Red tech official for radiographer

40 MCQS ON

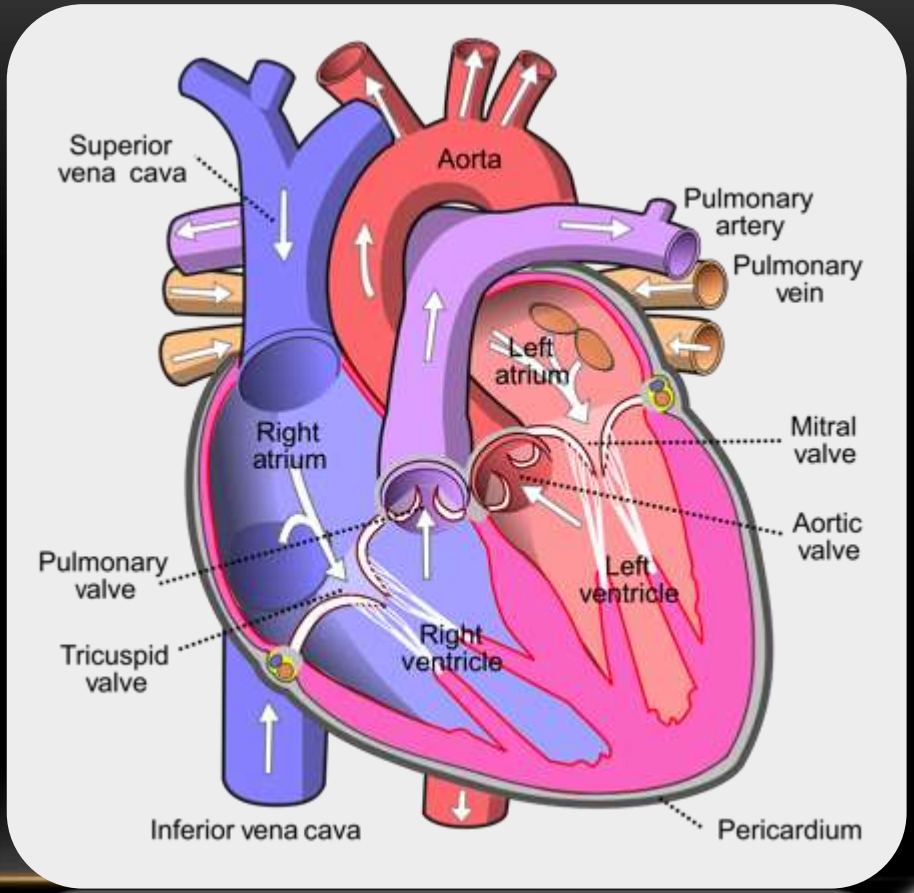
CARDIOVASCULAR SYSTEM

1. Which chamber of the heart pumps oxygenated blood into the aorta?

A) Right atrium
B) Right ventricle
C) Left atrium
D) Left ventricle

Correct answer: D) Left ventricle

The left ventricle pumps oxygenated blood into the aorta, which then distributes it to the rest of the body



2. **What structure prevents the backflow of blood into the left atrium?**

A) Tricuspid valve

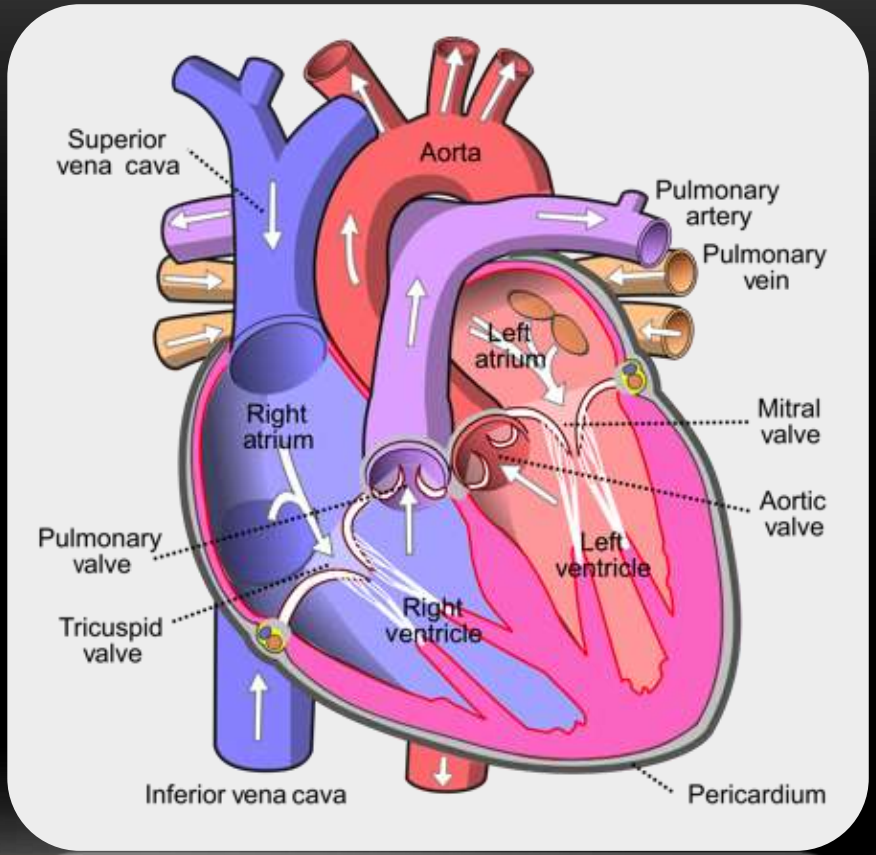
B) Pulmonary valve

C) Mitral (bicuspid) valve

D) Aortic valve

Correct answer: C) Mitral (bicuspid) valve

The mitral valve prevents blood from flowing back into the left atrium when the left ventricle contracts.

