

REVIEW OF ORGANS AND GLANDS

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Password: RCN69

June 2026

BRAIN - 1 OF 3

The brain can be divided into the cerebrum, brainstem, and cerebellum:

• Cerebrum

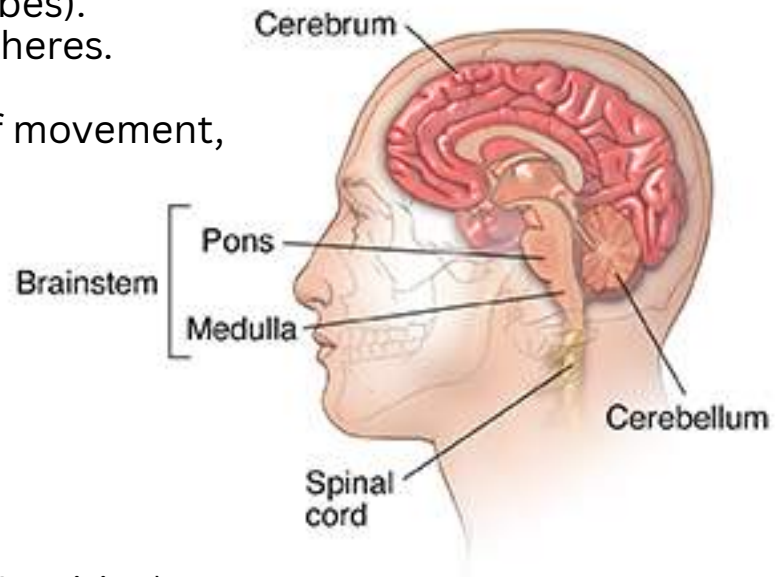
- Location: front of brain (frontal lobes).
 - Made up of right & left hemispheres.
 - **Controls:**
 - initiation & coordination of movement,
 - temperature,
 - touch,
 - vision,
 - hearing,
 - judgment,
 - reasoning,
 - problem solving,
 - emotions,
 - learning.
 - **Responsible for:**
 - communication (speaking & writing),
 - memory,
 - abstract thought,
 - appreciation for music & art.

• Brainstem

- This is the middle of the brain & it includes the midbrain, the pons, and the medulla.
- The brainstem **controls:**
 - movement of eyes, face, mouth.
 - respirations,
 - consciousness,
 - cardiac function,
 - involuntary muscle movements,
 - sneezing,
 - coughing,
 - vomiting, and
 - swallowing.
- The brainstem **relays:**
 - sensory messages (such as hot, pain, and loud)

• Spinal Cord

- Large bundle of nerve fibers located in back that extends from the base of brain to lower back. SC **carries messages** to & from brain & rest of the body.



• Cerebellum

- This is the back of brain.
- The cerebellum **coordinates:**
 - voluntary muscle movements
- It **helps to maintain:**
 - posture,
 - balance, and
 - equilibrium.
- **Pons:**
 - A deep part of the brain, located in the brainstem, the pons contains many of the control areas for **eye and face movements**.
- **Medulla:**
 - Lowest part of brainstem, it is **most vital part of** entire brain & contains control centers for the heart and lungs.

BRAIN - 2 OF 3

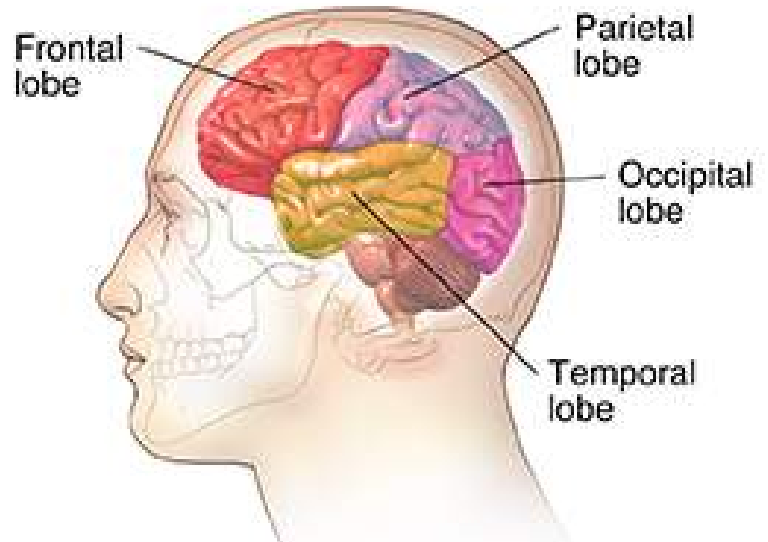
Other parts of the brain include:

- **Frontal Lobe**

- The **largest section of the brain** located in the front of the head, the frontal lobe is involved in **personality characteristics** and **movement**. Recognition of **smell** often involves parts of the frontal lobe.

- **Parietal Lobe**

- The middle part of the brain, the parietal lobe **helps a person to identify objects** and **understand spatial relationships** (where one's body is compared to objects around the person). The parietal lobe is also involved in **interpreting pain and touch** in the body.

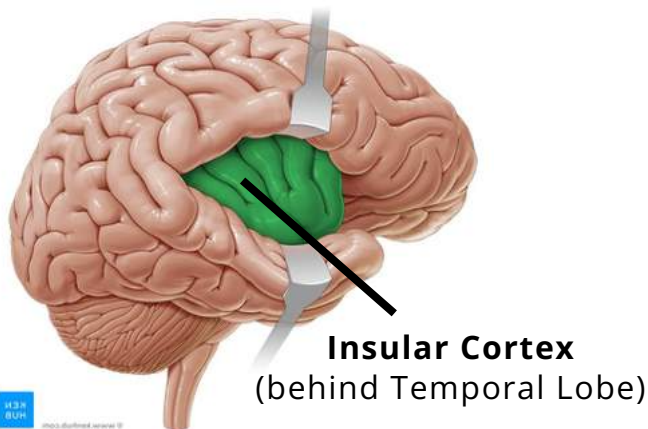


- **Occipital Lobe**

- This is the back part of the brain that is involved with **vision**.

- **Temporal Lobe**

- The sides of the brain, these temporal lobes are involved in **short-term memory, speech, musical rhythm, and some degree of smell recognition**. The temporal lobes are also important in **understanding sound and voice**.



- **Insular Cortex**

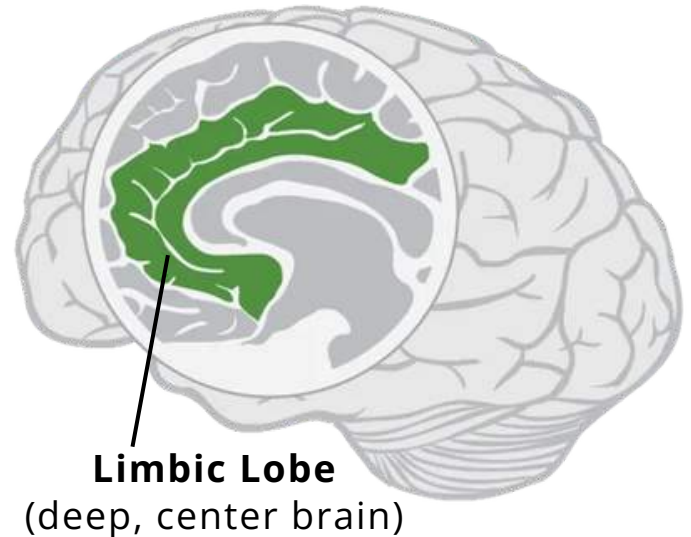
- Perception of pain.
- Basic emotions, including joy, happiness, anger, and disgust.
- Addiction and other conscious desires (compulsive behaviors).
- Motor control.
- Interoceptive awareness—ability to be consciously aware of bodily states, such as heart beat.
- The sense of self as an entity separate from the rest of the world.
- Reading emotions and social cues.

BRAIN - 3 OF 3

Limbic System = Stress Center of Brain.
95% - 99% of clients will unlock when tested.

