**DPT 4th Semester**

***Subject ; Exercise Physiology***

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 **Q. NO:1**

 **Ans**

**Short term effects of exercise on cardiovascular system;**

**Many short term effect of exercise takes place during physical activities, it including;**

* **Increase in stroke volume**
* **Increase in heart rate**
* **Increase in cardiac output**
* **Increase blood pressure**
* **Faster Heart Contractions; this lead to increase heart rate and circulation, which brings oxygenated blood to the muscle quicker.**
* **More forceful heart contraction with each heart beat; which leads to Large amount of blood being pimped through out the body.**

**Long term effects of exercise on cardiovascular system;**

**These effect include;**

* **Cardiovascular exercise icreases the number of new blood vessels .**
* **Exercise can naturally lower blood pressure to normal limits when combined with stress Reduction**
* **Reduce risk of cardiovascular disease,**
* **Improve your ability to do daily activities and prevent falls.**
* **Increased maximal oxygen consumption,**
* **Increased maximal cardiac output**
* **Increased blood flow capacity in cardiac muscle**

 **Q. No; 2**

 **Ans**

**Hormones & Function**

 Hormones are chemical substances that carry messages to regulate growth, metabolism, and reproduction.

Hormones also enhance body’s ability to respond to physical and psychological stress.

**Anterior Pituitary Hormones and Exercise**

•**Growth Hormone;** stimulates tissue growth, mobilizes fat for energy, and inhibits CHO metabolism; increase with exercise

•**Prolactin**; inhibits testosterone, and mobilizes fat for energy.

•**Endorphins**; block pain and promote euphoria;

 Increase with long-duration exercise

**Posterior Pituitary Hormones and Exercise**

•**Vasopressin (ADH)** ; controls water excretion by kidneys.

Increase with exercise.

**Adrenal Cortex Hormones and Exercise;**

•**Cortisol; P**romotes fat and protein catabolism, conserves blood sugar; increase with intense exercise

•**Aldosterone** – promotes sodium, potassium, and water retention by the kidneys; ↑ with exercise.

•**Epinephrine (adrenaline)** – facilitates sympathetic activity, increases heart activity, regulates blood vessels, increases glycogen catabolism and fat release; Increase with intense exercise.

•**Norepinephrine** – similar functions as epinephrine; increase with exercise

**•Thyroxine (T4) & Triiodothyronine (T3**) – stimulate metabolism and regulate cell growth and activity; increase with exercise.

•**Insulin** – promotes glucose transport into cells and promotes fatty acid and amino acid transport into cells; decrease with exercise.

•**Glucagon** – promotes release of glucose from liver to blood, increases fat metabolism, and reduces amino acid levels; increase with exercise.

**•Parathyroid hormone** – raises blood calcium and lowers blood phosphate; increase with long-term exercise.

•**Estrogen and Progesterone** – control menstrual cycle, increase fat deposition, and promote female gender characteristics;

 Increase with exercise depending on phase of menstrual cycle.

•**Testosterone** – controls muscle size, increases red blood cells, decreases body fat, and promotes male gender characteristics; increase with exercise