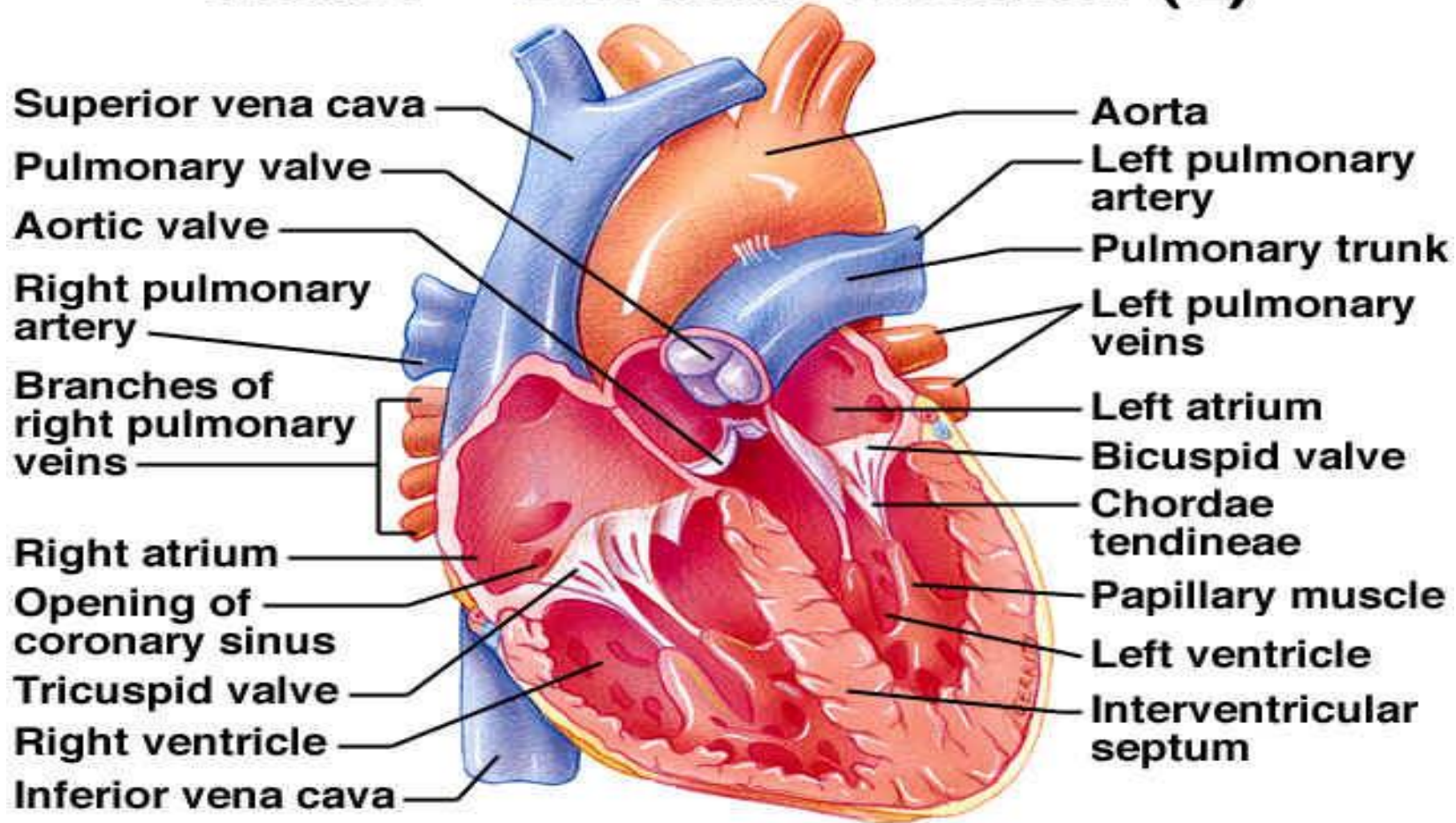


LC: Label the heart and describe the cardiac cycle

