

The Thalamus

By the simplest definition, the thalamus is the sorter or relay center for information coming into the cerebral cortex from all parts of the body (sensory impulses). With the exception of smell, afferent neurons from all parts of the body converge and synapse in the thalamus which in turn relays the information to specific regions of the cerebral cortex. The thalamus edits and sorts out information and then categorizes similar functions to be relayed as a group to the appropriate areas of the cerebral cortex. Thus, specific localizations and interpretation of stimuli occur in the cerebral cortex but only after careful sorting through the gate keeper, the thalamus. A recent study suggests that the thalamus plays an important role in our ability to concentrate on the task at hand by ignoring distracting sensory input. (Wimmer et al. "Thalamic control of sensory selection in divided attention," *Nature*, October 21, 2015. DOI: 10.1038/nature15398). It also plays an important role in regulating out states of sleep and wakefulness. In addition, it is thought to play an important role in maintaining the aroused state and damage to the thalamus can result in coma.



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