

CLASS X/ BIOLOGY

CONTROL AND COORDINATION

Date : 11/07/2020

TEACHER :SASWATI BASAK

CHEMICAL COORDINATION IN ANIMALS (HUMAN)

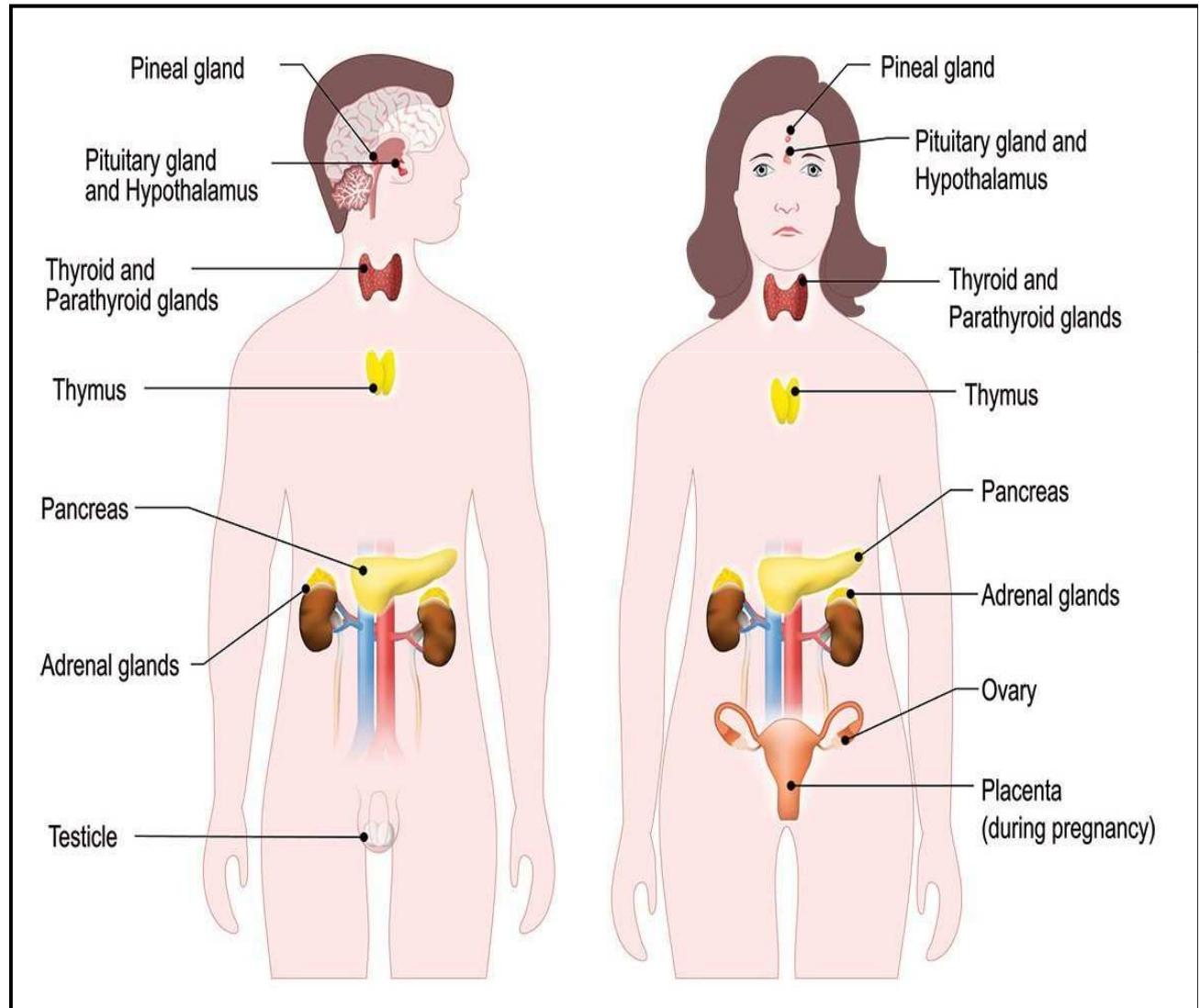
FUNCTION OF EXOCRINE GLANDS

These glands have ducts to discharge their secretion into the body surface eg. Sebaceous glands in the skin, Salivary glands in a buccal cavity, gastric in the stomach wall, liver etc.

