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Q1) write a paragraph on short term and long term effects of exercise on cardiovascular system?

SHORT TERM EFFECT OF EXERCISE ON CARDIOVASCULAR SYSTEM ;

When a person takes part in cardiovascular exercise . There working muscles require an increased supply of oxygen and glucose to create energy in the form of adenosine triphosphate. The cardiovascular system respond to physical activity by increasing blood flow to the working muscles to increase oxygen delivery and removal carbon dioxide.

- **Heart rate**= the number of heart beats per minute increases
- **Cardiac output** = the volume of blood pumped by the heart per minute increases
- **Respiratory rate**= the number of breaths per minute increases
- The rate of gaseous exchange increases
- **Stroke volume** = the amount of blood pumped out of the left ventricle in one contraction increases
- Increased muscle contraction
- Carbon dioxide production increases
- Blood pressure increases
- Increase in lactic acid production
- Oxygen debt

LONG TERM EFFECTS OF EXERCISE ON CARDIOVASCULAR SYSTEM ;

Long term effects are positive changes on the mind and body system which remain long after exercise has stopped.

- Increased size of heart
- Increased strength of heart muscle
- Increased resting stroke volume
- Increased maximum cardiac output
- Increased strength of diaphragm
- Increased tidal volume
- Increase in number of red blood cells
- Quicker recovery rate after exercise to return to resting heart rate
- Increase vital capacity

- Increase capillarisation

Q2) During exercise which hormone are involve and how they response to exercise.?

Ans)

ADH HORMONE ;ADH is involved with exercise. It increase water absorption at kidney and less water in urine and antidiuresis. Stimuli for ADH release is that when plasma volume become decrease. It increase osmolality and hemoconcentration. When osmolality increase it stimulates osmoreceptor in hypothalamus, ADH release. Increasing water retention by kidneys.

RESPONSE ; increase osmolality which stimulates osmoreceptor in hypothalamus.

During intense exercise. ADH work to minimize the extent of water loss from the kidneys

INSULIN_LIKE GROWTH FACTOR;

Insulin _like growth factor (IGF) has a identical molecular structure to insulin. That hormone increase the rate of growth hormone. It help regulate and stimulate by the same mechanism that produce HGH . That hormone increase the rate of growth hormone. IGH is a peptide hormone. It help and support the function of HGH to repair damage protein during exercise.

RESPONSE; stimulation of growth

EPINEPHRIN & NOREPINEPHRINE

These hormones play important role helping the sympathetic nerve system. It regulate the body function and produce energy during cardio respiratory exercises. Epinephrine produced by the adrenal gland, increase blood sugar support fat metabolism and promote the breakdown of glycogen for energy Norepinephrine performs the same function as epinephrine. It also constricting blood vessel in the part of the body not involved in exercise. Epinephrine, Norepinephrine and catecholamine's are separate but related hormone

EPINEPHRIN RESPONSE ; increase glycogenolysis(breakdown of glycogen) vasocontraction

NOREPINEPHRINE RESPONSE; increase lypolysis (breakdown of fat), increase heart rate, increase glycogenolysis

HUMAN GROWTH HORMONE ;

It is an anaerobic peptide hormone, stimulate growth, cell reproduction and regeneration in human and animal. HGH work specific receptors on certain type of cell. Growth hormone stimulates cell growth and cell division. It also stimulates uptake of amino acid into cells and increase rate of protein synthesis.

RESPONSE ; Decrease glucose uptake, increase gluconeogenesis , stimulation of growth

TESTOSTERONE ;

It is a steroid hormone. Testosterone play important role helping grow skeletal muscle. It work with specific receptor side. It also produced Leydig cells of the male testes and female ovaries.

RESPONSE; Protein synthesis, sperm production sex drive

ESTROGEN ;

ESTROGEN play important role in female body. It help to maintain the female respiratory system. It regulate female menstrual cycle and maintain pregnancy and also help bones stronger

RESPONSE ; Inhibition of glucose uptake, fat deposition

CORTISOL ;

Cortisol is also called "stress" hormone . Cortisol is secreted by Adrenal gland. It help in protein synthesis inhibition . Moderate to high intensity exercise may increase cortisol. When some people do high intensity exercise the body releases cortisol in response to the stress.

RESPONSE ; increase protein synthesis, decrease glucose uptake, Increase gluconeogenesis

GLUCAGON ;

It is a peptide hormone produce cell of the pancreas. It work to stimulate the release of free fatty acids from adipose tissue. It increase the blood glucose level. During exercise glycogen levels depleted, glycogen releases additional glycogen which stored in the liver.

RESPONSE ; stimulate the liver breakdown glycogen to be released in to the blood as glucose

INSULIN;

Insulin regulate carbohydrates metabolism. It is important to avoid foods and high level of sugar before exercise because it can elevated insulin level and promote glycogen storage. It promote the storage and absorption of glycogen and glucose.

RESPONSE ; promote blood glucose uptake. During exercise insulin concentration decrease of increasing intensity.