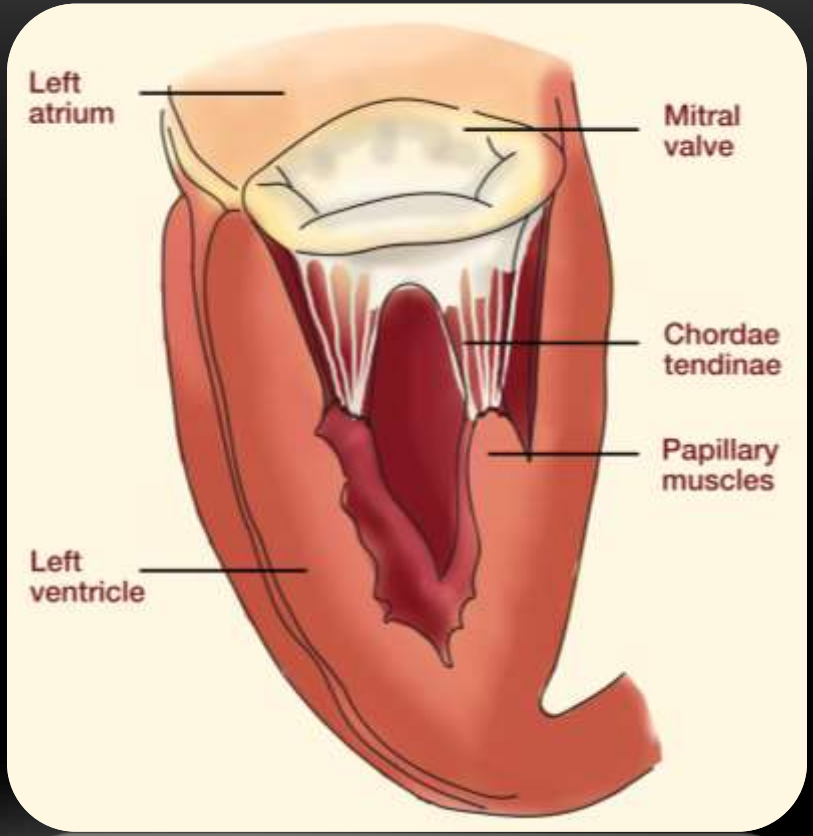


3. **Which of the following is NOT part of the conduction system of the heart?**

A) Sinoatrial node
B) Atrioventricular node
C) Purkinje fibers
D) Chordae tendineae

Correct answer: D) Chordae tendineae

The chordae tendineae are fibrous cords that prevent valve prolapse. They are not part of the heart's conduction system.



4. **The "lub" sound in the heart's "lub-dub" sound is caused by the closure of which valves?**

A) Aortic and pulmonary valves

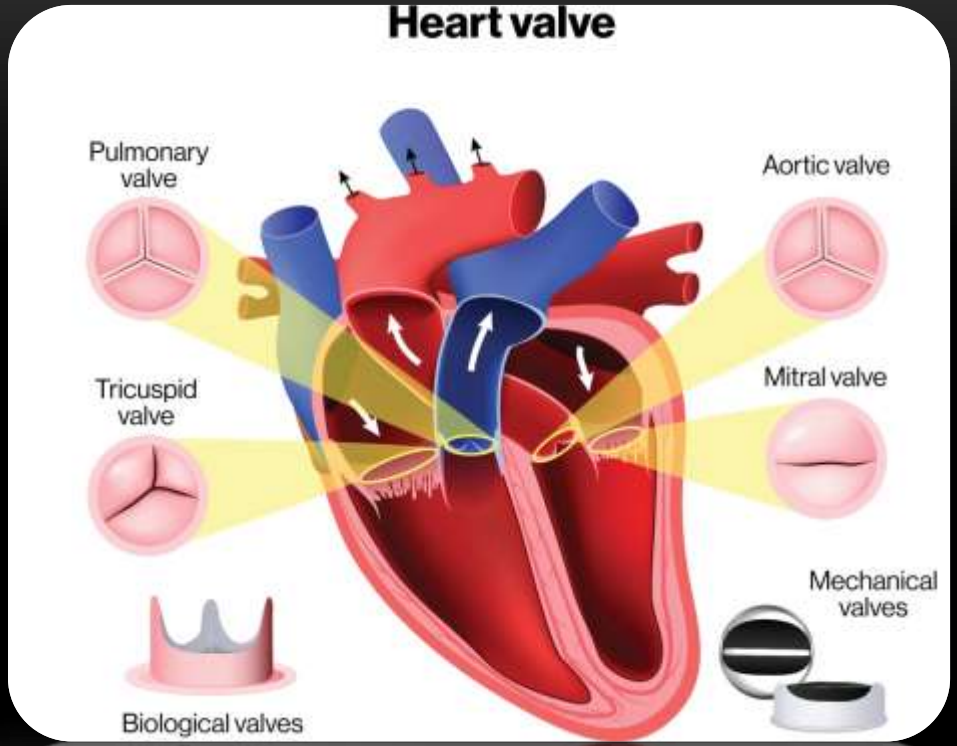
B) Tricuspid and mitral valves

C) Tricuspid and aortic valves

D) Mitral and pulmonary valves

Correct answer: B) Tricuspid and mitral valves

The "lub" sound occurs when the atrioventricular valves (tricuspid and mitral) close at the beginning of ventricular systole.

