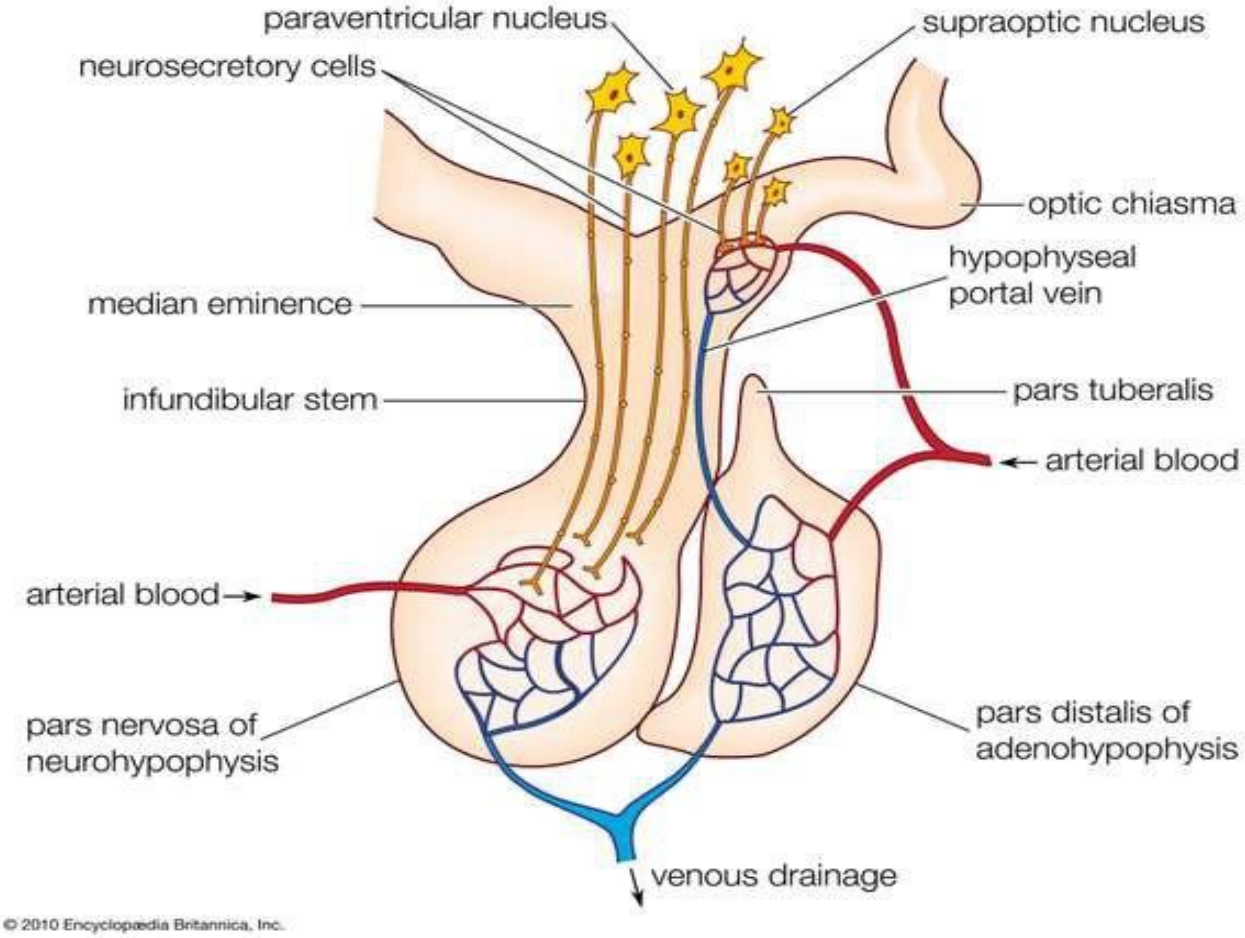
STRUCTURE OF PITUITARY GLAND:

- It is located directly just below the hypothalamus of brain and is held by an infundibular stalk.
- It is about 1 cm long, 1 to 1.5 cm wide and 0.5 cm thick (about the size and shape of a pea).
- It is also known as the master gland because the hormones released by this gland regulates and controls the secretions of other endocrine glands in our body.
- Pituitary gland itself is under the control of hypothalamus, hence also called the **hypophyseal gland**.
- The pituitary gland has two distinct lobes:
  - The anterior lobe (Adenohypophysis)
  - The posterior lobe (Neurohypophysis)
- Between these two lobes is a small zone called the pars intermedia.
- The anterior lobe is larger with more than 75% of the total weight of the gland and abundance of functional secretory cells.
- The posterior lobe has a greater supply of large nerve endings.



The anterior lobe of your pituitary gland makes and releases the following hormones:

- **Adrenocorticotropic hormone (ACTH or corticotrophin)**: ACTH plays a role in how your body responds to stress. It stimulates your adrenal glands to produce cortisol (the "stress hormone"), which has many functions, including regulating metabolism, maintaining blood pressure, regulating blood glucose (blood sugar) levels and reducing inflammation, among others.
- **Follicle-stimulating hormone (FSH)**: FSH stimulates sperm production in people assigned male at birth. FSH stimulates the ovaries to produce estrogen and plays a role in egg development in people assigned female at birth. This is known as a gonadotrophic hormone.
- **Growth hormone (GH)**: In children, growth hormone stimulates growth. In other words, it helps children grow taller. In adults, growth hormone helps maintain healthy muscles and bones and impacts fat distribution. GH also impacts your metabolism (how your body turns the food you eat into energy).
- **Luteinizing hormone (LH)**: LH stimulates ovulation in people assigned female at birth and testosterone production in people assigned male at birth. LH is also known as a gonadotrophic hormone because of the role it plays in controlling the function of the ovaries and testes, known as the gonads.
- **Prolactin**: Prolactin stimulates breast milk production (lactation) after giving birth. It can affect fertility and sexual functions in adults.
- **Thyroid-stimulating hormone (TSH)**: TSH stimulates your thyroid to produce thyroid hormones that manage your metabolism, energy levels and your nervous system.

The posterior lobe of your pituitary gland stores and releases the following hormones, but your hypothalamus makes them:

- **Antidiuretic hormone (ADH, or vasopressin)**: This hormone regulates the water balance and sodium levels in your body.
- **Oxytocin**: Your hypothalamus makes oxytocin, and your pituitary gland stores and releases it. In people assigned female at birth, oxytocin helps labor to progress during childbirth by sending signals to their uterus to contract. It also causes breast milk to flow and influences the bonding between parent and baby. In people assigned male at birth, oxytocin plays a role in moving sperm.

FUNCTION OF THE PITUITARY GLAND

The main function of your pituitary gland is to produce and release several hormones that help carry out important bodily functions, including:

- Growth.
- Metabolism (how your body transforms and manages the energy from the food you eat).
- Reproduction.
- Response to stress or trauma.
- Lactation.
- Water and sodium (salt) balance.
- Labor and childbirth.