VARIOUS ENDOCRINE GLANDS

Following are the various endocrine glands present in the human body:

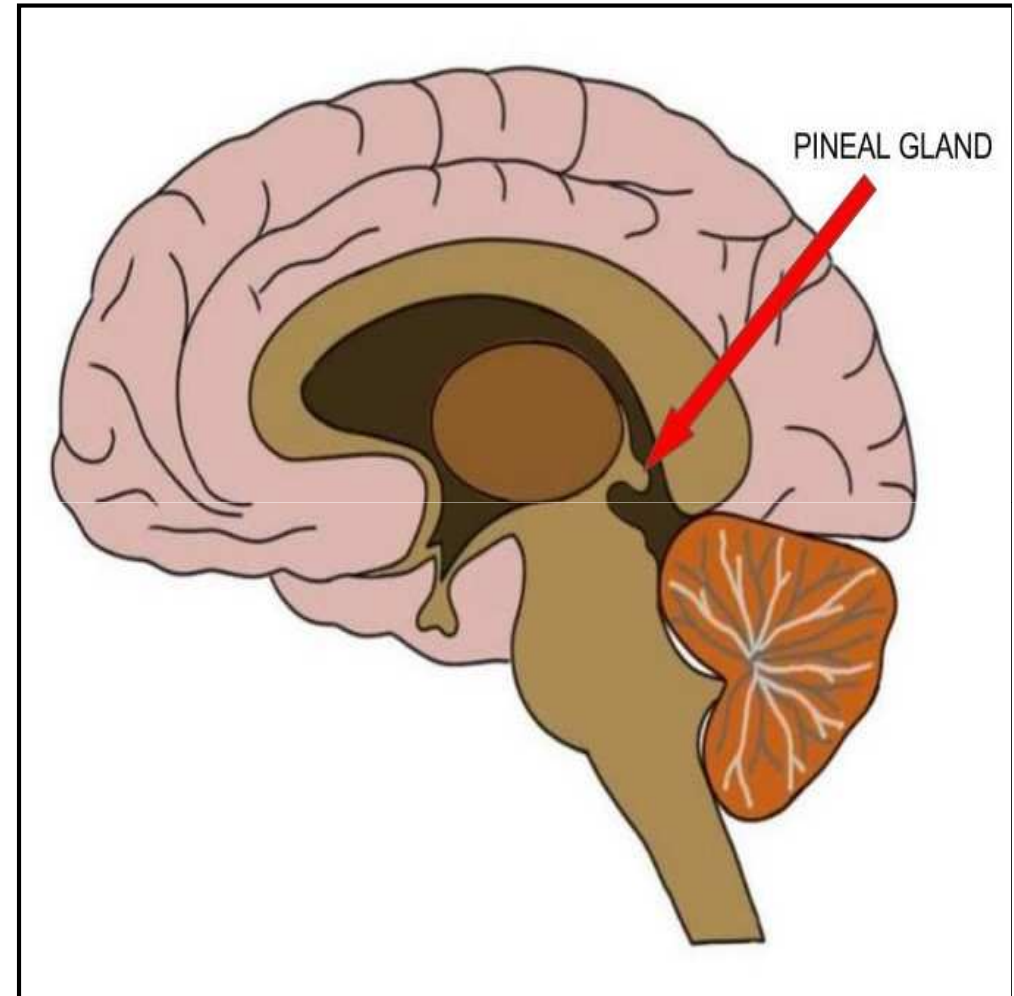
- i) Pineal Gland
- ii) Hypothalamus
- iii) Pituitary Gland
- iv) Thyroid Gland
- v) Parathyroid Gland
- vi) Thymus gland
- vii) Adrenal Gland
- viii) Pancreas
- ix) Testes
- x) Ovaries



PINEAL GLAND

LOCATION: It is located in the epithalamus near the centre of the brain between two hemispheres tucked in a groove.

