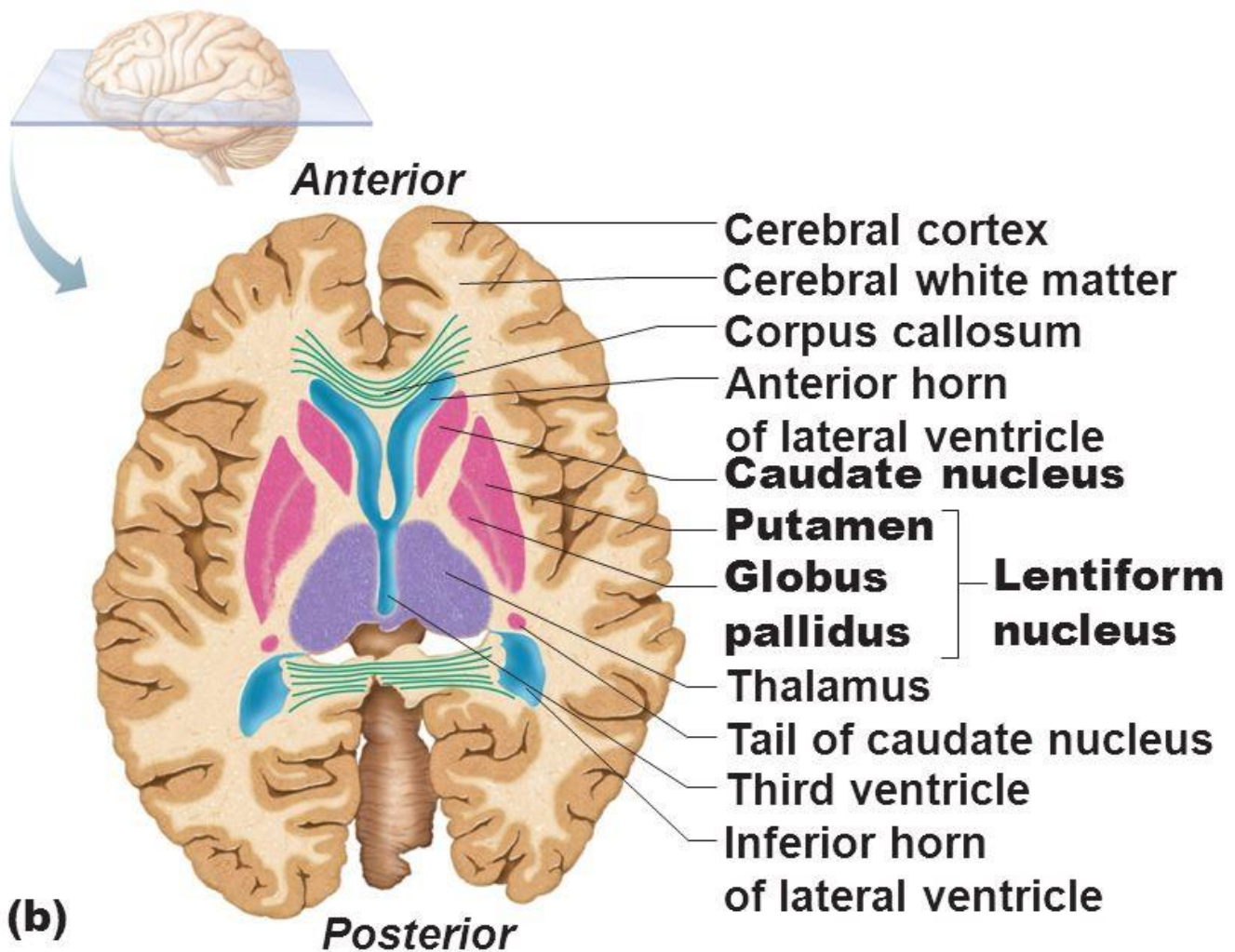


Basal Nuclei

* **Definition:** The basal nuclei (ganglia) are **masses of gray matter** (nerve cells) , which are deeply placed **inside the white matter** , the near the **inferior surface** of cerebral hemisphere .

* **Components:**

- a- The caudate nucleus.
- b- The lentiform nucleus.
- c- The amygdaloid nucleus .
- d- The claustrum .