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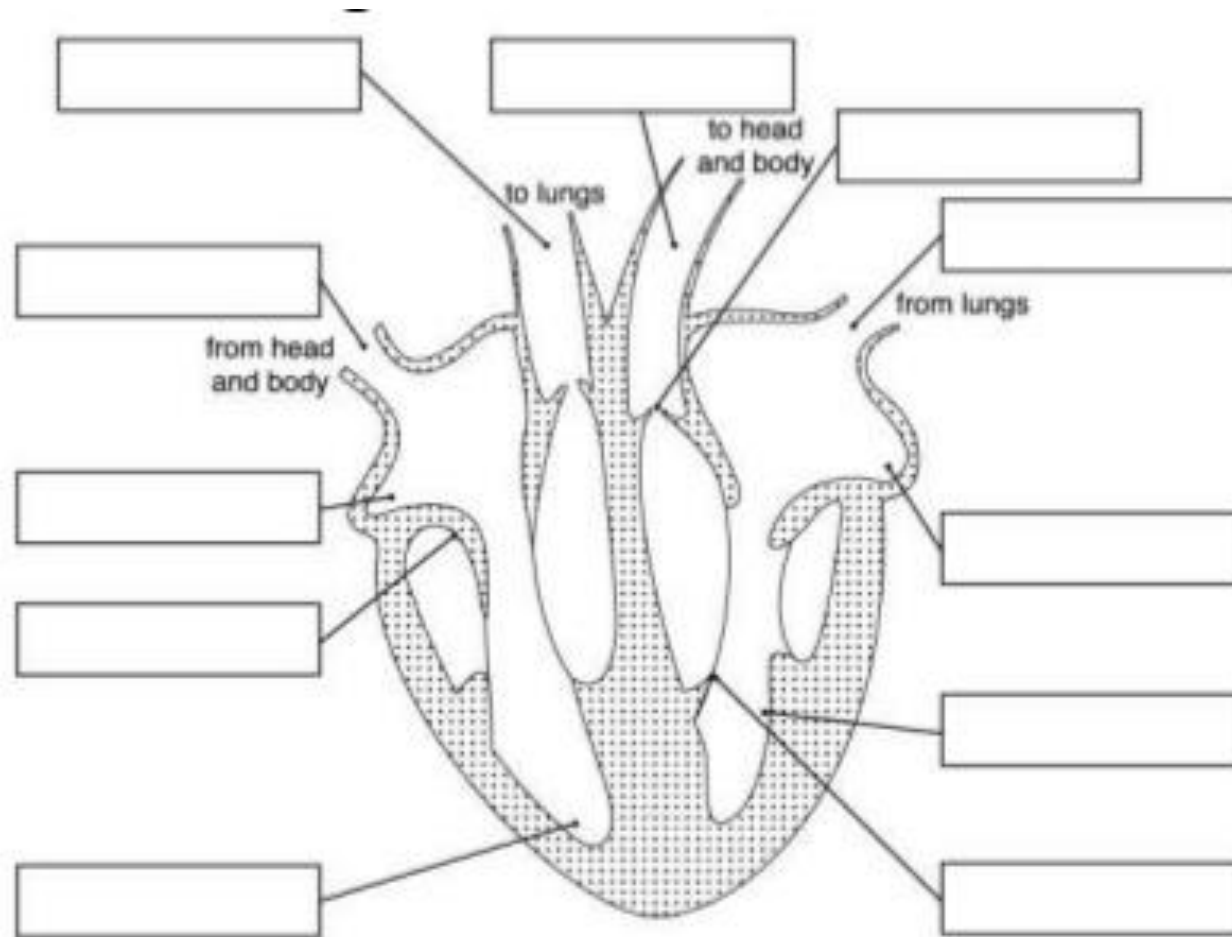
Heart—Coronal Section (2)

