

The heart is the muscular pump of the blood vascular system. It contains four cavities (chambers): two on the right side (pulmonary heart) and two on the left (systemic heart).

The pulmonary heart includes the **right atrium** and **right ventricle**. The thin-walled right atrium receives poorly oxygenated blood from the **superior** and **inferior vena cavae** and from the coronary sinus (draining the cardiac vessels). The thin-walled **left atrium** receives richly oxygenated blood from **pulmonary veins**. Atrial blood is pumped at a pressure of about 5 mm.Hg into the **right** and **left ventricles** simultaneously through the atrioventricular orifices, guarded by the three-cusp **tricuspid valve** on the right and the two-cusp **bicuspid valve** on the left. The cusps are like panels of a parachute, secured to the **papillary muscles** in the ventricles by **chordae tendineae** (tendons). These muscles contract with the ventricular muscles, tensing the cords and resisting cusp over-flap as ventricular blood bulges into them during ventricular contraction (*systole*). The right ventricle pumps oxygen-deficient blood to the lungs via the **pulmonary trunk** at a pressure of about 25 mm Hg (right ventricle), and the left ventricle simultaneously pumps oxygen-rich blood into the **ascending aorta** at a pressure of about 120 mm Hg. This pressure difference is reflected in the thicker walls of the left ventricle compared to the right. The pocket-like **pulmonary** and **aortic semilunar valves** guard the trunk and aorta, respectively. As blood falls back toward the ventricle from the trunk/aorta during the resting phase of the heartbeat (*diastole*), these pockets fill, closing off their respective orifices and preventing reflux into the ventricles.