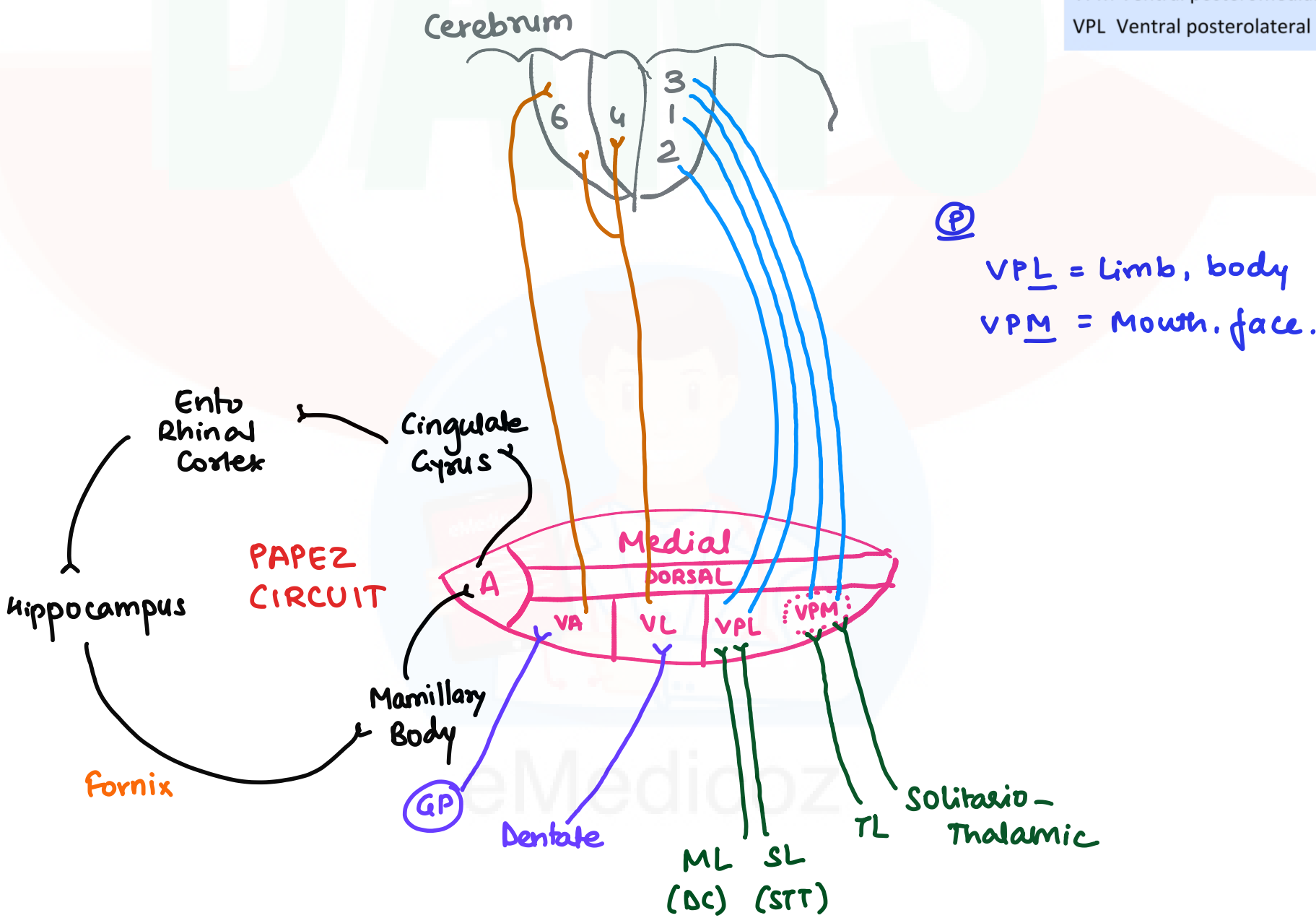
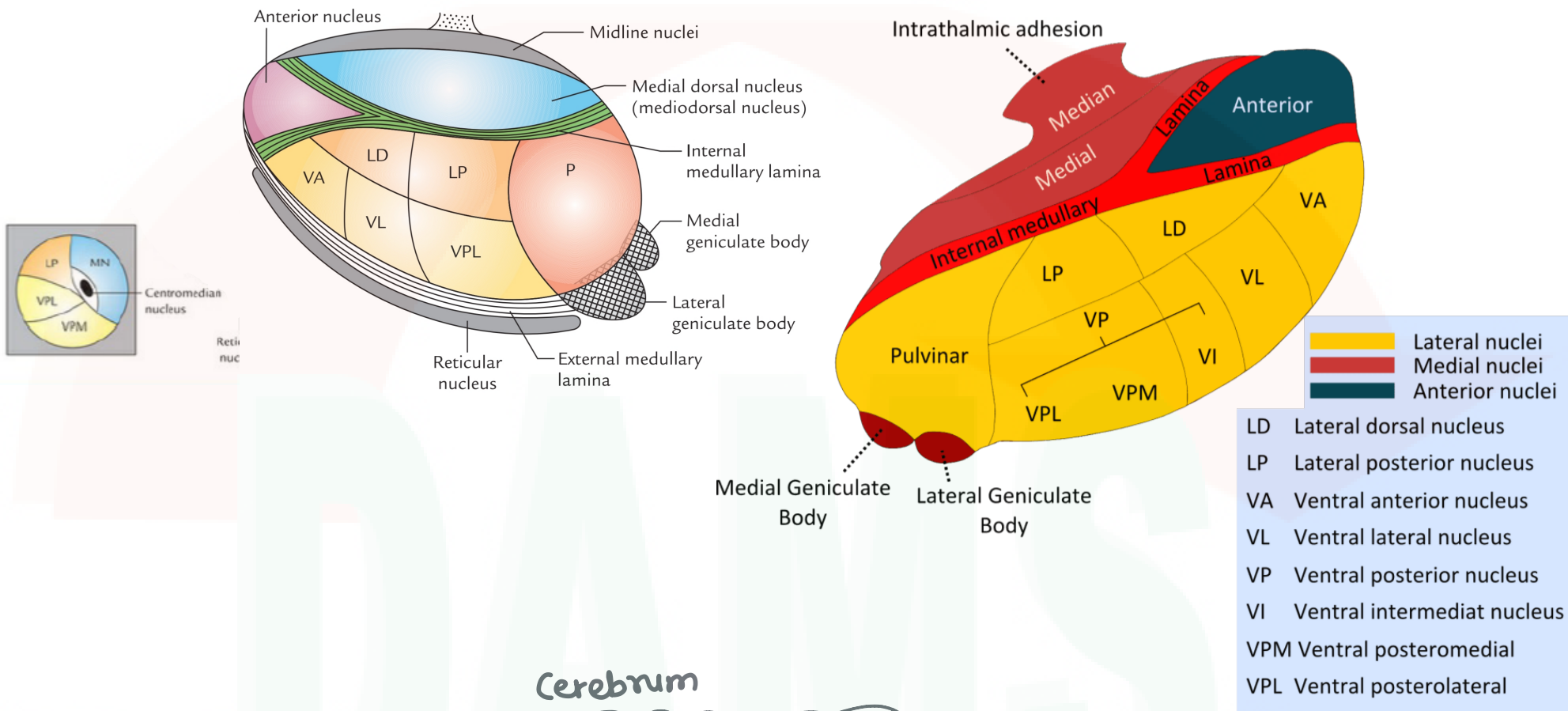
