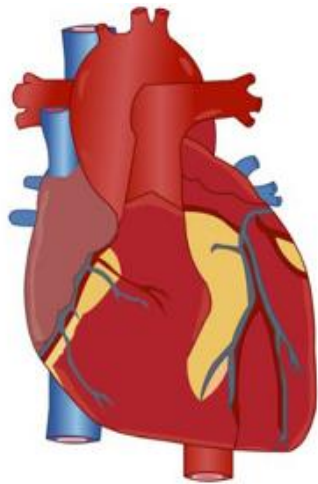


# LIFE PROCESSES

Class 10 Biology

## TRANSPORTATION

PART 1/4



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# **TRANSPORTATION IN HUMAN BEINGS CIRCULATORY SYSTEM**

- The circulatory system in the human beings is made up of the fluid connective tissue called blood , the vessels and the heart.
- Blood consists of a fluid medium called plasma in which the cells are suspended.
- There is a pumping organ to push blood around the body, a network of tubes to reach blood to all the tissues and a system in place to ensure that this network can be repaired if damaged.

## **PARTS OF THE CIRCULATORY SYSTEM / THE CARDIOVASCULAR SYSTEM**

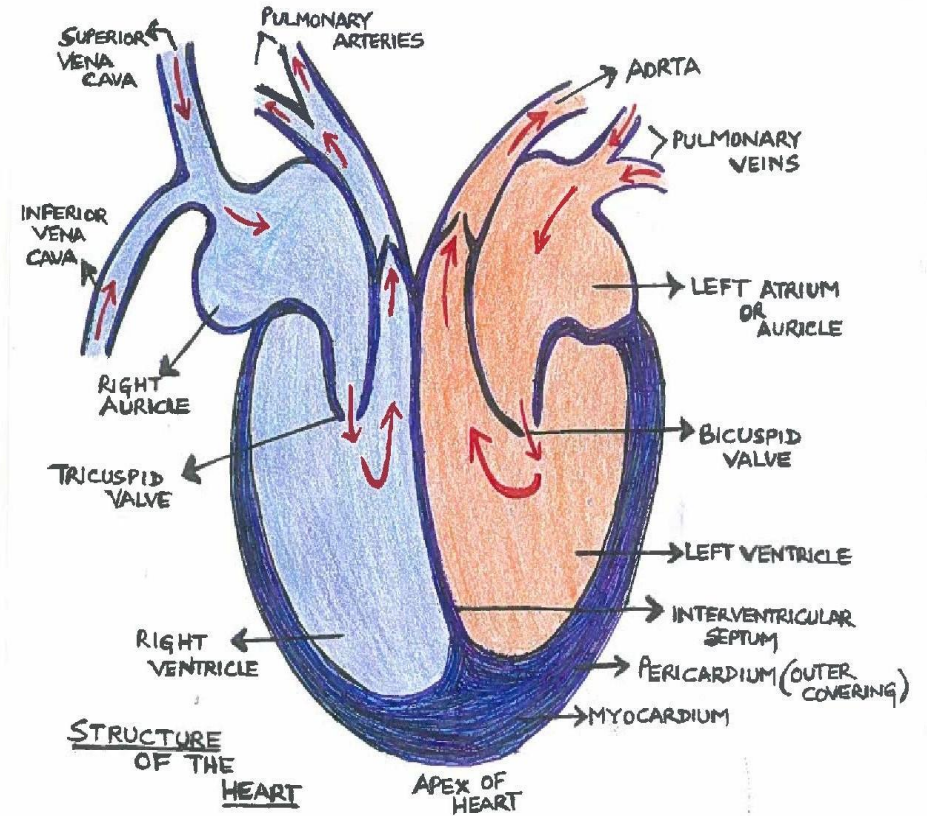
**1) THE HEART**

**2) BLOOD**

**3) THE BLOOD VESSELS (ARTERIES, VEINS AND CAPILLARIES)**

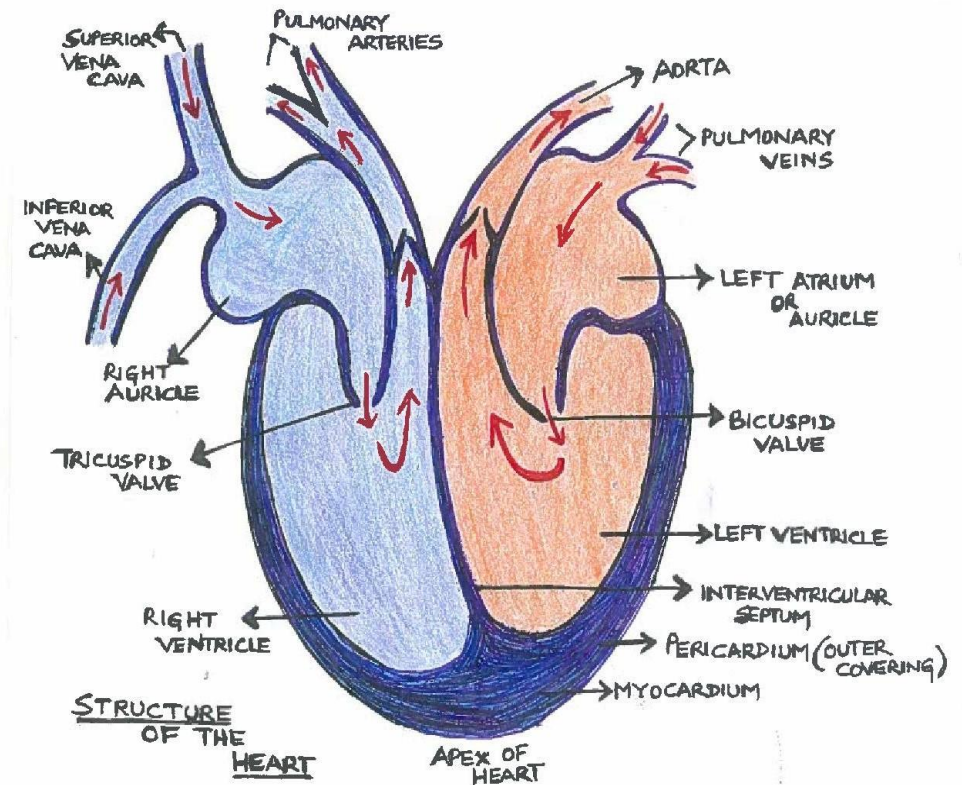
# THE HUMAN HEART

- The size of the heart is the of a clenched fist and it is located between the lungs in the thoracic cavity.
- A two layered sac called **PERICARDIUM** encloses the heart.
- It is made up of **MYOCARDIUM** i.e. cardiac muscles which is seen to contract and relax rhythmically throughout life.
- The heart is located towards the left side of our thoracic cavity.
- The heart has 4 prominent chambers.
- The upper two chambers are called the **Atria or the Auricles**
- The lower two chambers are called the **ventricles**
- The oxygenated and deoxygenated blood are kept separate in the left and right side of the heart respectively.
- The walls of the auricles are thinner than that of the ventricles as they send blood only to the ventricles, situated below them.
- The walls of the ventricles are thicker as they send blood to the different parts of the body.



