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## PHYSIOLOGY ASSIGNMENT

1. The long-term level of arterial pressure is dependent on the relationship between arterial pressure and the urinary output of salt and water, which, in turn, is affected by a number of factors, including renal sympathetic nerve activity (RSNA).

2.a Pulmonary circulation is the system of transportation that shunts de-oxygenated blood from the heart to the lungs to be re-saturated with oxygen before being dispersed into systemic circulation. ... It then flows through the pulmonic valve into the pulmonary artery before being delivered to the lungs.

.b The Circle of Willis is the joining area of several arteries at the bottom (inferior) side of the brain. At the Circle of Willis, the internal carotid arteries branch into smaller arteries that supply oxygenated blood to over 80% of the cerebrum.

.c The splanchnic circulation consists of the blood supply to the gastrointestinal tract, liver, spleen, and pancreas. It consists of two large capillary beds partially in series. The small splanchnic arterial branches supply the capillary beds, and then the efferent venous blood flows into the PV.

.d Coronary circulation is the circulation of blood in the blood vessels that supply the heart muscle (myocardium). Coronary arteries supply oxygenated blood to the heart muscle, and cardiac veins drain away the blood once it has been deoxygenated.

.e The cutaneous circulation is the circulation and blood supply of the skin. The skin is not a very metabolically active tissue and has relatively small energy requirements, so its blood supply is different to that of other tissues.

3 During exercise, increases in cardiac stroke volume and heart rate raise cardiac output, which coupled with a transient increase in systemic vascular resistance, elevate mean arterial blood pressure (60). However, long-term exercise can promote a net reduction in blood pressure at rest. The increase in size of the heart enables the left ventricle to stretch more and thus fill with more blood. The increase in muscle wall thickness also increases the contractility resulting in increased stroke volume at rest and during exercise, increasing blood supply to the body.