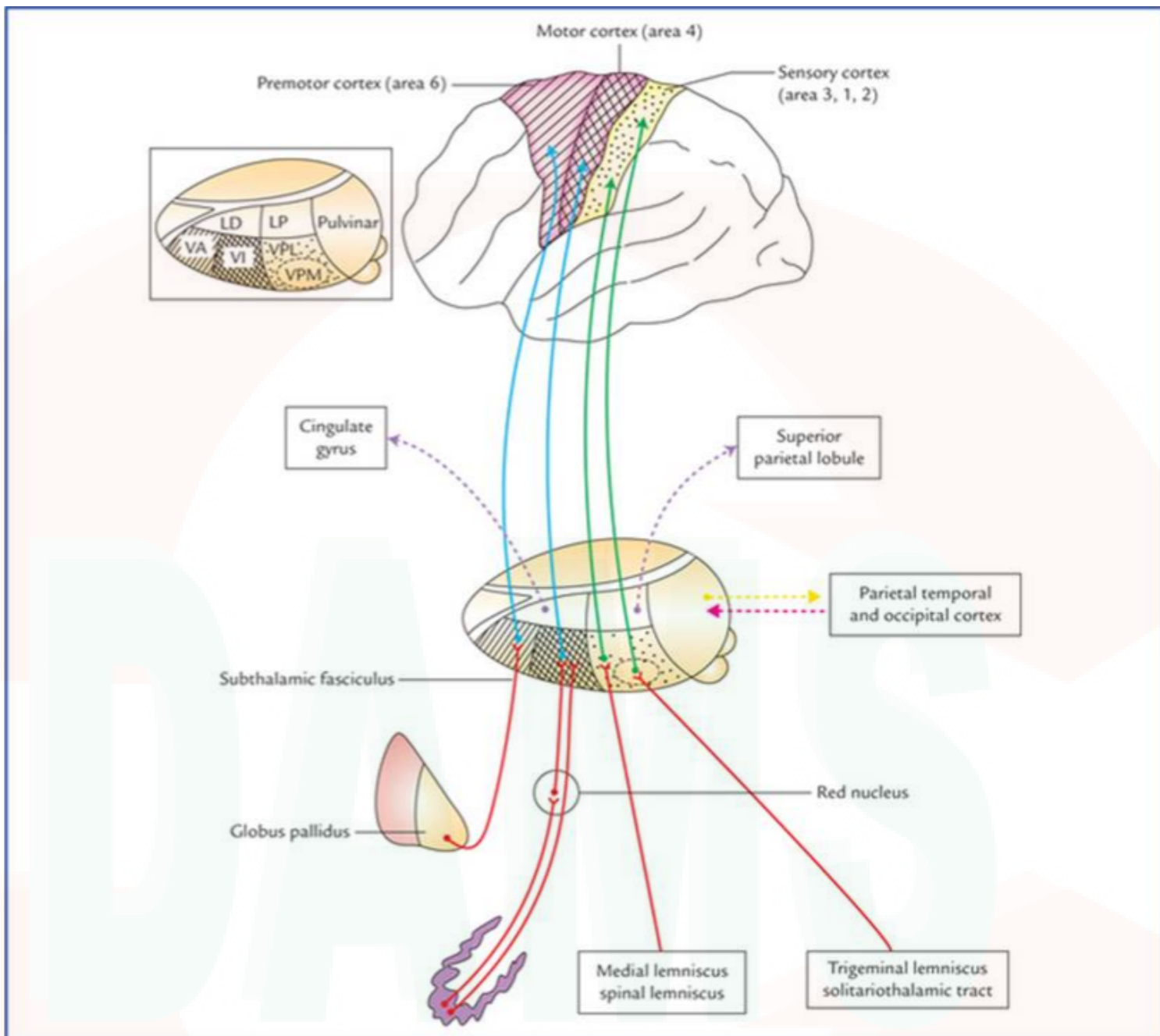


