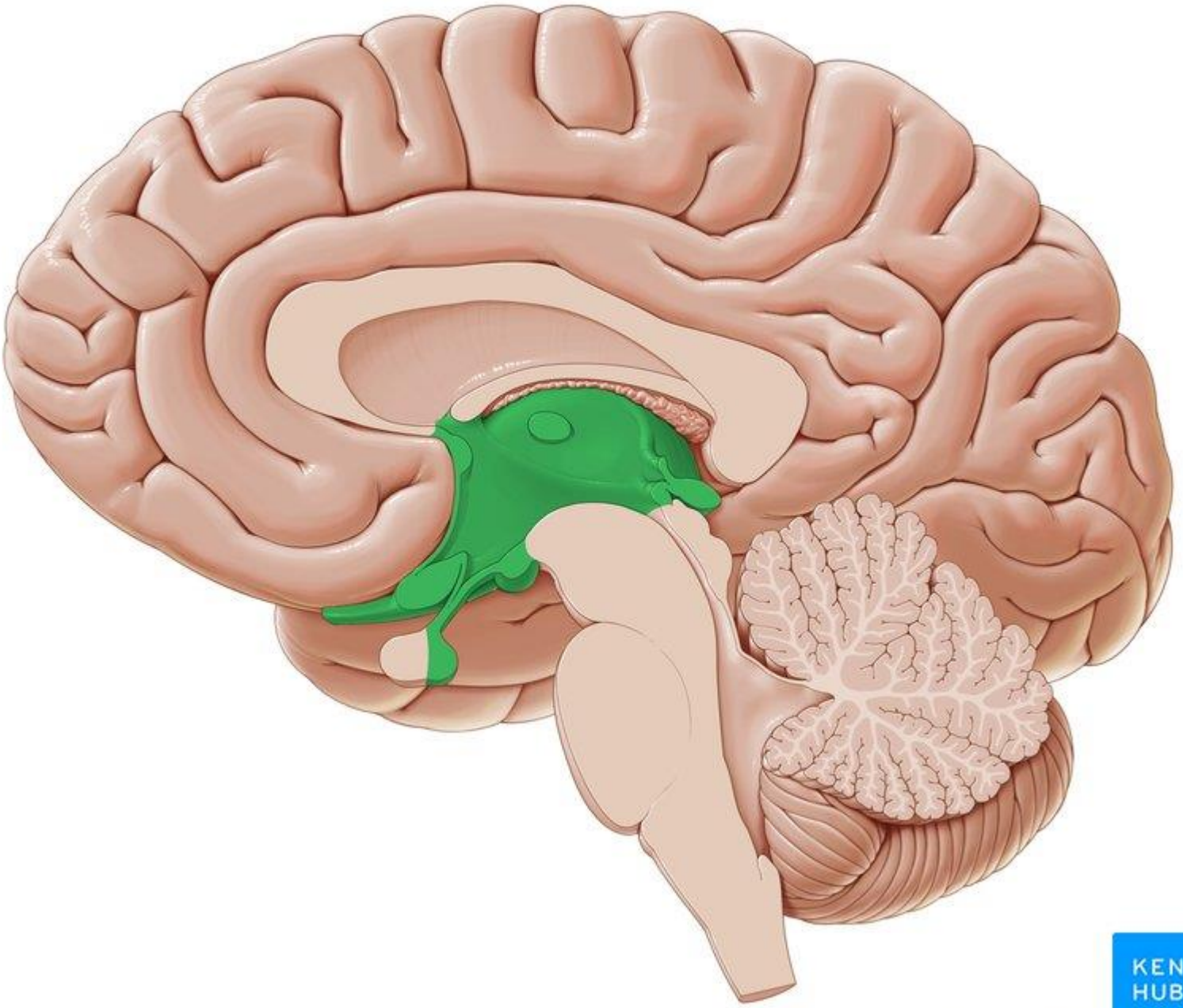