Disorders of the Pituitary Gland

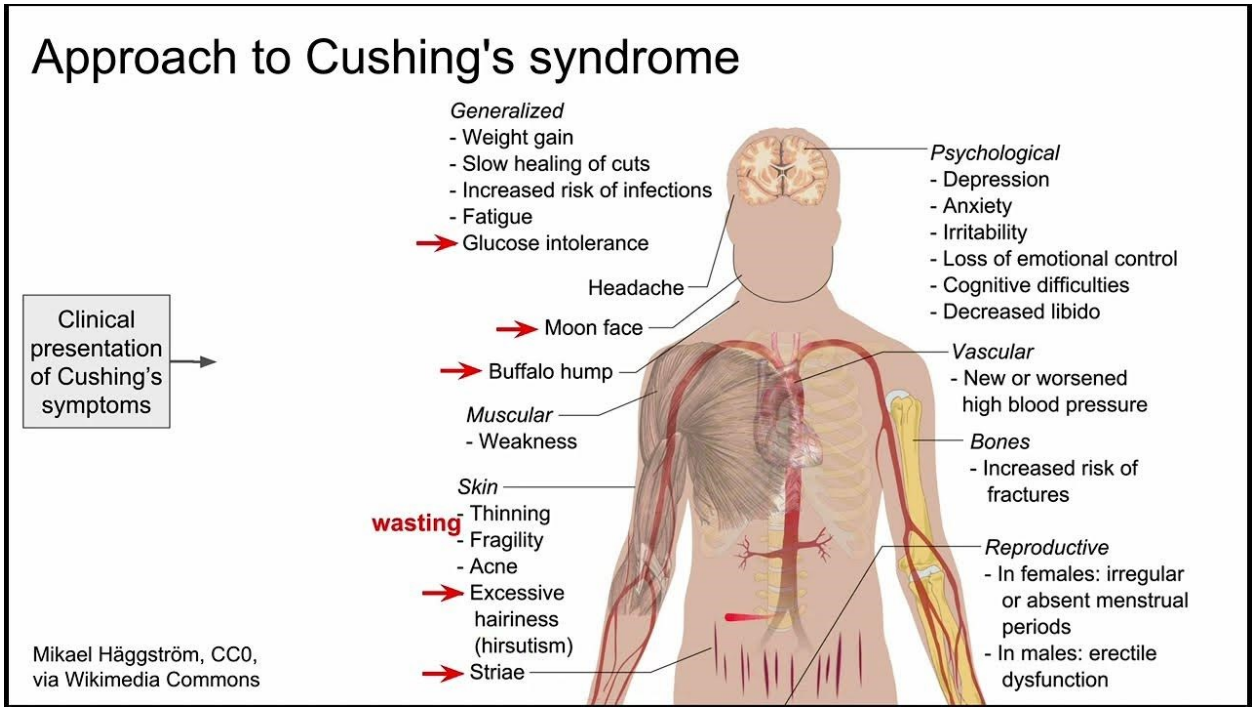
Pituitary conditions can affect sexual development, thyroid function, growth, skin pigmentation and adrenal function.

Acromegaly

Acromegaly occurs when a pituitary tumor produces excess growth hormones. More than 95% of acromegaly cases are caused by benign tumors on the pituitary gland.

Cushing's Syndrome

Cushing's syndrome occurs when a pituitary tumor produces excessive amount of a hormone called ACTH, which elevates blood cortisol levels.



Diabetes Insipidus

Diabetes insipidus results from insufficient production of ADH, a hormone that helps the body conserve the optimal amount of water. Diabetes insipidus is not related to diabetes mellitus, although some of the symptoms are similar.

Empty Sella Syndrome

Empty sella syndrome is characterized by an enlarged bony structure that houses the pituitary gland at the base of the brain. Symptoms, if they are present, can include impotence, reduced sexual desire and irregular menstruation.

Hypopituitarism

Hypopituitarism, also called an underactive pituitary gland, affects the function of the anterior lobe of the pituitary gland. Hypopituitarism can have impact on hormone production in the adrenals, thyroid, testes or ovaries.

Tumors

Most pituitary tumors are benign. However, because of the location of the pituitary gland, large pituitary tumors can press against the optic nerves, causing vision problems. In addition, pituitary tumors that produce excessive amounts of hormones overstimulate other endocrine glands and cause symptoms.

The most common hormone produced by pituitary tumors is prolactin. Prolactin-producing tumors (prolactinomas) are more frequent in women. They can cause irregularity or loss of periods, infertility and breast milk secretion. In men, excessive prolactin can cause reduced libido and erectile dysfunction.