THALAMUS





Q. Which of the following is/are projected to ventral posterior nucleus of thalamus? (PGIC)

- a. Lateral lemniscus
- ☒ b. Medial lemniscus
- c. Corticospinal tract
- ☒ d. Spinal lemniscus
- ☒ e. Trigeminal lemniscus

Q. Which of the following thalamic nuclei does NOT project to neocortex? (AIIMS)

- a. Intralaminar nuclei
- ☒ b. Reticular nuclei
- c. Pulvinar nuclei
- d. Anterior thalamic nuclei

Q. A 62-year-old female comes to the ER complaining of difficulty walking that started three hours ago. She also says that she cannot feel her right side. Physical examination reveals loss of touch sensation affecting the right upper and lower extremities and the right side of the face. Her muscle strength is 5/5 in all extremities.

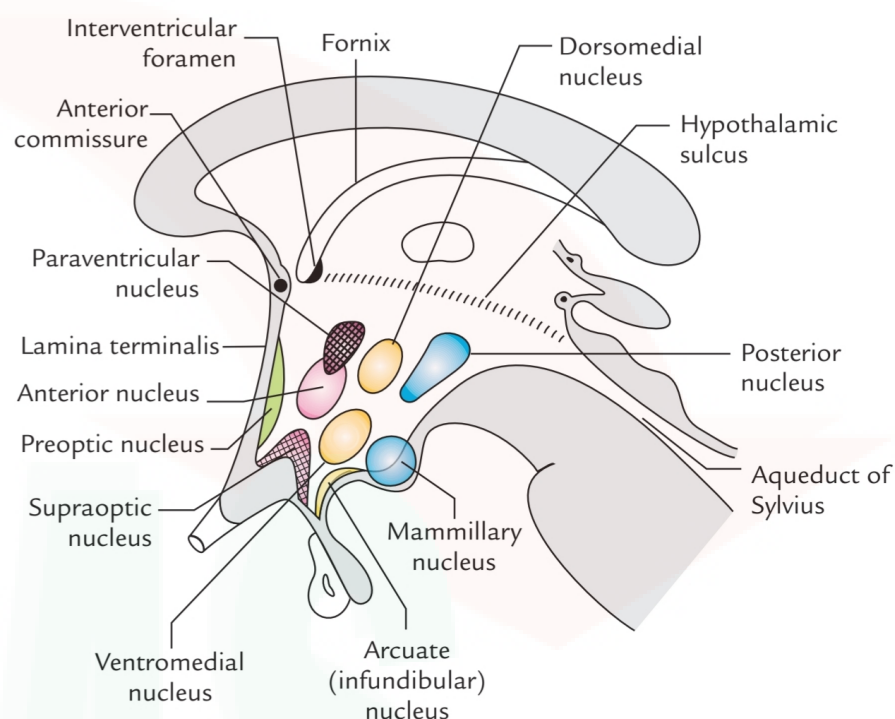
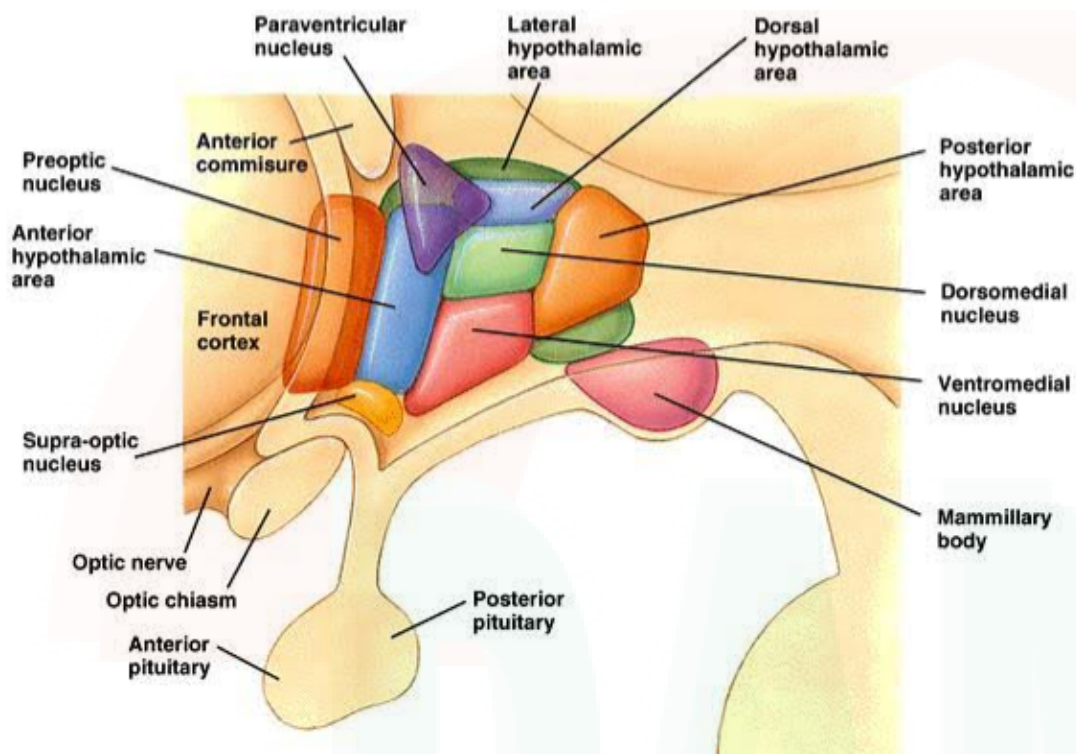
This patient has most likely suffered a stroke affecting which of the following brain structure?

