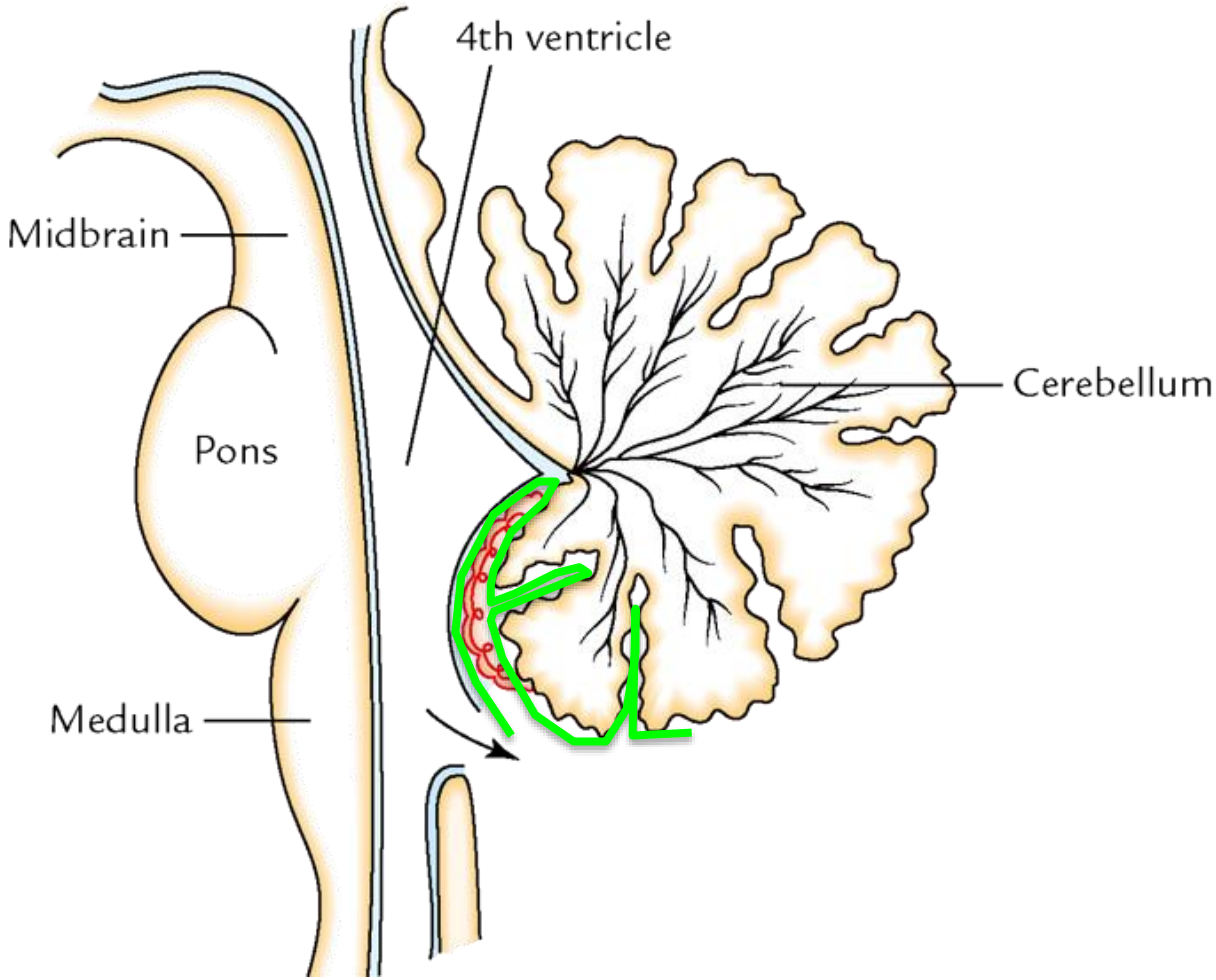