• Limbic System

- Plays role in regulation of endocrine system responses to emotions, such as the adrenaline-based **fight-or-flight response**.
- Without any voluntary input, the limbic system triggers a **reaction to perceived danger**.
- **Regulates both conscious and unconscious functions:**
 - sexual desire,
 - some homeostatic mechanisms,
 - appetite.
- Other roles of limbic system include:
 - **Attaching emotional significance** to sensory experiences
 - when the smell of a certain fragrance reminds you of the childhood or provokes an immediate negative reaction.
 - **Memory and learning.**
 - **Social skills, empathy, and social processing.**
- The limbic lobe interacts with other regions of the body:
 - **Processing sensory input from the eyes, ears, mouth, and skin,** and applying meaning to that input.
 - **Gathering information from the surrounding world** to make decisions.
 - **Telling the body to secrete hormones** in reaction to specific events, particularly emotionally salient ones.
 - **Affecting other bodily structures.** For example, chronic stress can lead to a chronic fight-or-flight response that may lead the body to be flooded with cortisol, adrenaline, or other hormones.
 - **Regulating attention.** The limbic system helps the brain determine what to focus on based on sensory input, as well as input from other regions of the body.



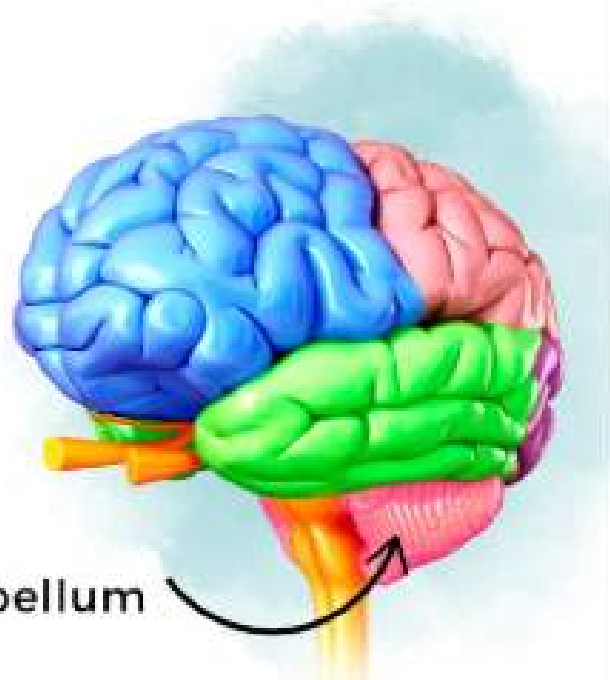
BRAIN - 4 OF ?

The Cerebellum

is located at the back of the brain just beneath the cerebrum, and is called the "**little brain**".

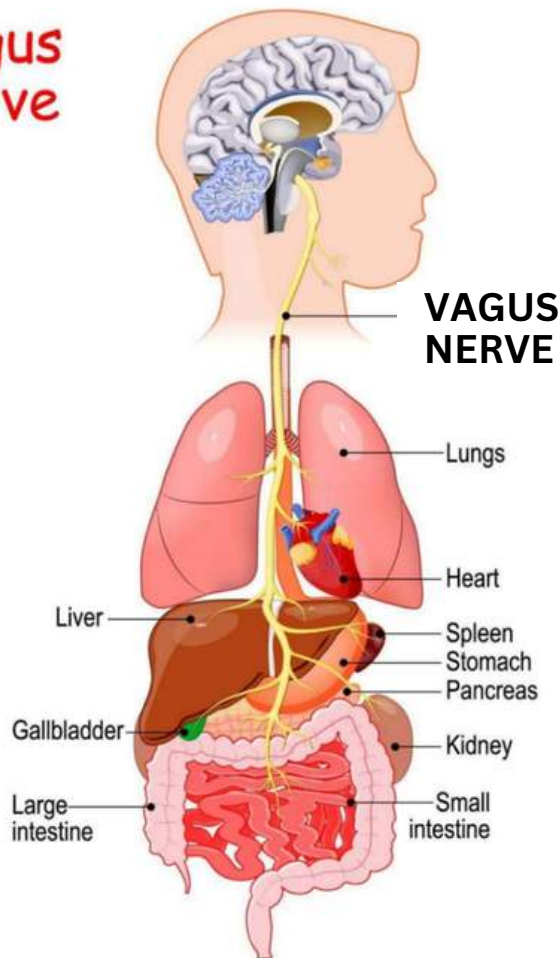
It is responsible for managing complex functions such as coordinating voluntary movements, maintaining balance and posture, adapting motor reflexes, and ensuring precision in tasks like writing or buttoning a shirt.