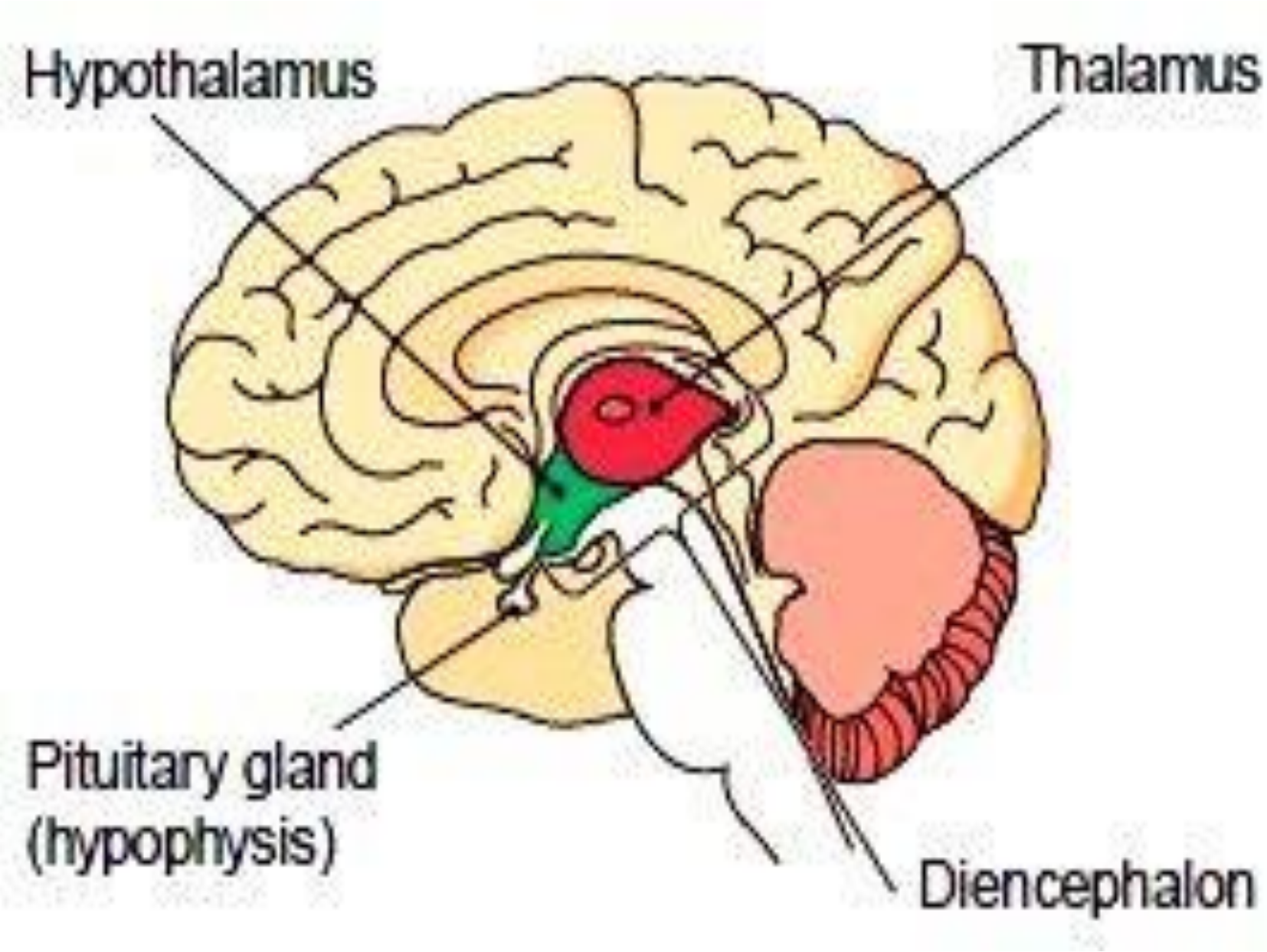
