

1. In the cardiovascular system, blood flow is controlled by arterial blood pressure, and in this way the long-term mean blood pressure is stabilized to regulate oxygen and carbon dioxide levels. Thereafter, the baroreflex would stabilize the instantaneous pressure value to the prevailing carotid pressure (MAP). Changes in blood volume affect arterial pressure by changing cardiac output. An increase in blood volume increases central venous pressure.

2. Pulmonary circulation: The pulmonary circulation is the portion of the circulatory system which carries deoxygenated blood away from the right ventricle, to the lungs, and returns oxygenated blood to the left atrium and ventricle of the heart. The term pulmonary circulation is readily paired and contrasted with the systemic circulation. The vessels of the pulmonary circulation are the pulmonary arteries and the pulmonary veins.

Circle of Willis : The circle of Willis (also called Willis' circle, loop of Willis, cerebral arterial circle, and Willis polygon) is a circulatory anastomosis that supplies blood to the brain and surrounding structures. It is named after Thomas Willis (1621–1675), an English physician.

Splanchnic circulation: The term 'splanchnic circulation' describes the blood flow to the abdominal gastrointestinal organs including the stomach, liver, spleen, pancreas, small intestine, and large intestine.

Coronary circulation : 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. Because the rest of the body, and most especially the brain, needs a steady supply of oxygenated blood that is free of all but the slightest interruptions, the heart is required to function continuously.

Cutaneous circulation: The cutaneous circulation is the circulation and blood supply of the skin. Some of the circulating blood volume in the skin will flow through arteriovenous anastomoses (AVAs) instead of capillaries.

2. Discuss the cardiovascular adjustment that occurs during exercise: 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. During exercise, your body may need three or four times your normal cardiac output, because your muscles need more oxygen when you exert yourself. During exercise, your heart typically beats faster so that more blood gets out to your body