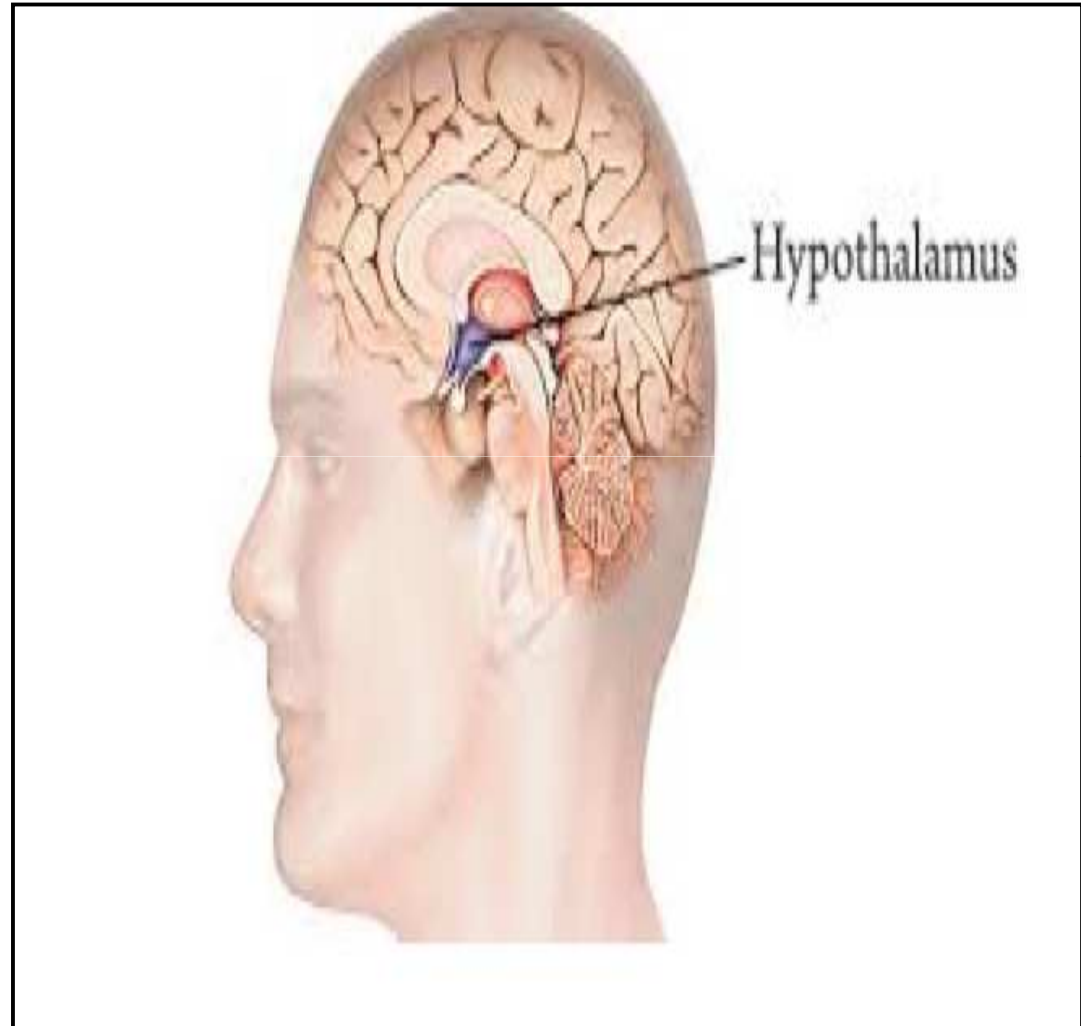
FUNCTION: It produces the serotonin derivative melatonin, a hormone that affects the modulation of wake / sleep pattern.



HYPOTHALAMUS

LOCATION: It is present in the brain.

FUNCTION: It uses the information, gather from other parts of the brain, stimulated or inhibited the secretion of hormones from the pituitary.



