

HORMONES IN HUMAN

Hormones: Hormones are chemicals released by the body to control and regulate the activity of certain cells and organs. Special glands known as endocrine glands secrete these hormones.

- Hormones in animals conduct a variety of functions like growth, sexual development, vegetative development, cellular respiration, metabolism, thermal production etc.
- Hormones play an important role in control and coordination in humans along with nervous system.
- Glands are known to secrete hormones and enzymes.
- There are two types of glands viz. endocrine and exocrine.
 1. **Endocrine glands:** lack the ducts and hence, release the hormones directly into the blood. Blood carries the hormones from the site of secretion to the site of action.
 2. **Exocrine glands:** contain ducts and hence, the site of synthesis of glands is same as their site of action i.e. the enzymes produced by the exocrine glands are not dependent on blood to carry them to their respective site of action.

Types of Exocrine Glands:

- **Holocrine Glands:** Holocrine glands will release whole broken open cells into their ductal system. These cells contain the stores of substance to be released by the gland.
- **Merocrine Glands:** Merocrine or Eccrine glands release their substances directly out into the duct, through cellular channels or pores, with no loss of cell structure or membrane. This is the most common type of exocrine gland.
- **Apocrine Glands:** Apocrine glands release their secretion by budding off a part of their cellular cytoplasm and membrane. This bud contains the secreted substance and is released into the ductal system.

Example of Exocrine Glands

1. Lacrimal Gland (Tear ducts and glands near each eye)
2. Mammary gland (Breast milk)
3. Eccrine sweat glands (Perspiration or salty water release)
4. Salivary glands (Saliva consisting of fluid with digestive enzymes)
5. Pancreas (Pancreatic juice with digestive enzymes into the stomach)
6. Liver (Bile, green-brown fluid that contains salts and digestion substances)

Note: Pancreas and Liver are also considered endocrine glands because they also secrete other substance into the bloodstream.

TEST SERIES

Bilingual



REET | RTET
MATHS & SCIENCE
LEVEL-2

24 TOTAL TESTS

Endocrine Glands and Hormone Secreted:

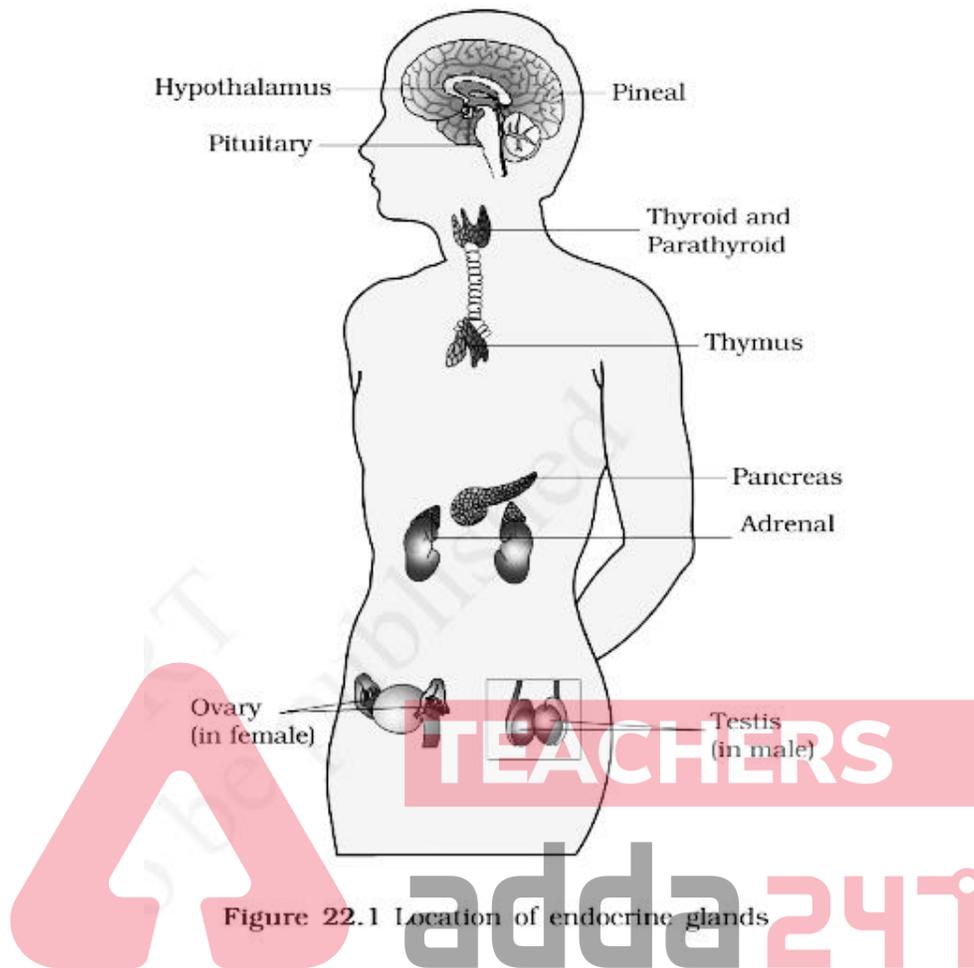


Figure 22.1 Location of endocrine glands

GLANDS	LOCATION	FUNCTIONS	DEFECINECY
Pituitary gland (master gland) (single)	Present in the Hypothalamus of the brain	It controls growth and controls secretion of other glands.	Hypopituitarism (short supply of pituitary hormones) can affect any number of your body's routine functions, such as growth, blood pressure or reproduction.

BILINGUAL

TEACHING Prime Test Pack

CTET | Super TET | KVS | Others

500+ Total Tests

12 + 12 Months Validity

TEST SERIES
Bilingual



REET | RTET
2020-21
LEVEL 1

20 TOTAL TESTS

TEST SERIES
Bilingual



UTET 2021
PAPER-I

15 TOTAL TESTS

GLANDS	LOCATION	FUNCTIONS	DEFECINECY
Hypothalamus	Hypothalamus, region of the brain lying below the thalamus	It regulates the body temperature (homeostasis), controls thirst, sleep, hunger, emotions, and moods and allows the release of hormones.	Hypothalamic dysfunction includes head injuries, certain genetic disorders, tumor, anorexia or bulimia.
Pineal gland (single)	Present in the brain.	It develops serotonin derivatives of melatonin, which can affect sleep.	The low melatonin concentrations were related to increase depressive symptomatology, especially sadness, bodily discomfort, inner tension and sleeplessness.
Thyroid gland (paired)	Present in the interior neck region, below the Adam's apple.	Produces thyroxin (contains iodine). Responsible for metabolic rate, healthy hair & skin, affect the heart rate.	Lack of iodine cause deficiency of thyroxin which develops a goiter.
Parathyroid gland (paired)	Present above the thyroid gland.	It is a Para hormone, Controls and regulates the level of calcium and phosphorus in blood.	Lack of parathyroid hormone cause hypocalcaemia and hyperphosphatemia which causes the bones to become brittle (osteoporosis).
Thymus	Located in the upper anterior (front) part of chest directly behind sternum and between lungs.	It helps in the functioning of the adaptive immune system, produces T-cells and maturity of the thymus.	Myasthenia gravis occurs when the thymus is abnormally large
Pancreas (Islets of Langerhans)	It is present behind the stomach.	This gland produces insulin crucial to maintain blood sugar levels.	Deficiency of insulin causes diabetes.

TEST SERIES
BILINGUAL



UP B.Ed 2021
PAPER -1 & 2
Science | Arts | Commerce

35 TOTAL TESTS

Teaching Exam
Digital Library

CTET | Super TET | KVS | Others

12 Months Validity

BILINGUAL



RAJASTHAN REET
2021 Complete Batch
Starts Feb 15, 2021 10 AM to 03 PM

GLANDS	LOCATION	FUNCTIONS	DEFECINECY
Adrenal (paired)	It is present above the kidney.	Produces adrenaline (fight or flight hormone). Functions include increases heartbeat, supplies more oxygen to muscles, increases breathing rate, lowers blood supply to the digestive organs and increases supply to the skeletal system.	Adrenal insufficiency caused by Addison's disease or autoimmune adrenalitis.
Testes (paired)	Present outside the pelvic region and produces testosterone.	Responsible for Secondary sexual characters, puberty, sperm production.	Lack of secretion of testosterone would result in hypogonadism in which body does not produce primary male hormone leads to infertility.
Ovaries (paired)	Present inside the pelvic region and produces estrogen, progesterone, small amount of testosterone.	Responsible for Secondary sexual characters, puberty, egg production.	Lack of secretion of these hormones would result in infertility and delay the onset of puberty.

Some Important Hormones:

- **Estrogen:** This is the main sex hormone present in women who bring about puberty, prepares the uterus and body for pregnancy and even regulates the menstrual cycle. Estrogen level changes during menopause because of which women experience many uncomfortable symptoms.
- **Progesterone:** It is a female sex hormone also responsible for menstrual cycle, pregnancy and embryo genesis.
- **Cortisol:** It has been named as the “stress hormone” as it helps the body in responding to stress. This is done by increasing the heart rate, elevating blood sugar levels etc.
- **Melatonin:** It primarily controls the circadian rhythm or sleep cycles.
- **Testosterone:** This is the main sex hormone present in men who cause puberty, muscle mass growth, and strength, increases bone density and handles facial hair growth.

BILINGUAL

adda247

English Ka Master Batch for UP-TGT/PGT

Starts April 5, 2021 | 9 PM to 10 PM