

Name: Maria

Id : 14704 DPT 4th

Assignment: physiology

Submitted to : Dr . Ahmed Hayat.

Question 1

Write a paragraph on the short term and long term effects of exercise on cardiovascular system?

Short term effects of exercise on cardio vascular system:

When a person take part in exercise the cardiovascular , respiratory system, energy and muscular system all work together to supply energy to the working muscles and remove waste products. When the muscle start to work the blood carry greater amount of oxygen and heart responds to pump more oxygenated blood amount the body .

So the effects

- 1) Increase in stroke volume
- 2) Increase heart rate
- 3) Increase blood pressure
- 4) Increase in systolic blood pressure
- 5) Faster heart contraction.

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.

- 1) Increase the number of red Blood cells and capillaries.
- 2) **Cardiac hypertrophy** : cardiac hypertrophy means over a long period of time with regular exercise the heart will increase in size and volume . The wall of the ventricles will get bigger and become able to make more powerful contractions.
- 3) Increase in stroke volume.
- 4) Increase in cardiac output
- 5) Lower resting heart rate.
- 6) Reduced risk of heart problem.
- 7) **Increase in capillarisation means:** that a muscle growing process where the blood vessels surrounds a muscles fibre increase in number.
- 8) **Recovery** :time which takes after exercise for your heart rate to return to its normal resting rate .means decrease in recovery time.

QUESTION 2

The initial response to the onset of exercise is enhancement of Sympathoadrenal activity and secretion of pituitary hormones , which result in a reduction in the plasma concentration of insulin and a rise in that of virtually all other hormones which involved during exercise.

1.ADH Hormone

ADH control water excretion by kidneys.

Increase in adrenal cortex hormone during during exercise

Response of DDH

During intense exercise , ADH work to minimize the extent of water loss from the kidneys increase osmolality which stimulates osmoreceptor in hypothalamus.

2 Cortisol hormone:

It promote fat and protein metabolism , conserve blood sugar with increase intense exercise cortisol is catabolic steroid hormone produced by the adrenal gland in response to stress and exercise .it also support energy metabolism during long period of exercise by facilitating the breakdown of triglyceride and protein to create the glucose necessary to help fuel exercise. **RESPONSE OF CORTISOL** :increase gluconeogenesis and protein synthesis ..it decrease glucose uptake during exercise.

3Growth hormone : growth hormone is a anabolic peptide hormone secreted by anterior pituitary gland it promote muscle growth and also stimulate cellular growth.the body produce HGH DURING the REM cycles of sleep and stimulated by high intensity exercise such as heavy strength training and cardiorespiratory exercise l.

Response of growth hormone.

It stimulate the growth hormone.

Increase gluconeogenesis

Decrease glucose uptake and increase ate of protein synthesis.

Epinephrine hormone: epinephrine is the hormone released from adrenal medulla and it is the more potent stimulator of metabolic activities and increased blood flow to skeletal muscles and heart during exercise .with intensive exercise it increase heart activity and regulate blood vessels and also increase fat release catabolism.

Response : it facilitates sympathetic activity.

It increase gluconeolysis it regulate body function during cardiorespiratory exercise.

It also help in vasoconstriction.

Nor epinephrine hormone :it also release from the adrenal medulla and it has greater influence on peripheral vasoconstriction and blood pressure with intensive exercise it increase heart rate .it gas the same function as epinephrine perform.

Response: increase heart rate .

It hepl in lipolysis

It also hepl increase glyconeolysis.

5. Insulin: insulin regulate carbohydrate metabolism .it promote the stroage and absorption of glycogen and glucose it is important to avoid foods with high level sugar before exercise because it can elevate insulin level and promote glycogen storage.

Response : during exersice insulin contraction decrease of increasing intensity .

It promote blood glucose uptake

When exercise start the sympathetic nervous system suppresses the release of insulin

6 Glucagon hormone: glucagon is produce by pancreas . It stimulate the release of fatty acid from adipose tissue. During exercise as glycogen level are depleted , glucagon releases additional glycogen which stored in the liver it increase the blood glucose level.

Response : released in response to decrease blood glucose level in response to vigorous exercise. It stimulate the liver to breakdown glycogen to be released into the blood as glucose .

Testoteron and Estrogen hormone : Testosterone is released by the leyding cell of these testes it work with specific receptor side .while the Estrogen is the essential part of woman reproductive process it keeps cholesterol level in control.

Response: Testosterone is responsible for muscles protein synthesis sperm productive and sex drive estrogen is responsible or inhibition of growth uptake and fat deposition.

Insulin like growth Hormone : is a peptide hormone produce by liver it support the function of HGH to repair protein during exercise .

Response : stimulation of growth hormone and increase growth hormone.