- A. Frontal cortex
- B. Internal capsule
- C. Base of the pons
- D. Caudate nucleus
- ☒ E. Thalamus

Pure sensory stroke

↳ Relay centre Gone → Thalamus

HYPOTHALAMUS



Nucleus/nuclei	Functions
Prebiotic nucleus	Regulates release of gonadotrophic hormones
Supraoptic and paraventricular nuclei	- Produce antidiuretic hormone (ADH) and oxytocin - Regulate water balance
Anterior nucleus	- Regulates body temperature by dissipation of heat - Stimulates parasympathetic nervous system
Arcuate (infundibular) nucleus	Produces hypothalamic releasing factors
Ventromedial nucleus	It is considered as a 'satiety centre'. Its stimulation inhibits the urge to eat.
Dorsomedial nucleus	Its stimulation causes obesity and results in savage behaviour
Posterior nuclei	- Regulates body temperature by conservation of heat - Stimulates sympathetic nervous system
Mammillary nuclei	Receives input from hippocampal formation through fornix
Lateral nucleus	Its stimulation induces eating

Hypothalamic Nuclei

Ant. → ^(P)Ac → Cooling
 Post. → Heating
 Lat. → Eating (P we eat, we spread lat.)
 ventromed. → Satiety

S O A P
 Supraoptic oxytocin ADH Paraventricular

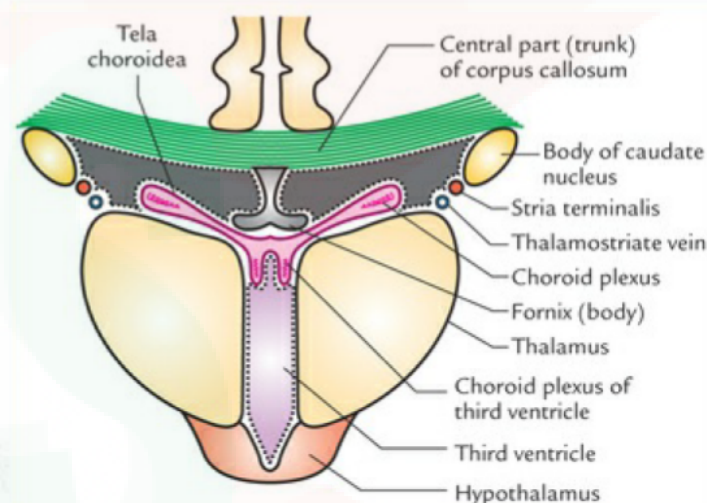
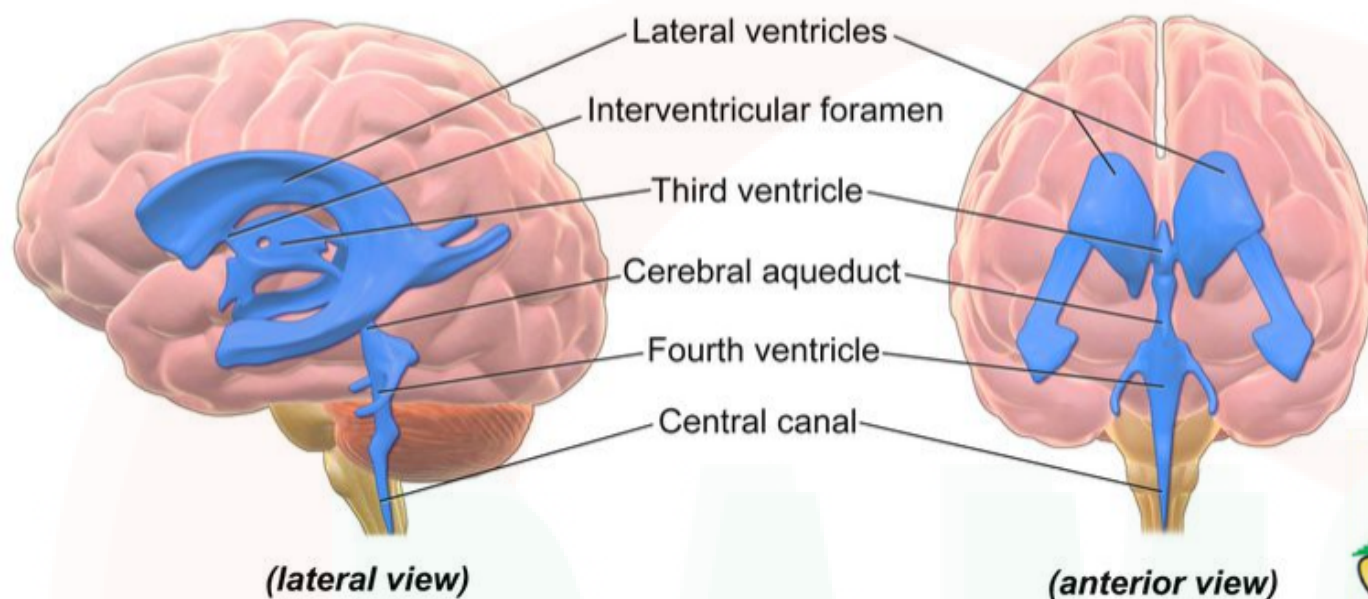
Preoptic → Gonadotropin Release
 Arcuate → Hypothalamic Release factors
 Suprachiasmatic → Sleep

Q- A 5-year-old male demonstrates persistent food-seeking behavior. He is obese, and his mother reports that he sometimes exhibits aggressive and bizarre behaviors. These clinical findings may be explained by a lesion in which of the following hypothalamic nuclei?