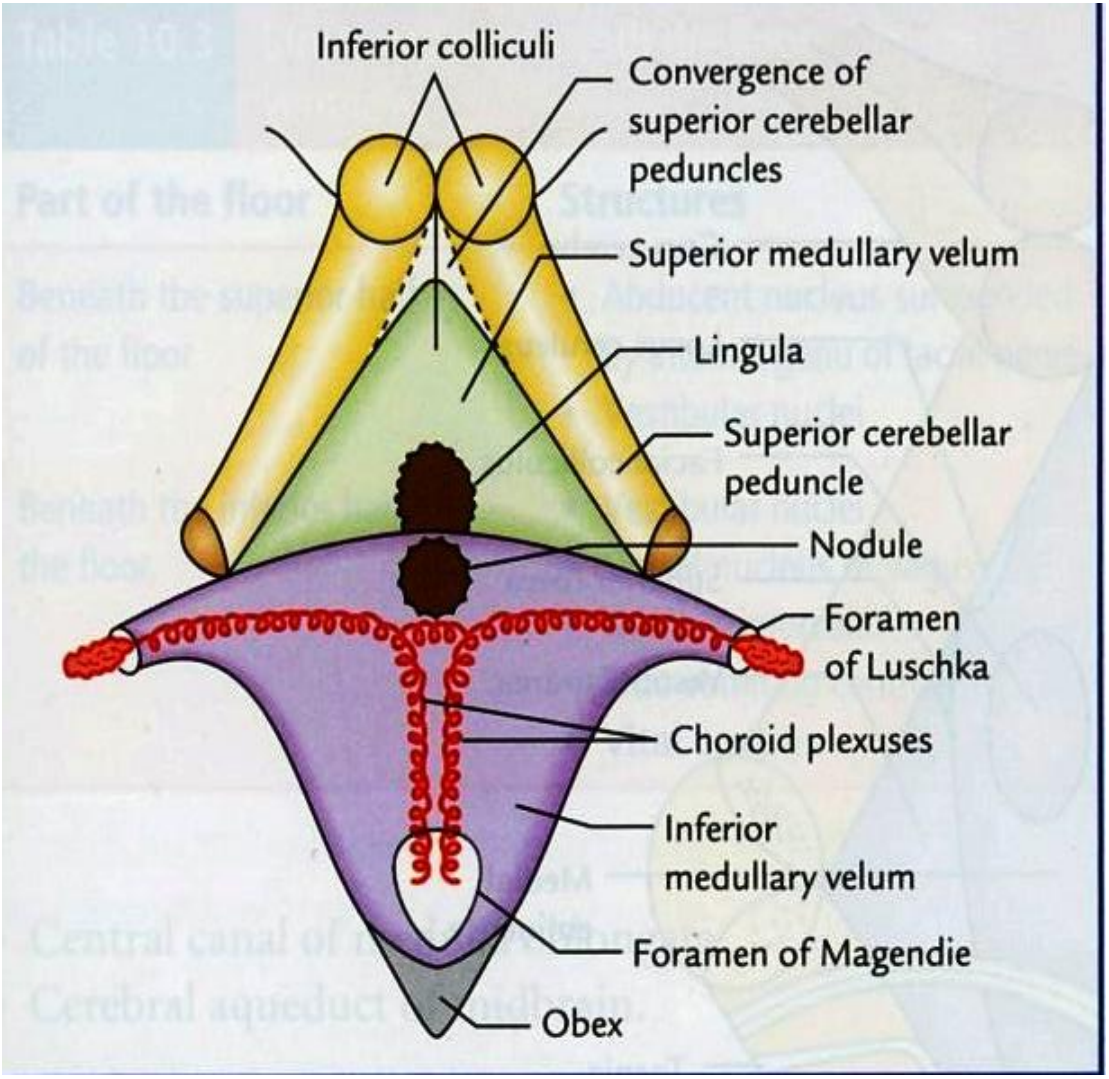