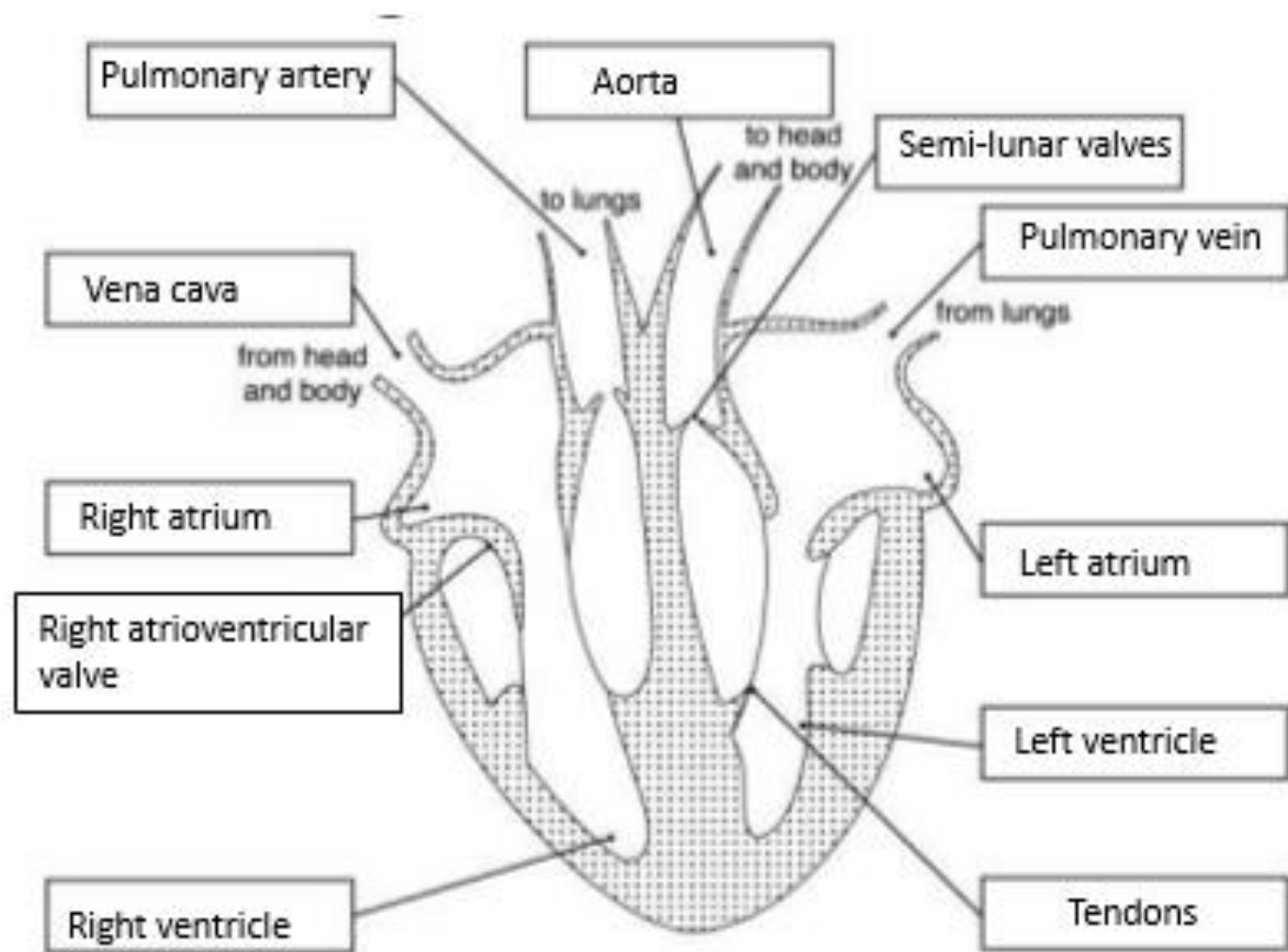


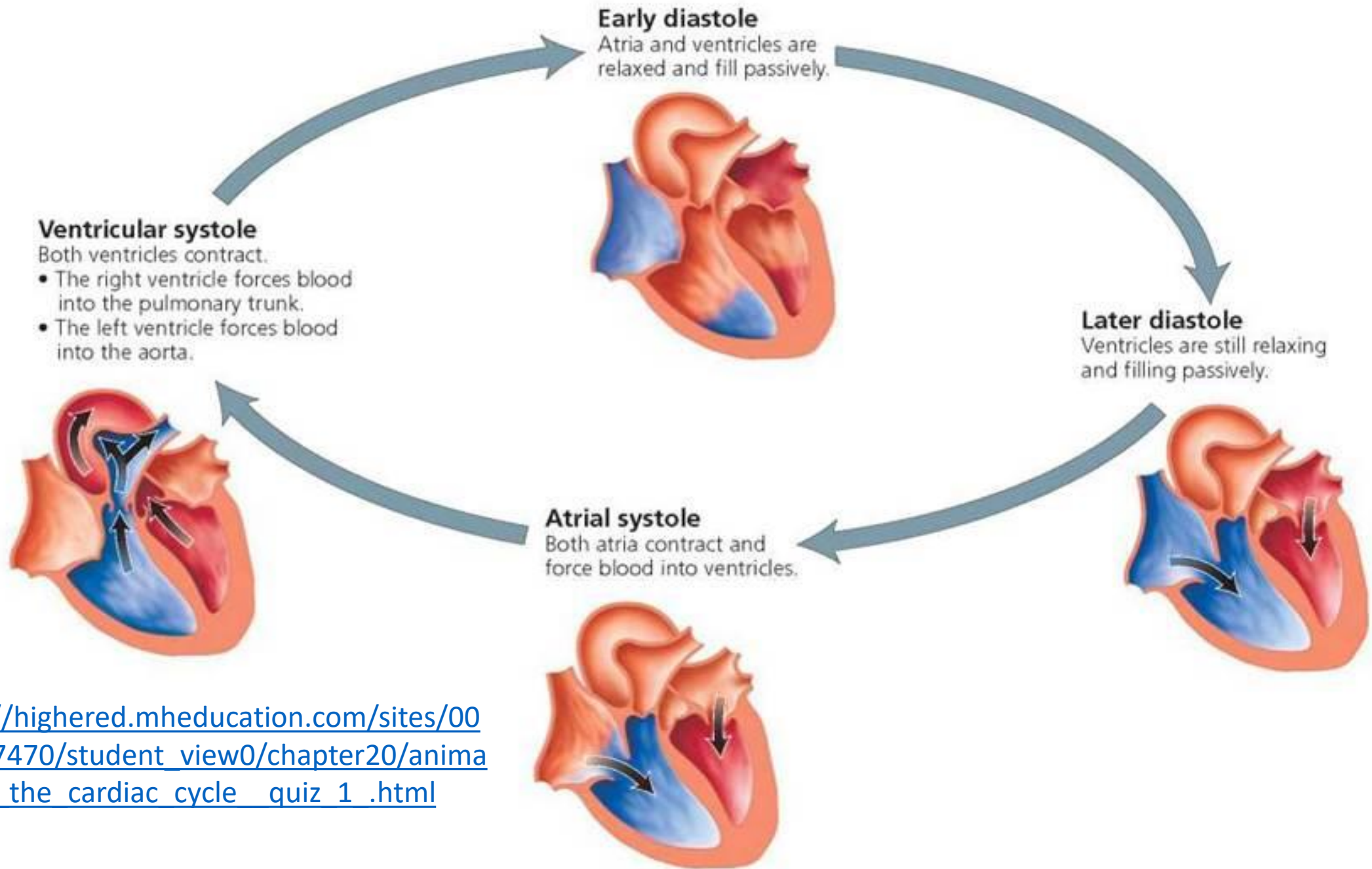
Starter:

1. Which side of the heart contains oxygenated blood?
2. Which side of the heart has is larger
3. Can you explain why it is larger?
4. What is the purpose of valves?