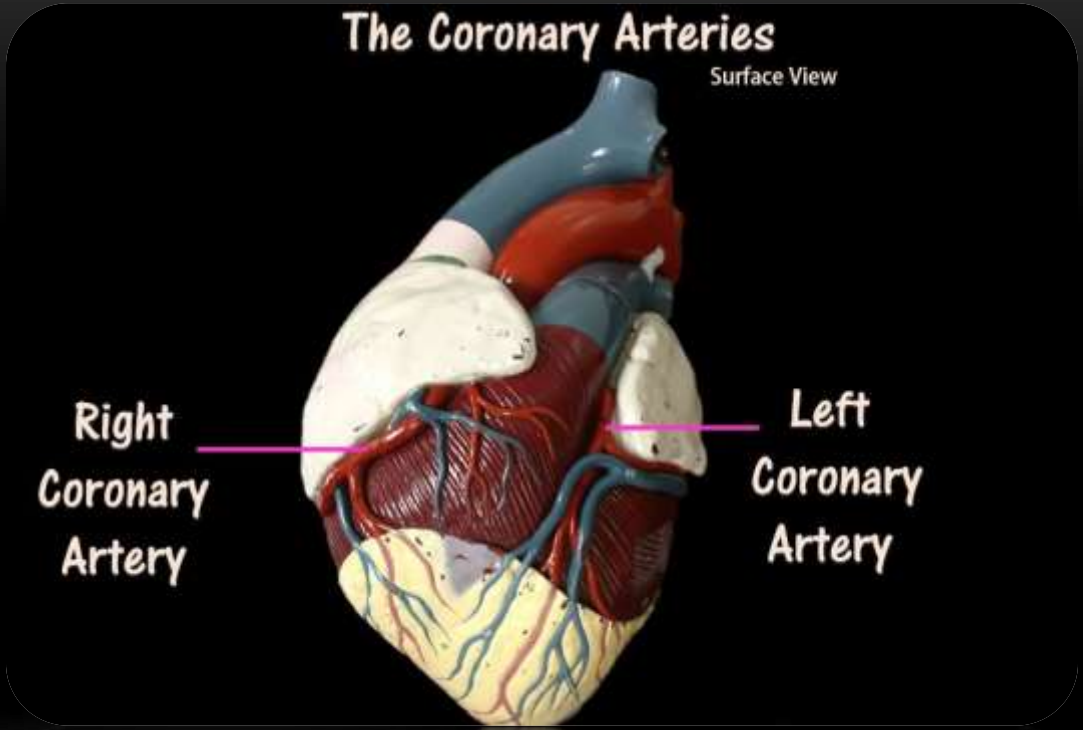


5. **Which of the following arteries supplies the heart muscle itself with oxygenated blood?**

A) Coronary arteries
B) Pulmonary arteries
C) Carotid arteries
D) Brachial arteries

Correct answer: A) Coronary arteries

The coronary arteries supply oxygenated blood to the myocardium (heart muscle).



6. **What is the primary function of the pulmonary veins?**

A) Carry deoxygenated blood from the lungs to the heart

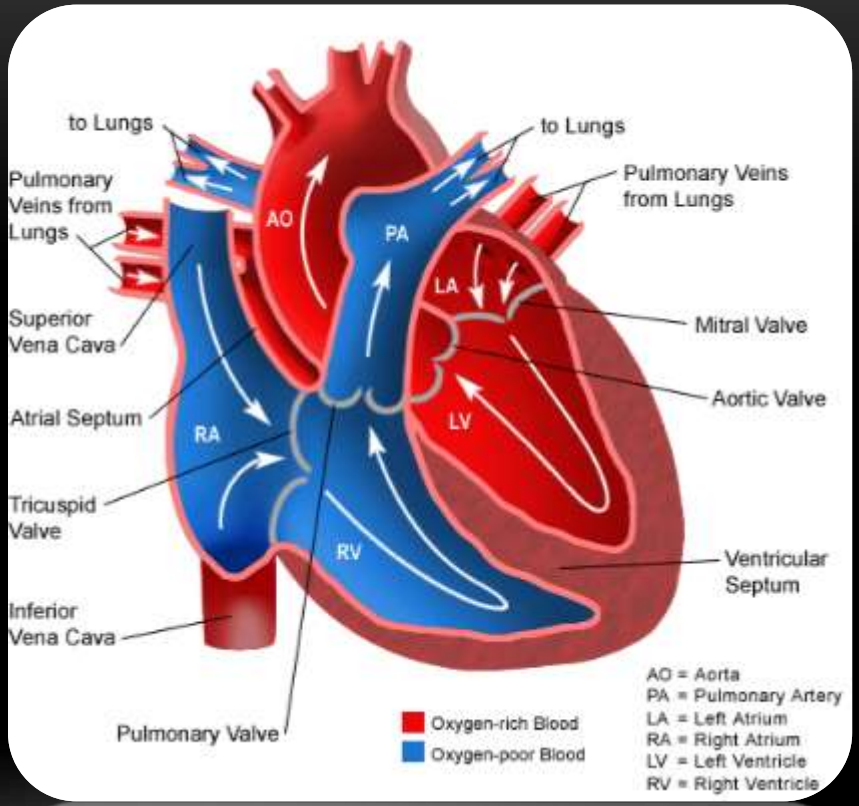
B) Carry oxygenated blood from the heart to the lungs

C) Carry oxygenated blood from the lungs to the heart

D) Carry deoxygenated blood from the heart to the lungs

Correct answer: C) Carry oxygenated blood from the lungs to the heart

Pulmonary veins return oxygenated blood from the lungs to the left atrium of the heart.