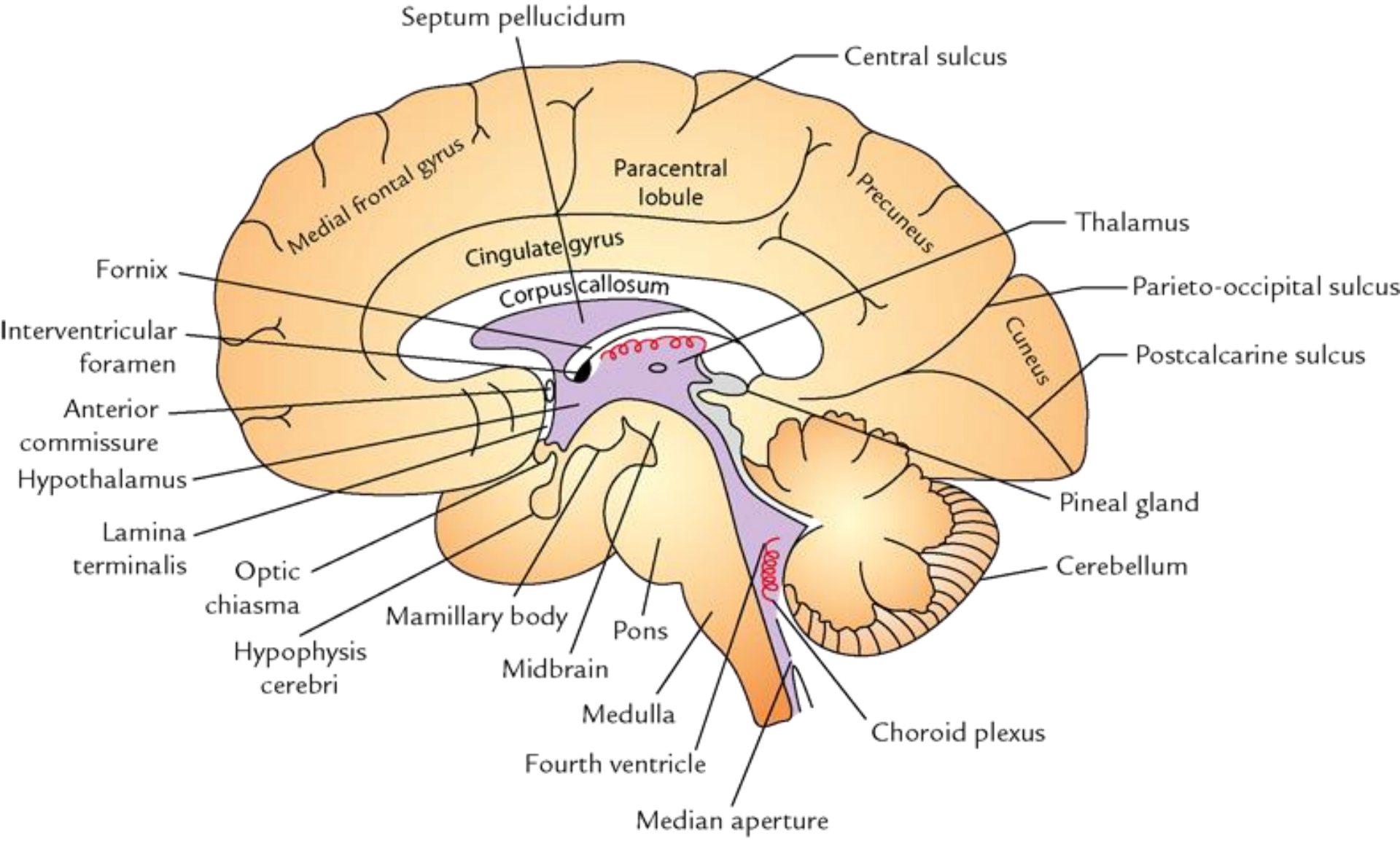