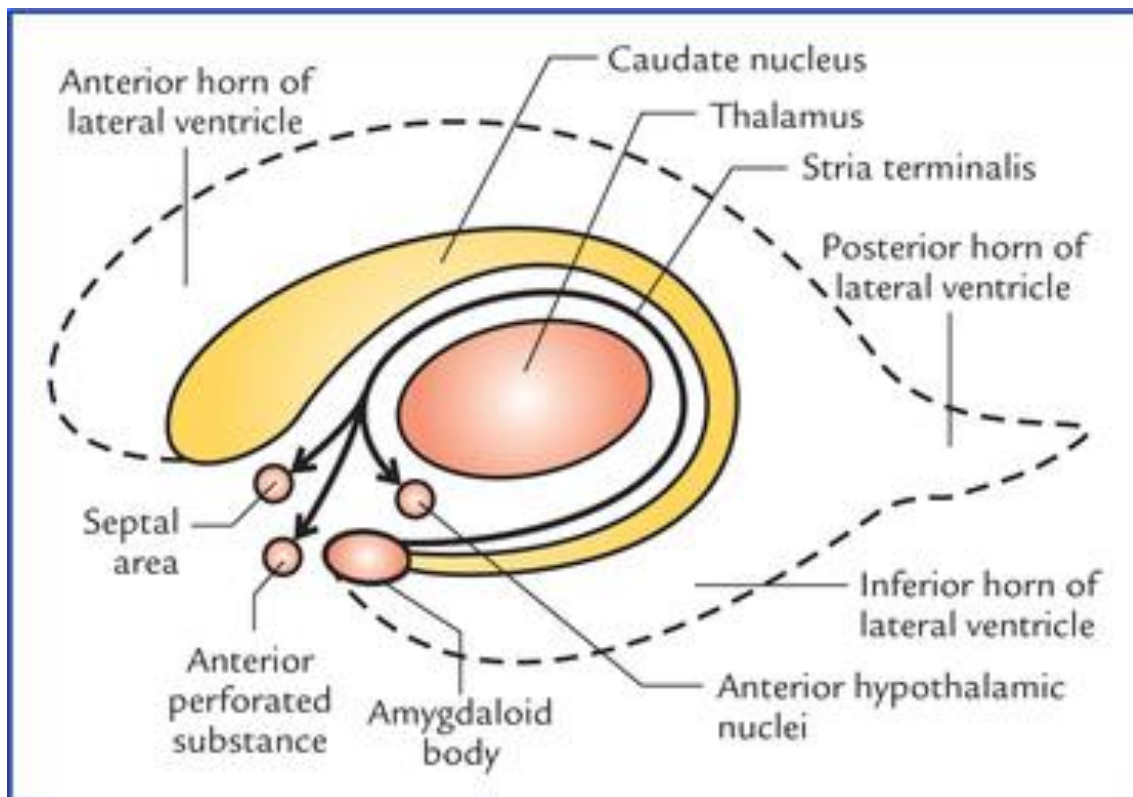


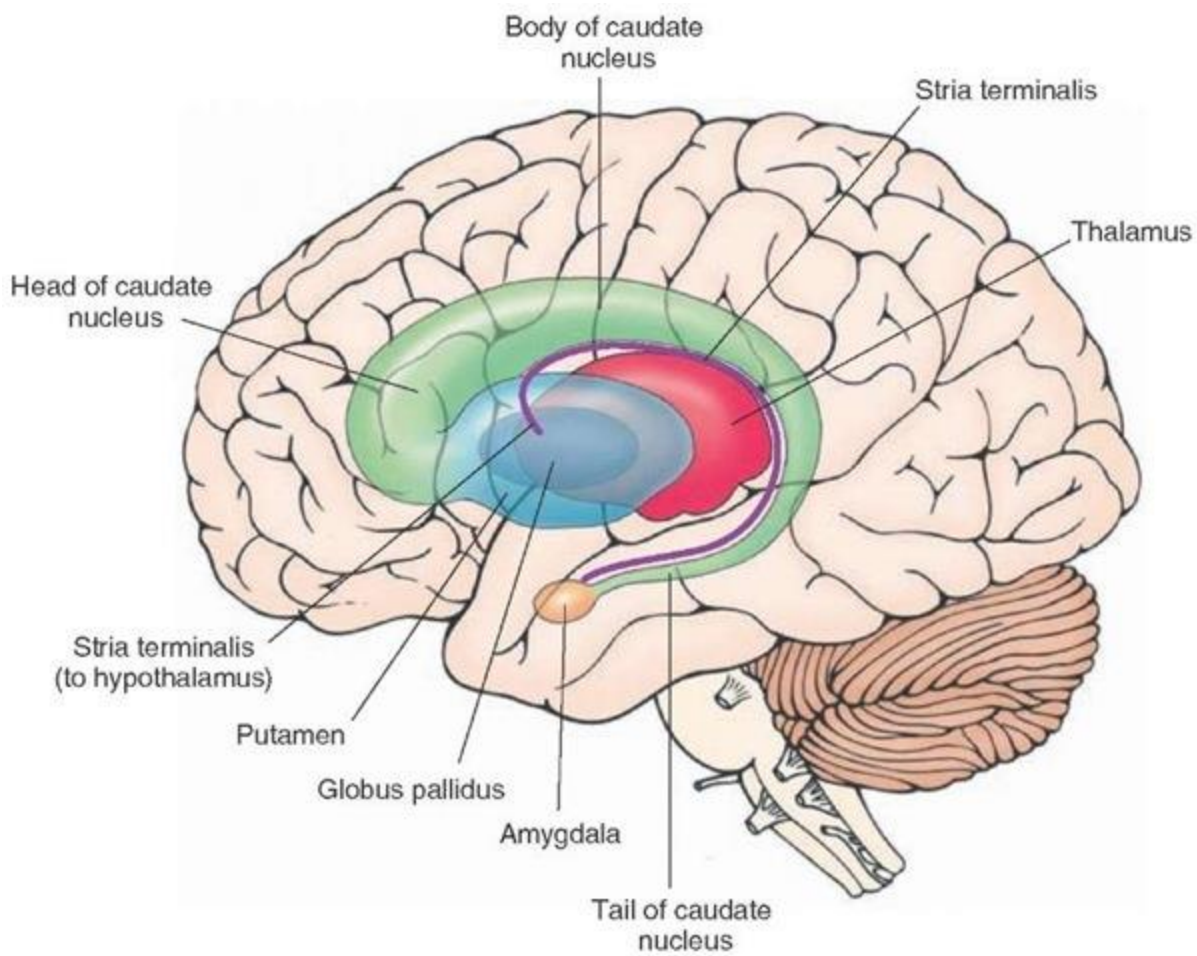
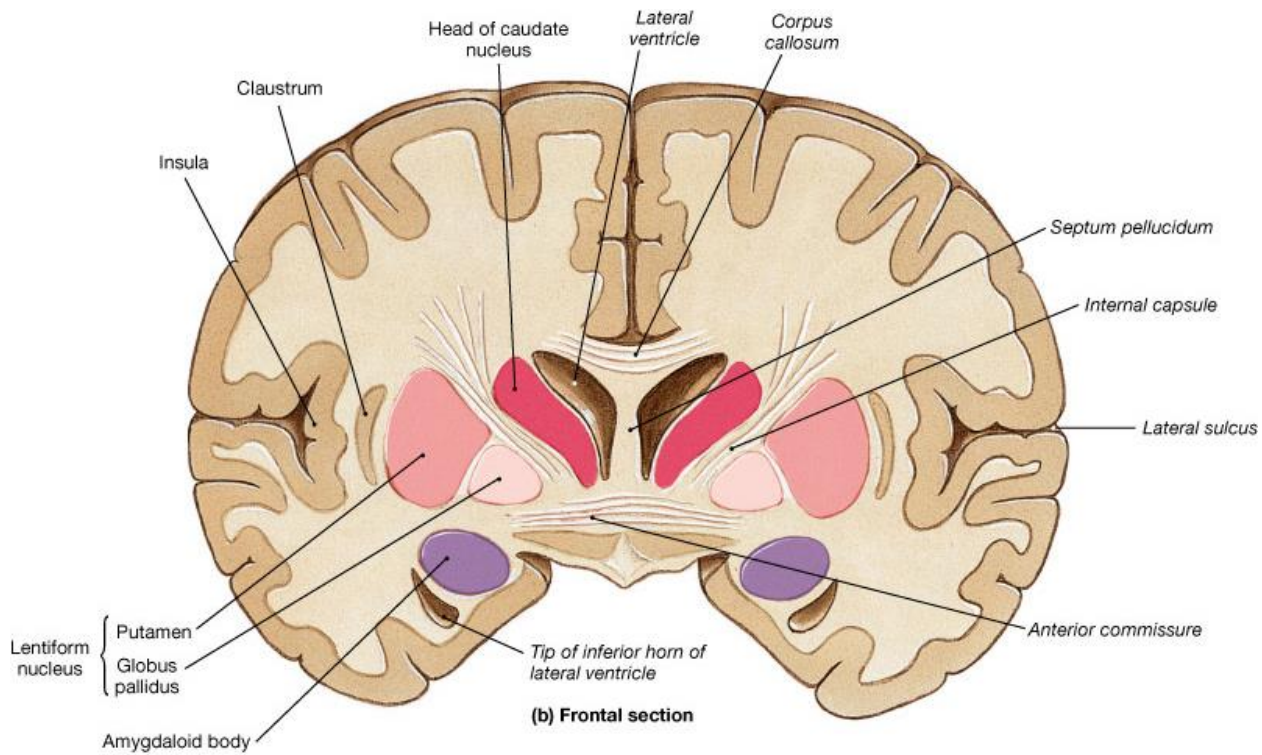
A- The Caudate Nucleus

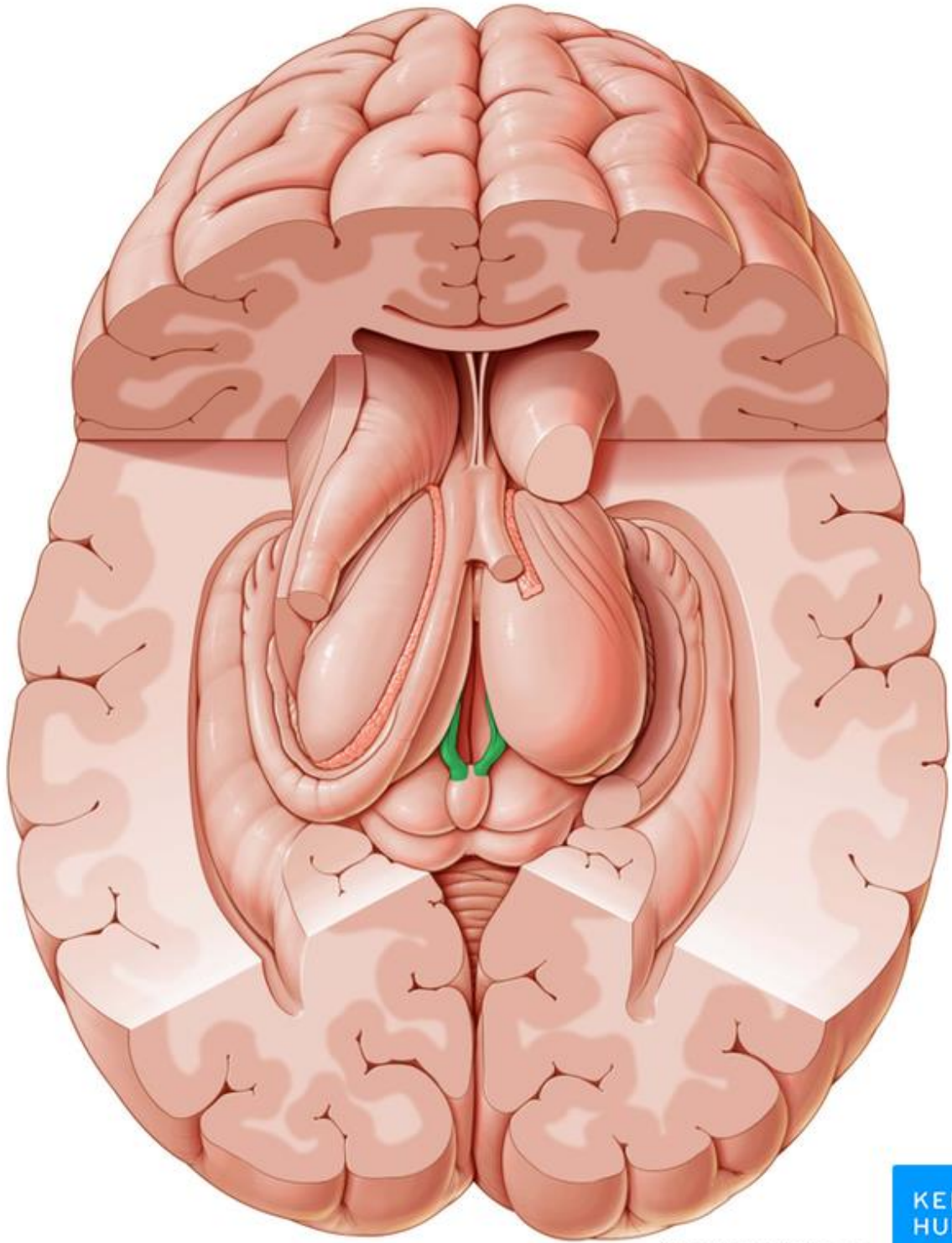
- It is **partly** exposed in the **ventricular wall** and partly buried in the hemisphere.
- It has: (1) head . (2) body . (3) tail.