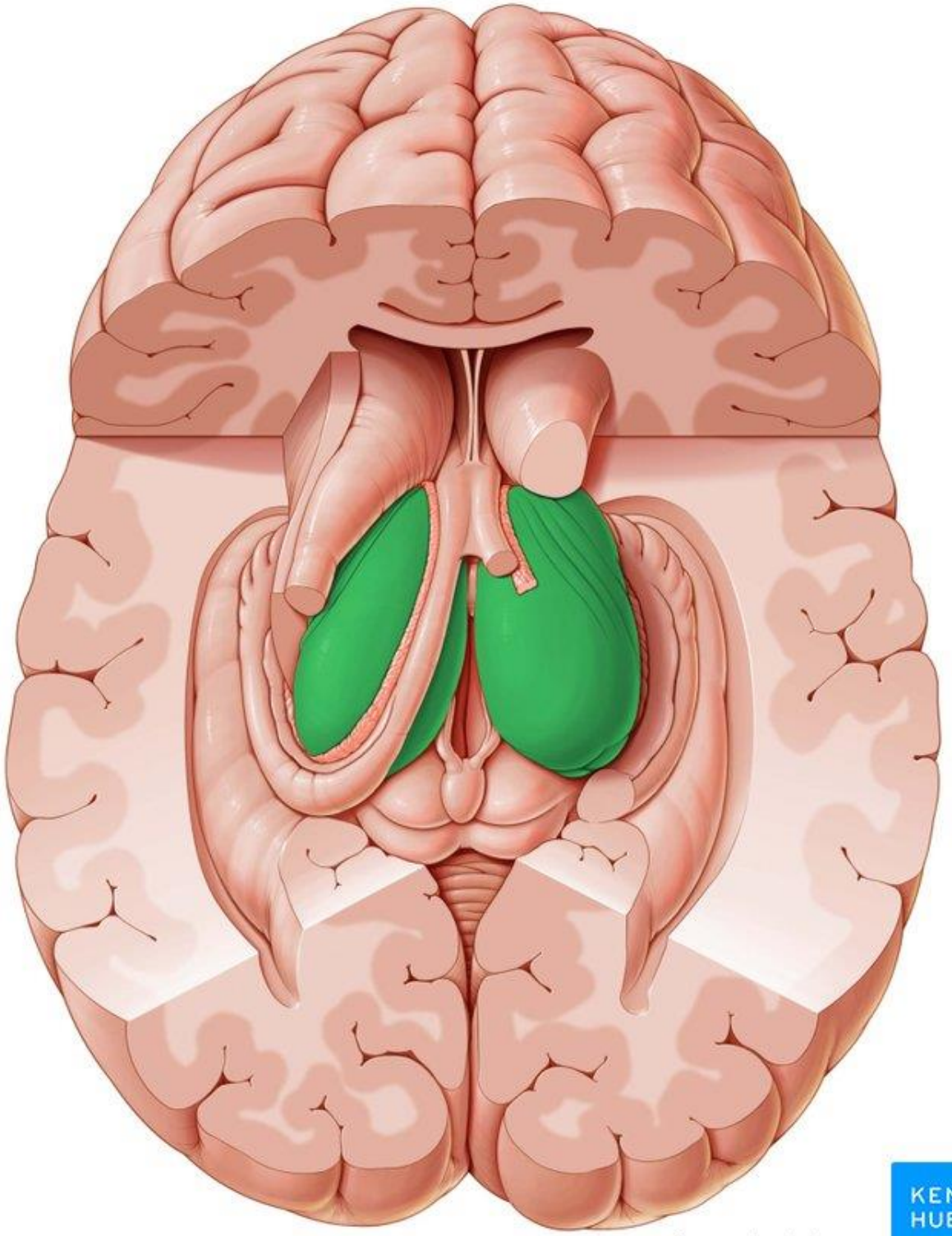
THALAMUS

