

NORMAL HEART FUNCTION

The heart has four chambers. The upper two chambers are the atria, and the lower two chambers are the ventricles. The chambers are separated by a wall of tissue called the septum. Blood is pumped through the chambers, aided by four heart valves. The valves open and close to let blood flow in one direction only.

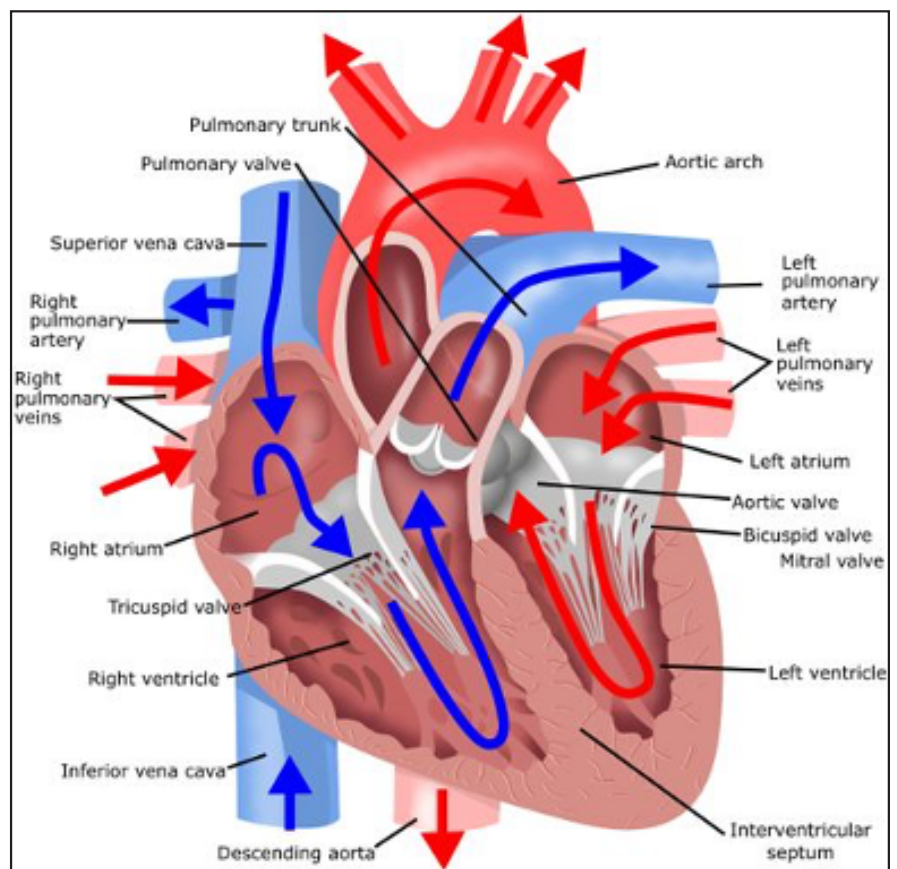
The four heart valves are:

The **Tricuspid valve** is between the right atrium and right ventricle. The **Pulmonary (pulmonic) valve** is between the right ventricle and the pulmonary artery. The **Mitral valve** is between the left atrium and left ventricle. The **Aortic valve** is between the left ventricle and the aorta

Normal blood flow pattern:

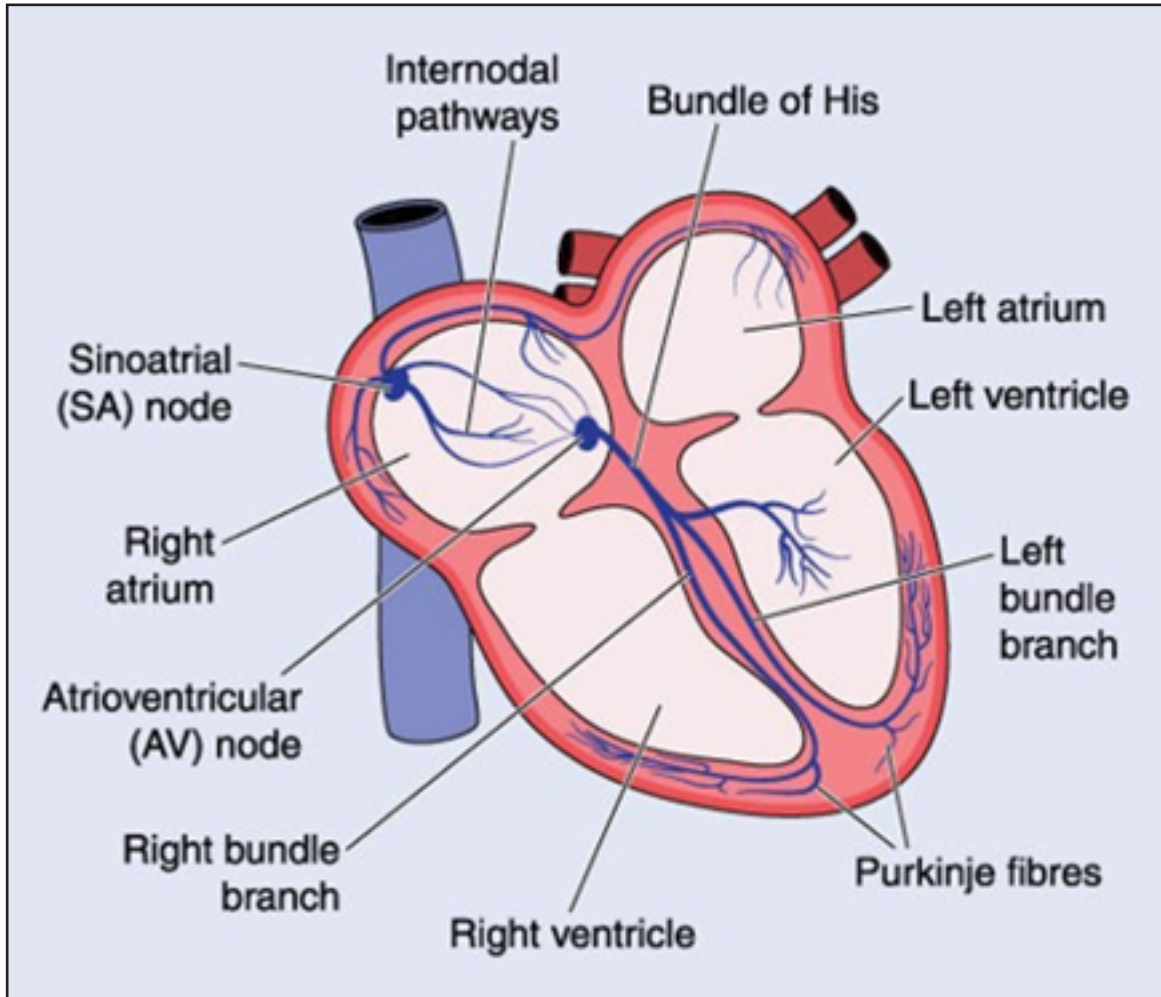
The blue represents the flow of blood back to the heart after circulating through the body. It returns to the heart through the veins entering the right atrium. The right atrium empties into the right ventricle through the tricuspid valve. The right ventricle pumps blood through the pulmonary valve into the pulmonary artery where it goes to the lungs to get fresh oxygen.

Blood returns to the left heart after being refreshed with oxygen through the pulmonary veins into the left atrium. (Represented in red). From there it passes through the mitral valve entering the left ventricle. The left ventricle pumps oxygen-rich blood through the aortic valve into the aorta which takes blood to the body's general circulation.



The heart's electrical conduction system

A normal heartbeat is started by an electrical signal that comes from the heart's natural pacemaker, the sinoatrial (SA) node, located at the top of the right atrium. The electrical signal travels through the atria and reaches the atrioventricular (AV) node



After crossing the AV node, the electrical signal passes through the bundle of His. This bundle then divides into branches that extend into the right and left ventricles. The electrical signal travels down the left and right bundle branches and eventually reach the muscle cells of the ventricles, causing them to contract and pump blood to the body.