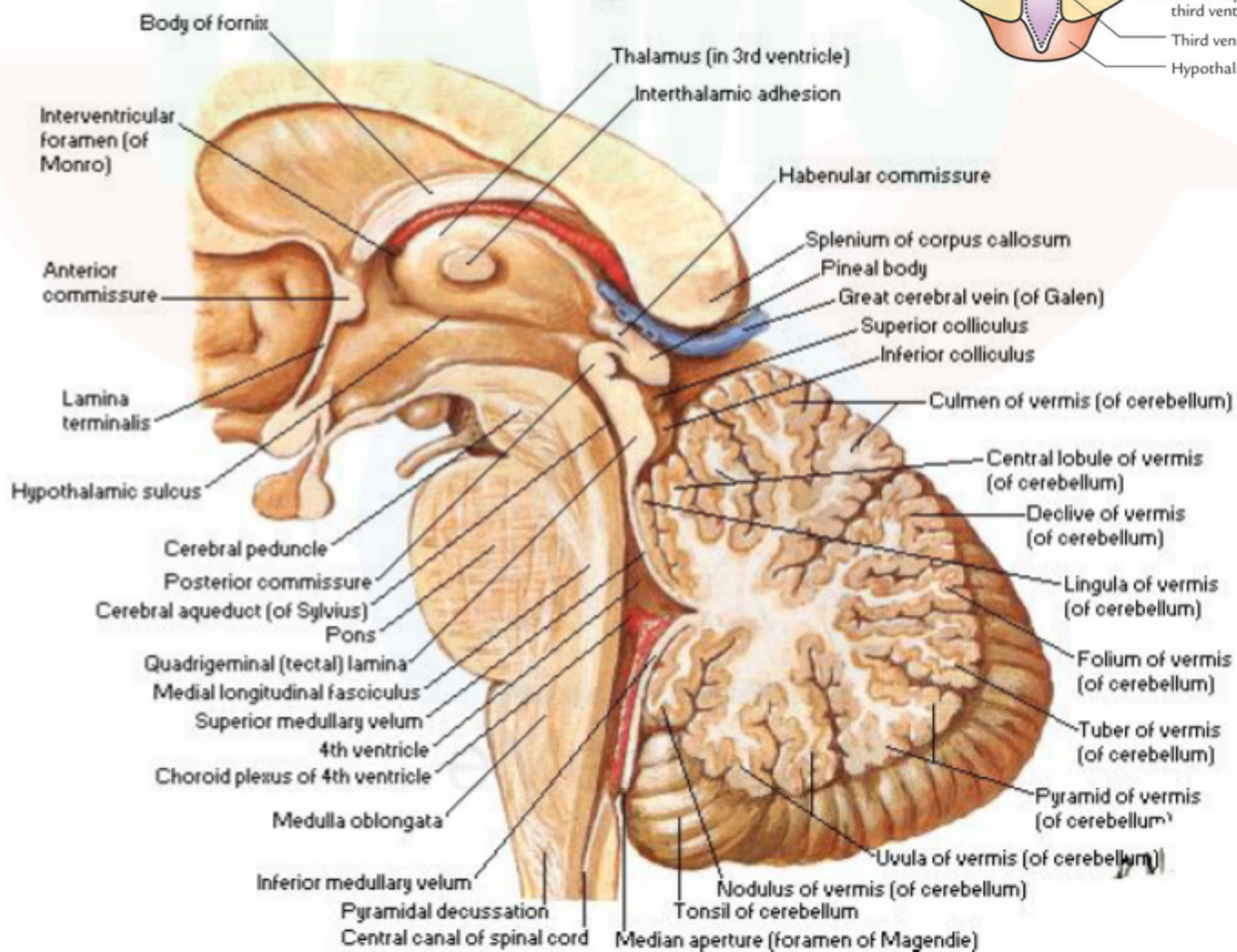
- A. Lateral
- B. Suprachiasmatic
- C. Supraoptic
- D. Anterior
- ☒ E. Ventromedial