1- ***The head:***

- Is the **large anterior** end of the caudate nucleus.
- It **forms** the sloping **lateral wall and the floor of the anterior horn** of the lateral ventricle.
- Laterally the head is **separated from the lentiform** nucleus by the **internal capsule except anteriorly** where the head becomes **continuous** with the anterior end of the putamen of the lentiform nucleus (as well as with the gray matter of the **anterior perforated** substance).

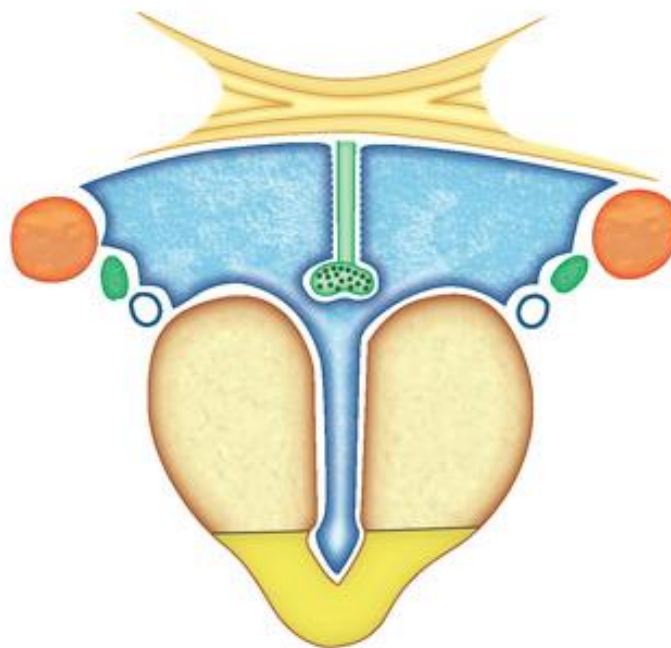
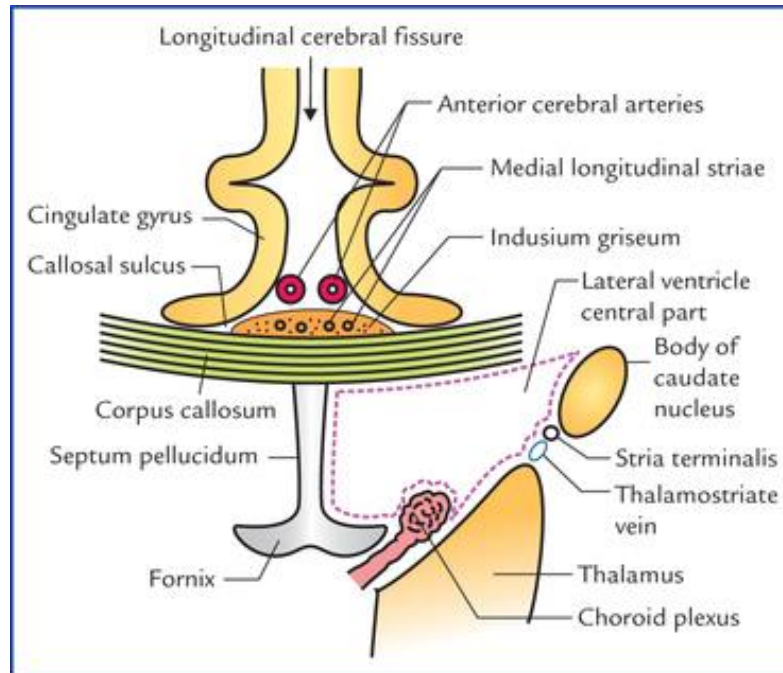