Cerebellum



BRAIN - 4 OF ?

Vagus
nerve



- Carries information:
 - **Body → Brain**
 - Gut status
 - Immune status
 - Inflammatory signals
 - Stretch and pressure information
 - **Brain → Body**
 - Digestive activity
 - Saliva production
 - Heart-rate regulation
 - Rest-and-digest functions
- Roles in involuntary sensory and motor (movement) functions:
 - Digestion.
 - Heart rate, blood pressure, and respiration (breathing).
 - Immune system responses.
 - Mood.
 - Mucus and saliva production.
 - Skin and muscle sensations.
 - Speech.
 - Taste.
 - Urine output.

- Other symptoms:
 - Abdominal pain and bloating.
 - Acid reflux (gastroesophageal reflux disease, GERD).
 - Changes to heart rate, blood pressure or blood sugar.
 - Difficulty swallowing or loss of gag reflex.
 - Dizziness or fainting.
 - Hoarseness, wheezing or loss of voice.
 - Loss of appetite, feeling full quickly or unexplained weight loss.
 - Nausea and vomiting.

**Plate is held horizontal -
directly in front of SCM.**

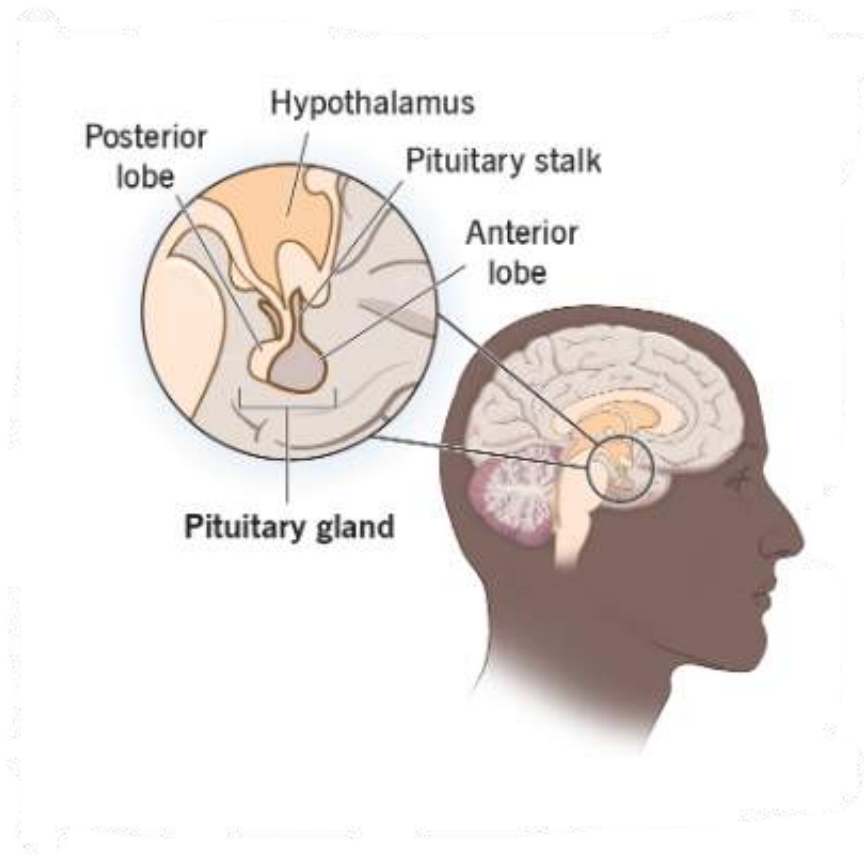


PITUITARY GLAND

A small, pea-sized endocrine gland located at the base of the brain below the hypothalamus. It releases several important hormones and controls the function of many other endocrine system glands.