Can you label your heart.....you can use a text book



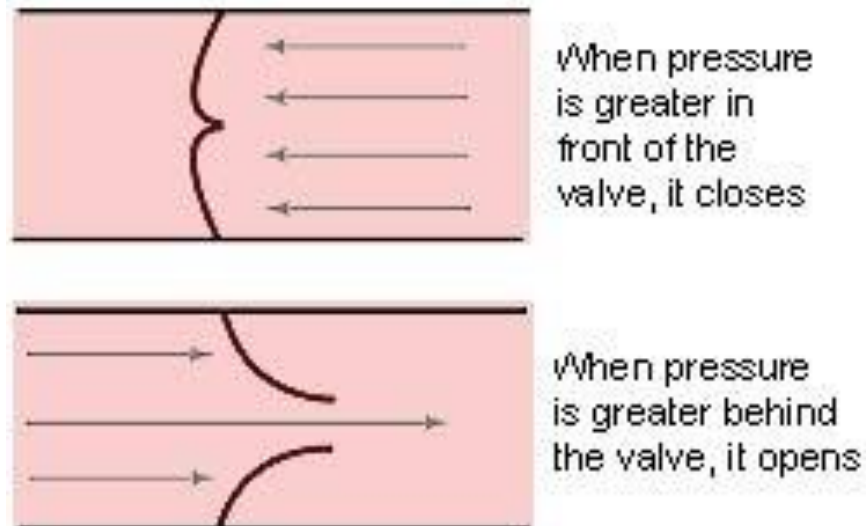




http://highered.mheducation.com/sites/0072507470/student_view0/chapter20/animation_the_cardiac_cycle_quiz_1.html

Heart Valves

The heart valves open and close passively because of pressure differences on either side of the valve. When pressure is greater behind the valve, the leaflets are blown open and the blood flows through the valve. However, when pressure is greater in front of the valve, the leaflets snap shut and blood flow is stopped



