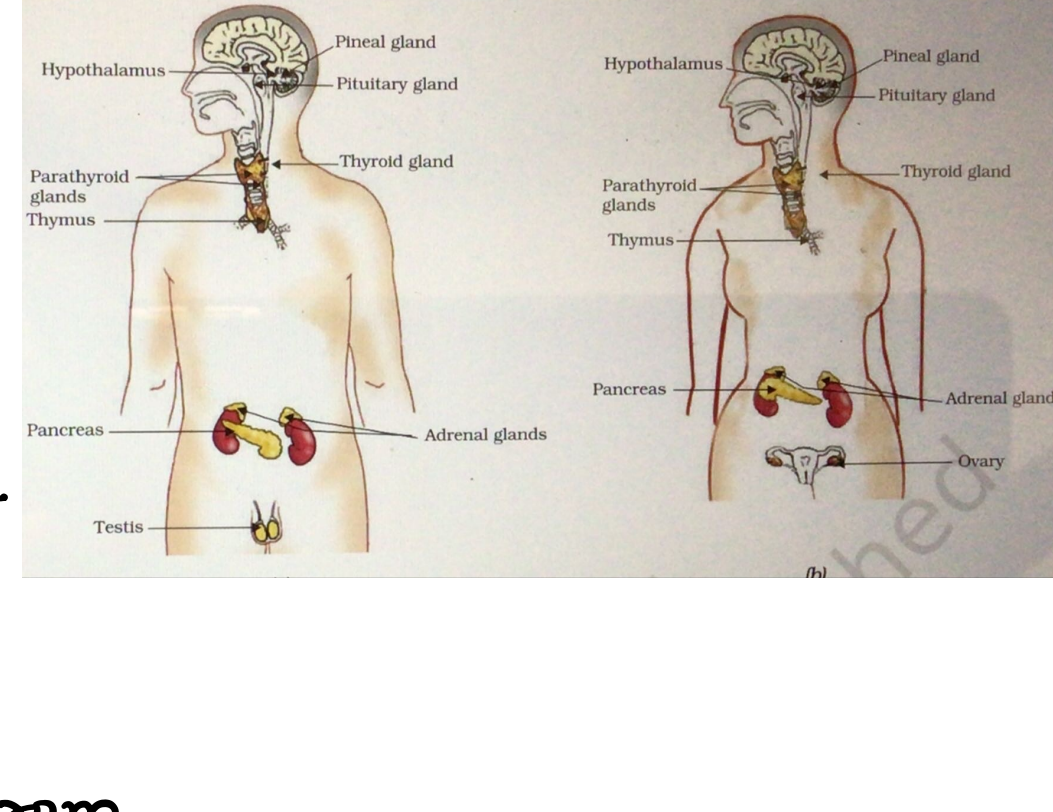


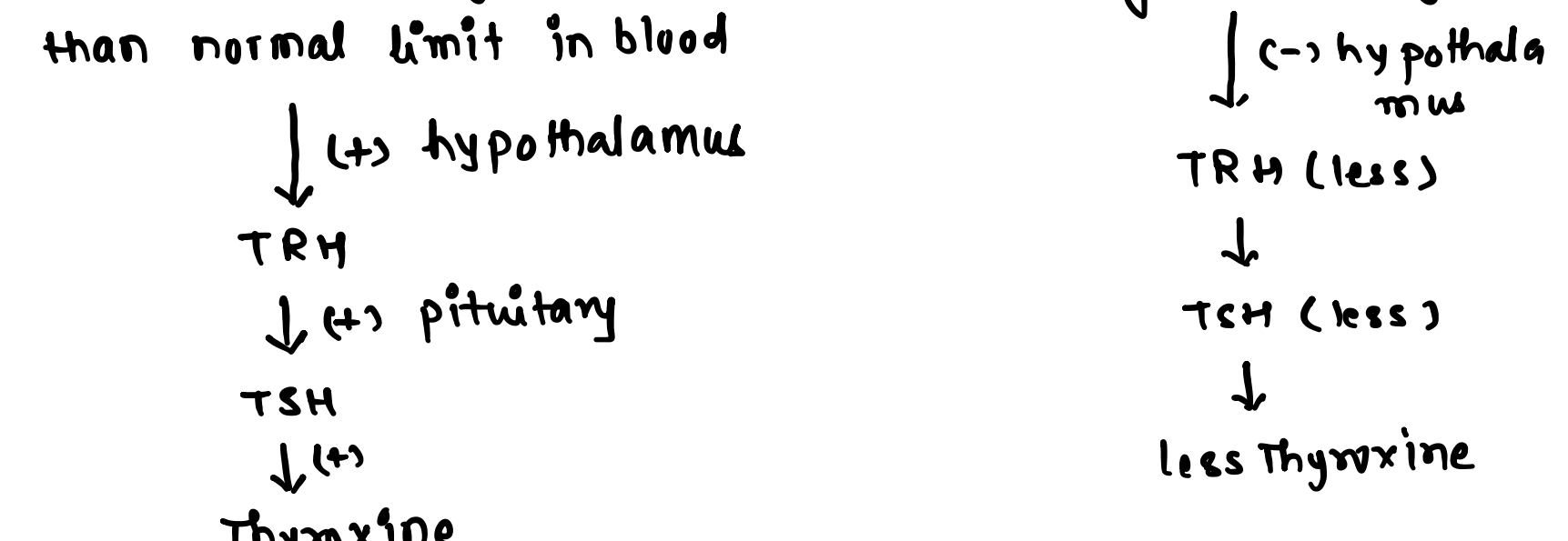
Hormones in animals

- chemical coordination in animals are brought about by the secretions of endocrine glands.
- Endocrine glands are ductless glands which secrete the chemical substances called hormones.
- These are directly pour into blood.
- Non-nutrient chemical substances secreted from endocrine gland are carried by the blood to other parts of the body for its specific function is termed as Hormones.



Feed back Mechanism :-

- Homeostasis means keeping the internal environment of body constant. Hormones help in maintaining internal environment of the body. When the secretions of hormone is under the control of factors or other hormones it is called feed back control.



- timing and amount of hormone released is regulated by feedback mechanisms.
- For example:- if the sugar levels in blood rise, they are detected by the cells of pancreas which respond by producing more insulin. As the blood sugar level falls, insulin secretion is reduced.

Hormones	Endocrine gland	Functions
1. Growth hormone	Pituitary gland	Stimulates growth in all organs.
2. Thyroxine	Thyroid gland	Regulates metabolism for growth
3. Insulin	Pancreas	Regulates blood sugar level
4. Oestrogen and Progesterone	ovary	Development of female sex organs, regulate menstrual cycle, etc.
5. Testosterone	Testes	Development of male sex organ
6. Adrenaline	Adrenal gland	res, HR, RR, dilate pupil, (+) glycolysis, gluconeogenesis, lipolysis.
7. Releasing Hormone	Hypothalamus	stimulate pituitary gland to release hormones.

Example of hormone action :-

- When squirrels in scary situation, their body have to prepare either fighting or running away. so there is a situation in which some common preparation can be usefully made in the body. These preparations should ideally make it easier to do either activity in near future.
- If the body design in the squirrel relied only on electrical impulses via nerve cells, the range of tissues instructed to prepare for coming activity would be limited. on other hand, if a chemical signal were to be sent as well, it would reach all the cells of body and provide wide ranging changes needed.
- This is done in many animals including human beings, using a hormone called adrenaline that is secreted from the adrenal gland.