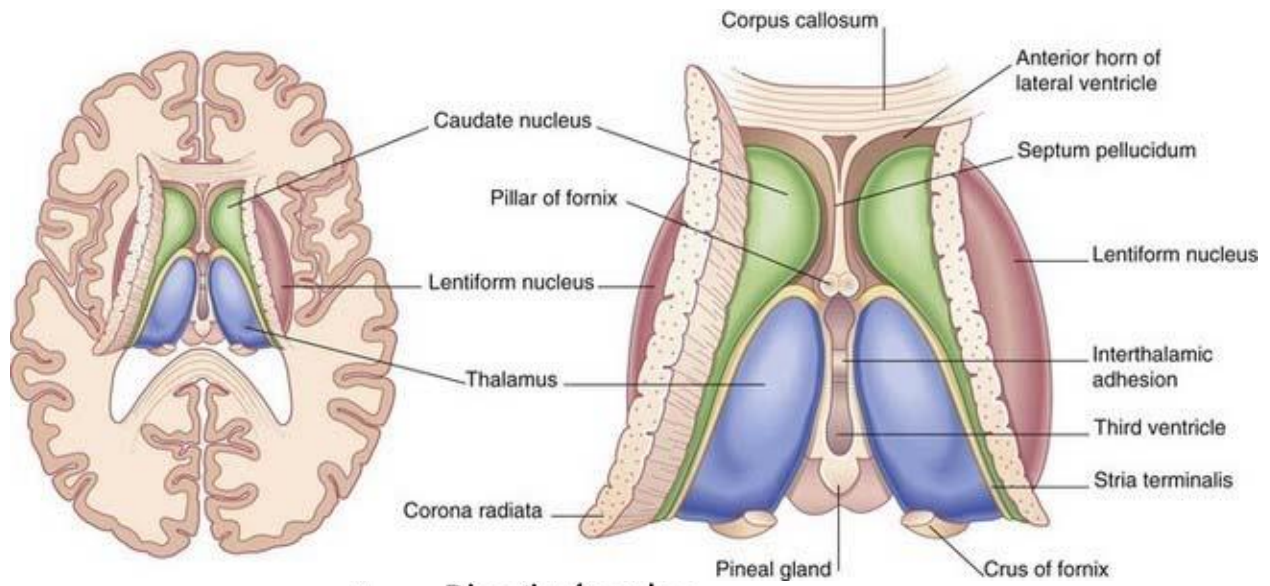




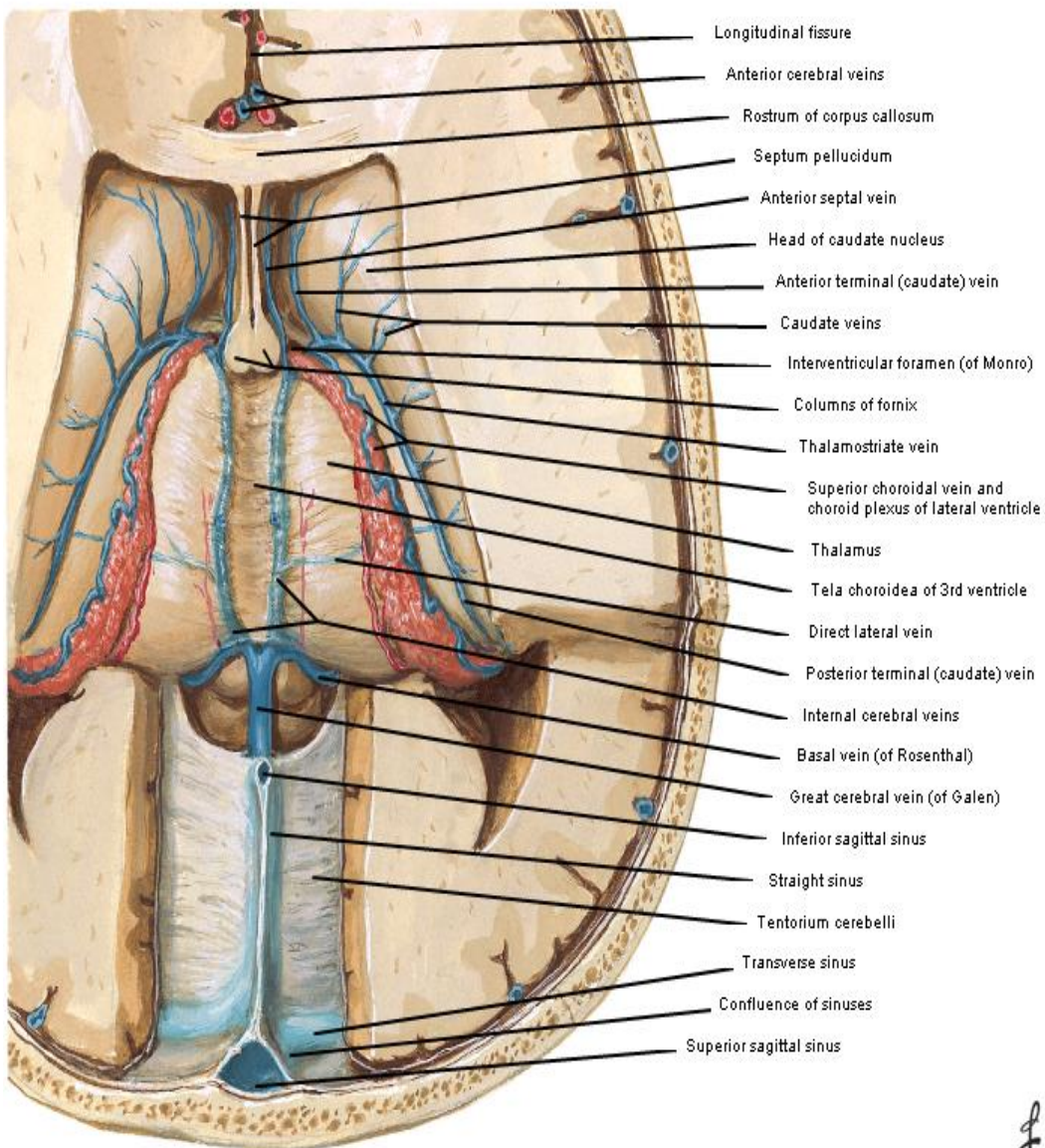
2- **The body:**

- It is the narrowing part behind the head **arches** upwards and backwards **above and lateral to the thalamus** with **stria terminalis and thalamostriate vein in between** (all forming part of the sloping **floor & lateral wall** of the body of the lateral ventricle).
- Its **lateral** aspect is related to the **internal capsule**.