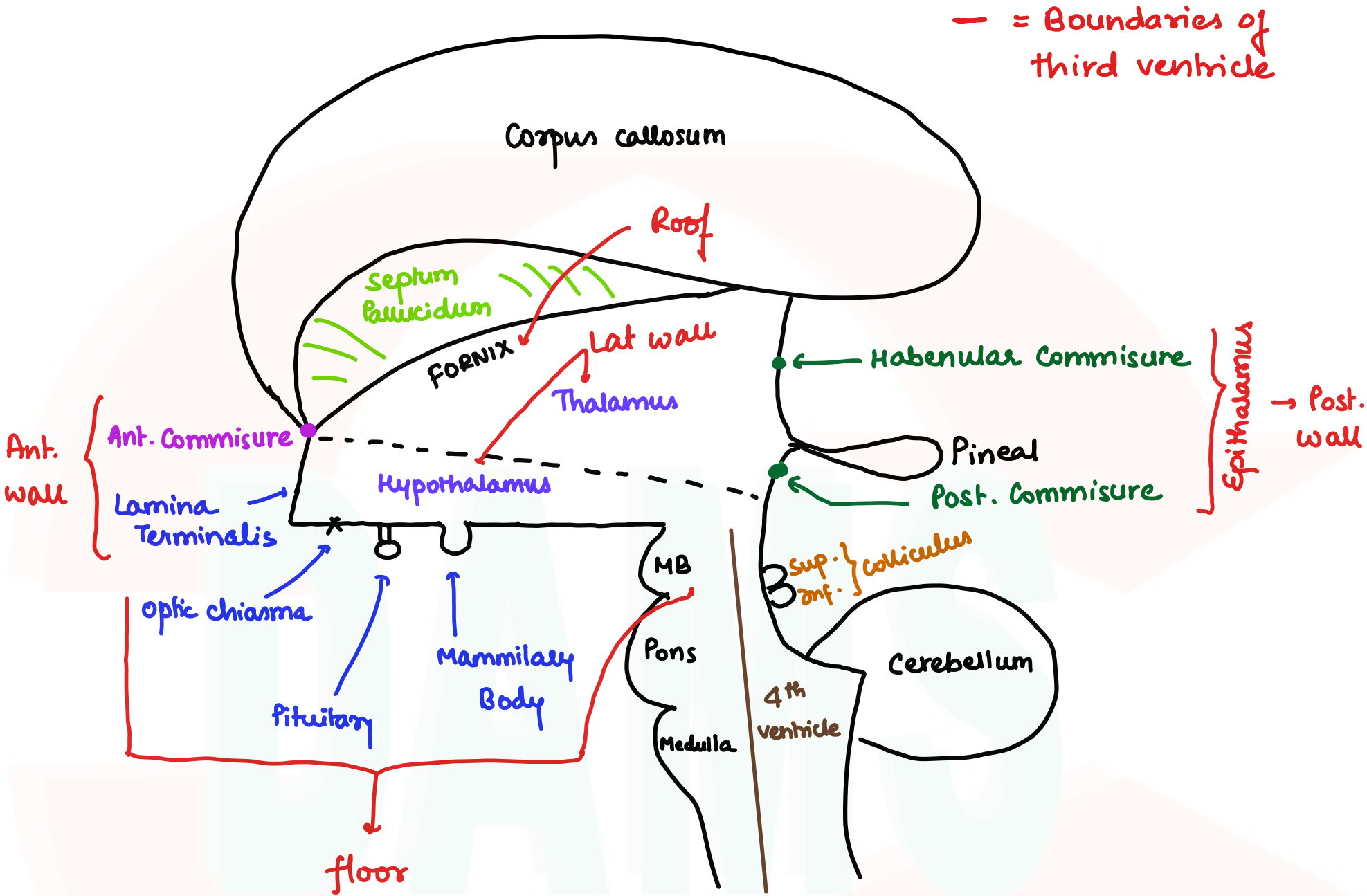
↳ Satiety centre gone

VENTRICLES

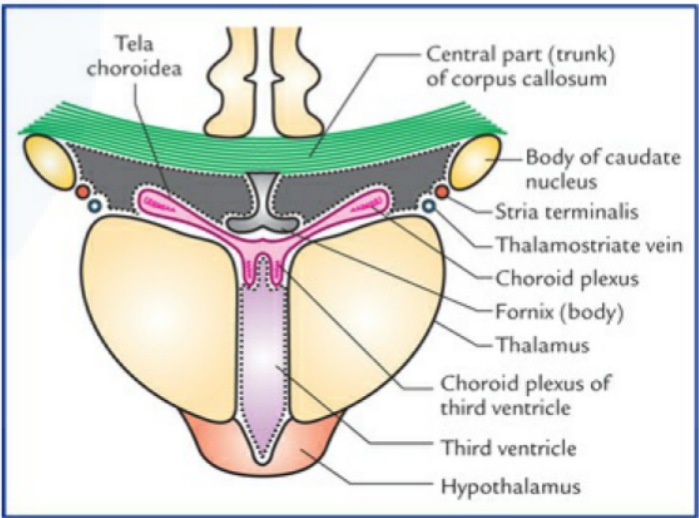
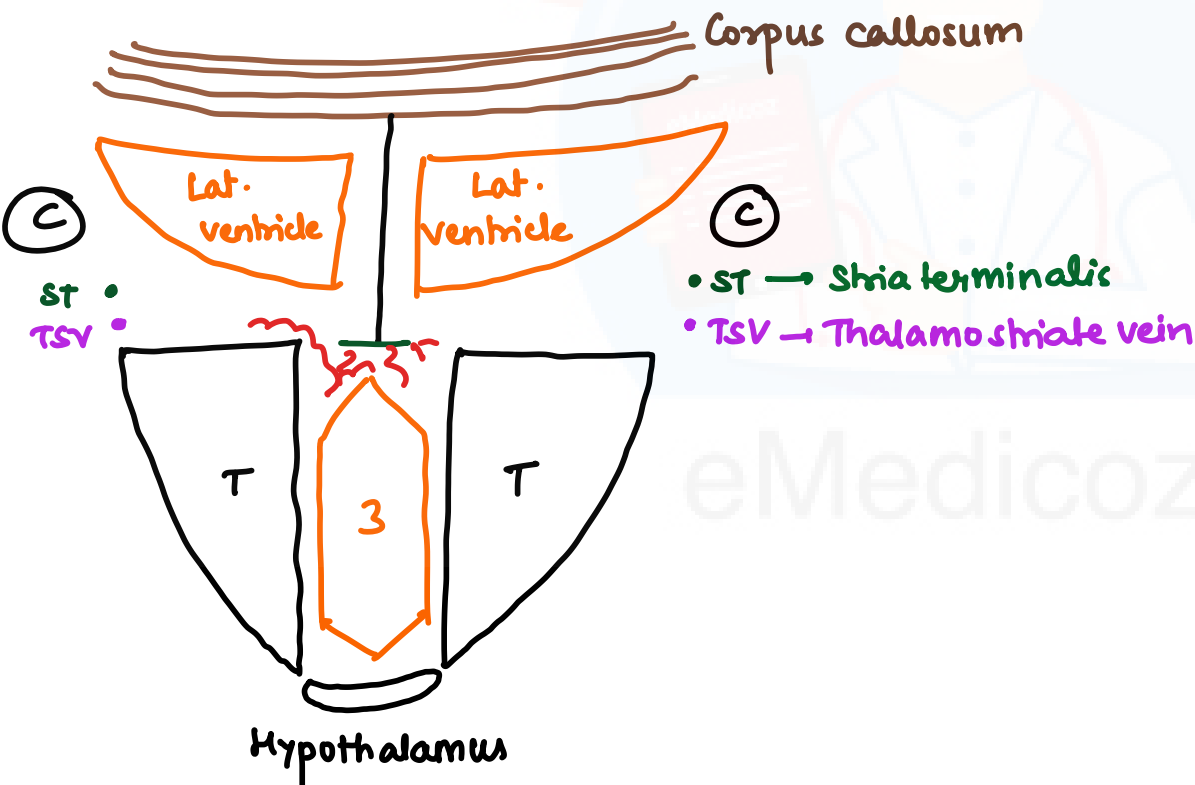