7. **In which phase of the cardiac cycle do the ventricles fill with blood?**

A) Atrial systole

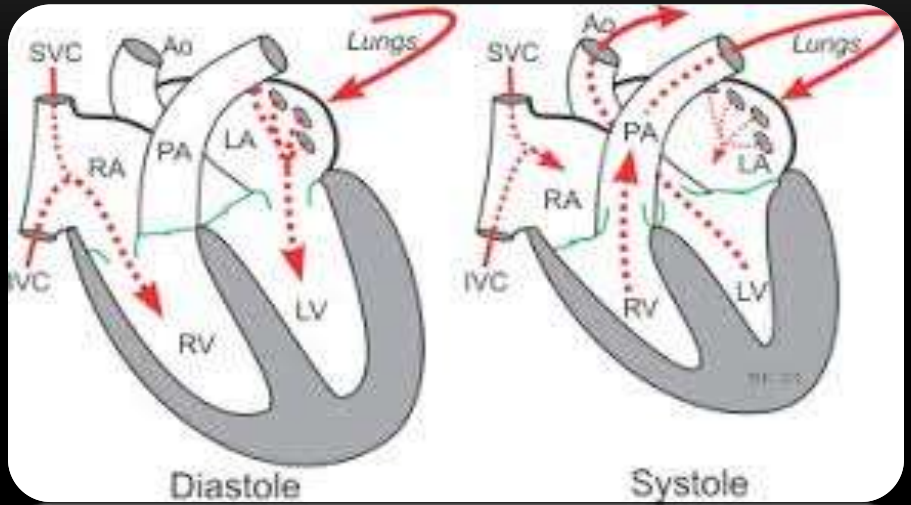
B) Ventricular systole

C) Atrial diastole

D) Ventricular diastole

Correct answer: D) Ventricular diastole

During ventricular diastole, the ventricles relax and fill with blood from the atria.



8. **Which of the following conditions is characterized by the narrowing of the coronary arteries?**

A) Hypertension

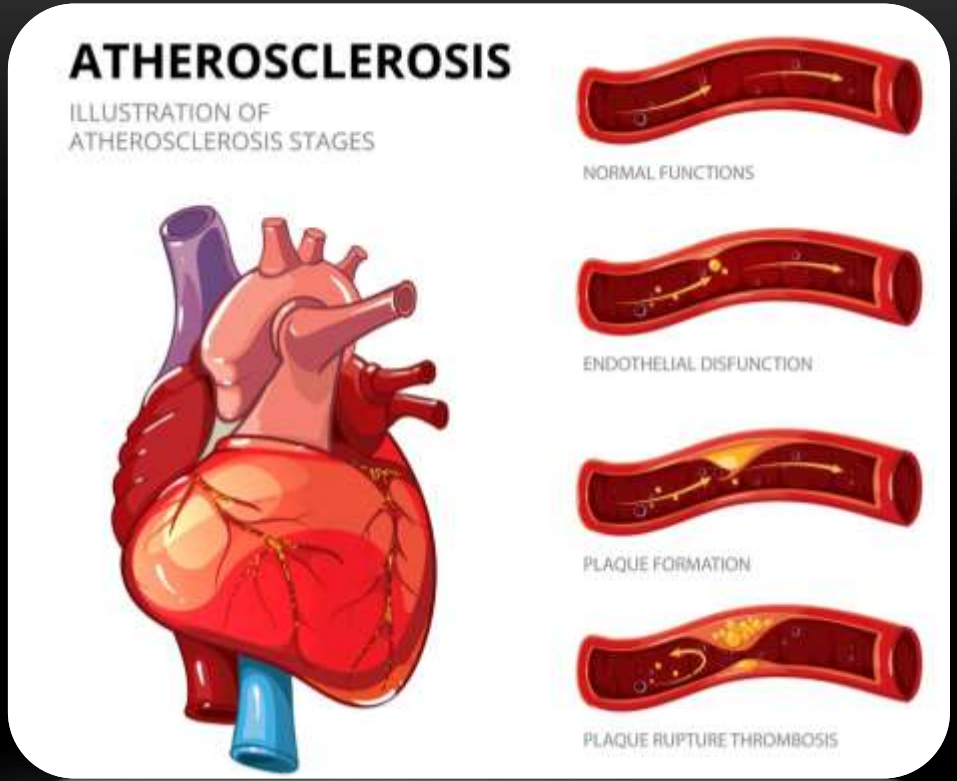
B) Atherosclerosis

C) Heart block

D) Cardiomyopathy

Correct answer: B) Atherosclerosis

Atherosclerosis involves the buildup of plaque inside the coronary arteries, leading to their narrowing.



9. **What is the effect of the sympathetic nervous system on heart rate?**

A) Decreases heart rate

B) Increases heart rate

C) No effect

D) Only affects blood vessels

Correct answer: B) Increases heart rate

The sympathetic nervous system releases norepinephrine, which increases the heart rate.