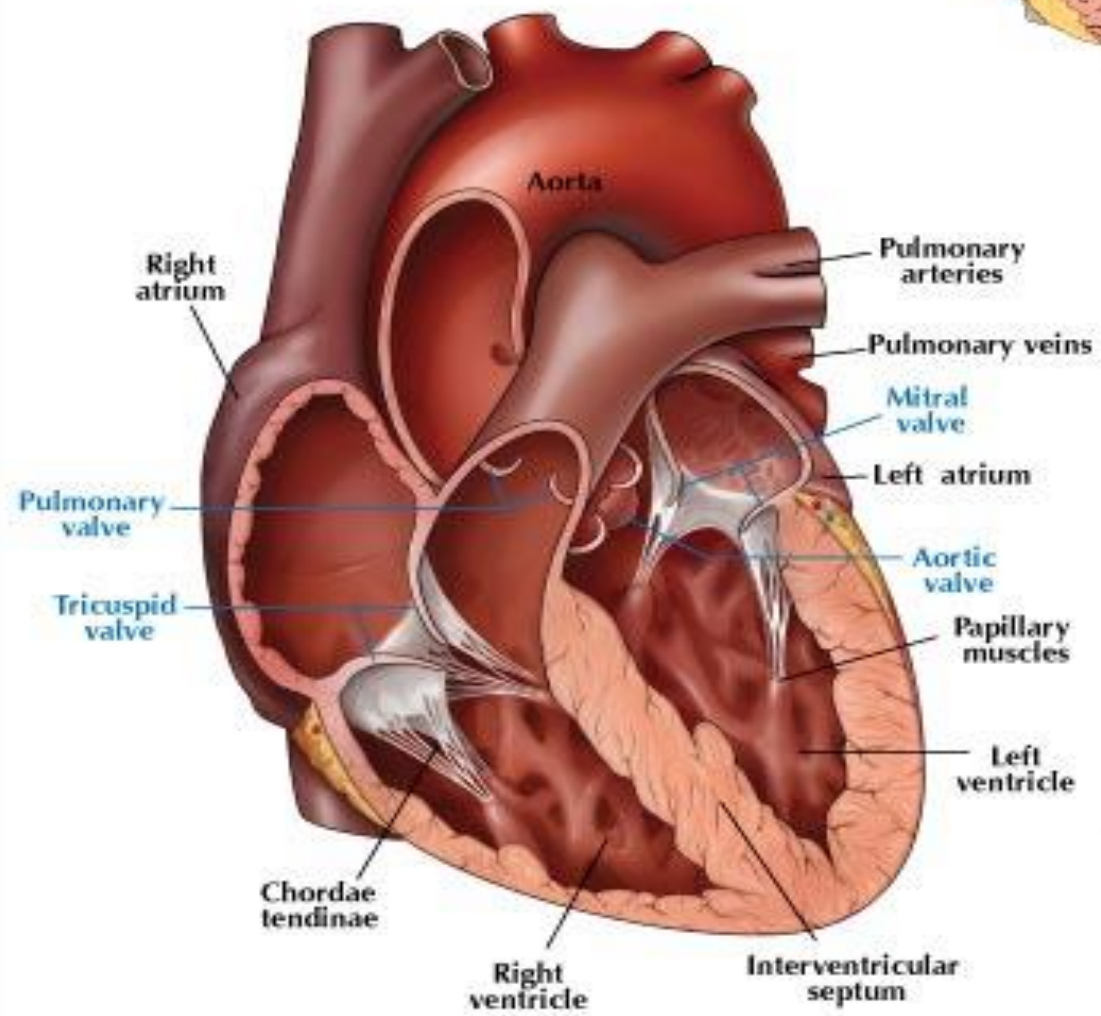
AV Valves

- The **atrioventricular valves** (AV valves), which separate the atria from the ventricles, allow blood to flow from the atria to the ventricles, but prevent flow in the opposite direction.
- The right AV valve is called the tricuspid valve. The left AV valve is called the mitral valve. The opening and closing of the AV valves is dependent on pressure differences between the atria and ventricles.
- When the ventricles relax, atrial pressure exceeds ventricular pressure, the AV valves are pushed open and blood flows into the ventricles. However, when the ventricles contract, ventricular pressure exceeds atrial pressure causing the AV valves to snap shut.

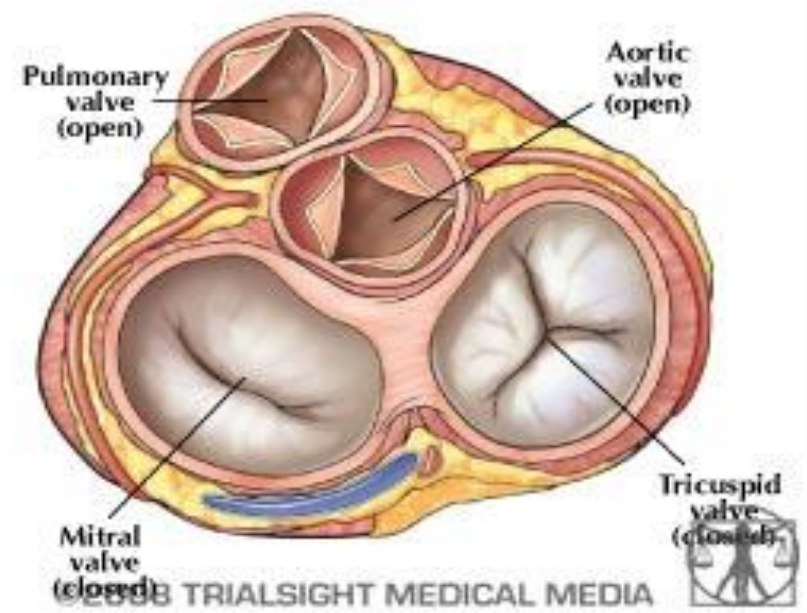
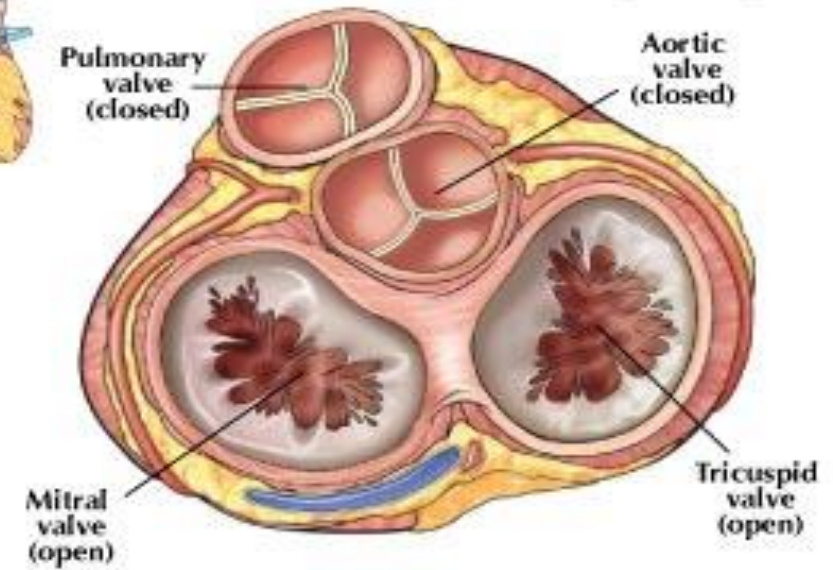
Semi-lunar valves