Functions:

- **Makes Hormones**
- **Controls Endocrine Glands**
 - thyroid gland — produces thyroid hormone
 - adrenal glands — produces cortisol
 - reproductive glands (ovaries and testes) — produces oestrogen and testosterone
 - Hormones made by the pituitary gland include:
 - growth hormone — regulates growth
 - thyroid stimulating hormone (TSH) — tells the thyroid gland to make hormones
 - prolactin — controls breastmilk production
 - adrenocorticotrophic hormone (ACTH) — tells the adrenal glands to make hormones
 - follicle stimulating hormone (FSH) — helps regulate the reproductive system
 - luteinising hormone — also involved in the reproductive system

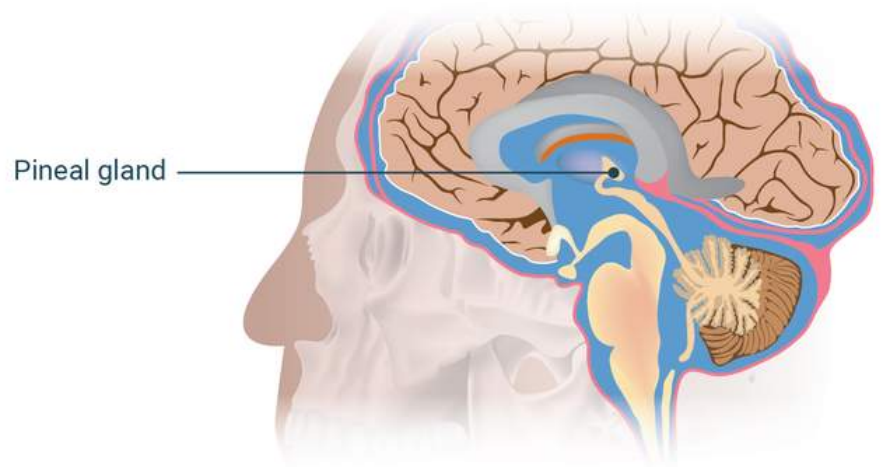


The hormones made or controlled by the pituitary gland affect vital body functions, including:

- metabolism
- blood pressure
- reproduction

PINEAL GLAND

Pineal gland is a small gland in the center of the brain.

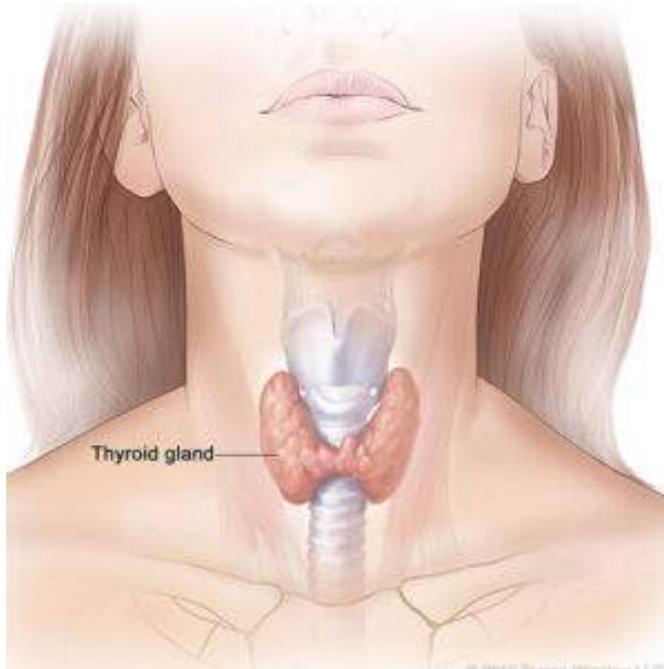


Key Facts

- The pineal gland makes a hormone called **melatonin**, which controls sleep patterns and the internal body clock (**circadian rhythms**).
- Melatonin levels rise at night and fall during the day to help the body keep a daily rhythm.
- The pineal gland also supports the **reproductive system**, especially **during puberty**.
- Issues, such as cysts or tumours of the pineal gland, are rare but can lead to headaches and vision changes.

THYROID GLAND

The thyroid gland is a small organ in the neck that makes hormones to help the body work properly.



Key Facts

- Thyroid hormones control growth, energy use and body temperature.
- Thyroid problems can lead to too much or too little thyroid hormone in the bloodstream, leading to conditions such as hyperthyroidism or hypothyroidism.
- Thyroid problems are diagnosed with blood tests, imaging or biopsies.
- They may be treated with medicines or surgery.

