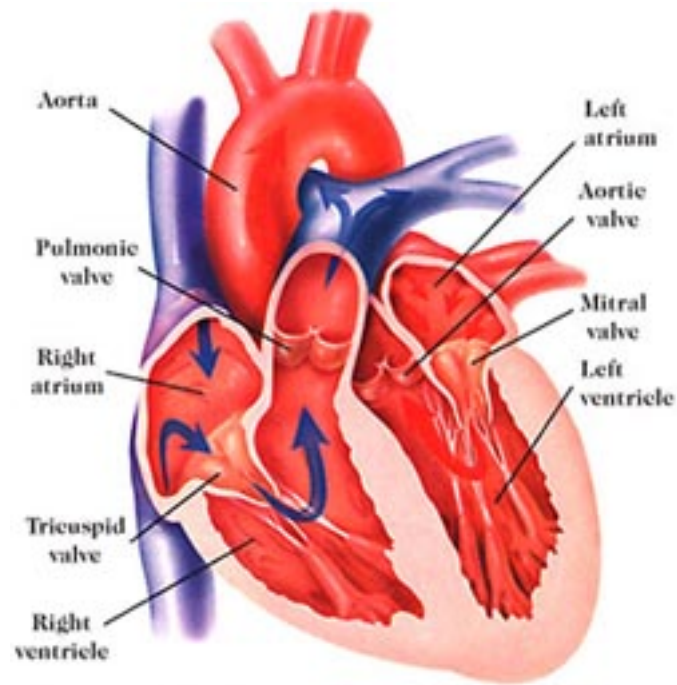




The Heart and Blood Vessels



Anatomy of the human heart. (Reproduced from the Department of Cardiothoracic Surgery, USC, with permission.)

Oxygen is vital to life as it provides fuel for all the body's functions. The heart's role is to pump oxygen-rich blood to every cell in the body. The blood vessels — a network of interconnecting arteries, arterioles, capillaries, venules, and veins — provide the pathway in which blood travels.

Arteries are the passageways through which the blood is delivered, the largest of which is the aorta. The aorta branches off the heart and divides into many smaller arteries, which have muscular walls that adjust their diameter to increase or decrease blood flow to a particular body area. Capillaries are thin walled, highly branched vessels that feed the tissues and collect wastes to be carried back to the lungs, liver, or kidney for elimination. Capillaries empty into the venules, which in turn drain into the veins that lead back to the heart. Veins carry deoxygenated blood to the lungs to pick up more oxygen, and then back to the heart once again.

The four most common types of vascular disease are high blood pressure, coronary heart disease, stroke, and rheumatic heart disease. Other forms include arrhythmias, diseases of the arteries, arterioles and capillaries, congenital defects, valvular heart disease, diseases of pulmonary circulation; and diseases of veins and lymphatics. Some of these disorders are the result of the over production of blood vessel cells, while others occur

from vascular malformations. Still others result from inflammation of the blood vessels or the build up of a fatty substance called plaque within the blood vessels.

Diseases

Ataxia telangiectasia

Atherosclerosis

Long QT syndrome

Von Hippel-Lindau syndrome

Williams syndrome