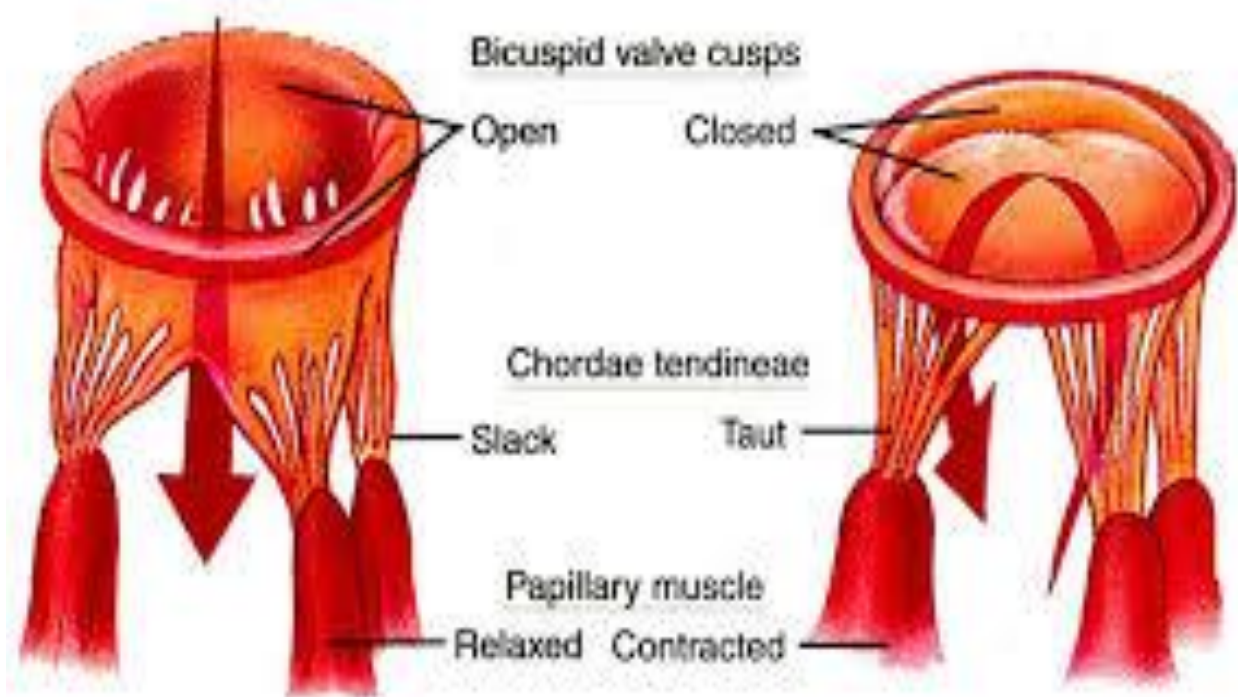
- The **semilunar valves** (pulmonary valve and aortic valve) are one-way valves that separate the ventricles from major arteries. The aortic valve separates the left ventricle from the aorta, while the pulmonary valve separates the right ventricle from the pulmonary artery.
- As the ventricles contract, ventricular pressure exceeds arterial pressure, the semilunar valves open and blood is pumped into the major arteries.
- When the ventricles relax, arterial pressure will exceed ventricular pressure and the semilunar valves snap shut. This is due to the elevated pressures in the aorta and the pulmonary artery pushing the blood back toward the ventricles to close the semilunar valves.