PITUITARY GLAND

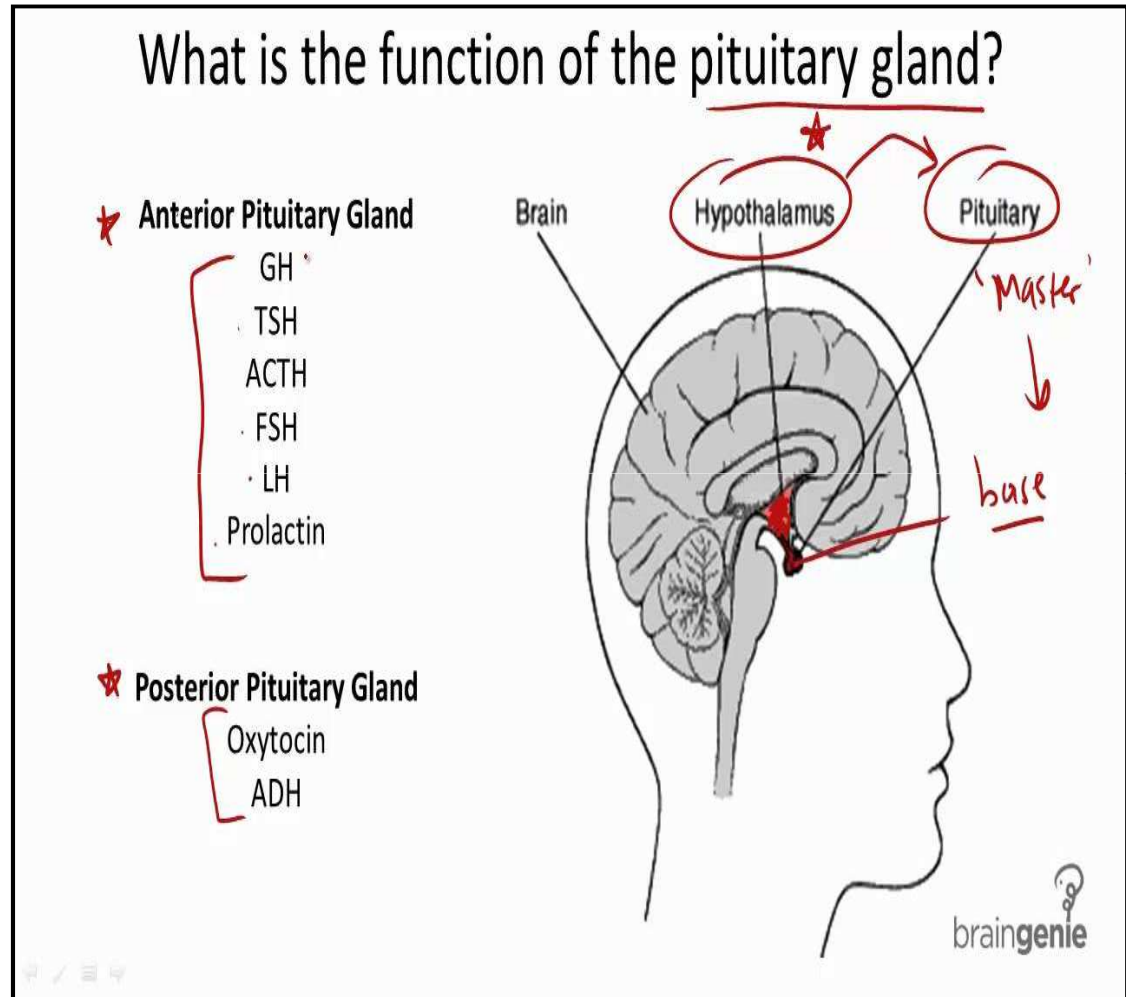
LOCATION: It is present just below the brain and is known as the master gland.

FUNCTION: It secretes the following hormones.

a) Tropic Hormones – These are of four types.

i) **FSH (Follicle Stimulating Hormone)** - It targets the ovaries and triggers the maturation of one egg each month. It also stimulates the cells in the ovaries to secrete **estrogens**

ii) **LH (Lutenizing Hormone)** – It stimulates the cells in the testes to produce the male sex hormone **testosterone**. It also triggers the development of cells within the ovary to produce **progesterone**.