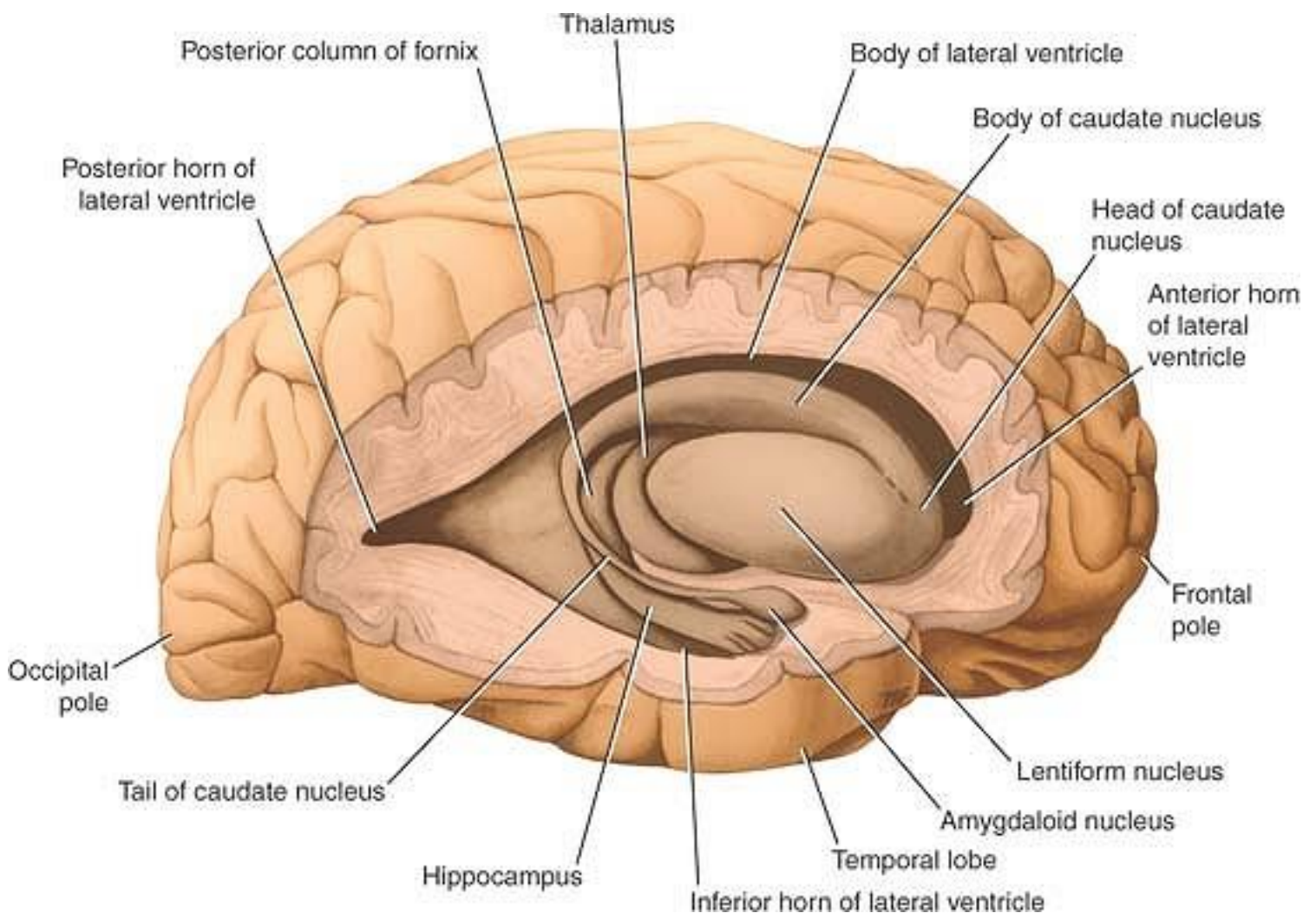


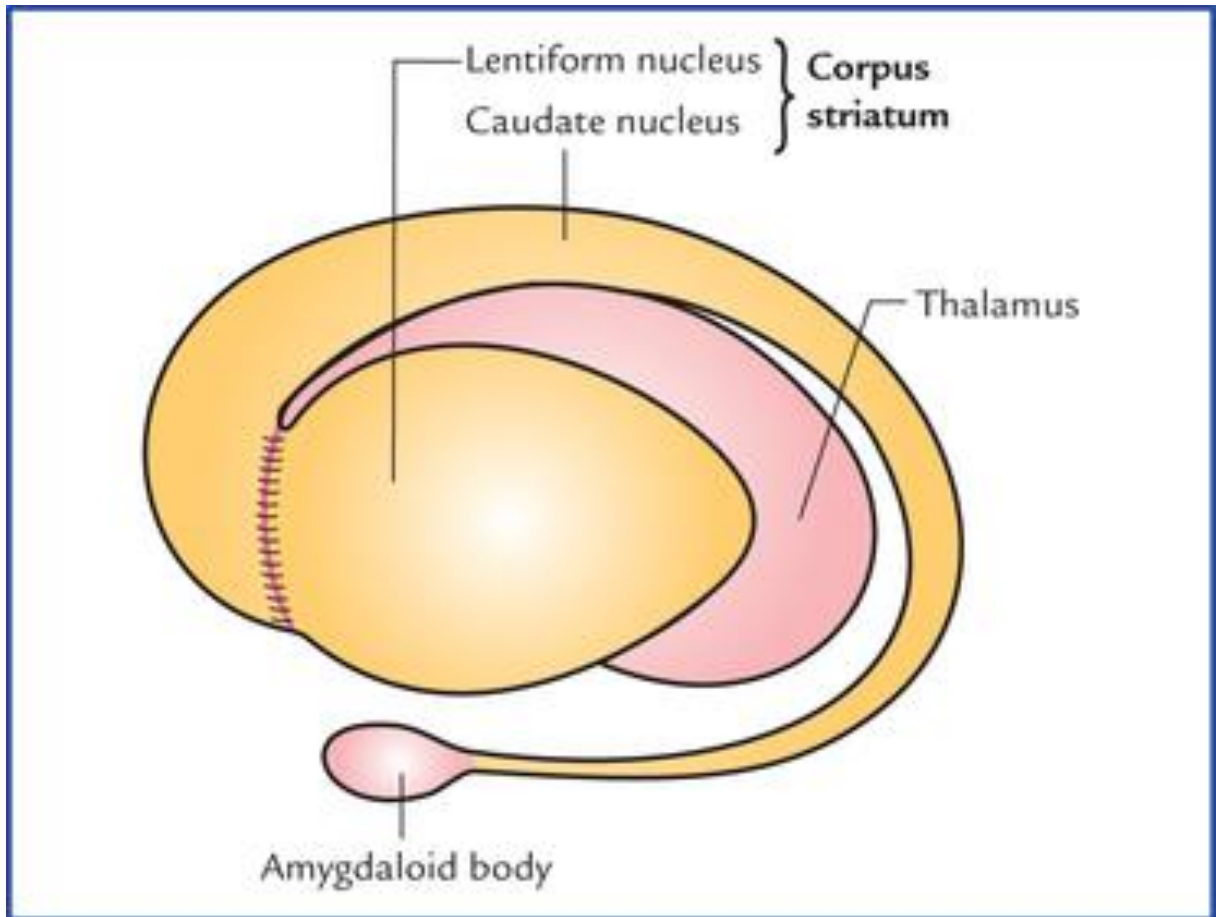
Dissection from above



3- *The tail:*

- The body tapers to form a narrow tail which curves **downwards behind the thalamus** and then **forwards** in the **roof of the inferior horn** of the lateral ventricle.
- It terminates in the **amygdaloid nucleus** in the most anterior part of the **roof** of the inferior horn.



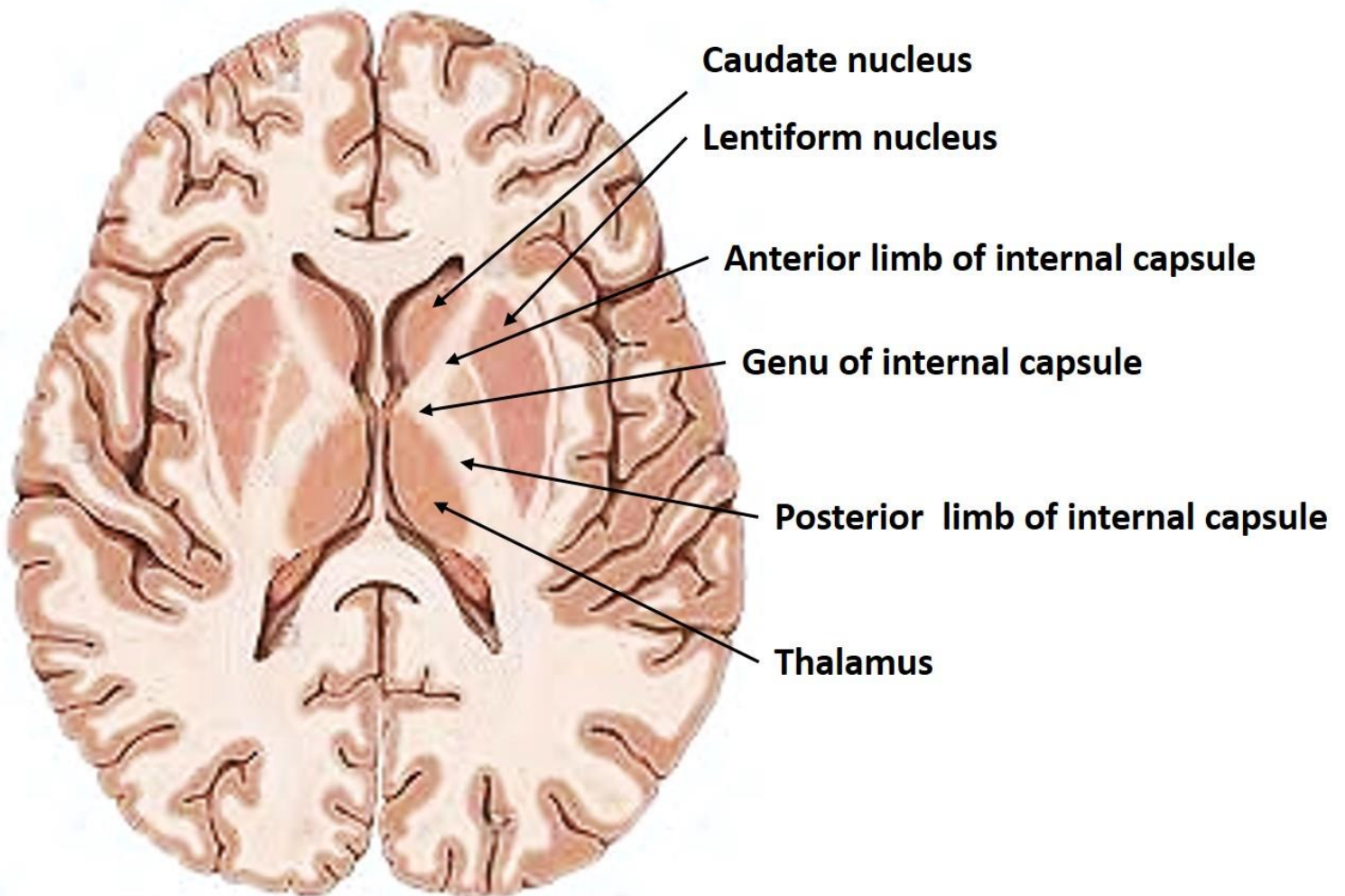


B- The Lentiform Nucleus

- *It consists of 2 parts:*
 - 1- **A larger darker lateral part;** the putamen.
 - 2- **A smaller pale medial part;** the globus pallidus.
- The 2 parts are **separated by** a whitish streak.
- *The lentiform nucleus looks like a biconvex lens having two convex surfaces; medial and lateral:*
 - 1- *The lateral surface* of the nucleus is **gently convex** and is **related to** a thin covering of white matter, termed the **external capsule** which separates the nucleus from a thin sheet of gray matter, known as the **claustrum**.
 - 2- *The medial surface* of the nucleus is **markedly convex** and is **related to** the **internal capsule** which **separates** the lentiform nucleus from the **thalamus** and the head of **caudate** nucleus **except anteriorly** where the anterior end of

the **putamen becomes continuous with the head of caudate** (as well as with the gray matter of the **anterior perforated** substance).