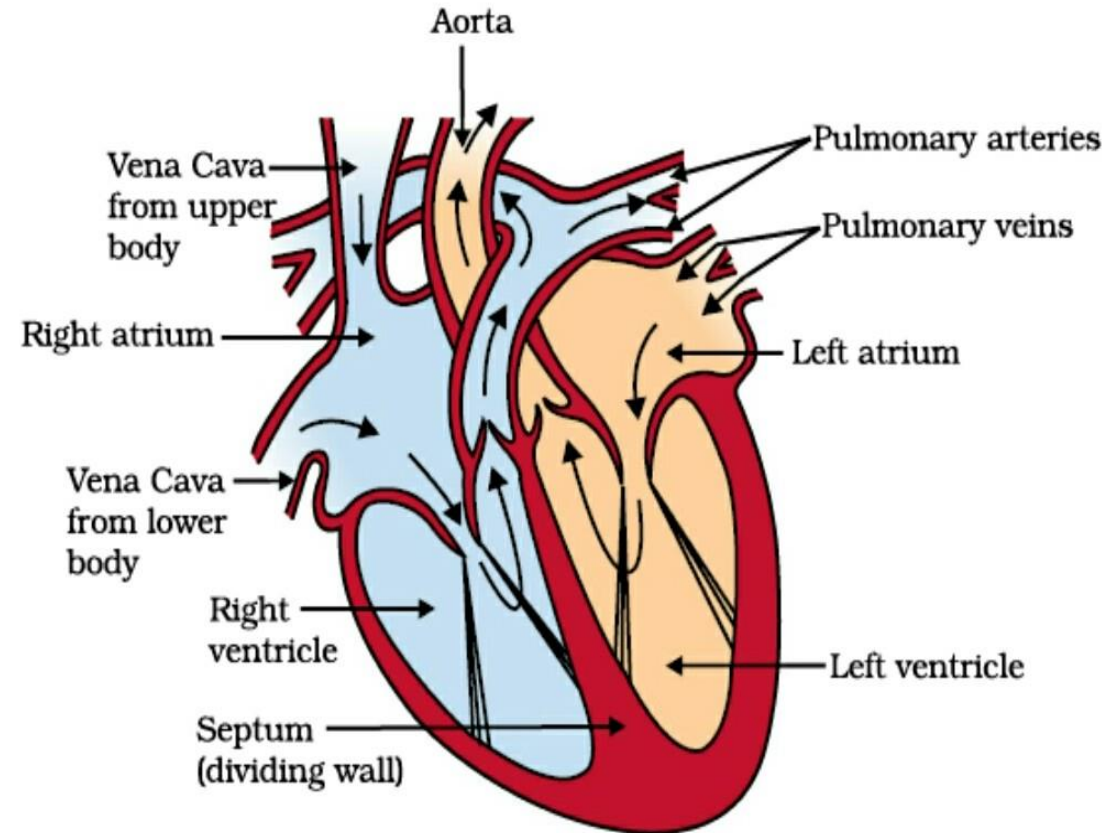
# THE HUMAN HEART

- The wall of the left ventricle is thickest as it sends blood to all the body parts through the aorta.
- The left auricle and ventricle has the bicuspid/mitral valve.
- The right auricle and ventricle has the tricuspid valve.
- The 4 chambers are separated by the septum(dividing wall).
- The right auricle gets deoxygenated blood via the vena cavas.
- The left auricle receives oxygenated blood via the pulmonary veins.
- The right ventricle sends out deoxygenated blood via the pulmonary arteries to the lungs. This has the pulmonary valve.
- The left ventricle sends out oxygenated blood via the aorta to the body parts. This has the aortic valve.
- The valves prevent the backflow of blood.
- Heart rate (at rest) = 75 beats per min