Fig. 10.12 Schematic diagram to show the five recesses of the cavity of the fourth ventricle.

Tela choriodea &Choroid plexus of fourth ventricle




Inferior colliculi
Convergence of superior cerebellar peduncles
Superior medullary velum
Lingula
Superior cerebellar peduncle
Nodule
Foramen of Luschka
Choroid plexuses
Inferior medullary velum
Foramen of Magendie
Obex


Septum pellucidum
Central sulcus
Medial frontal gyrus
Paracentral lobule
Precuneus
Thalamus
Cingulate gyrus
Fornix
Corpus callosum
Parieto-occipital sulcus
Interventricular foramen
Cuneus
Postcalcarine sulcus
Anterior commissure
Hypothalamus
Pineal gland
Lamina terminalis
Optic chiasma
Cerebellum
Mamillary body
Pons
Hypophysis cerebri
Midbrain
Medulla
Choroid plexus
Fourth ventricle
Median aperture

Applied

THANK-YOU

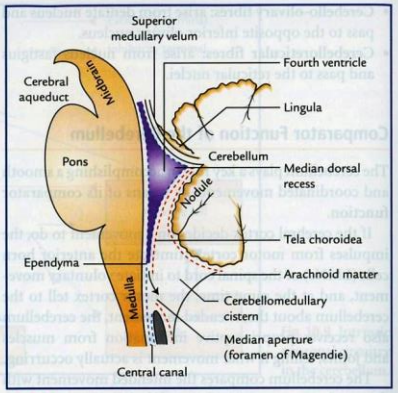


Fig. 10.11 The fourth ventricle and related structures as seen in midsagittal section.

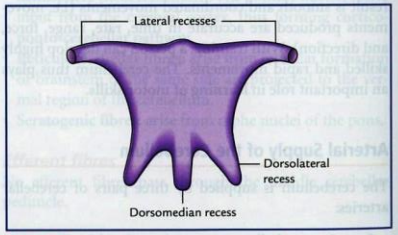


Fig. 10.12 Schematic diagram to show the five recesses of the cavity of the fourth ventricle.

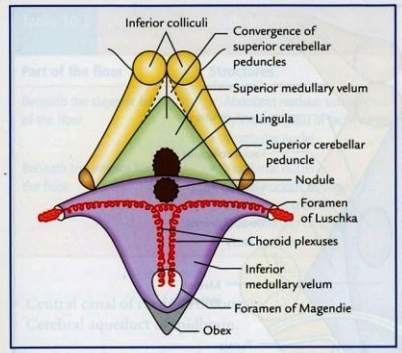


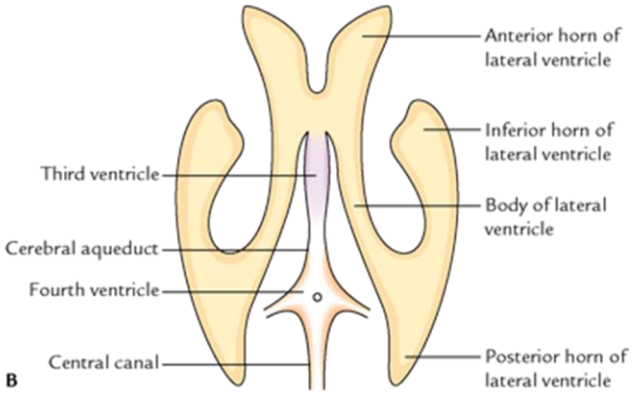
Fig. 10.13 Roof of the fourth ventricle. Note that the uppermost part of the roof is formed by the convergence of two superior cerebellar peduncles.