Median Sagittal Section





LATERAL VENTRICLE

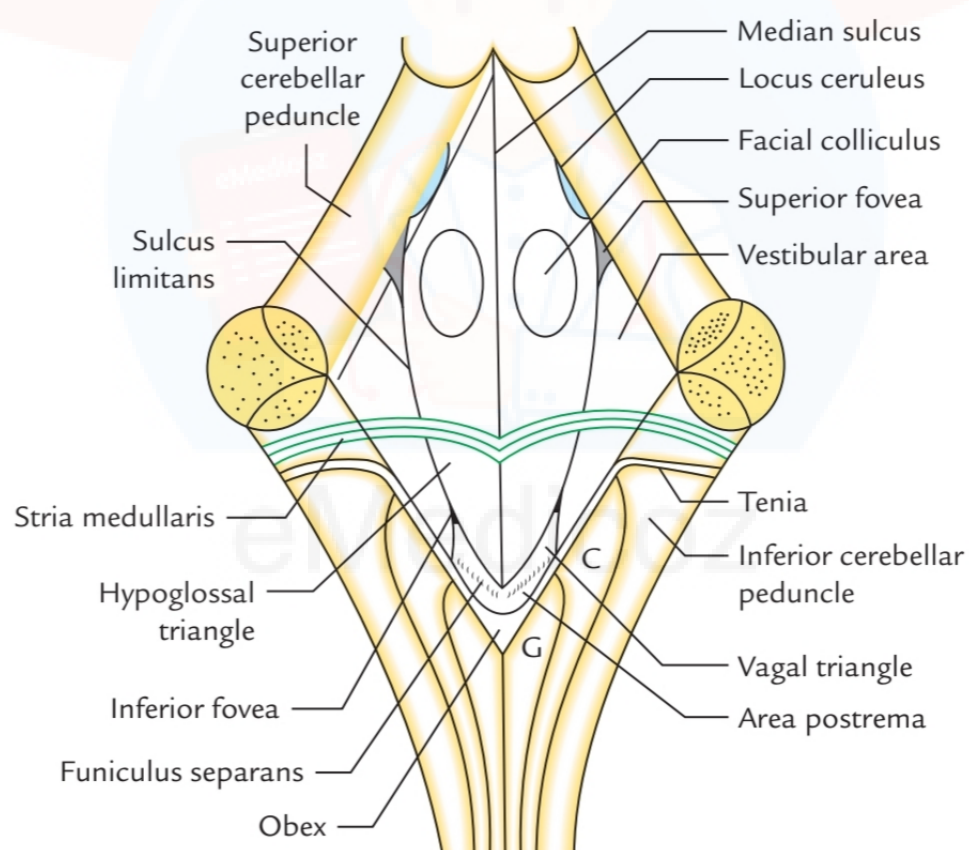
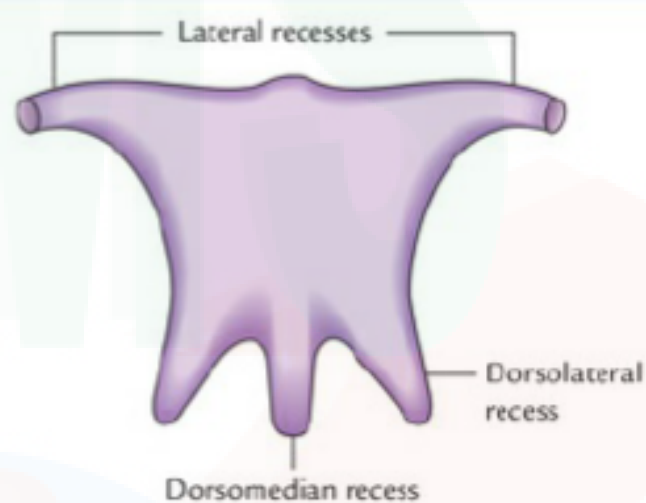
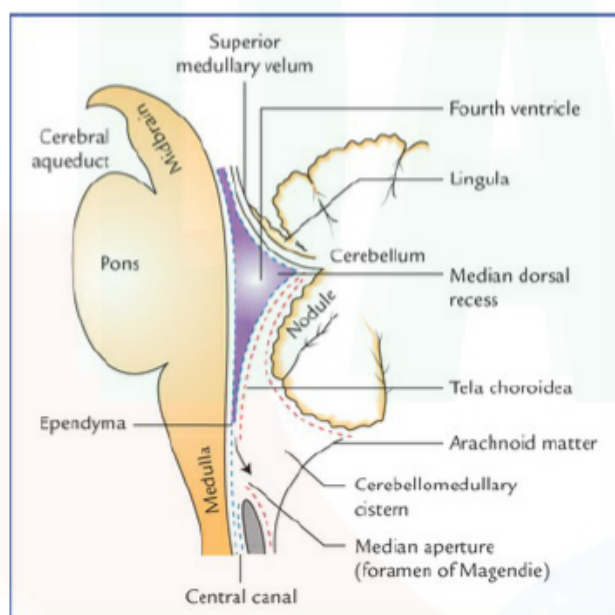