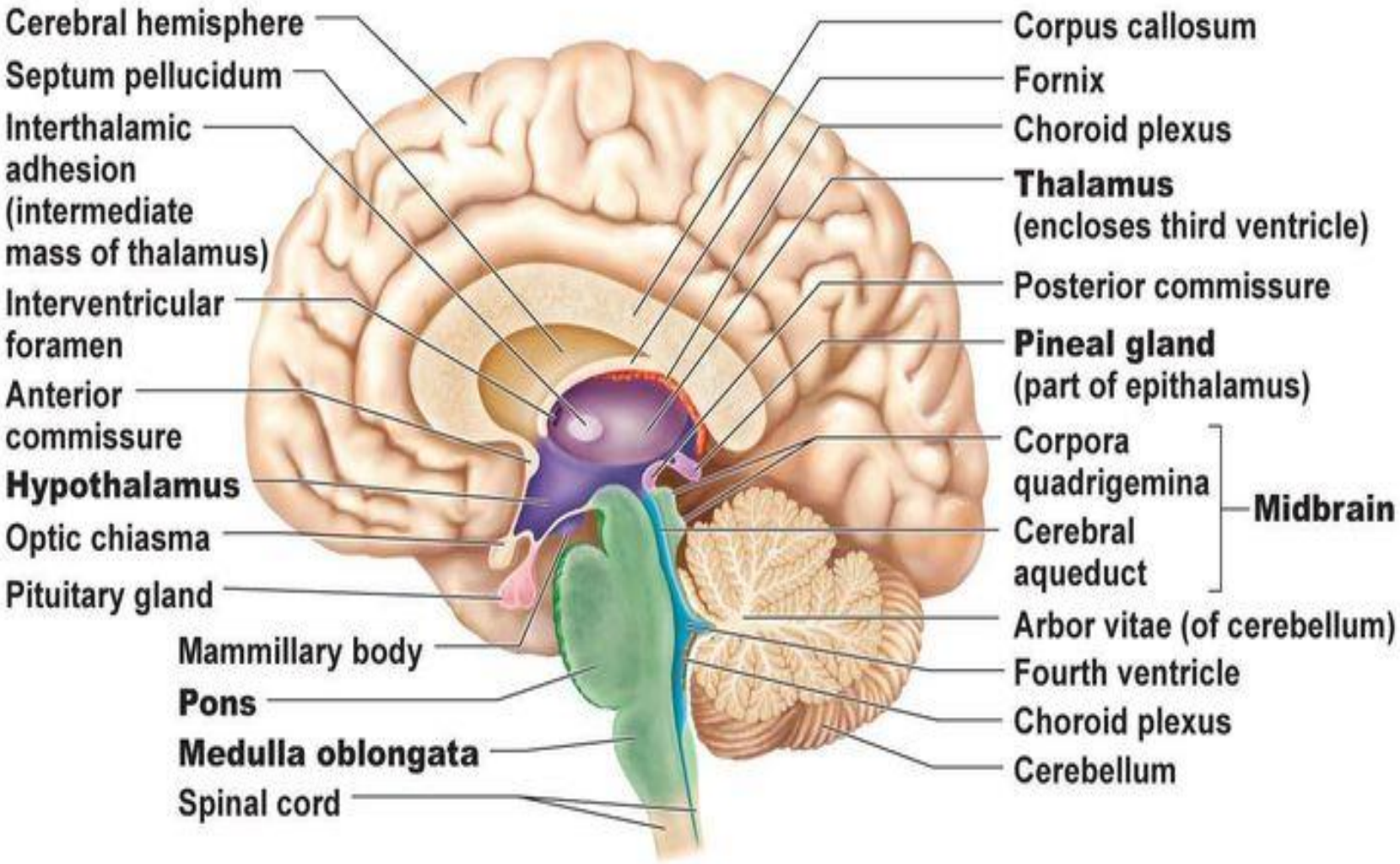



Hypothalamus
Thalamus
Pituitary gland
(hypophysis)
Diencephalon

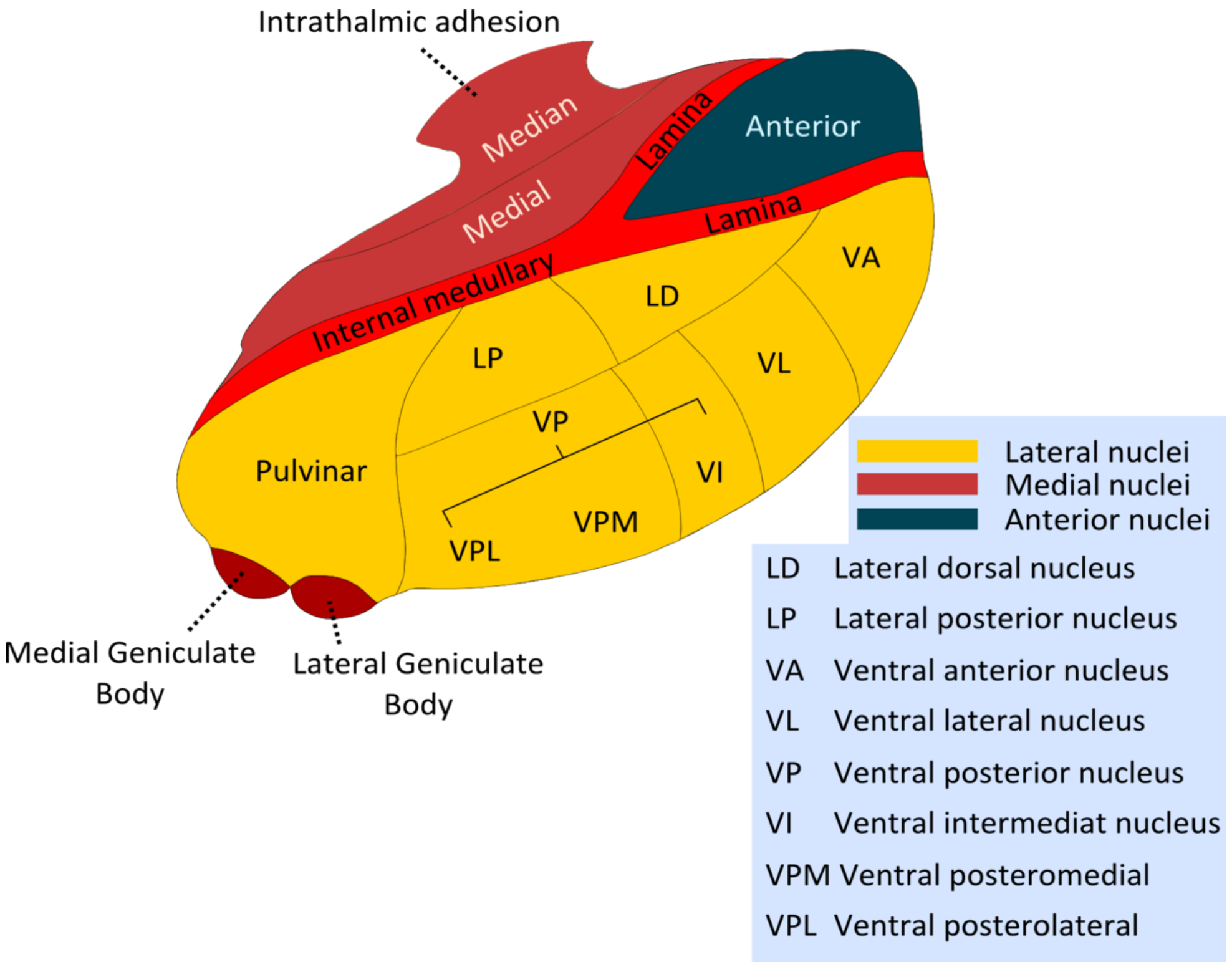


RELATIONS

- Anterior end: posterior border of interventricular foramen
- Posterior end:forms pulvinar overhanging superior colliculus
- Inferior surface: tegmentum of midbrain
- Medial surface:lateral wall of 3rd ventricle
- Superior surface:Stratum zonale
- Lateral surface: external medullary lamina