The thyroid gland makes 2 hormones:

- **Thyroxine (T4)** is the main hormone made by the thyroid. In the body, thyroxine is changed into triiodothyronine (the active thyroid hormone).
- **Triiodothyronine (T3)** is also made and released by the thyroid.

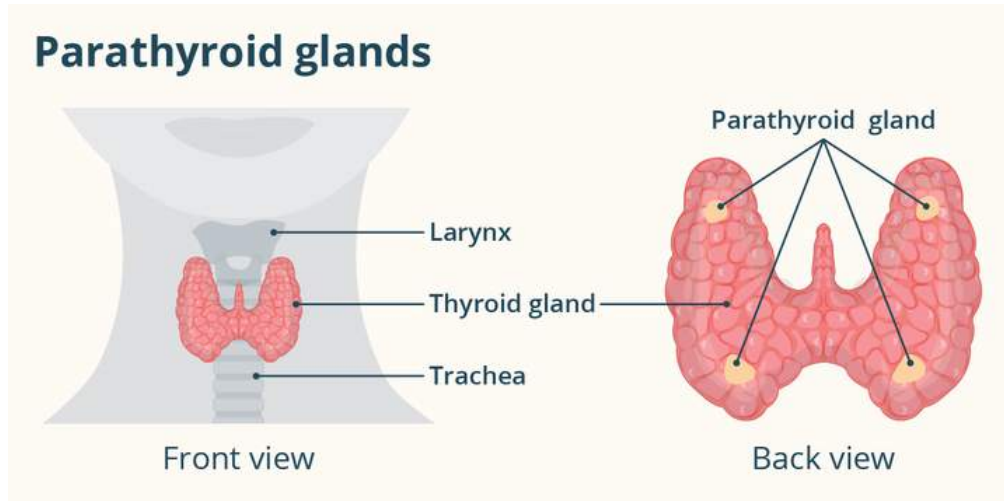
These hormones are like messengers that help the body grow, stay active and use energy from food. They also help keep the body temperature steady.

The thyroid gland stores these hormones in tiny sacs (follicles) and releases them when the body needs them.

The thyroid also has cells called C cells. These cells make a hormone called calcitonin. They work together with other systems in the body to keep calcium levels balanced.

PARATHYROID GLANDS

The parathyroid glands are 4 small glands found in the neck behind the thyroid gland.



Key Facts

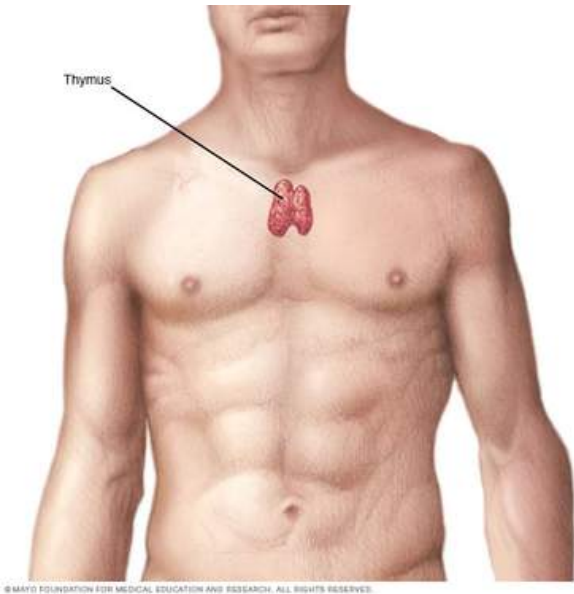
- They make parathyroid hormone (PTH), which regulates calcium levels in blood and bones.
- Calcium levels are important for healthy bones, muscles, nerves, heart and kidneys.
- Hyperparathyroidism occurs when too much parathyroid hormone is made.
- Hypoparathyroidism occurs when too little parathyroid hormone is made.