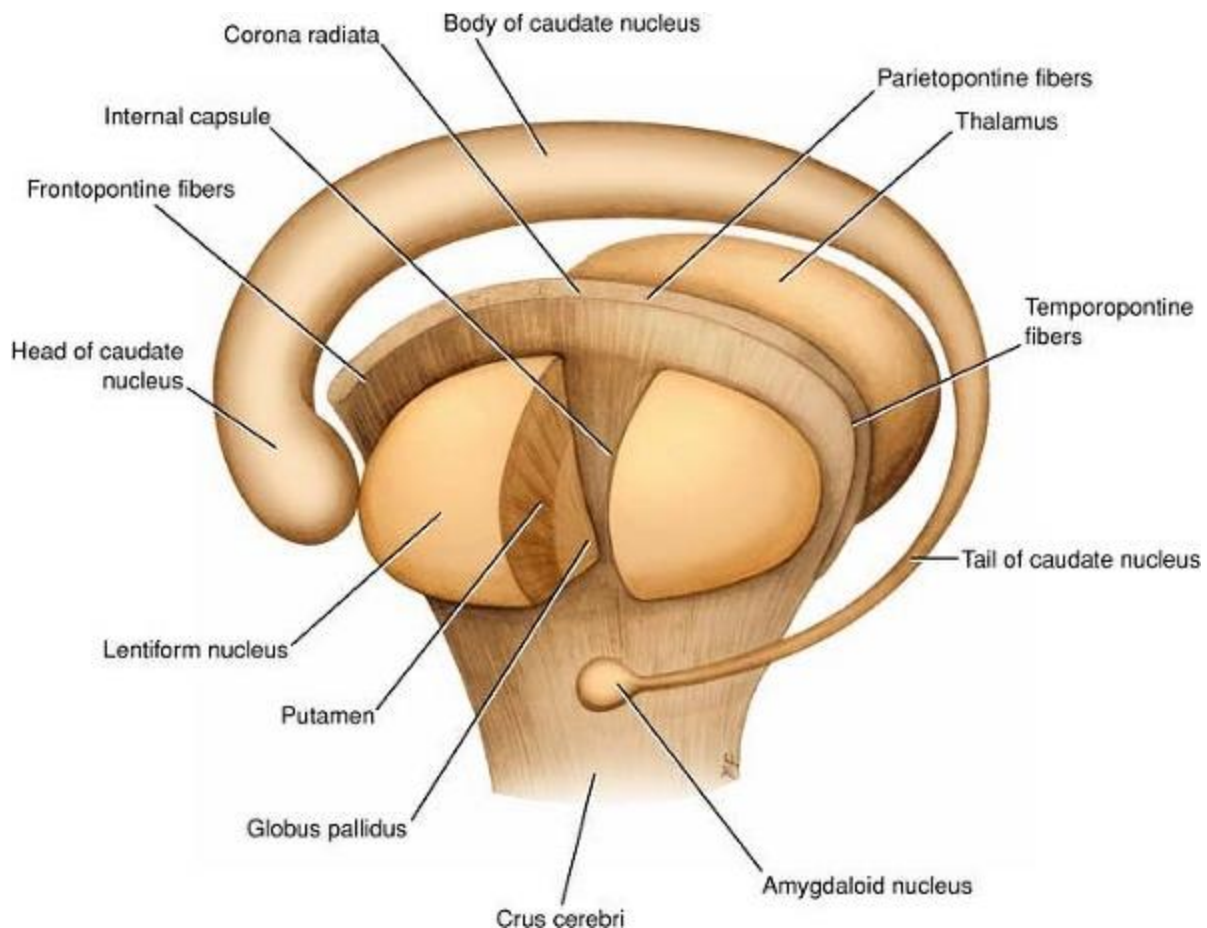
i.e. The lentiform nucleus has two capsules of white matter (nerve fibres); internal and external capsules.

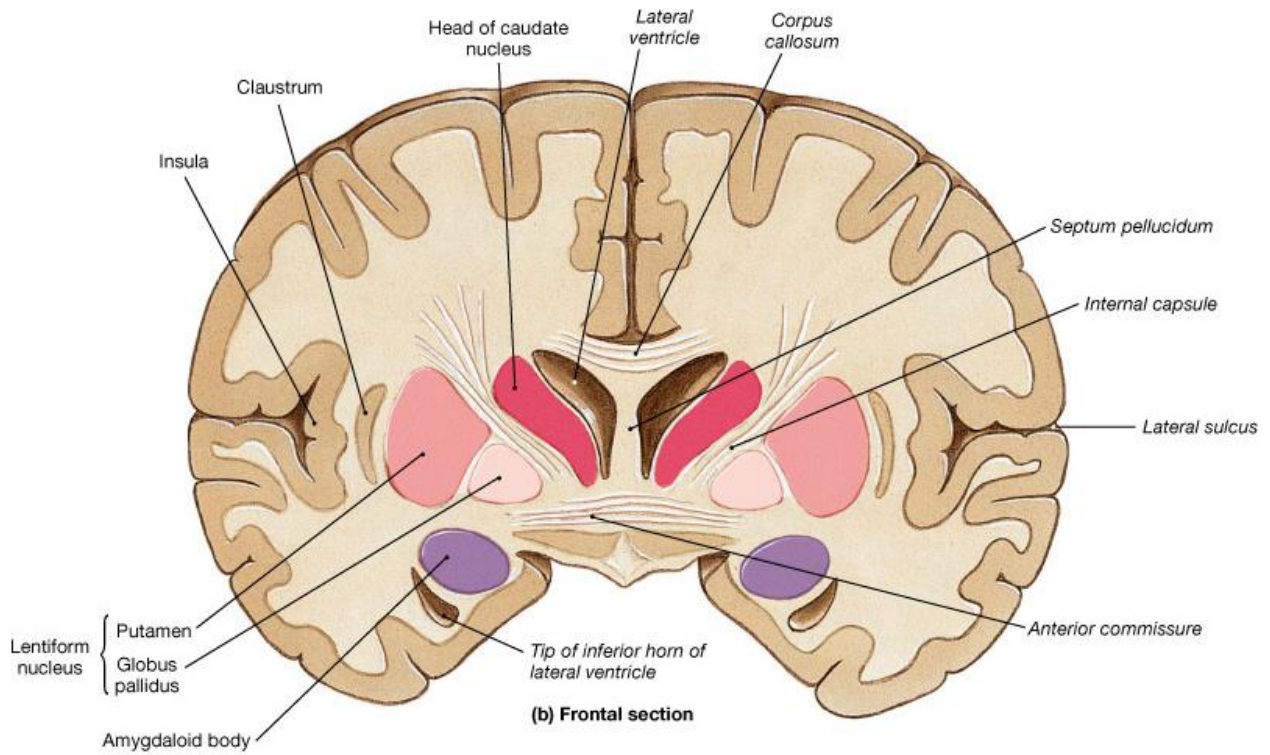
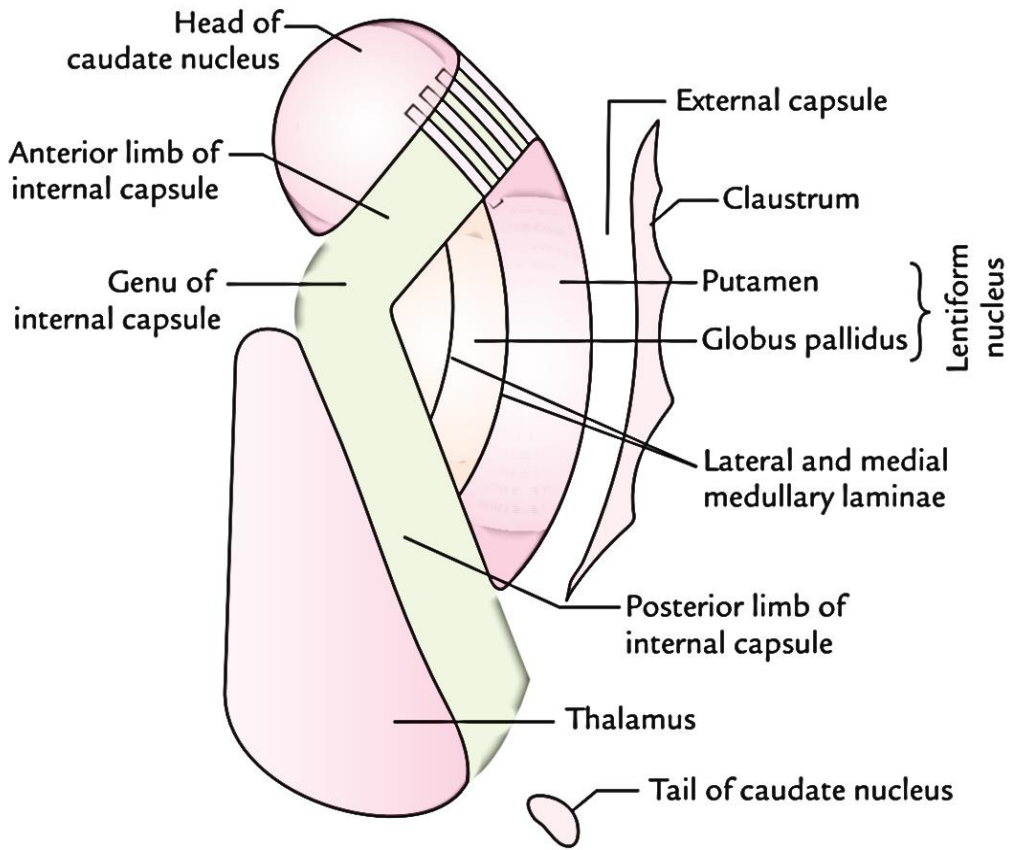