HEART VALVE ANATOMY



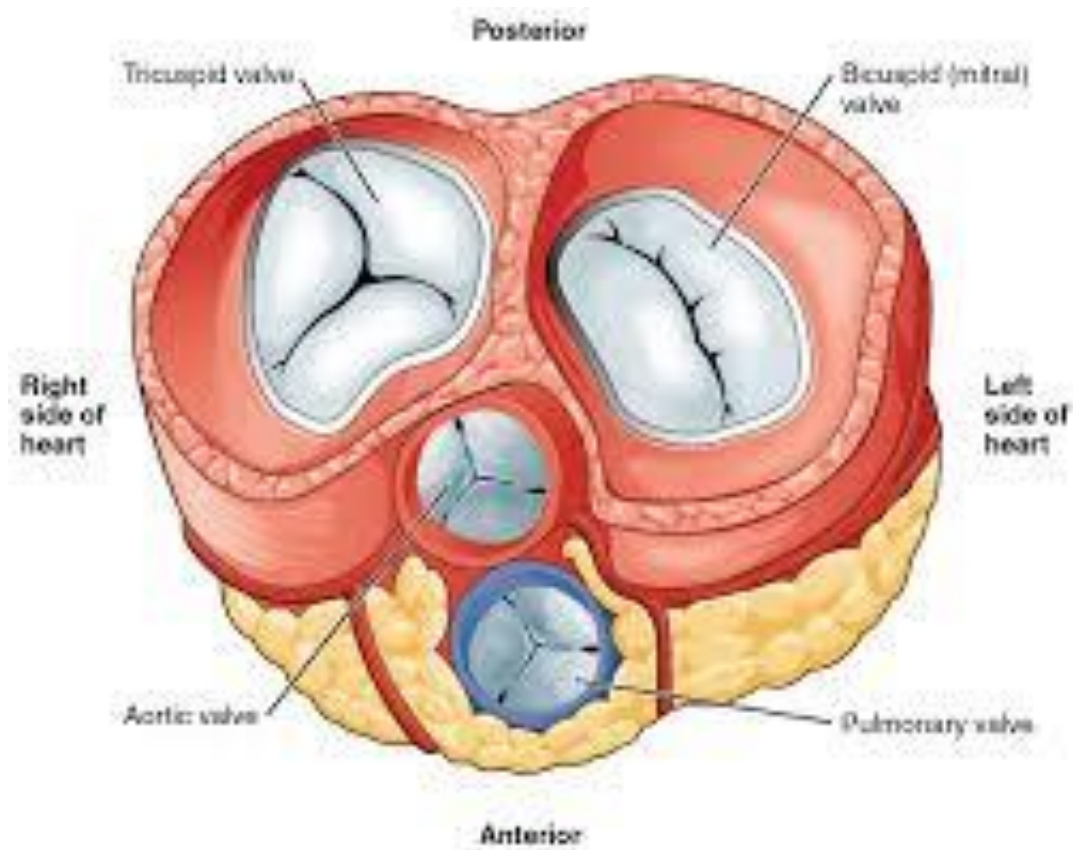
VIEW FROM ABOVE





(a) Bicuspid valve open

(b) Bicuspid valve closed



Summary of Diastole

- Ventricles and atria are relaxed
- Semi-lunar valves close as blood flows back towards the ventricles due to higher pressure higher in arteries than in the ventricles
- AV valves open once atrial pressure is higher than ventricle pressure
- Ventricles fill passively with blood (about 80% of capacity)

Atria systole

- Atrial contraction forces the rest of the blood into the ventricles
- AV valves open
- Semi-lunar valves closed

Ventricle Systole

- Ventricle contraction occurs (after a short delay)
- AV valves close (ventricle pressure is higher than atrial pressure)
- Ventricle contraction continues and then the semi-lunar valves open once the pressure is greater in the ventricles compared to arterial pressure.
- Blood is forced into the arteries

Watch again, does it make more sense?

- http://highered.mheducation.com/sites/0072507470/student_view0/chapter20/animation_the_cardiac_cycle_quiz_1.html

Group Task

- Stick your heart onto A3 paper
- Describe the cardiac cycle around your heart

Individual task

- Describe the cardiac cycle (6 marks) Can you complete this on your own without any notes??