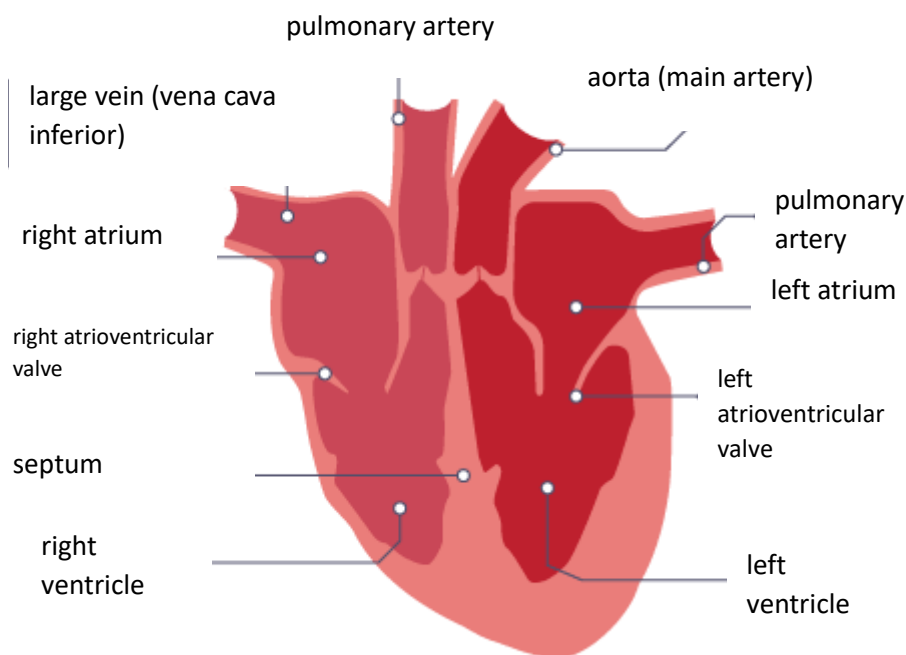


## THE CIRCULATORY SYSTEM

Flying consumes a huge amount of energy, which requires the circulatory system to keep oxygenated blood flowing to the cells of muscle tissue and to remove carbon dioxide and roughage. The vascular system also plays an important role in maintaining a constant body temperature.

Like mammals, birds have a four-chambered (2 ventricles-2 atria) heart with two blood circulations. The right half of the heart maintains the lesser circulation, the left half the greater circulation. In the lesser circulation, carbon dioxide blood flows from the right ventricle through the pulmonary artery to the lungs, and from there oxygenated blood flows back to the left atrium. From the left ventricle, oxygen-rich blood flows to the tissues of the body, and from there, carbon dioxide-rich blood flows to the right atrium.



Source: <https://www.bbc.co.uk/bitesize/guides/zg2xxnb/revision/2>

The human heart weighs 0.42 per cent of body weight, with an average resting heart rate of 72 beats per minute. The heart of a house sparrow is 1.68 per cent of body mass, with an average resting heart rate of 460 beats/minute.