

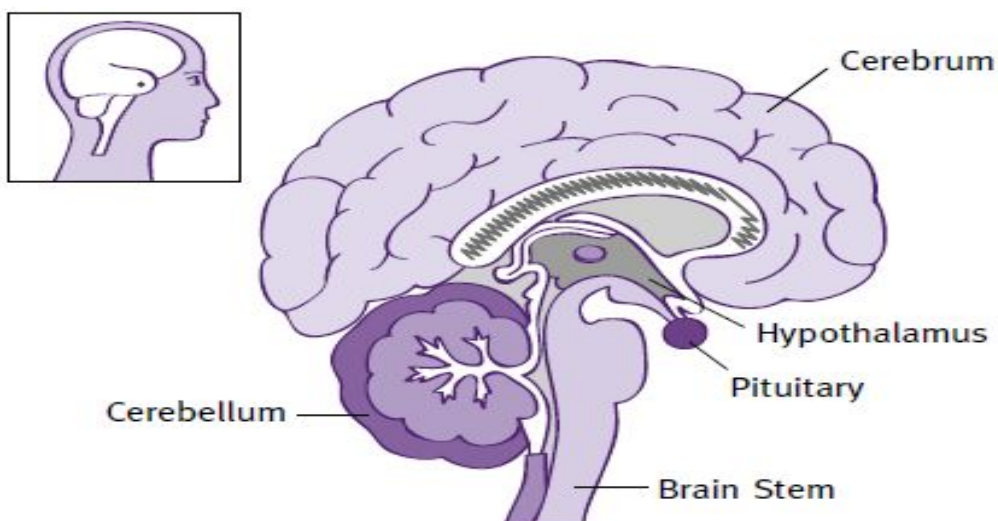
Ram Balak Mahto
Guest faculty
Zoology department
v.s.j college Rajnagar Madhubani
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Pituitary Gland part-1

Your pituitary gland is about the size of a pea and is situated in a bony hollow, just behind the bridge of your nose. It is attached to the base of your brain by a thin stalk. The hypothalamus, which controls the pituitary by sending messages, is situated immediately above the pituitary gland. The pituitary gland is often called the master gland because it controls several other hormone glands in your body, including the thyroid and adrenals, the ovaries and testicles. It secretes hormones from both the front part (anterior) and the back part (posterior) of the gland. Hormones are chemicals that carry messages from one cell to another through your bloodstream. If your pituitary gland is not producing sufficient amounts of one or more hormones this is called hypopituitarism. If on the other hand you are over producing certain hormones, then you would have features due to the over production of the specific hormone concerned.

The Hypothalamus

This serves as a communications centre for the pituitary gland, by sending messages or signals to the pituitary in the form of hormones which travel via the bloodstream and nerves down the pituitary stalk. These signals, in turn, control the production and release of further hormones from the pituitary gland which signal other glands and organs in the body. The hypothalamus influences the functions of temperature regulation, food intake, thirst and water intake, sleep and wake patterns, emotional behaviour and memory.



DEVELOPMENT

The anterior pituitary structures derive from Rathke's pouch, an endodermal invagination of the primitive oral cavity. At the third week of gestation, endoderm from the roof of the stomodeum invaginates and, by 6 weeks, the connection with the oropharynx is obliterated. Rathke's pouch then establishes contact with the infundibulum of the hypothalamus. Early organogenesis is regulated by specific temporal and spatial expression of transcription factors and homeobox genes including the Rathke pouch homeobox (Rpx) protein, Pax-6, and the bicoid-related pituitary homeobox factors (Ptx-1 and Ptx-2). Two members of the LIMhomeodomain transcription factor family, encoded by *LHX3* and *LHX4*, and the P-LIM protein are expressed during Rathke pouch development and mutations are associated with combined pituitary hormone deficiency. An early determinant of pituitary differentiation is the prophet protein (PROP-1). By mid-gestation, Rathke's pouch is virtually obliterated and is replaced by the pars intermedia. The pituitary portal system forms between 7 and 12 weeks and is fully established by 18–20 weeks. Remnants of adenohypophysis may be deposited along the migration route of Rathke's pouch, the most common site being the roof of the nasopharynx.