10. **Which structure in the heart initiates the electrical impulses that regulate the heartbeat?**

A) Bundle of His

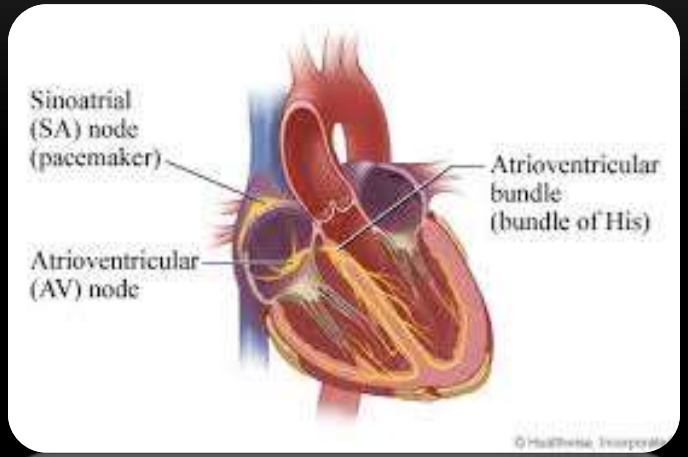
B) Atrioventricular node

C) Sinoatrial node

D) Purkinje fibers

Correct answer: C) Sinoatrial node

The sinoatrial node (SA node) is known as the pacemaker of the heart, initiating the electrical impulses that regulate the heartbeat.



11. **Which of the following veins is responsible for returning deoxygenated blood from the body to the right atrium?**

A) Pulmonary vein

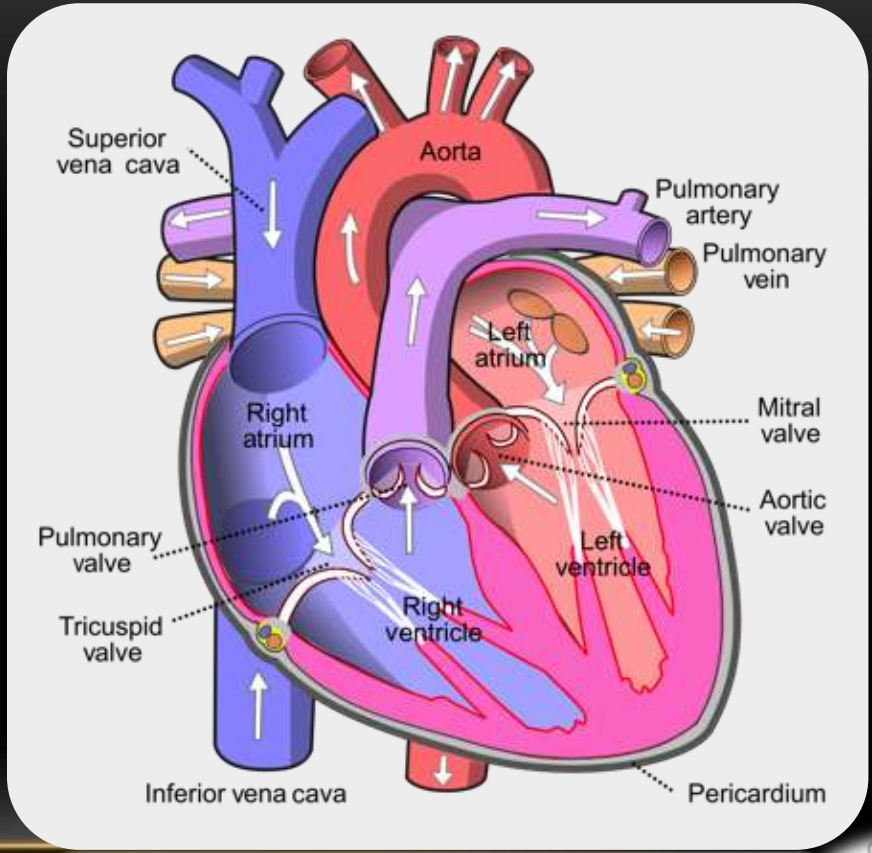
B) Superior vena cava

C) Inferior vena cava

D) Coronary sinus

Correct answer: B) Superior vena cava and C) Inferior vena cava

Both the superior and inferior vena cava return deoxygenated blood from the body to the right atrium.



