

Assignment For Physiology

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Q.1

Explain homeostatic mechanism regarding the control of calcium in the body with reference to parathyroid hormone and calcitonin.

Answer:

- Calcium metabolism or calcium homeostasis is the mechanism by which the body maintain adequate calcium level....
- Calcium release from bone is regulated by parathyroid hormone. Calcitonin stimulates incorporation of calcium in bone....
- Calcium regulation: parathyroid hormone regulates the level of calcium in the blood.

Control of Calcium level in the body:

Calcitonin is involved in helping to regulate level of calcium and phosphate in the blood opposing the action of parathyroid hormone...

Calcitonin reduce calcium level in the blood by two main mechanism:

It inhabits the activity of osteoclasts, which are the cells responsible for breaking down bone.

Reference to Parathyroid Hormone:

Parathyroid hormone regulates calcium level in the blood, largely by increasing the levels when they are too low. It does this trough it's action on the kidneys, bones and intestine:

Bones:

Parathyroid hormone stimulates the release of calcium from large calcium stores in the bones into the blood stream.

Parathyroid Hormone Maintain Homeostasis:

Parathyroid hormone in maintaining blood calcium homeostasis.

Parathyroid hormone increases blood calcium levels when they drop too low. Conversely, calcitonin, which is released from the thyroid gland, decreases blood calcium levels when they become too high.

Q.2

Give clinical difference between hypothyroidism and hyperthyroidism.

ANSWER:

The difference b/w two diseases relates to Hormone Level.

HYPOTHYROIDISM

This is a condition that thyroid hormones decreases in a bloodstream.

Hypothyroidism leads to decrease in thyroid hormones.

Following are the common **SYMPTOMS** of this disease:

- Slow metabolism
- Obesity
- Long sleeping patterns
- Low heartbeat (cardiac output)
- Low blood pressure

Following are **CAUSES** of this disease:

- Not enough iodine in food
- Hashimoto disease
- Ant thyroid medication toxicity
- Pituitary tumor

HYPERTHYROIDISM

Hyperthyroidism leads to an increase in thyroid hormone production. However, it is not uncommon to have an overactive thyroid and then an underactive thyroid, or vice versa.

Following are the common **SYMPTOMS** of this disease:

- Fast metabolism
- Polyphagia
- Short sleeping patterns

- Fast heartbeat

Following are **CAUSES** of this disease:

- Having too much of iodine
- Graves disease
- Thyroid replacement toxicity
- Toxic nodular goiter

Q.3

Classify Enzyme and their function in Digestion.

ANSWER

Digestive enzymes are classified based on their target substrates:

Lipases:

Lipases split fatty acids of fats and oils.

Protease:

Proteases and peptidases split proteins into small peptides and amino acids.

Amylases:

Amylases split carbohydrates such as starch and sugar into simple sugar such as glucose.

The role of Enzymes in Digestion:

Role of enzymes in the digestive system.

Chemical digestion could not take place without the help of digestive enzymes. An enzyme is a protein that speeds up chemical reaction in the body. Digestive enzymes speed up chemical reaction that breakdown large food molecules into small molecules.

Digestive Enzyme there Functions:

- Amylase produced in the mouth. It helps breakdown large starch molecules into smaller sugar molecules.
- Pepsin, produced in the stomach...
- Trypsin, produced in the pancreas...
- Pancreatic lipase, produced in the pancreas...
- Deoxyribonuclease and ribonuclease, produced in the pancreas...

Enzyme Classification:

According to International Union of Biochemists (IUB),

Enzymes are divided into 6 functional classes and are classified based on the type of reaction in which they are used to catalyze.

The 6 types of enzymes are oxidoreductases, hydrolases, transferases, lyases, isomerases and lygases.