(a)


Intrathalmic adhesion
Median
Medial
Lamina
Anterior
Lamina
Internal medullary
VA
LD
LP
VL
VP
Pulvinar
VI
VPM
VPL
Medial Geniculate Body
Lateral Geniculate Body
Lateral nuclei
Medial nuclei
Anterior nuclei
LD Lateral dorsal nucleus
LP Lateral posterior nucleus
VA Ventral anterior nucleus
VL Ventral lateral nucleus
VP Ventral posterior nucleus
VI Ventral intermediat nucleus
VPM Ventral posteromedial
VPL Ventral posterolateral

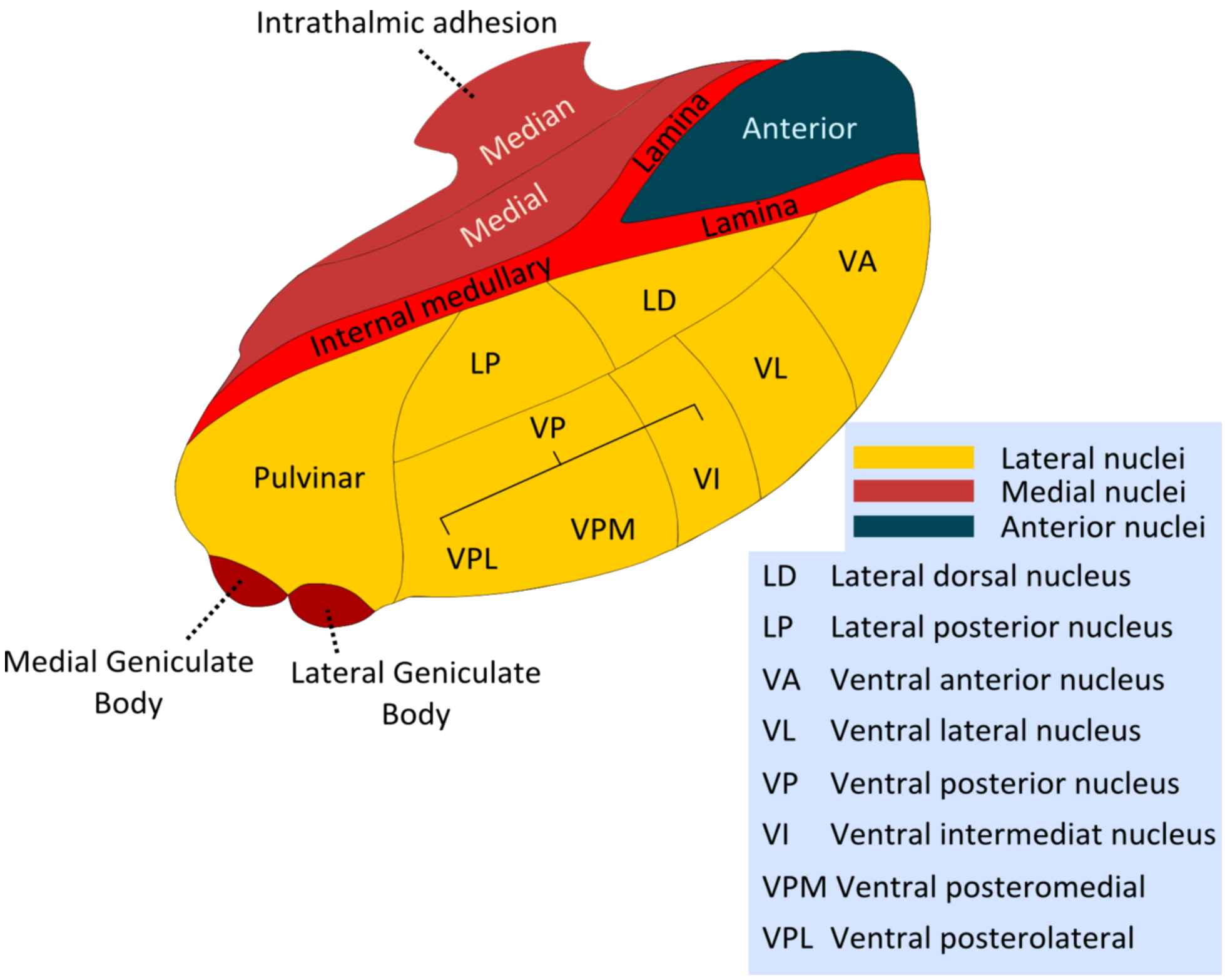
ANTERIOR PART

- Anterior thalamic nuclei recieves mamillothalamic tract + connections from hypothalmus and cingulate gyrus

- Emotional tone+ recent memory

MEDIAL PART

- Dorsomedial nucleus has connections with:
- hypothalamic nuclei + all thalamic nuclei + prefrontal cortex of frontal lobe
- Integration of sensory info including somatic, visceral and olfactory + expression of affect emotion and behaviour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LATERAL PART

- Divided into dorsal and ventral tier
- DORSAL TIER:
- Lateral dorsal nucleus
- Pulvinar
- Lateral post nucleus
- interconnections with thalamic nuclei+ parietal,occipital,temporal lobes +cingulate gyrus

VENTRAL TIER:

- **Ventral ant nucleus**
- connected to reticular formation,substantia niagra,corpus striatum,premotor cortex and thalamic nuclei
- **Ventral lateral nucleus**
- same as anterior one but includes major input from cerebellum and minor input from red nucleus
- involved in motor activity