12. **Which valve is situated between the right atrium and right ventricle?**

A) Mitral valve

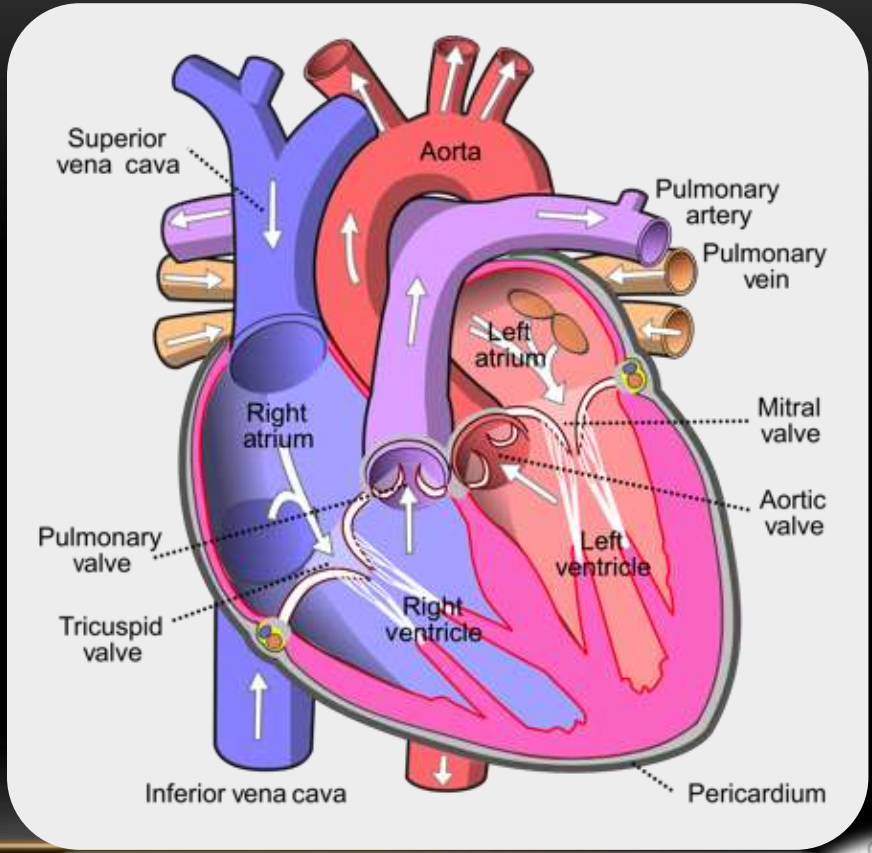
B) Aortic valve

C) Tricuspid valve

D) Pulmonary valve

Correct answer: C) Tricuspid valve

The tricuspid valve controls blood flow from the right atrium to the right ventricle..



13. **Which of the following is the correct pathway of blood flow through the heart starting from the right atrium?**

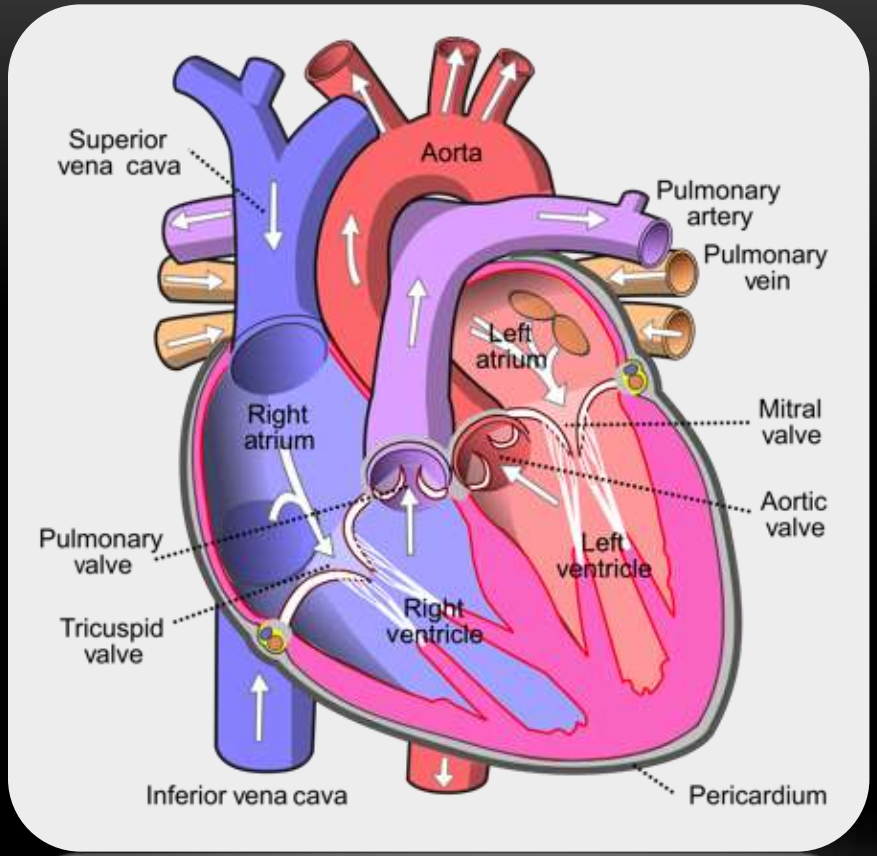
A) Right atrium → Right ventricle → Pulmonary artery → Lungs → Pulmonary vein → Left atrium → Left ventricle → Aorta

B) Right atrium → Right ventricle → Pulmonary vein → Lungs → Pulmonary artery → Left atrium → Left ventricle → Aorta

C) Right atrium → Left atrium → Right ventricle → Lungs → Pulmonary vein → Left ventricle → Aorta

D) Left atrium → Right ventricle → Pulmonary vein → Lungs → Pulmonary artery → Right atrium

Correct answer: A) Right atrium → Right ventricle → Pulmonary artery → Lungs → Pulmonary vein → Left atrium → Left ventricle → Aorta


Superior vena cava
Aorta
Pulmonary artery
Pulmonary vein
Left atrium
Right atrium
Mitral valve
Aortic valve
Pulmonary valve
Left ventricle
Tricuspid valve
Right ventricle
Inferior vena cava
Pericardium

14. **Which heart valve controls blood flow between the left ventricle and the aorta?**

