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Physiology assignment report

Answers

1. Long term regulation of mean arterial blood pressure:

In cvs, the arterial blood pressure fluctuates between systolic and diastolic pressure. The body behaves as if regulation is by mean arterial blood pressure which is the average between systolic and diastolic pressures.

The regulation is achieved by independent adjustment of the following parameters which are:

Heart rate - Stroke volume = Cardiac output

Cardiac output - Total peripheral vascular resistance = Mean arterial blood pressure.

Long term regulation of mean arterial blood pressure is mainly by regulation of ECF volume by pressure naturessis mechanisms residing in the kidney and by widespread actions of angiotensin. Studies show that this long term regulation isn’t necessarily available for arterial blood pressure but balances between intake and outtake of fluids and electrolytes.

2.Short notes on:

* Pulmonary circulation - this is the passage of deoxygenated blood from the right ventricle to the lungs and returning oxygenated back to left atrium and ventricle of the heart. Pulmonary circulation begins in the pulmonary valves
* Circle of Willis is a network or hound area of several arteries at the bottom side of the brain. At the circle of Willis yeh interval carotid arteries branches into smaller arteries that supply the oxygenated blood to over 80% of the cerebrum.
* Splanchnic circulation which is also known and mesenteric circulation consist of blood supply tot the gastrointestinal tract, liver, spleen and pancreas. It consist of two large capillary beds partially in series l. The small splanchnic arteries supply the beds and the efferent venous blood flows tor the PA.
* Coronary circulation is the circulation and blood supply within the heart muscles. Coronary arteries supply oxygenated blood to the heart muscles and cardiac veins drain away the blood once it has been deoxygenated.
* Cutaneous circulation is the circulation and blood supply of the skin. The skin isn’t very metabolically active and has small energy requirements so the blood supply is different to that of other tissues.

3. Cardiovascular adjustment to exercise

For the body’s cardiovascular system to adjust during exercise, there will be a increase in the cardiac output of the heart and also redistribution of blood to areas of low demand. This causes the blood to flow in the direction of the active skeletal muscles and also as body temperature increases so does blood supply to the skin.

During exercise, cardiac output increases to provide flow of blood to needed contracting skeletal muscles and yet by resettling the operating points for the arterial baroreceptors, vasodilations us required to make blood pressure stable and also increase during exercise.