



Endocrine System

What Is the Endocrine System?

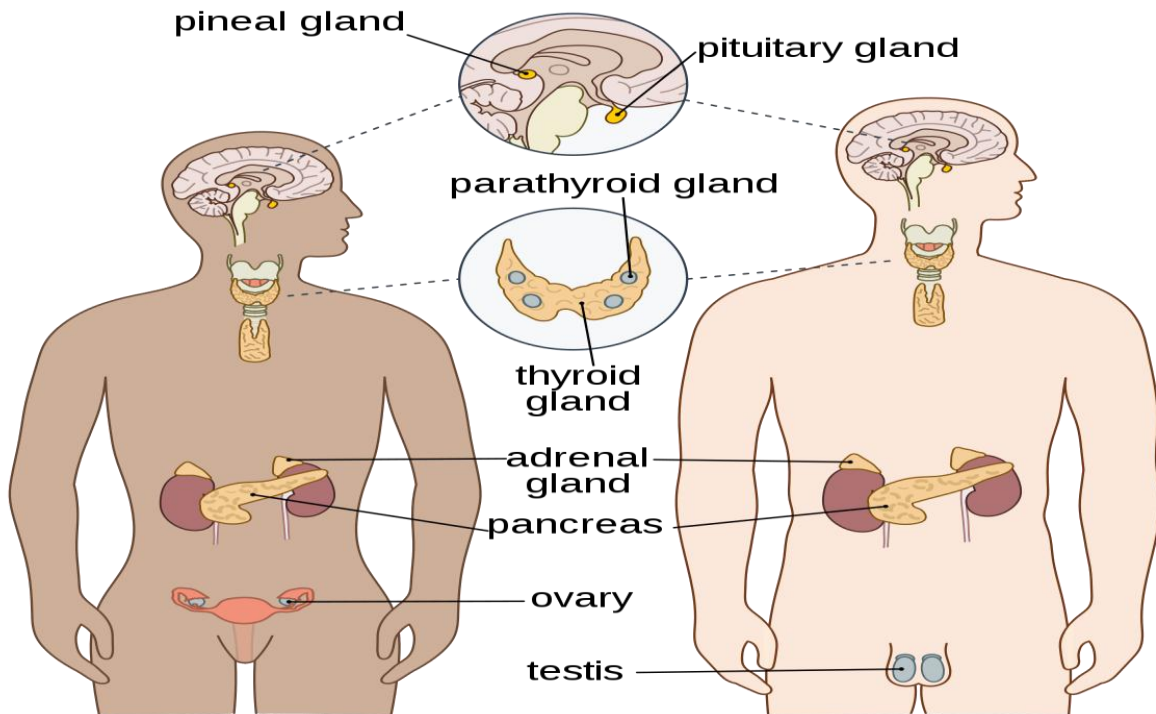
The endocrine system is made up of glands that make hormones. Hormones are the body's chemical messengers. They carry information and instructions from one cells to another.

These glands have no ducts but secrete their hormones directly into the blood, by which means they reach every cell in the body.

The endocrine system influences almost every cell, organ, and function of our bodies.

Function of endocrine system

- 1- Endocrine glands release hormones into the bloodstream.
- 2- The endocrine hormones help control mood, growth and development, metabolism , and reproduction.
- 3- The endocrine system regulates how much of each hormone is released.



Parts of the Endocrine System

Many glands make up the endocrine system.

The hypothalamus, pituitary gland, and pineal gland are in your brain.

The thyroid and parathyroid glands are in your neck.