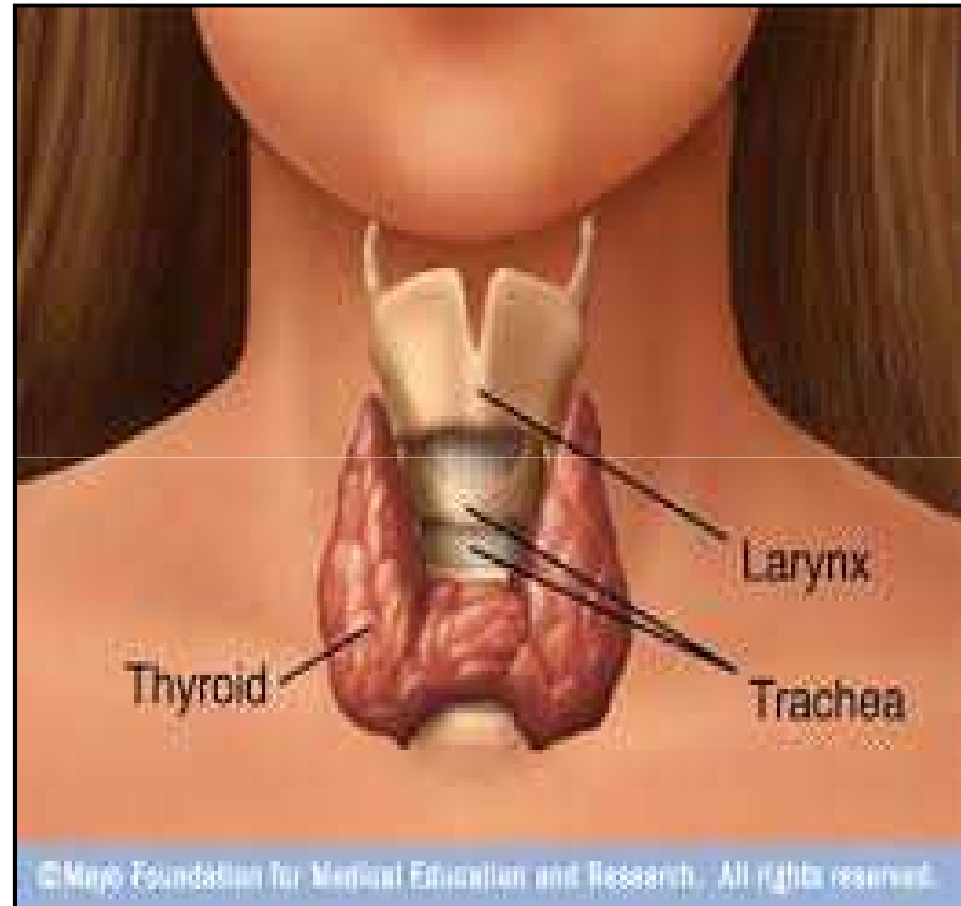
PITUITARY GLAND

- iii) **ACTH (Adreno Corticotropic Hormone)** – It triggers the adrenal cortex to produce certain steroid hormones to regulate the production of glucose from non carbohydrates such as fats and proteins.
- iv) **TSH (Thyroid Stimulating Hormone)** - It triggers thyroid glands to produces thyroid hormones.
- b) **Growth Hormone (GH)** – It regulates the normal growth. Over secretion of GH causes gigantism and little cause dwarfism.
- c) **Prolactin** - It stimulates the mammary gland in the breast to secrete milk after a woman gives birth to a child.
- d) **Antidiuretic Hormone (ADH)** - It helps to control the volume of the blood by regulating the amount of water reabsorbed by the kidney.
- e) **Oxytocin** – It helps women during the delivery of the baby. It is triggered by stretching of the cervix.

THYROID GLAND

LOCATION: It is attached to the wind pipe in our neck.

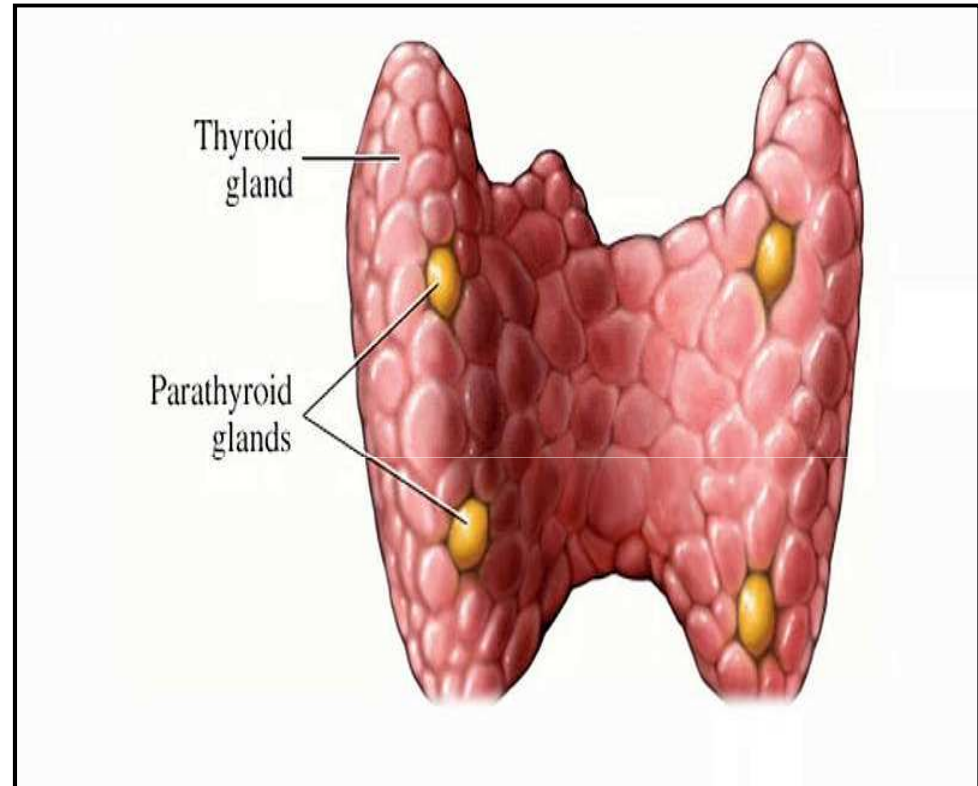
FUNCTION: It secretes a hormone called thyroxine which controls the rate of metabolism of carbohydrate, fats and proteins in our body. Iodine is necessary for the thyroid gland to make thyroxine. Deficiency in iodine cause a disease goitre. Deficiency of thyroxine slows down mental growth in children called cretinism. It also secretes the hormone called calcitonin (CT). CT regulates the concentration of calcium in the blood stream.



