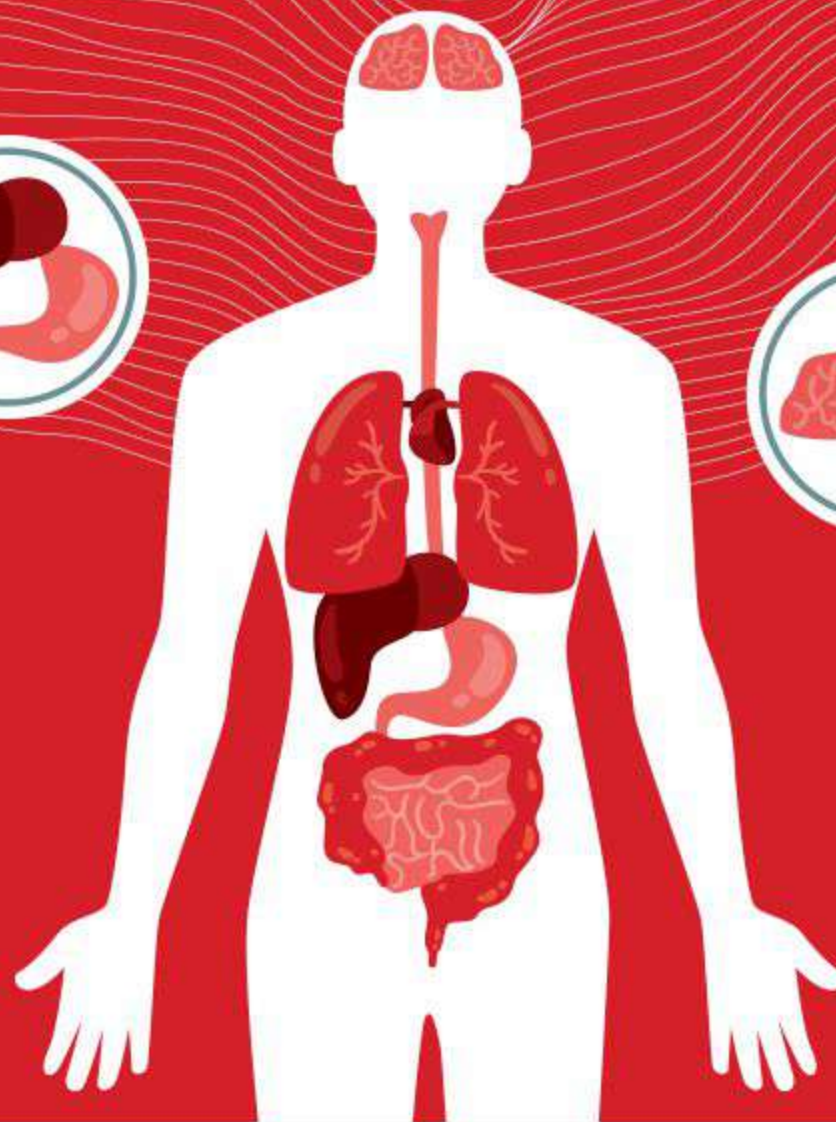
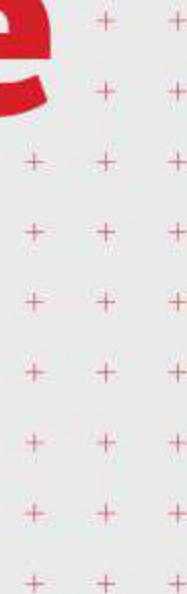




UPS Education UTSAAH PSYCHOLOGICAL
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HEALTH — EDUCATION — RESEARCH

Endocrine Glands



The endocrine system is essential for maintaining the body's internal balance by releasing hormones that influence growth, metabolism, stress responses, and sleep. These glands throughout the body work in a feedback loop with the hypothalamus and pituitary gland to ensure that hormone levels remain balanced. This system controls long-term processes, contrasting with the rapid responses managed by the nervous system.

Pituitary Gland

- Known as the “master gland,” the pituitary directs other glands by releasing specific hormones based on signals from the hypothalamus.
- Located in the brain, it manages growth, metabolism, and stress responses through feedback from other organs and glands.

Pineal Gland

- The pineal gland, situated in the brain, produces melatonin, a hormone sensitive to light and darkness.
- Melatonin increases at night, promoting sleep, and decreases in the daytime, helping regulate sleep-wake cycles.
- In some animals, melatonin also influences seasonal behaviors like breeding and hibernation.

Thyroid Gland

- Found in the neck, the thyroid gland releases thyroxin, which controls metabolism, or the body's rate of energy use.
- Thyroxin also supports growth and development, especially in early life, aiding both physical and brain health.
- Imbalances in thyroid hormones can affect weight, energy, and overall health.

Pancreas

- The pancreas has a dual function: it aids digestion and regulates blood sugar through insulin and glucagon.
- Insulin lowers blood sugar levels by helping cells absorb glucose, while glucagon raises it by releasing glucose from stored reserves.
- A balance in these hormones is vital, with imbalances leading to conditions like diabetes or hypoglycemia.

Gonads

- The gonads (ovaries in females, testes in males) produce reproductive hormones such as estrogen, progesterone, and testosterone.
- These hormones are essential for sexual development, reproduction, and the development of secondary sexual characteristics.
- While hormones influence sexual behavior, human sexuality is complex and influenced by psychological and social factors as well.

Adrenal Glands

- The Body's Stress Managers -

- Located above each kidney, adrenal glands help manage stress with two parts: the medulla and the cortex.
- The medulla releases adrenaline, enabling “fight-or-flight” responses during stress by increasing heart rate and energy.
- The cortex releases cortisol, which mobilizes glucose and fatty acids for sustained energy and regulates salt levels, metabolism, and immune response.

Balancing Health through the Endocrine System
Maintaining a healthy endocrine system is essential, as hormone imbalances can impact everything from mood and energy to growth and immunity.

A balanced diet, regular sleep, exercise, and stress management are key to supporting endocrine health, enabling the glands to work harmoniously and keep the body in optimal condition.

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