A) Pulmonary valve

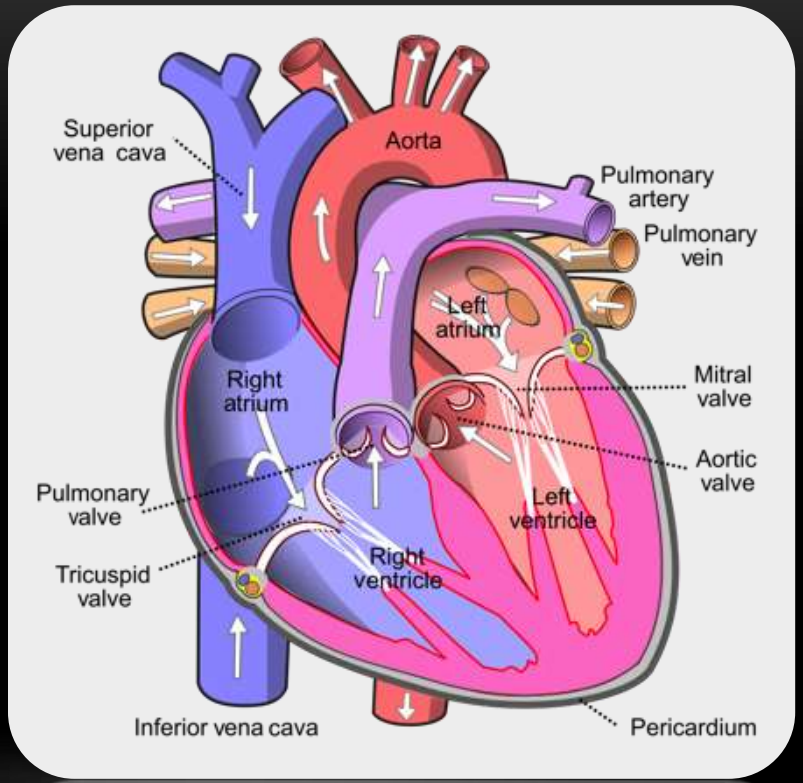
B) Tricuspid valve

C) Mitral valve

D) Aortic valve

Correct answer: D) Aortic valve

The aortic valve prevents backflow into the left ventricle and allows blood to flow into the aorta.

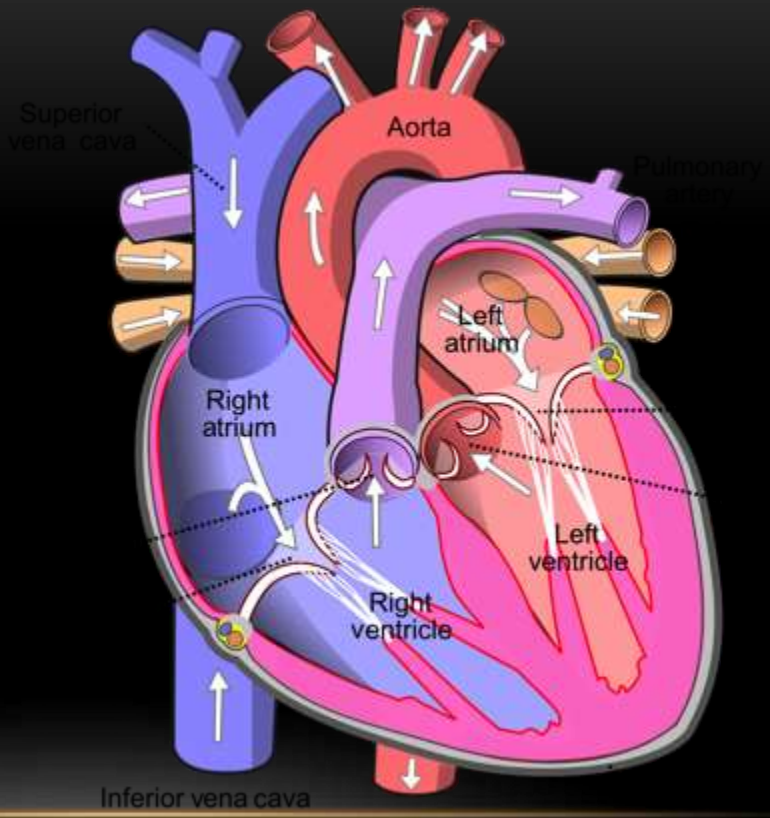


15. **During which phase of the cardiac cycle are the ventricles contracting?**

A) Atrial systole
B) Ventricular diastole
C) Ventricular systole
D) Atrial diastole

Correct answer: C) Ventricular systole

During ventricular systole, the ventricles contract, pumping blood into the pulmonary artery and aorta.

