

Chapter 07

CONTROL AND COORDINATION

HORMONES IN ANIMALS:

Hormone:

These are chemicals which are synthesized and produced by the specialized glands to control and regulate the activity of certain cells and organs.

- Hormones also called chemical Messengers.
- Hormones name coined by E.H. Starling.
- Hormone word derives from the Greek word – To set in motion.

In Animals:

- **Squirrels** – when the scary situation, they have to prepare for either fighting or running away.
- Both are very complicated activities, many different tissues integrated together coordinated these actions by chemical & electrical impulse.

In Human:

- Hormone Adrenaline that is secreted from the Adrenaline is secreted directly into the blood and carried to different parts of the body.
- The target organs or specific tissues respond and control and coordinated together.

TYPES OF HORMONE:

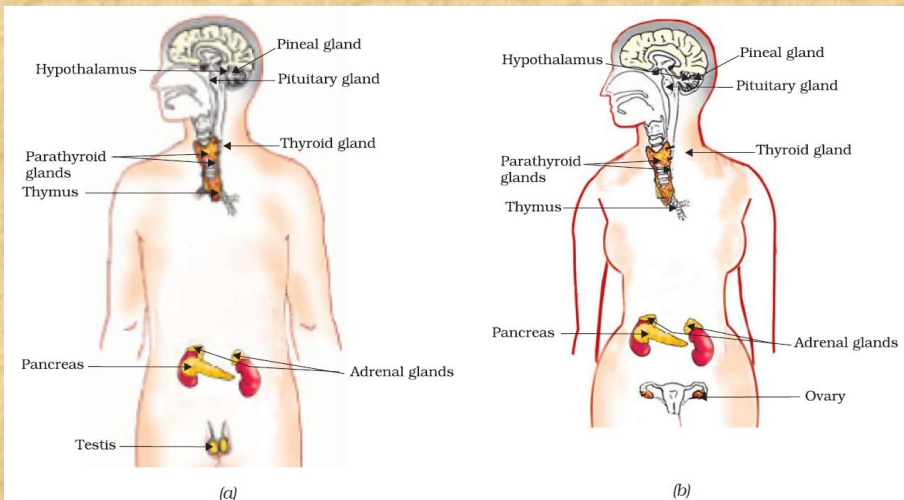
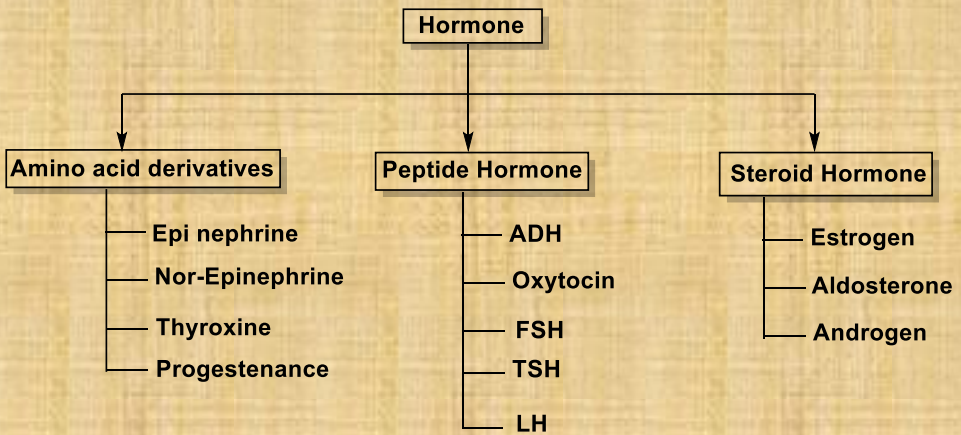


Figure: Endocrine glands in human beings (a) male, (b) female

Role of Hypothalamus:

- ❖ Is the **Master control centre** of Endocrine system which regulate **Master gland** pituitary.
- ❖ Hypothalamus secrete and release hormones like
 - **GHRH:** Growth hormone releasing hormone – **Somatocrinin.**
 - Somatotropin:** Synthesis release of growth hormone.
 - **GHIH:** Growth hormone inhibiting hormone – **Somatostatin.**

Define Pituitary Gland:

Pituitary Gland: Called hypophysis.

- Present beneath the hypothalamus.

Parts:

1) Anterior Pituitary (Adeno hypophysis):

6 Protein Hormone – [TSH]

2) Posterior Pituitary (Neuro hypophysis):

2 Hormone – Oxytocin & Vasopressin.

Thyroid Gland:

- Largest endocrine gland.
- Endodermal origin.
- Lies close to the body surface, near the junction of Larynx.
- **Thyroxine:** T4 – Tetra Iodothyronine
T3 – Tri - Iodothyronine
- **Calcitonin:** TCT – Thyrocalcitonin
- Thyroid hormone regulate carbohydrate, protein & Fat metabolism in the body & provide best balance for growth.
- Iodine is essential for the synthesis of thyroxin.
- Iodine deficient suffer from – **Goitre**.
- Some people very short(dwarf) or extremely tall (gaints)
- Deficiency hormone in child hood leads to Dwarfism.

- After puberty Age (10 to 12 yrs) secondary sex organs are develop because of some hormones like.
 - **Male – Testosterone**
 - **Female – Oestrogen**
- **Pancrease:** secrete hormone Insulin which regulate blood sugar levels in body.
- Deficiency of Insulin hormone, sugar level will rise.

