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# Hypothalamus

National Cancer Institute

## Source

National Cancer Institute. *Hypothalamus*. NCI Thesaurus. Code C12458.

An important supervisory center in the brain, rich in ganglia, nerve fibers, and synaptic connections. It is composed of several sections called nuclei, each of which controls a specific function. The hypothalamus regulates body temperature, blood pressure, heartbeat, metabolism of fats and carbohydrates, and sugar levels in the blood. Through direct attachment to the pituitary gland, the hypothalamus also meters secretions controlling water balance and milk production in the female. The role of the hypothalamus in awareness of pleasure and pain is well established in the laboratory. It is involved in the expression of emotions, such as fear and rage, and in sexual behaviors. Despite its numerous vital functions, the hypothalamus in humans accounts for only 1/300 of total brain weight, and is about the size of an almond. Structurally, it is joined to the thalamus; the two work together to monitor the sleep-wake cycle.