Responsible For

- PTH works by raising calcium levels in the blood when they drop too low. It does this by:
 - adjusting the amount of calcium released by bones into the blood
 - managing the amount of calcium that is removed by the kidneys via the urine
 - increasing calcium absorption from diet through the intestines
- Without regulation by the parathyroid glands, calcium levels could become too high or too low. This may lead to issues, such as:
 - weak bones
 - muscle problems
 - nerve dysfunction

THYMUS GLAND

The thymus gland is in your upper chest behind your breastbone (sternum).



Key Facts

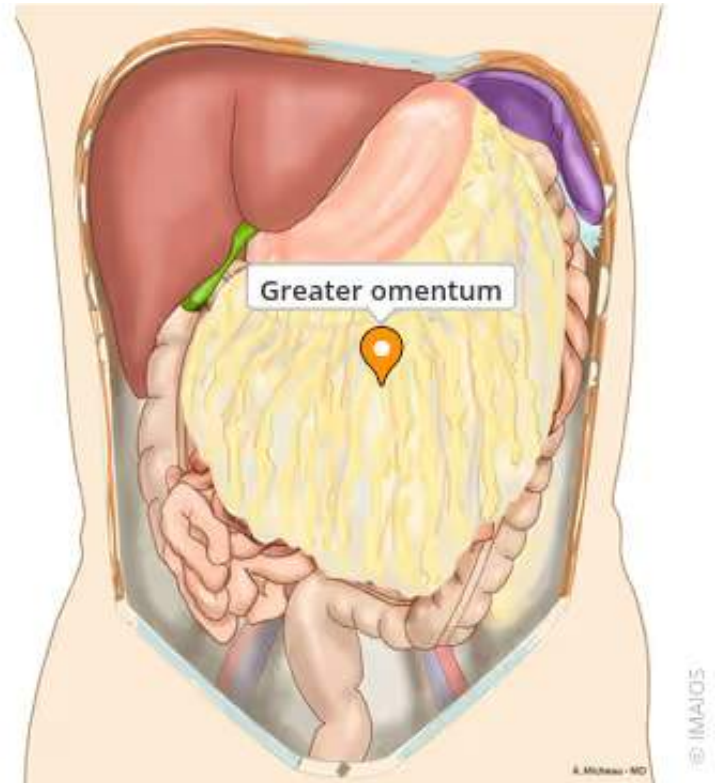
- The thymus is a small gland that's part of the lymphatic system.
 - The lymphatic system is made up of a network of tissues, vessels and organs such as:
 - tonsils,
 - spleen and
 - appendix.
 - The lymphatic system is a part of the immune system.
 - As part of the lymphatic system, the thymus makes and trains special white blood cells called T-cells.
 - T-cells help the immune system fight disease and infection.
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- The primary function of the thymus gland is to train special white blood cells called T-lymphocytes or T-cells.
 - White blood cells (lymphocytes) travel from the bone marrow to the thymus. The lymphocytes mature and become specialized T-cells in the thymus.
 - After the T-cells have matured, they enter the bloodstream.
 - They travel to the lymph nodes (groups of cells) and other organs in the lymphatic system, where they help the immune system fight disease and infection.
-
- The thymus gland is also part of the endocrine system.
 - The endocrine system makes and releases hormones that control the functions of the body.
 - The thymus produces and releases several hormones including:
 - Thymopoietin: fuels the production of T-cells & tells the pituitary to release hormones.
 - Thymosin and thymulin: help make specialized types of T-cells.
 - Thymic humoral factor: keeps the immune system working properly.

OMENTUM

The omentum is fatty tissue that connects the stomach to the intestines.

Key Facts

- The omentum is a fold of the peritoneum, a membrane within the abdominal cavity that supports internal organs.
- It is composed of many folds, with the omentum specifically hanging in front of the stomach and intestine.
- The omentum contains blood vessels, nerves, lymph nodes, fat, and connective tissue.
- It is thinner than the mesentery, another peritoneal fold, and has a lacy appearance.



Functions

- Preventing friction between organs by secreting a lubricating serum
- Helping to hold organs in place
- Acting as a barrier against infection. There are two omenta: the greater omentum, which hangs like an apron from the large intestine, and the lesser omentum, which connects the stomach and liver.

There are Two Omenta

- Greater omentum, which hangs like an apron from the large intestine
- Lesser omentum, which connects the stomach and liver.