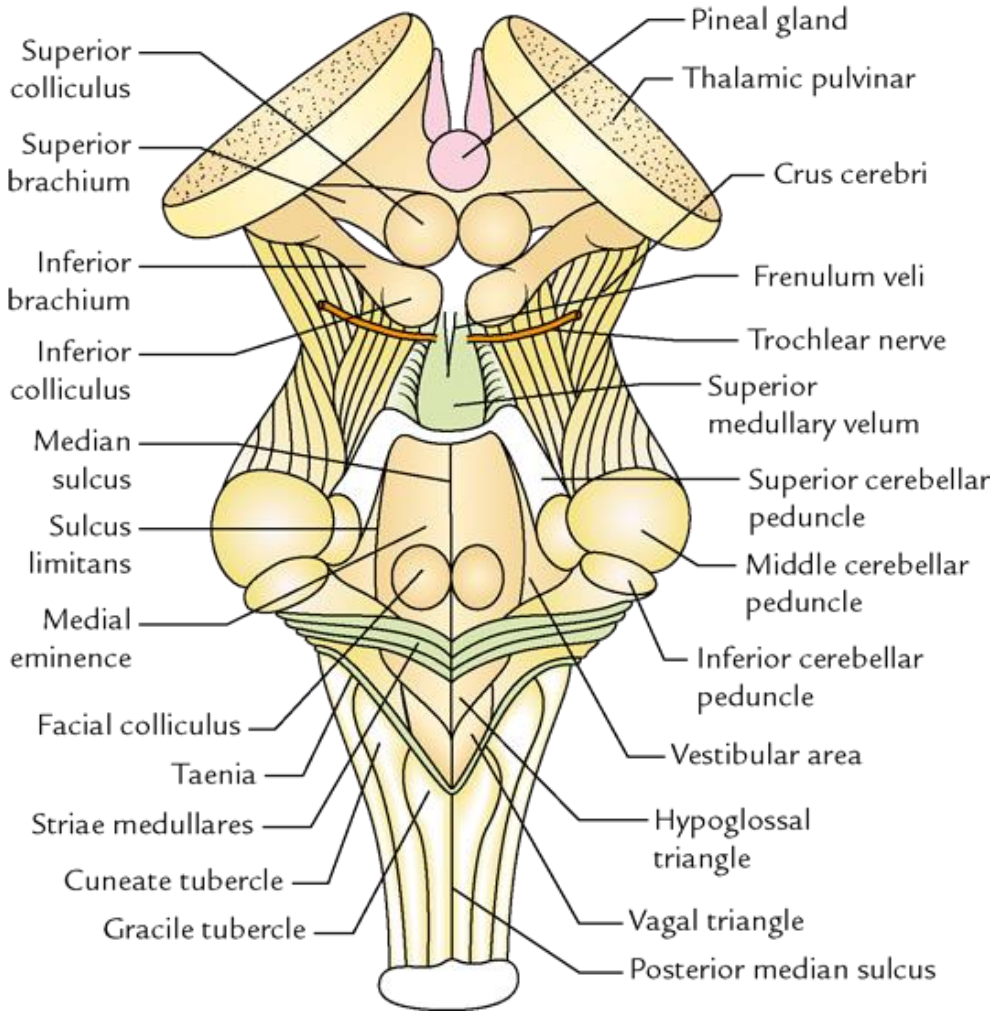
Roof (posterior wall) (Fig. 10.13)

The roof of fourth ventricle is tent-shaped and has upper and lower sloping surfaces. The apex of the tent extends posteriorly into the white core of the cerebellum.

The *upper part of the roof* is formed by the convergence of two superior cerebellar peduncles and a thin sheet of white matter, the **superior medullary velum** that bridges the triangular gap between the two superior cerebellar peduncles. On it lies the lingula of the superior vermis of the cerebellum.

The *lower part of the roof* is formed by a thin sheet of non-nervous tissue, the **inferior medullary velum** which is formed conjointly by the ventricular ependyma and the pia mater (of tela choroidea) that covers it posteriorly. It is inti-


Anterior horn of lateral ventricle
Inferior horn of lateral ventricle
Third ventricle
Body of lateral ventricle
Cerebral aqueduct
Fourth ventricle
Central canal
Posterior horn of lateral ventricle
B


Pineal gland
Thalamic pulvinar
Superior colliculus
Superior brachium
Crus cerebri
Inferior brachium
Frenulum veli
Trochlear nerve
Inferior colliculus
Superior medullary velum
Median sulcus
Superior cerebellar peduncle
Sulcus limitans
Middle cerebellar peduncle
Medial eminence
Inferior cerebellar peduncle
Facial colliculus
Vestibular area
Taenia
Striae medullares
Hypoglossal triangle
Cuneate tubercle
Vagal triangle
Gracile tubercle
Posterior median sulcus