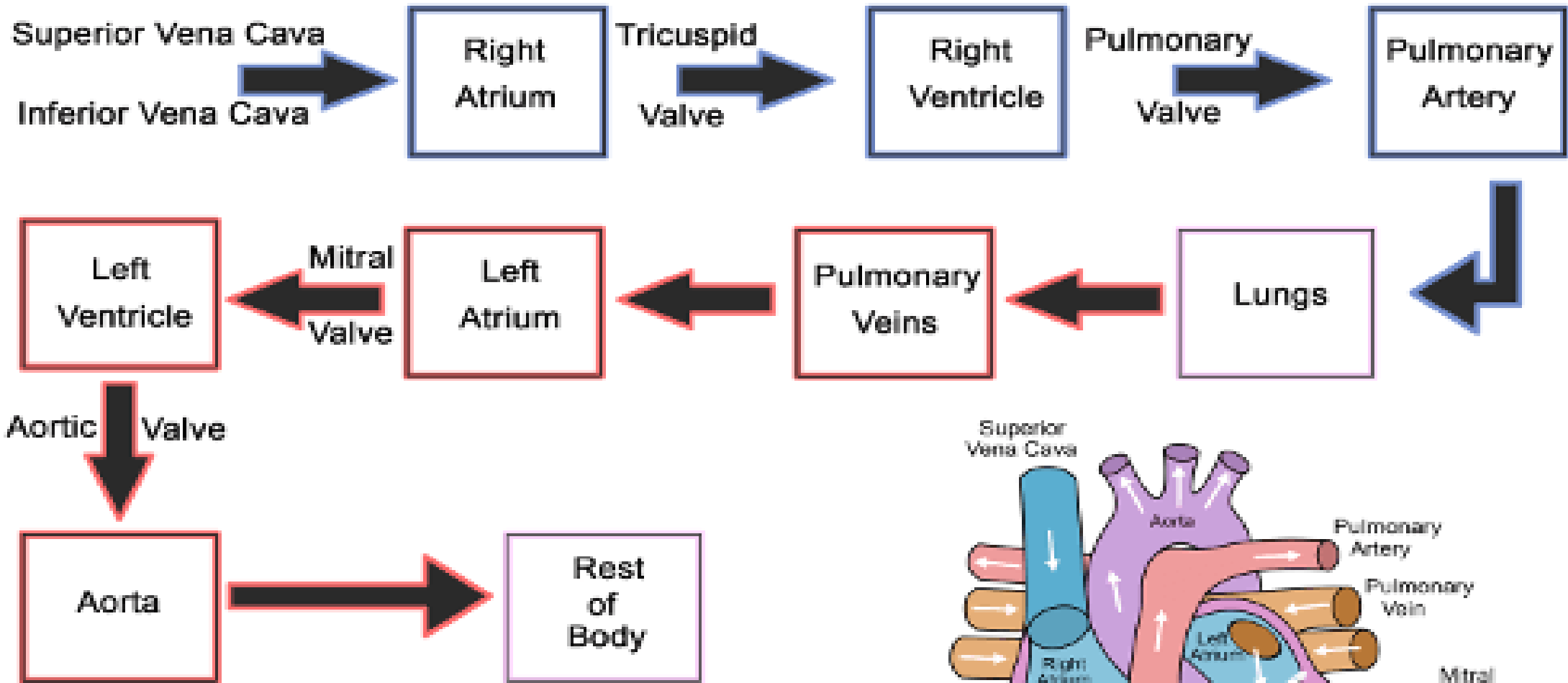


# FLOW OF BLOOD THROUGH THE HEART

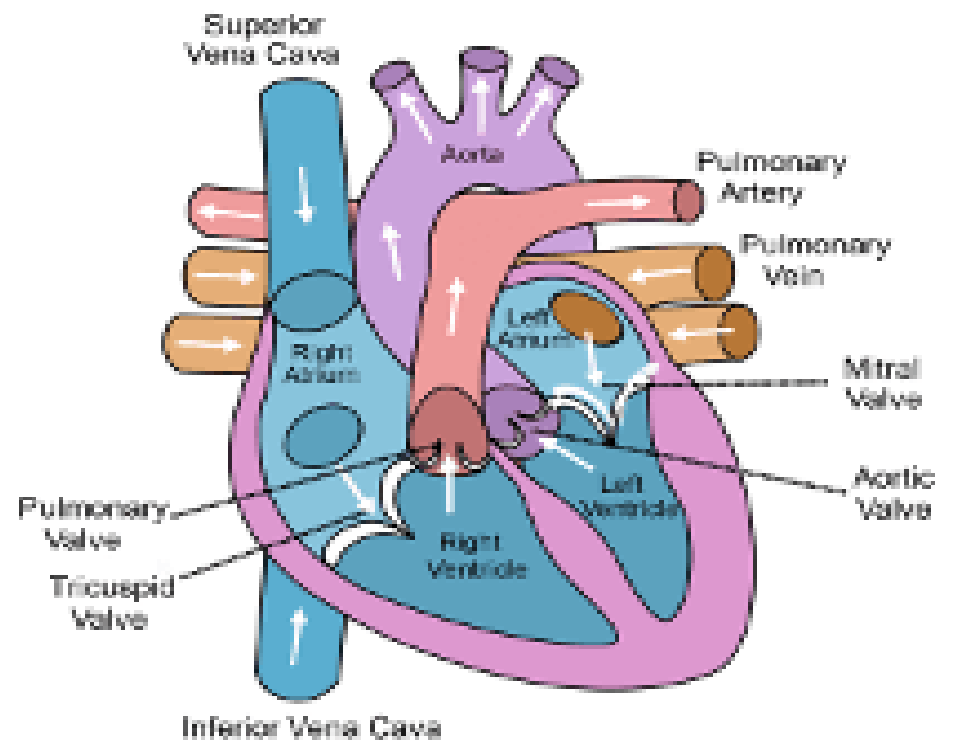
- Deoxygenated blood from the body enters the relaxed right atrium.
- The right atrium now contracts, and simultaneously its lower chamber(the right ventricle) relaxes and the deoxygenated blood pours into it.
- Now the right ventricle contracts sending the blood through the pulmonary arteries to the lungs for oxygenation to take place.
- The oxygenated blood is seen to enter the relaxed left auricle through the pulmonary veins.
- Now the left auricle contracts sending the oxygenated blood to its lower chamber, the left ventricle which relaxes.
- The left ventricle on contracting sends the oxygenated blood out to all the body parts through the aorta.
- Valves help to stop the back flow of the blood.



