

Circulatory System

The purpose of the circulatory system is to provide mass flow of materials from one part of the body to another, i.e. it is an internal transport system. It has three basic characteristics:

- Circulatory fluid, i.e. blood which transports the materials.
- A pump, e.g. the heart.
- Tubes through which the blood can circulate, i.e. blood vessels (vascular)

The human blood circulatory system is a double circulation which means that the blood passes through the heart twice during every full circulation, thus we can consider:

- Pulmonary circulation system.
- Systemic circulation system.

The pulmonary circulation system, shown in Fig. 1 below, carries deoxygenated blood through the lungs to be oxygenated. On return through the left side of the heart, the oxygenated blood is then pump through the systemic circulation system to tissues throughout the body.

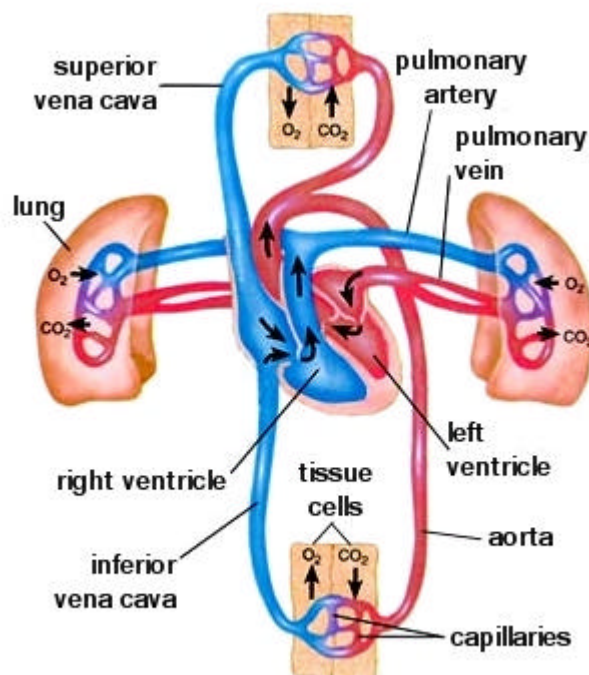


Fig.1 Circulation

In both of the systems, there are principally three types of blood vessel:

- Arteries - transport oxygenated blood from the heart to areas of the body.
- Veins - transport blood to the heart to be reoxygenated.
- Capillaries - transport blood to different areas of tissue.

Note that the pulmonary artery is the only artery that carries deoxygenated blood and the pulmonary vein is the only vein that carries oxygenated blood.

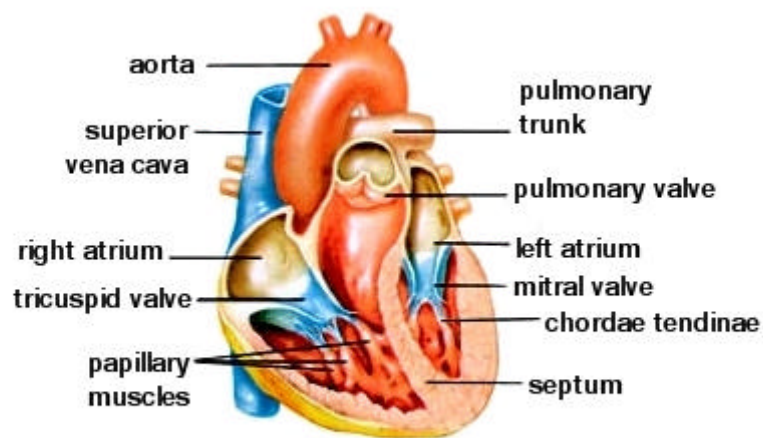


Fig.2 Heart

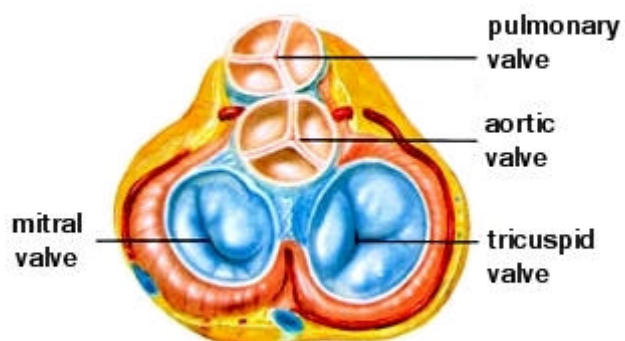


Fig.3 Heart in cross-section