

The Hypothalamus

The hypothalamus is so named because of its position below the thalamus. The hypothalamus is the visceral control center, it regulates functions of the internal organs. As such, it is chiefly concerned with maintaining homeostasis. Due to the key role it plays in maintaining normal body function it is sometimes referred to as the brain within the brain. Some of the important functions of the hypothalamus are listed in the table below.

Table: Select homeostatic roles of the hypothalamus.

The autonomic nervous system	The autonomic nervous system is a system of neurons that automatically regulate function such as heart rate, blood pressure, digestion, etc. (functions we don't have to consciously think about). The hypothalamus regulates many of the activities of the activity of the autonomic nervous system by controlling centers in the brain stem and spinal cord.
Emotions	Hypothalamic neurons are involved in the perception of pleasure, fear and rage.
Body temperature	Select groups of hypothalamic neurons monitor blood temperature directly as well as respond to inputs from other thermoreceptors throughout the body and then send appropriate signals to systems that help regulate body temperature such as sweat glands.
Food intake	Select neurons respond to blood levels of nutrients and regulate feelings of hunger or satiety.
Water balance	Osmoreceptors (modified neurons) in the hypothalamus respond to changing salt concentrations in the blood which in turn elicit responses from the kidneys as well as regulate thirst.
Sleep	Neurons in the hypothalamus have been linked to our biological clock.
Endocrine system	The hypothalamus regulates the pituitary gland. A major endocrine organ gland that regulates numerous body functions including metabolism and reproduction.



This content is provided to you freely by BYU-I Books.

Access it online or download it at

https://books.byui.edu/bio_264_anatomy_phy_l/1122_the_hypothalamus.