15.7A: Overview of the Pituitary Gland

The pituitary gland is connected to the hypothalamus and secretes nine hormones that regulate body homeostasis.

Learning Objectives

• Summarize the structure and function of the pituitary gland

Key Points

• The pituitary gland, or hypophysis, is an endocrine gland about the size of a pea. Although located at the base of the brain and often considered to be part of the brain, the pituitary gland is in fact a separate organ, and is not part of the brain.

• The pituitary gland is divided into two parts, the anterior pituitary and the posterior pituitary. The anterior pituitary receives signalling molecules from the hypothalamus, and in response, synthesizes and secretes seven hormones.

• The posterior pituitary does not produce any hormones of its own; instead, it stores and secretes two hormones made in the hypothalamus.

Key Terms

• **pituitary gland**: An endocrine gland, about the size of a pea, that sits in a small, bony cavity at the base of the brain whose secretions control the other endocrine glands and influence growth, metabolism, and maturation.

• **hypothalamus**: A region of the forebrain located below the thalamus, forming the basal portion of the diencephalon, and functioning to regulate body temperature, some metabolic processes, and governing the autonomic nervous system.
The pituitary gland, or hypophysis, is an endocrine gland about the size of a pea. Although located at the base of the brain and often considered to be part of the brain, the pituitary gland is in fact a separate organ. It protrudes off the bottom of the hypothalamus at the base of the brain, and rests in a small, bony cavity.

**Pituitary location:** The location of pituitary gland in the human brain.

The pituitary is functionally connected to the hypothalamus by a small tube called the infundibular stem, or, pituitary stalk. The pituitary gland secretes hormones that regulate homeostasis.

The pituitary gland is divided into two parts, the anterior pituitary and the posterior pituitary.

- The anterior pituitary receives signaling molecules from the hypothalamus, and in response, synthesizes and secretes seven important hormones including thyroid-stimulating hormone and growth hormone.
- The posterior pituitary does not produce any hormones of its own, rather, it stores and secretes two hormones made in the hypothalamus—oxytocin and anti-diuretic hormone.

**The pituitary gland:** In this image, the pituitary gland is referred to by its other name, the hypophysis.