Horizontal Section of Cerebral Hemispheres

The Corpus Striatum

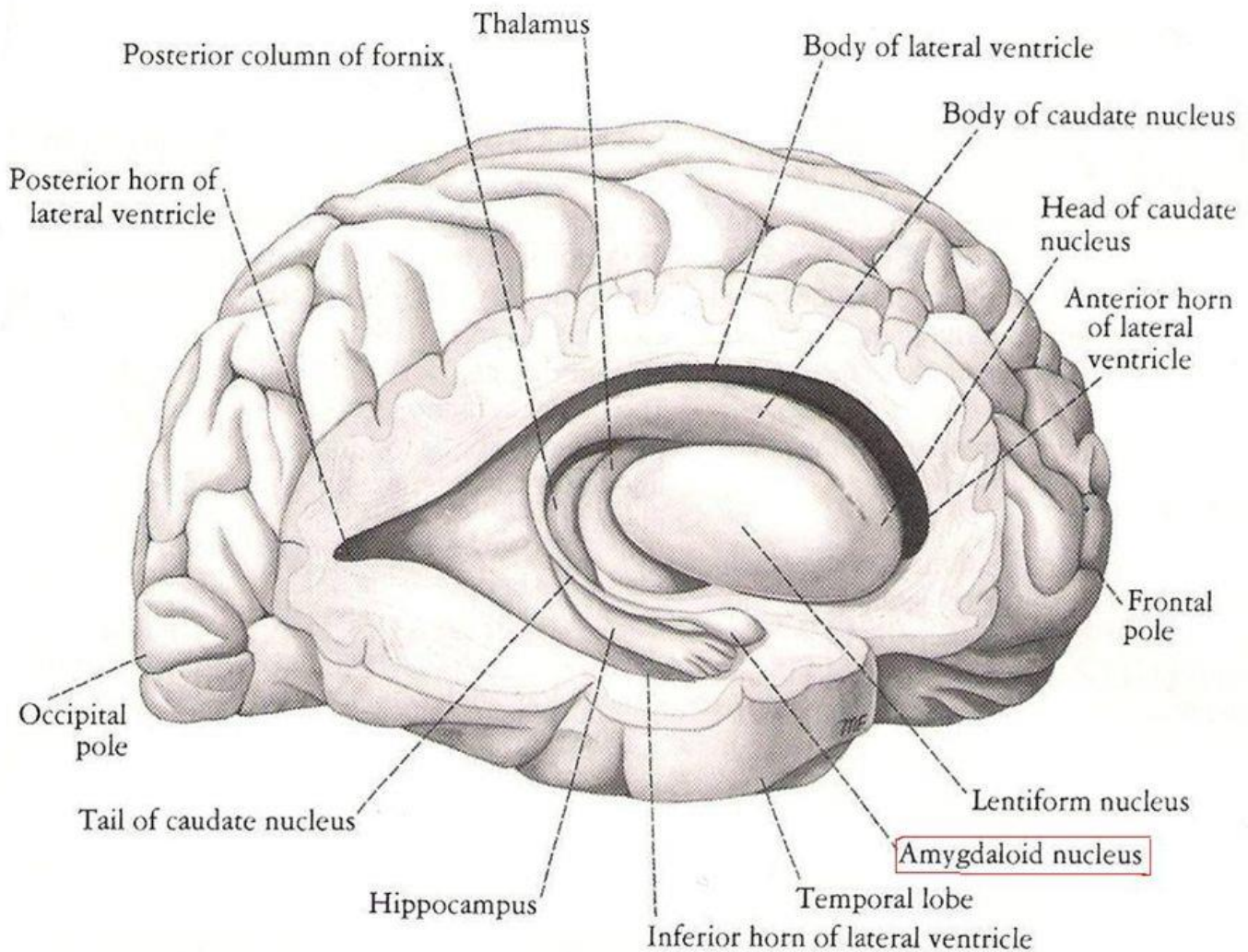
- Is situated anterior & **lateral to the thalamus**.
- It is almost completely **divided by the internal capsule** into the **caudate** nucleus and the **lentiform** nucleus. **Below and in front**, however, these two nuclei are directly **continuous** with each other.
i.e. The caudate nucleus, the lentiform nucleus and the internal capsule are together called the corpus striatum.
- The **globus pallidus** is phylogenetically the **oldest** part of the corpus striatum, while the **putamen** and the caudate nucleus constitute the **neo-striatum**.
- The corpus striatum is an **extra-pyramidal** centre.