PARATHYROID GLAND

LOCATION: It is embedded in the thyroid gland.

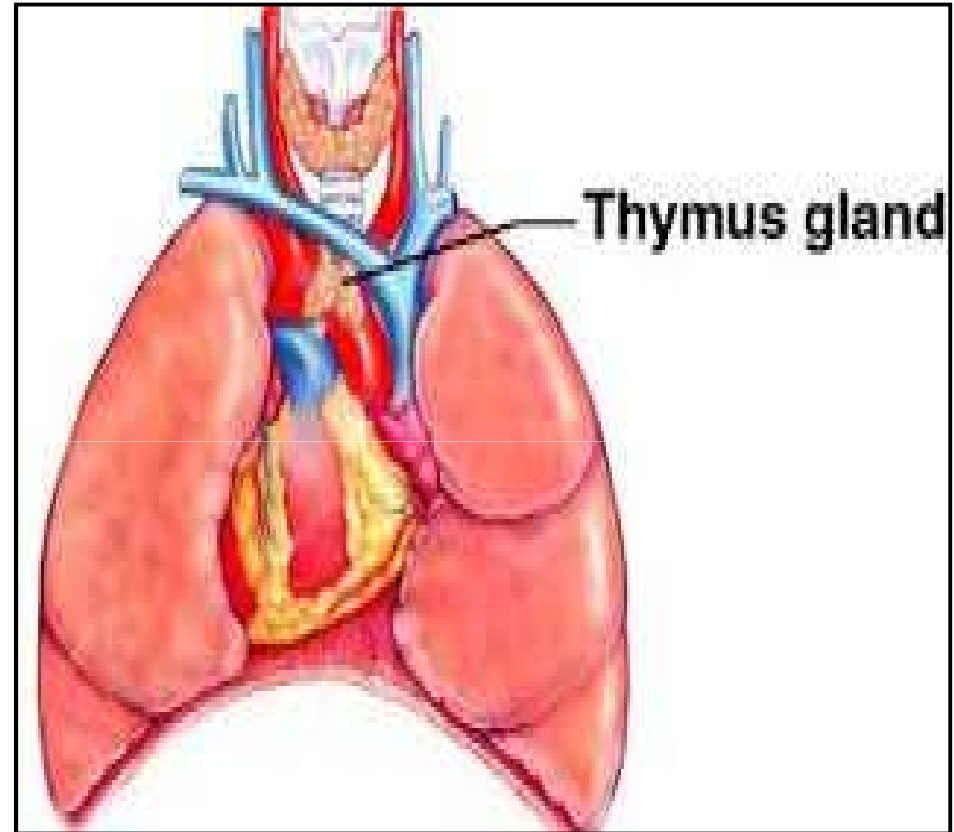
FUNCTION: These glands secrete parathyroid hormone (PTH) which works antagonistically to CT to maintain a proper level of calcium in the blood.



THYMUS GLAND

LOCATION: It lies in the lower part of the neck and upper part of the chest.