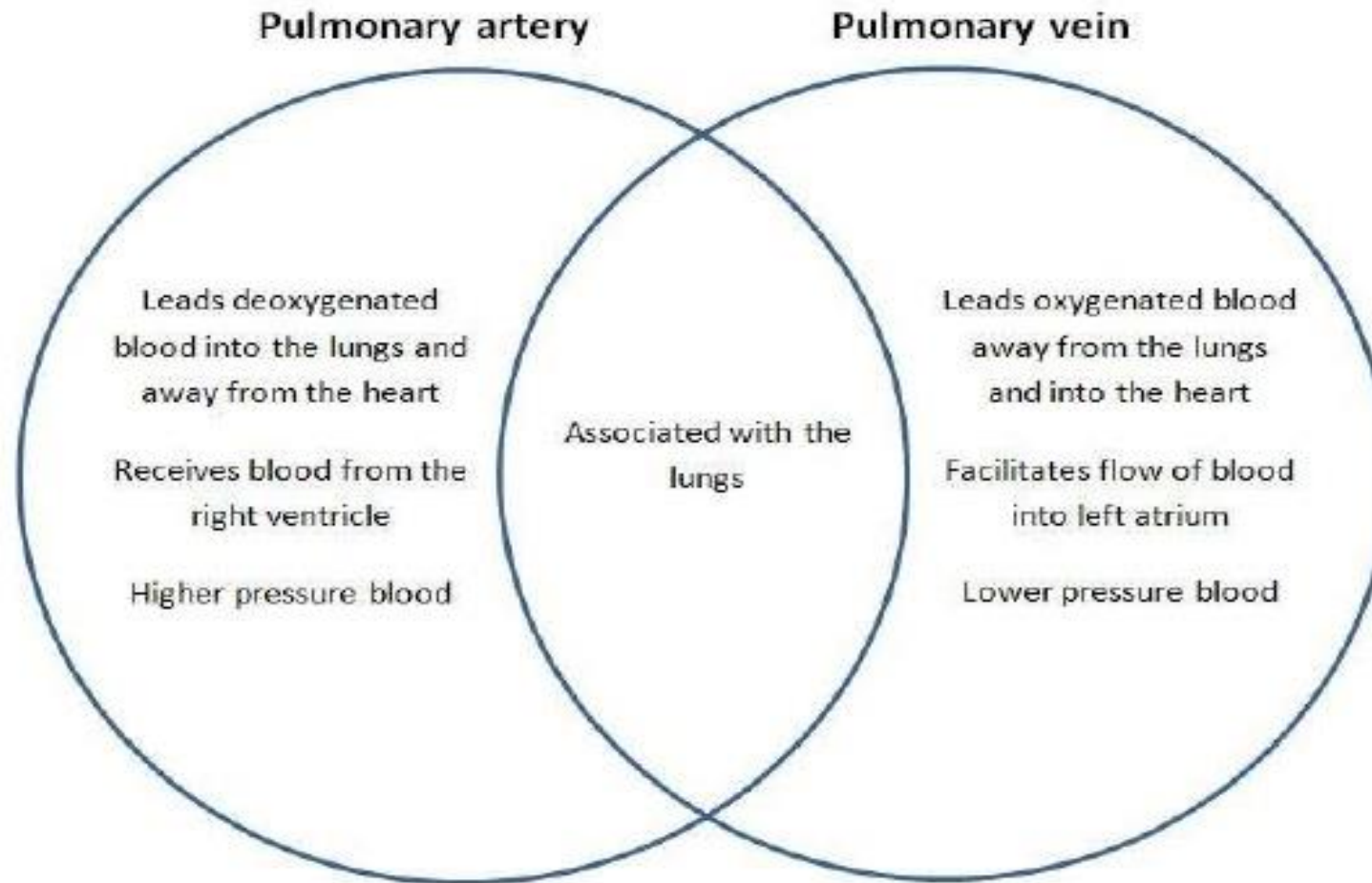




## Circulation of Blood Through the Heart:



# G) THE PULMONARY ARTERY AND PULMONARY VEIN



Source:  
NCERT science text book  
Google

**Continued in Part 2**