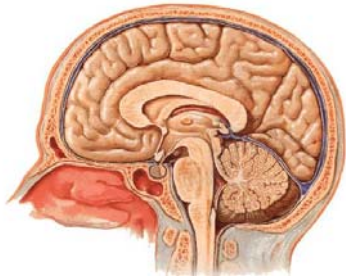


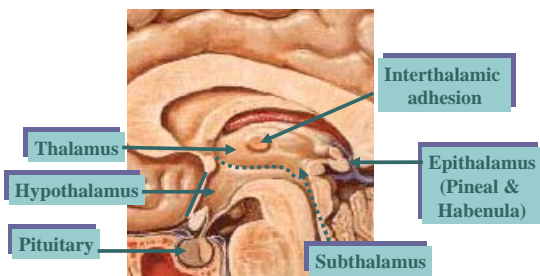
● ● ● | Dorsal "Thalamus"

Medical Neuroscience
Dr. Wiegand

● ● ● | The Diencephalon



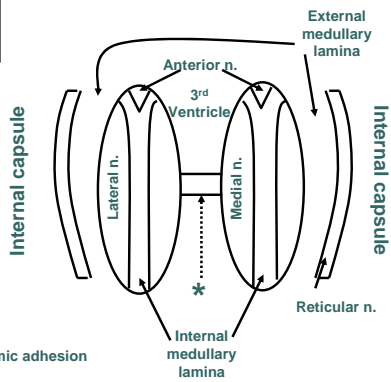
● ● ● | The Diencephalon

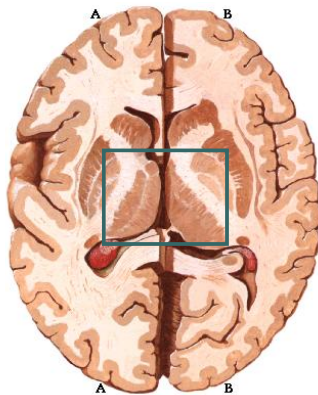




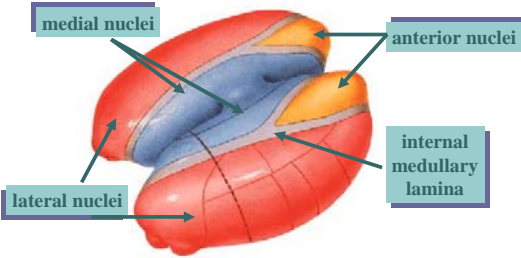
The "Dorsal" Thalamus

- Sensory integration nucleus – gateway to the cerebral cortex
- Afferents from both rostral and caudal central nervous system structures
- Efferents primarily to cerebral cortex via four principal "radiations"
- Associated with motor, sensory, limbic and vegetative functions

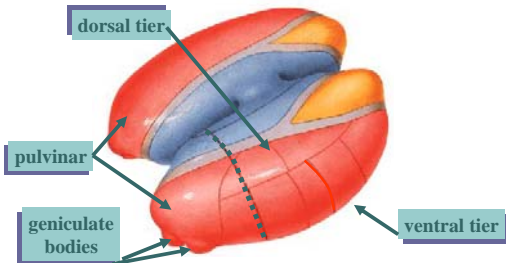




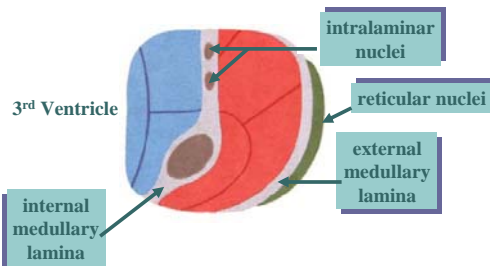
● ● ● | General Organization



● ● ● |



● ● ● | Frontal Section



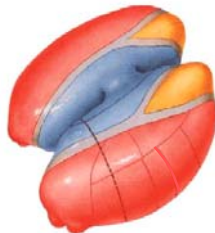
Thalamic Nuclei

- Anterior
- Lateral
 - Dorsal Tier
 - lateral dorsal
 - lateral posterior
 - pulvinar
 - Ventral Tier
 - ventral anterior
 - ventral lateral
 - ventral posterior (VLP & VPM)
 - posterior nucleus



Thalamic Nuclei

- Medial
 - medial/medial dorsal
 - midline nuclei
- Pulvinar
- Geniculate bodies
- Reticular
- Intralaminar
 - centromedian
 - parafascicular



Specific Sensory Nuclei

<i>afferent</i>	<i>nucleus</i>	<i>efferent</i>	<i>function</i>
Dorsal Column & Anterolateral System	VPL	Postcentral Gyrus	Somesthesis
Trigeminal System	VPM	Postcentral Gyrus	Somesthesis
Inferior Colliculus	MGB	Temporal lobe	Hearing
Retina	LGB	Occipital lobe	Vision

Specific Cortical Relay Nuclei

<i>afferent</i>	<i>nucleus</i>	<i>efferent</i>	<i>function</i>
Cerebellum	VL	Precentral Gyrus & Frontal cortex	Movement & Motor Planning
Globus Pallidus	VA	Premotor Cortex	Motor Planning

Specific Association Nuclei

<i>afferent</i>	<i>nucleus</i>	<i>efferent</i>	<i>function</i>
Hypothalamus	Anterior	Cingulate	Limbic
Amygdala	MD	Prefrontal Cortex	Limbic
Hypothalamus & Cingulate	LD	Cingulate	Emotions
Parietal lobe & Sup. Colliculus	LP	Parietal Cortex	Sensory integration
Anterolateral System	Posterior	Insula, Cingulate and Association Cortices	Pain
Sup. Colliculus	Pulvinar	Temporal, Parietal and Occipital Lobes	Vision

Non-Specific Nuclei

<i>afferent</i>	<i>nucleus</i>	<i>efferent</i>	<i>function</i>
Reticular Formation	Midline	Entire Cortex	Arousal/Limbic
Motor / Premotor Basal Ganglia & Reticular Formation	Intra-laminar	Striatum & Cortex	Motor Integration
Cortex & Brainstem	Reticular	Thalamus	Thalamic Modulation