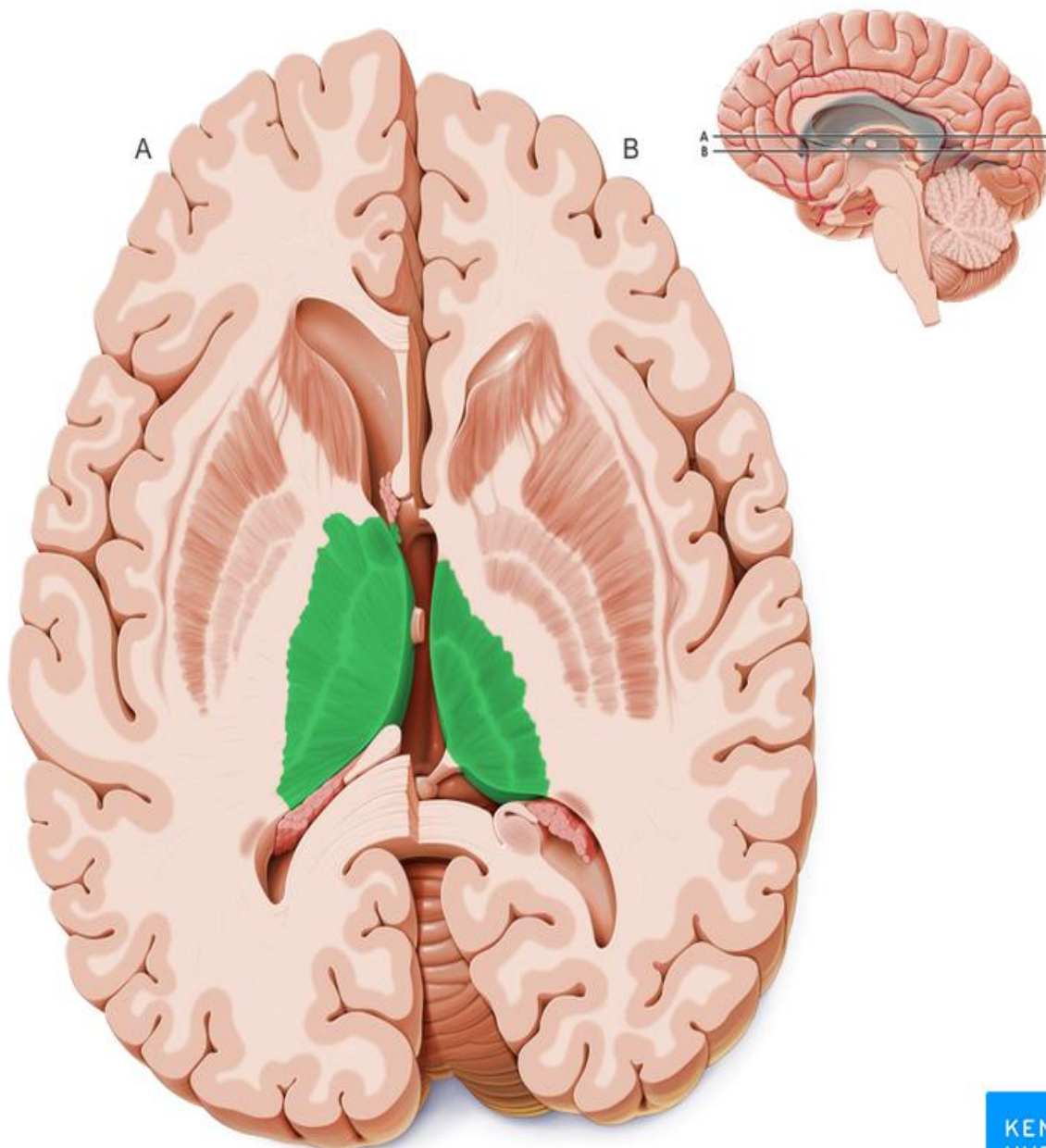
C- The Amygdaloid Nucleus

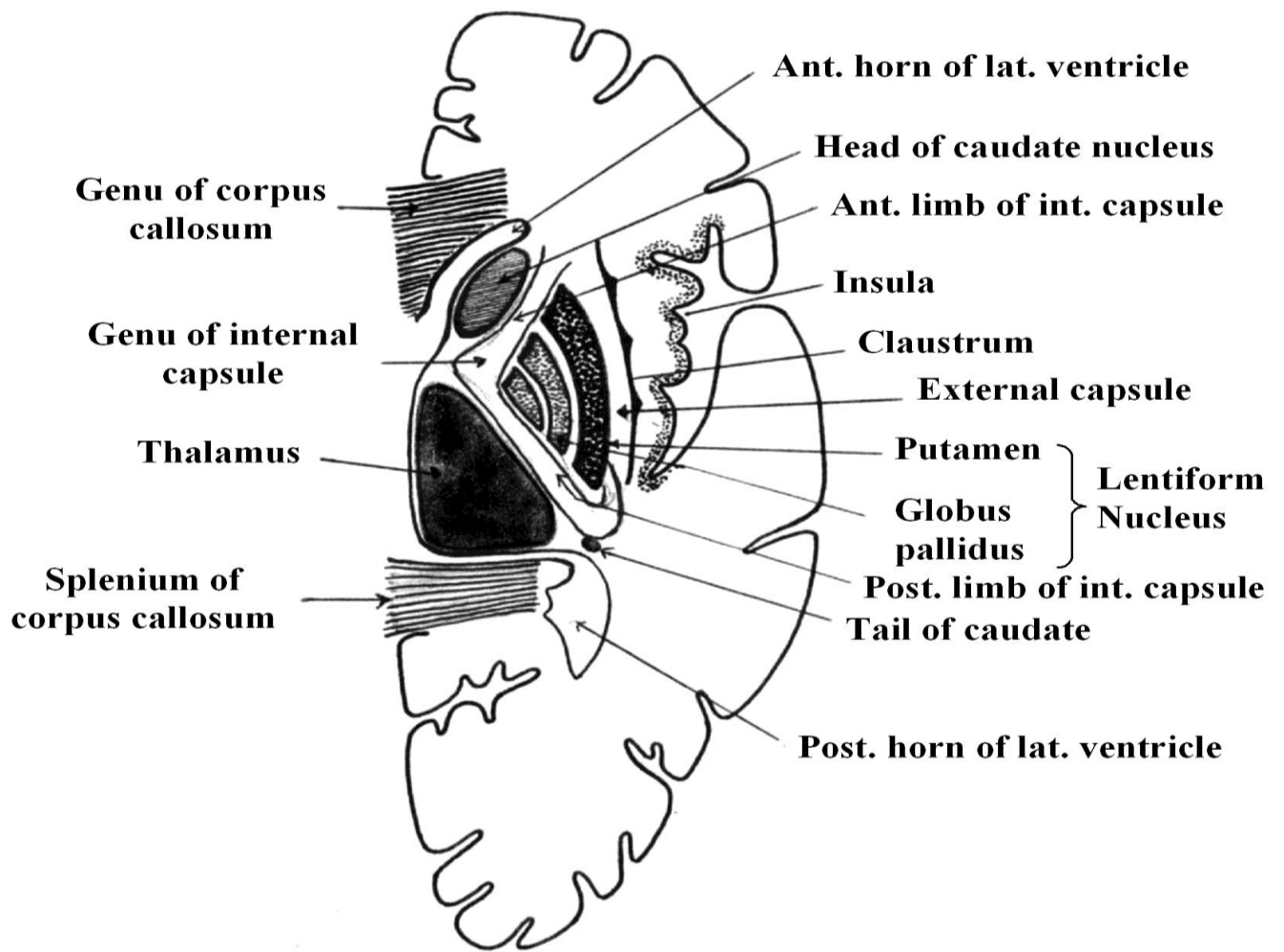
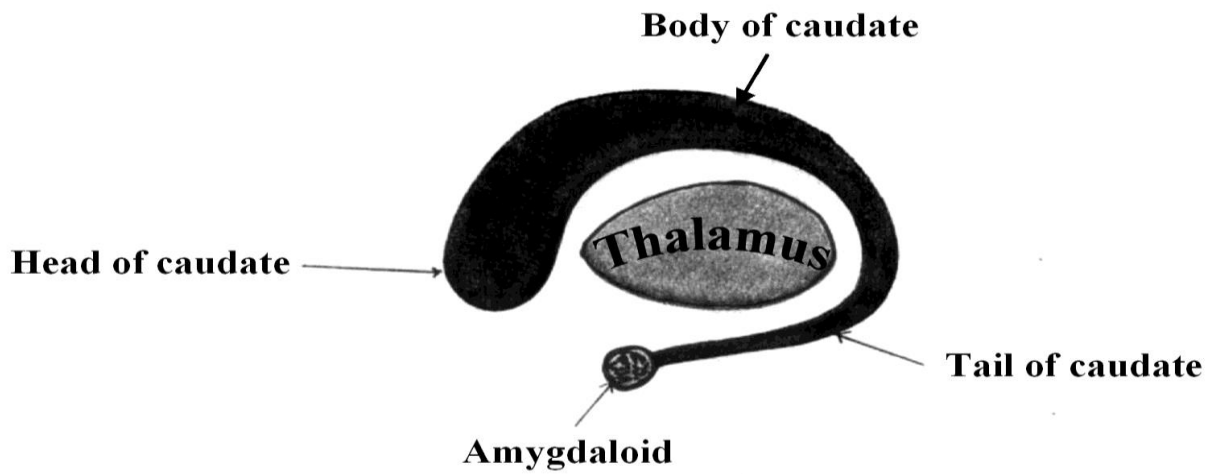
- It is a **small round mass** which lies **in the uncus**, at the **anterior end of the tail** of the **caudate** nucleus, in the anterior end of the **roof of the inferior horn** of lateral ventricle.
- It is a **smell** centre. The axons of its cells form the **stria terminalis**.



D- The Claustrum

- Is a **thin layer of gray matter** between the lateral surface of the **lentiform nucleus** and the **insula** and is separated from the lentiform nucleus by the **external capsule**.
- Its function is unknown.





Transverse Section of the Cerebral Hemisphere