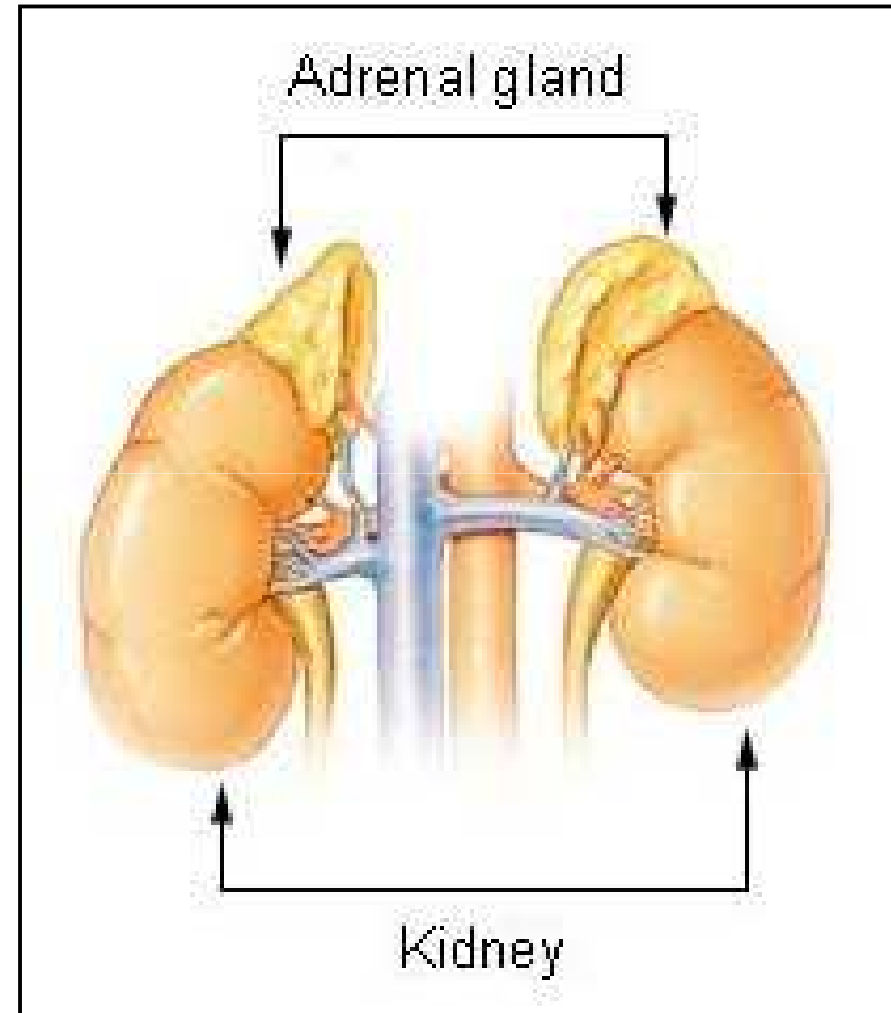
FUNCTION: It secretes thymus hormone which play a role in the development of the immune system of the body. It is large in young children and shrinks after sexual maturity.



ADRENAL GLAND

LOCATION: These glands are situated on the upper part of each kidney.

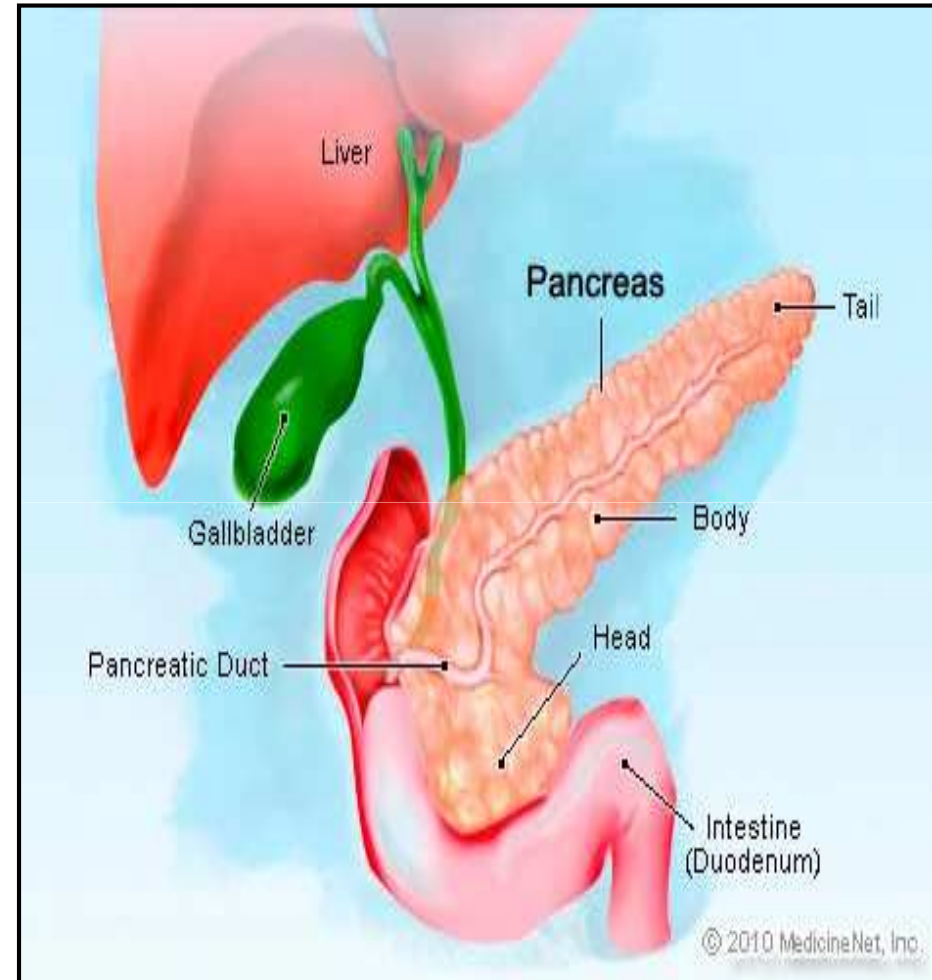
FUNCTION: These glands secrete two hormones: adrenaline and corticoids. The functions of the hormones include regulation of breathing rate, heart rate, blood pressure, carbohydrates metabolism and mineral balance. These hormones are secreted all the time in the body. But in large amounts when a person is frightened. When the hormones are secreted in the body they increase a heart beat and breathing, raise blood pressure and allow more glucose to go into the blood to give energy to fight or flight from the frightening situation and thus they are known as emergency hormone.



