

Imagining ourselves as a group of traveling red blood cells, we are about to embark on a journey through the heart, pointing out structures you need to know for the exam!

Beginning on the posterior side of the heart, we drain through the **inferior vena cava** into the **right atrium (RA)**. We see a ring worm structure on our left- this once connected the left and right atria in a newborn. This is the **fossa ovalis**. We see other red blood cells draining into the heart from the **superior vena cava** and the **ostium**. Observe the **pectinate muscles** on the interior walls of the heart (known as the **endocardium**). The right atrium depolarizes and the right atrium's **myocardium** contracts pushing us through the **right atrioventricular (RAV) valve** aka the "**tricuspid**" into the **right ventricle (RV)**.

In the right ventricle we see that there are grooves in the endometrium, this is the **trebeculae carneae**. Prominent extensions of the trabeculae carneae are the **papillary muscles**. Connecting the papillary muscles and the **cusps** of the tricuspid are the **chordae tendinae**. When the right ventricle's myocardium contracts, we are sent through the **pulmonary semilunar valve**, up through the **pulmonary trunk**, and branch left or right through the **pulmonary arteries** towards the **hilus** of the left or right lungs.

After binding oxygen molecules to our heme groups, we conformationally change and absorb light differently, giving us a reddish color instead of our blue appearance as we head back from the lungs by way of the **pulmonary veins**. The pulmonary veins drain us into the **left atrium (LA)**. After filling the LA, the myocardium contracts and we are pushed through the **left atrioventricular valve (LAV)** into the **left ventricle (LV)**.

In the LV, we see the familiar trebeculae carneae, the papillary muscles, and the chordae tendinae that attach the papillary muscles to the cusps of the LAV. Suddenly the left ventricle depolarizes, the very thick myocardium contracts, sending us very fast through the **aortic semilunar valve** of the left ventricle superiorly and anteriorly up the **ascending aorta** and through the **aortic arch**.

After passing the aortic arch, there are a series of "off ramps" to different parts of the "systemic circuit". Some of us will take the first off ramp, the **brachiocephalic trunk**, which then splits into the **right subclavian** (lateral) and the **right common carotid artery**. The right common carotid (as well as the left common carotid) then splits into the **external carotid** (anterior) and the **internal carotid** (posterior). Some of us will take the second off ramp, the **left common carotid**. Some of us will continue on as our highway splits off to the **left subclavian**