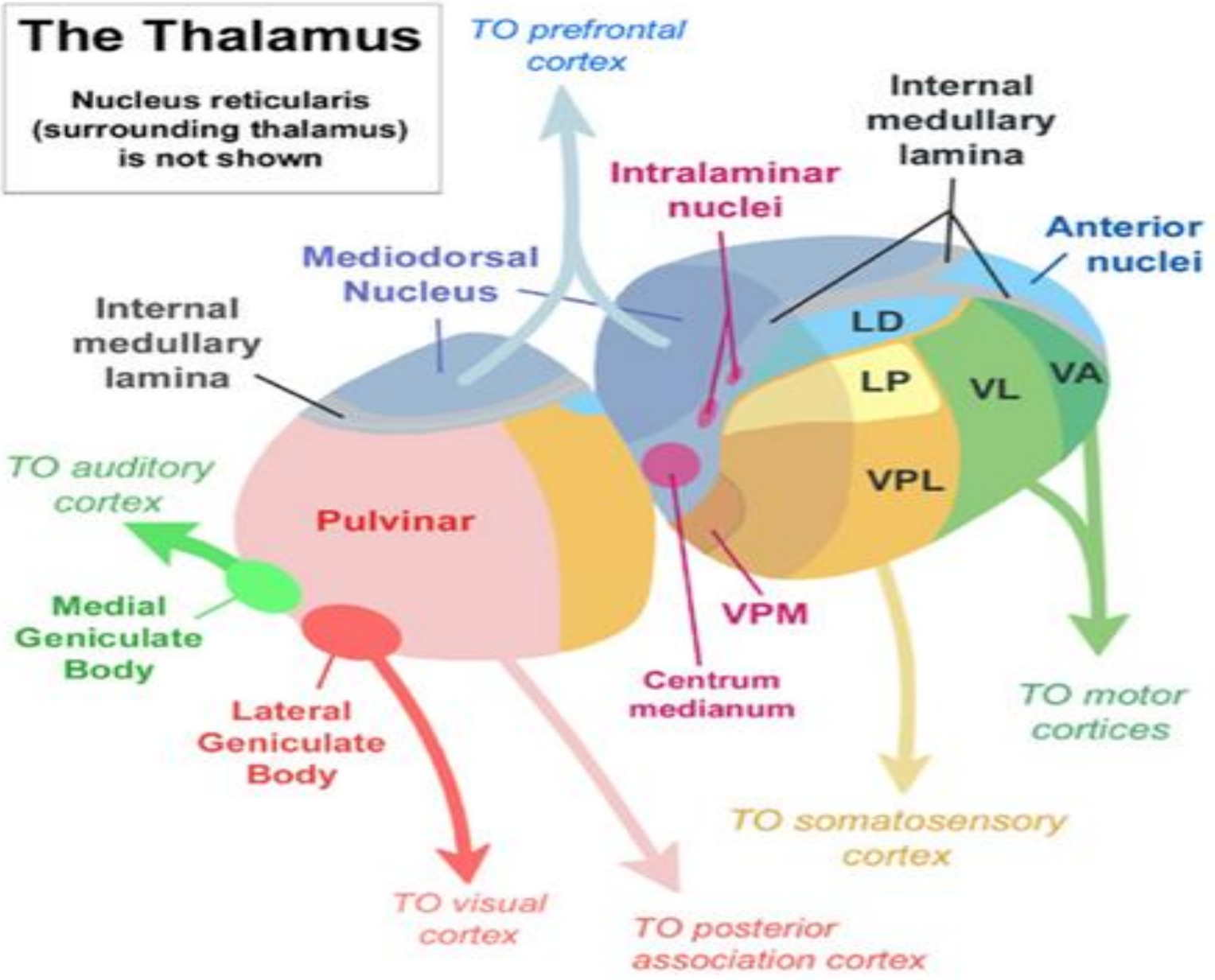
- Ventral post nucleus:
- divided into posteromedial and posterolateral
- Main function sensory relay
- **Posteromedial**: receive from ascending trigeminal and gustatory pathways and projects to primary somatic sensory cortex(area 3,2,1)
- **Posterolateral:** receive from medial and spinal leminisci and projects to same as above

OTHER NUCLEI

- **Midline nuclei:** present in inter-thalamic connections and receive fibres from reticular formation
- **Intra laminar nuclei:** present in internal medullary lamina
- receive fibres from reticular formation,spinothalamic and trigeminothalamic tract and gives fibres to cerebral cortex+corpus striatum
- controls level of alertness and consiousness

- **Reticular nucleus:** btw external medullary lamina and post limb of internal capsule
- fibres from cerebral cortex and reticular formation and fibres to other thalamic nuclei
- **Medial geniculate body:**part of auditory pathway located on post surface of thalamus beneath pulvinar
- fibres from inferior colliculus and lateral leminiscus from both ears(mainly opposite ear)
- fibres to auditory cortex of superior temporal gyrus
- Function is hearing

- **Lateral geniculate body:** part of visual pathway present on undersurface of pulvinar
- fibres from optic tract and go to visual cortex of occipital lobe
- Function is taking visual information from opposite field of vision


The Thalamus
Nucleus reticularis (surrounding thalamus) is not shown
TO prefrontal cortex
Internal medullary lamina
Intralaminar nuclei
Anterior nuclei
Mediodorsal Nucleus
Internal medullary lamina
LD
LP
VL
VA
VPL
TO auditory cortex
Pulvinar
Medial Geniculate Body
VPM
Centrum medianum
Lateral Geniculate Body
TO motor cortices
TO somatosensory cortex
TO visual cortex
TO posterior association cortex