The thymus is between your lungs,

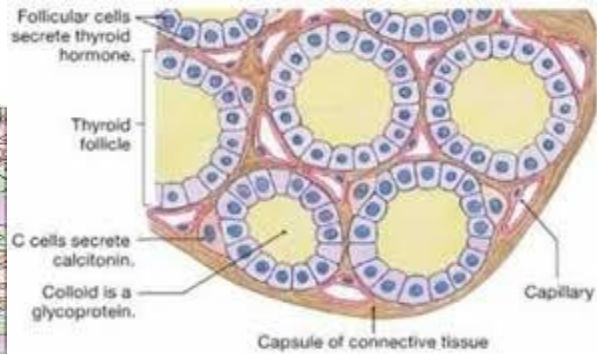
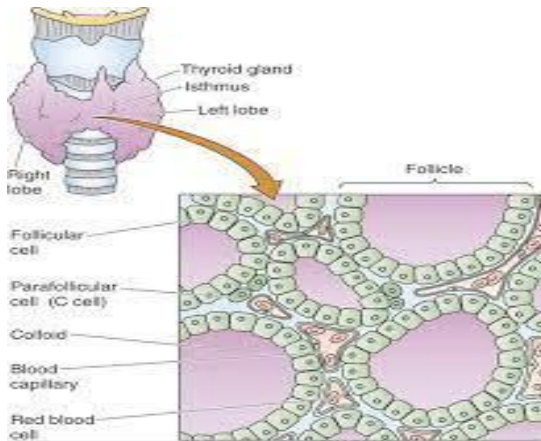
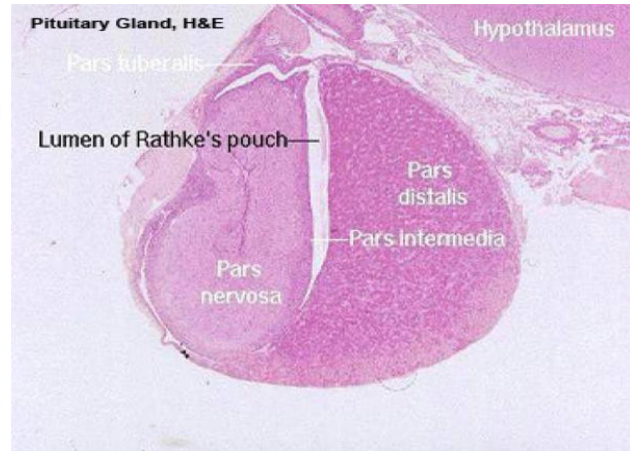
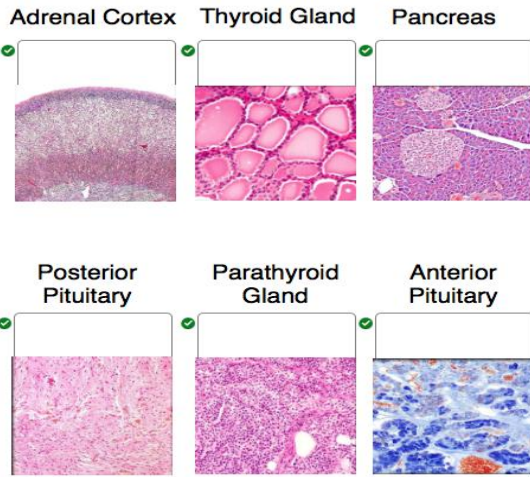
the adrenals are on top of your kidneys,

and the pancreas is behind your stomach.

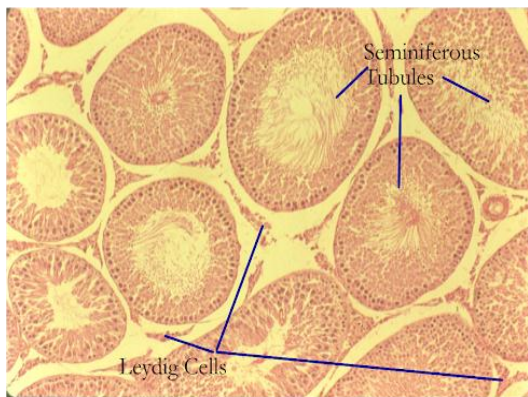
The ovaries (woman) or testes (man) are in the pelvic region.



- **Hypothalamus.** This organ connects endocrine system with nervous system. Its main job is to tell pituitary gland to start or stop making hormones.
- **Pituitary gland.** master gland. It makes many important hormones, including
 - ❖ growth hormone
 - ❖ prolactin, helps breastfeeding
 - ❖ antidiuretic hormone(ADH) controls blood pressure and helps control body water balance
 - ❖ thyroid-stimulating hormone (TSH),
 - ❖ oxytocin which helps in milk ejection
 - ❖ luteinizing hormone (LH), which manages estrogen in women and testosterone in men.
- **Pineal gland.** It makes a chemical called melatonin that helps the body get ready to go to sleep.
- **Thyroid gland.** This gland makes thyroid hormone [triiodothyronine \(T₃\)](#) and **thyroxine (T₄)**, which controls the growth and metabolism. The thyroid gland also produces the hormone calcitonin
- **Parathyroid.** They play a role in bone health. The glands control the levels of calcium and phosphorus.
- **Thymus.** This gland makes white blood cells called T-lymphocytes
- **Adrenals gland.** make the "fight or flight" hormone adrenaline (also called epinephrine), also make hormones called corticosteroids.
- **Pancreas.** makes the hormones insulin and glucagon.
- **Ovaries.** In women, these organs make estrogen and progesterone.
- **Testes.** In men, the testes make testosterone.



Testes



The Adrenal Gland—Gross and Microscopic