PANCREAS

LOCATION: It lies just below the stomach in the body.

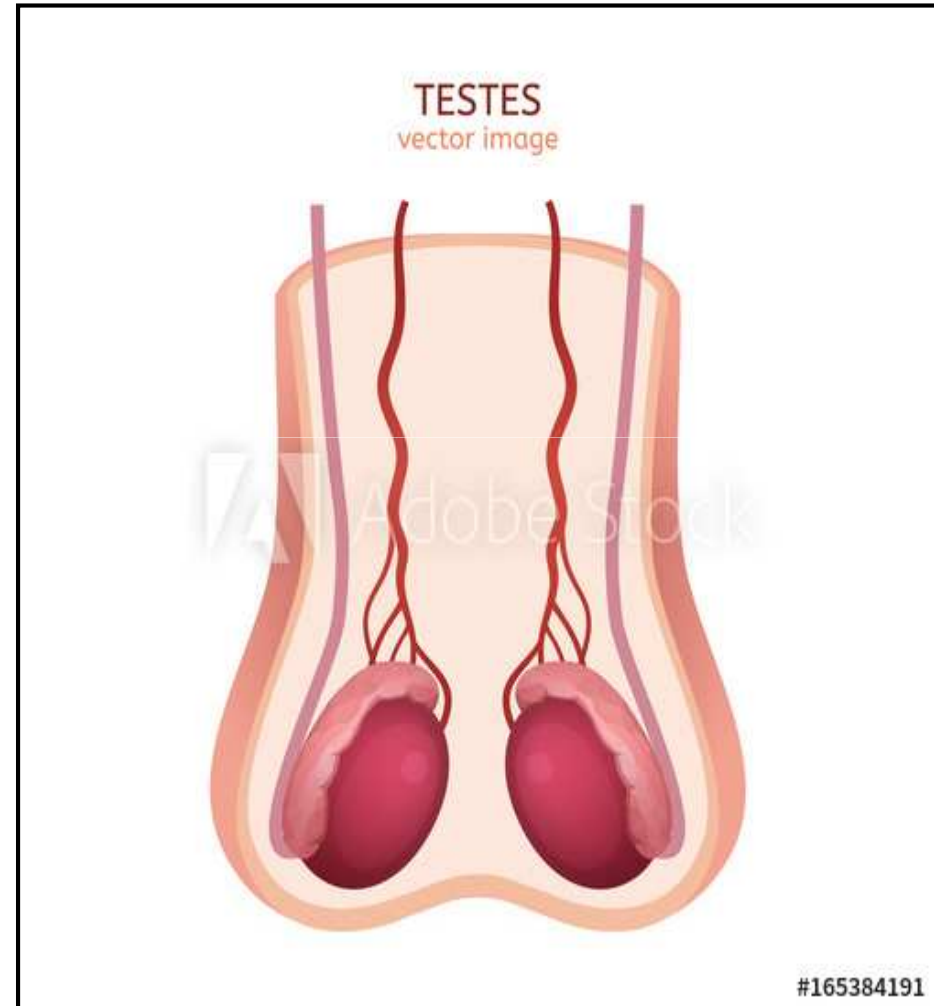
FUNCTION: It acts as both exocrine gland and endocrine gland. As an exocrine gland it secretes the digestive enzymes. As an endocrine gland it secretes the hormones insulin and glucagon. Insulin decreases blood glucose level and glucagon increases blood glucose level



TESTES

LOCATION: These are located in the scrotum.

FUNCTION: It secretes testosterone which develop secondary sexual characters in males.



OVARIES

LOCATION: These are the glands lie in the abdomen.

FUNCTION: These secretes estrogen and progesterone. Estrogen helps in the development of secondary sexual characters in females. And Progesterone helps in placenta formation, development of foetus, development of mammary glands during pregnancy, suspends ovulation during pregnancy. Fixes the foetus to placenta wall.