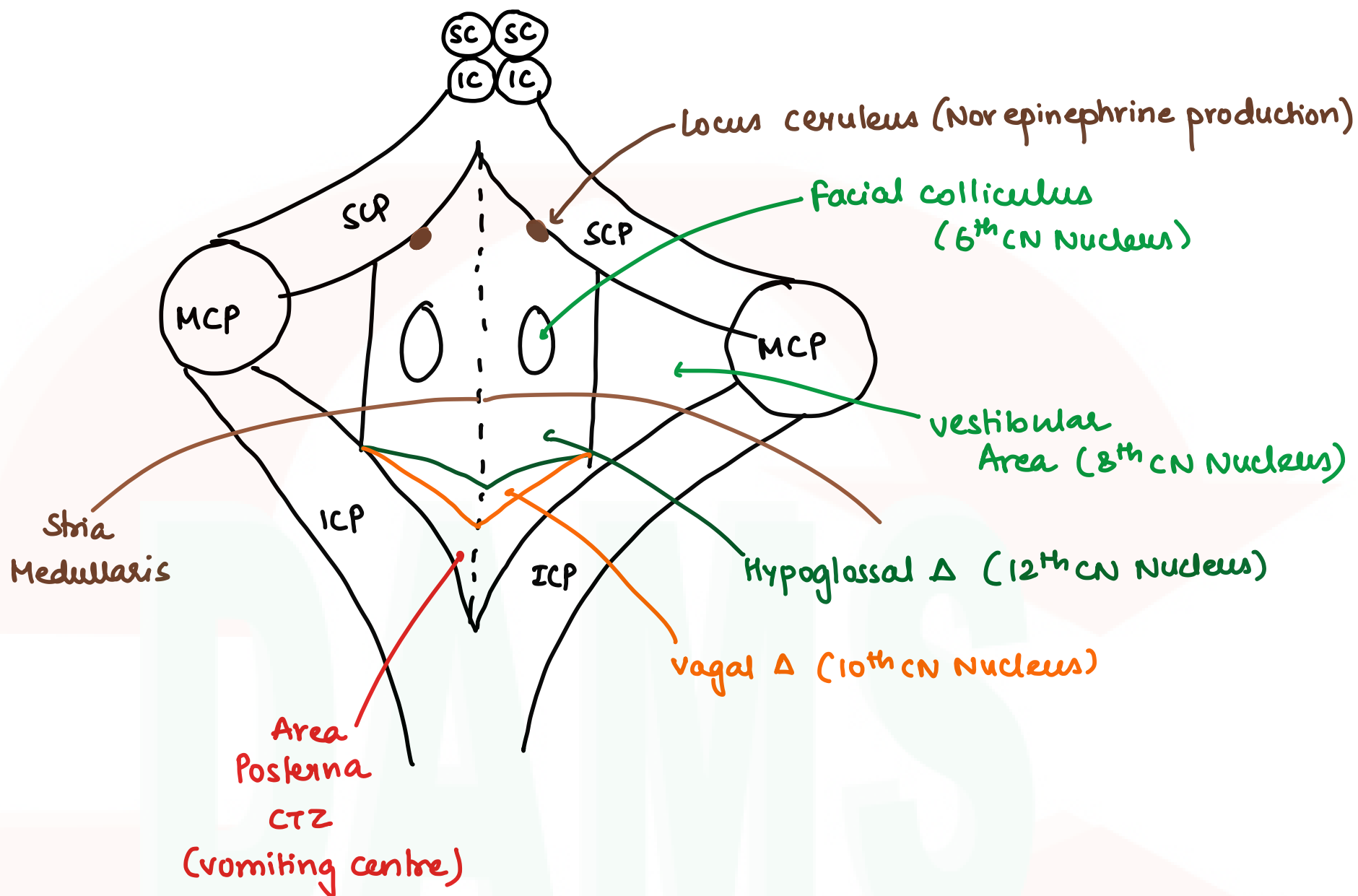
Roof → Corpus callosum

Medial → septum pellucidum

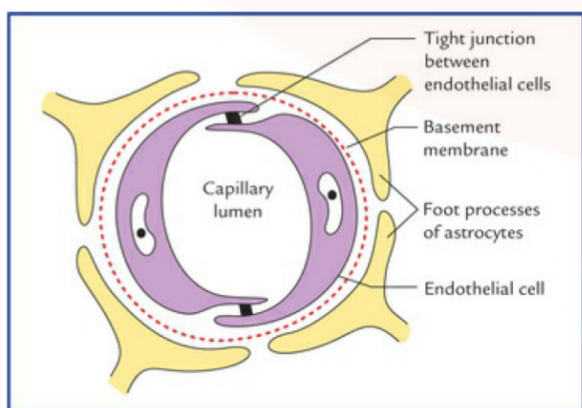
Floor → Caudate
 Stria terminalis
 Thalamostriate vein
 Thalamus
 Fornix

FOURTH VENTRICLE





→ Areas devoid of blood brain barrier : (Circumventricular organs)



Median

S

O

A

P

Median eminence

Subfornical organ

OVL (Organum vasculosum lamina Terminalis)

Area Postrema

Post. Pituitary, Pineal gland

Q. A 77-year-old man is brought to the emergency department after he was found unresponsive at home. The patient has a history of poorly controlled hypertension. Blood pressure is 260/140 mm Hg and pulse is 108/min. He has extensor posturing and pinpoint pupils. CT scan of the head without contrast reveals an acute pontine hemorrhage with associated mass effect. The patient dies several hours later. Autopsy reveals disruption of all pigmented neurons in the posterior rostral pons at the lateral floor of the fourth ventricle. These neurons normally produce which of the following?

- A. Dopamine
- ☒ B. Norepinephrine
- C. Oxytocin
- D. Histamine