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Commentary

Physiology and its Role in Cardiovascular System

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DESCRIPTION

The heart is an organ that pumps blood to blood vessels. It pumps blood directly into the arteries, more specifically the aorta or pulmonary arteries. Blood vessels are very important because they control blood flow to specific parts of the body. Blood vessels include arteries, capillaries, and veins. Arteries carry blood away from the heart and can be divided into large and small arteries. Large arteries receive the highest blood flow pressure and are thick, elastic with high pressure. Small arteries, such as arterioles, have smooth muscles that contract and relax to regulate blood flow to specific parts of the body. Arterioles have low blood pressure and do not need to be elastic. Arterioles are stiffer than larger arteries and therefore account for most of the resistance of the pulmonary circulation. This thin layer allows the exchange of nutrients, gases and waste products with tissues and organs. Veins also return blood to the heart.

The cardiovascular system supplies blood throughout the body. The cardiovascular system consists of the heart, arteries, veins, and capillaries. The heart and blood vessels work closely together to ensure proper blood flow to all parts of the body. The cardiovascular system is regulated by a variety of stimuli, including changes in blood volume, hormones, electrolytes, osmotic pressure, drugs, adrenal glands, kidneys, and more. The parasympathetic and sympathetic nervous systems also play important roles in the regulation of the cardiovascular system. The main function of the heart is to pump blood into and through blood vessels to pump blood to all parts of the body. The arteries that carry high-speed blood throughout the body have thick walls of elastic fibrous tissue and muscle cells. The thin, fine capillaries permeate important cellular nutrients and waste products and absorb and distribute them.From the capillaries, blood that is currently low in oxygen and contaminated with waste products flows more slowly and at low pressure into small blood vessels. The main function of the heart is to pump blood into and through blood vessels to pump blood to all parts of the body. The arteries that carry high-speed blood throughout the body have thick walls of elastic fibrous tissue and muscle cells. The thin, fine capillaries permeate important cellular nutrients and waste products and absorb and distribute them. From the capillaries, blood that is currently low in oxygen and contaminated with waste products flows more slowly and at low pressure into small blood vessels.

The vascular system plays an important role in regulating blood flow throughout the body this is because the pressure overcomes the resistance of the blood vessels. Arterioles have the greatest increase in resistance and the greatest decrease in blood pressure. As the arterioles narrow, resistance increases, blood flow to the capillaries downstream decreases and blood pressure drops significantly. Dilation of arterioles causes a decrease in resistance, an increase in blood flow to downstream capillaries, and a slight decrease in blood pressure. Dilated Blood Pressure is the minimum pressure in the arteries at the beginning of the cardiac cycle while the ventricles are relaxed. In addition, the energy stored in the systolic adaptable aorta is released by the rebound of the diastolic aortic wall, increasing diastolic pressure. Systolic blood pressure is the peak pressure of the arteries at the end of the cardiac cycle while the ventricles are contracting. It is directly related to the stroke volume and as the stroke volume increases. Because the aorta is elastic, it stretches and stores the energy caused by ventricular contraction, reducing systolic pressure. Blood Pressure (BP) is an important clinical value because it represents the chronic conditions.

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