- Adrenaline is secreted directly into the blood and carried to the different parts of the body. the target organs or the specific tissues on which it acts include the heart. As a result, the heart beats faster, resulting in supply of more oxygen to our muscles. The blood to the digestive system and skin is reduced due to contraction of muscle around small arteries in these organs. This diverts the blood to our skeletal muscles. the breathing rate also increases because of contraction of diaphragm and rib muscles.
- All these responses together enables the animal body to ready to deal with the situation.
- Such animal hormones are part of the endocrine system which constitutes a second way of control and coordination in our body.

Thyroxine :-

- we have all seen salt packets which say 'iodised salt' or 'enriched salt with iodine'. why iodised salt should be present in our diet
- Iodine is necessary for thyroid gland to make thyroxine hormone.
- Thyroxine regulates carbohydrate, protein and fat metabolism in the body so as to provide best balance for growth.
- In case of iodine is deficient in our diet, there is a possibility that we might suffer from goitre.

Goitre is enlargement of thyroid gland. one of the symptom of this disease is swollen of neck b/c it is present in neck region.

Growth hormone :-

- This hormone is secreted by pituitary
- This hormone regulates growth and development of the body.
- It's deficiency in childhood leads to dwarfism
- It's excess in childhood leads to gigantism.

Testosterone and oestrogen :-

- Male & female shows change in physical appearance during the age of 10-12 years. These changes are associated with puberty are because of secretion of Testosterone in males and Oestrogen in females.

Insulin :-

- This hormone is produced by pancreas and help in regulating blood sugar levels.
- If it is not secreted in proper amounts or it's deficiency causes increase in sugar level in blood leads to many harmful effects. This disease is known as diabetes mellitus.
- As a treatment patient might be taking injections of insulin

Growth Hormone Releasing factor

- This hormone is secreted by hypothalamus when level of growth hormone is low.
- This hormone stimulate the pituitary gland to release growth hormone.