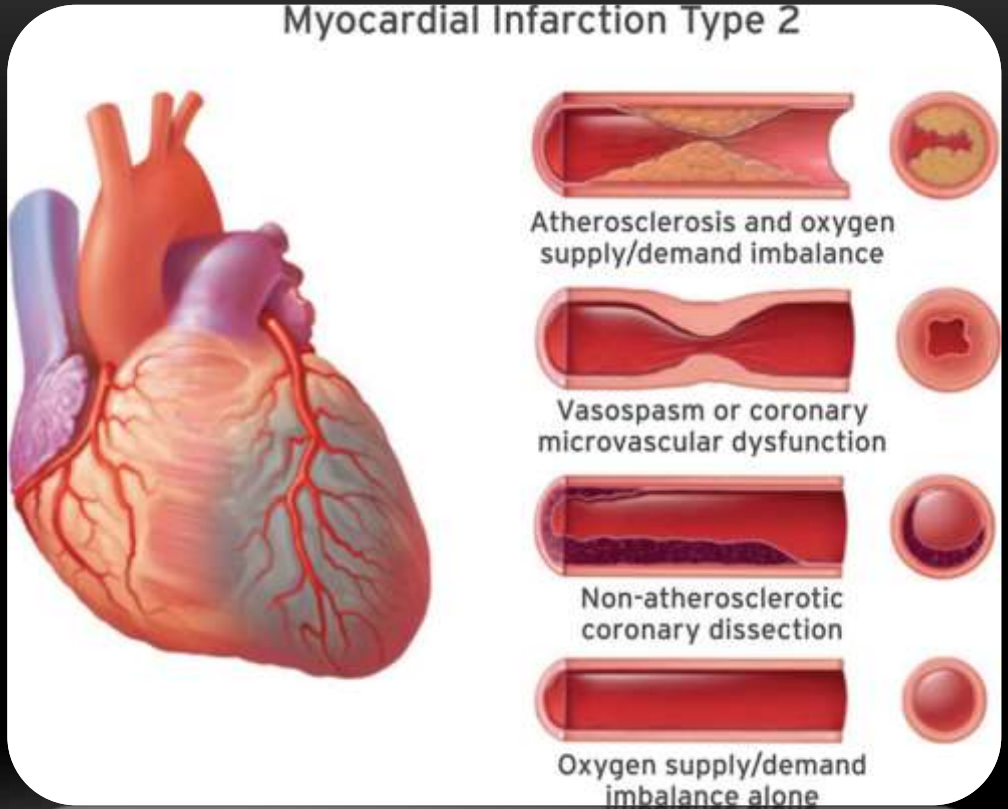


16. **Which heart disease is characterized by the death of myocardial tissue due to prolonged ischemia?**

A) Myocarditis
B) Pericarditis
C) Myocardial infarction
D) Cardiomyopathy

Correct answer: C) Myocardial infarction

Myocardial infarction (heart attack) occurs due to prolonged lack of oxygen to the heart muscle, causing tissue death.



17. **Which of the following is the primary pacemaker of the heart?**

A) Atrioventricular node

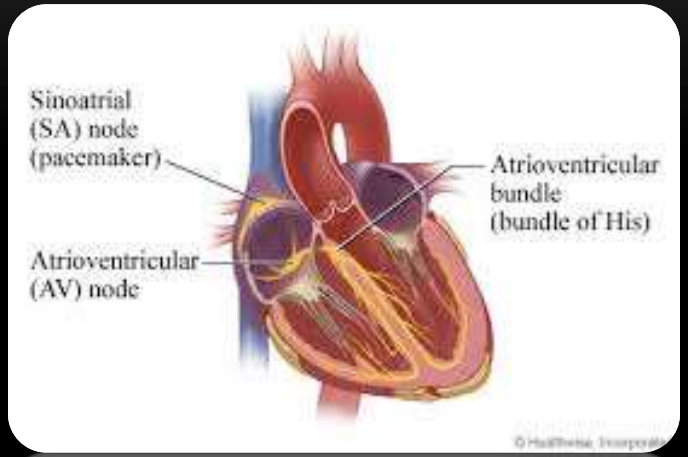
B) Bundle of His

C) Purkinje fibers

D) Sinoatrial node

Correct answer: D) Sinoatrial node

The sinoatrial (SA) node is the primary pacemaker of the heart, initiating electrical impulses.



18. **Which vessel carries oxygen-poor blood from the right ventricle to the lungs?**

A) Pulmonary vein

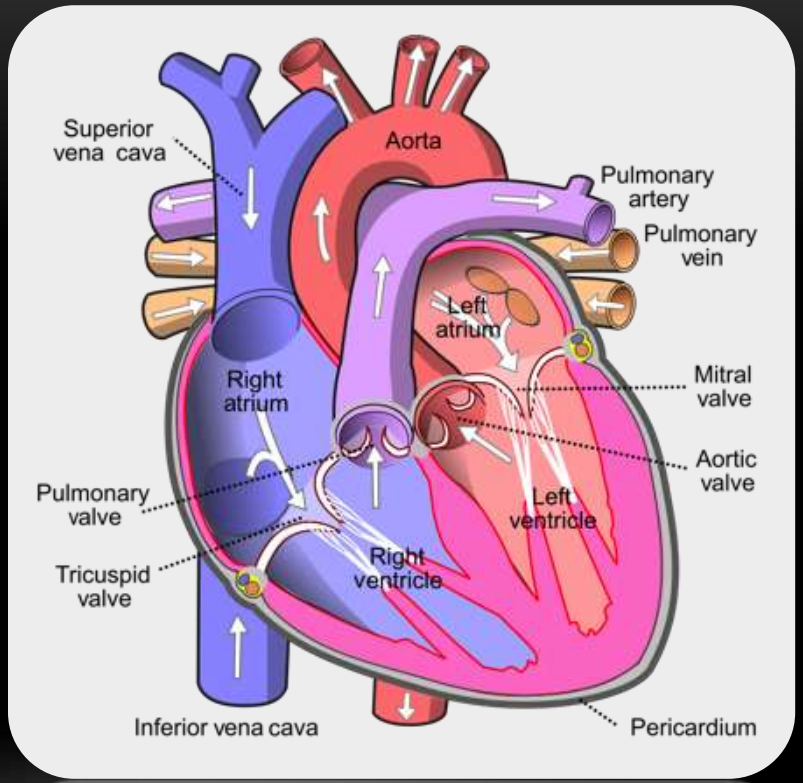
B) Aorta

C) Pulmonary artery

D) Superior vena cava

Correct answer: C) Pulmonary artery

The pulmonary artery carries deoxygenated blood from the right ventricle to the lungs for oxygenation.

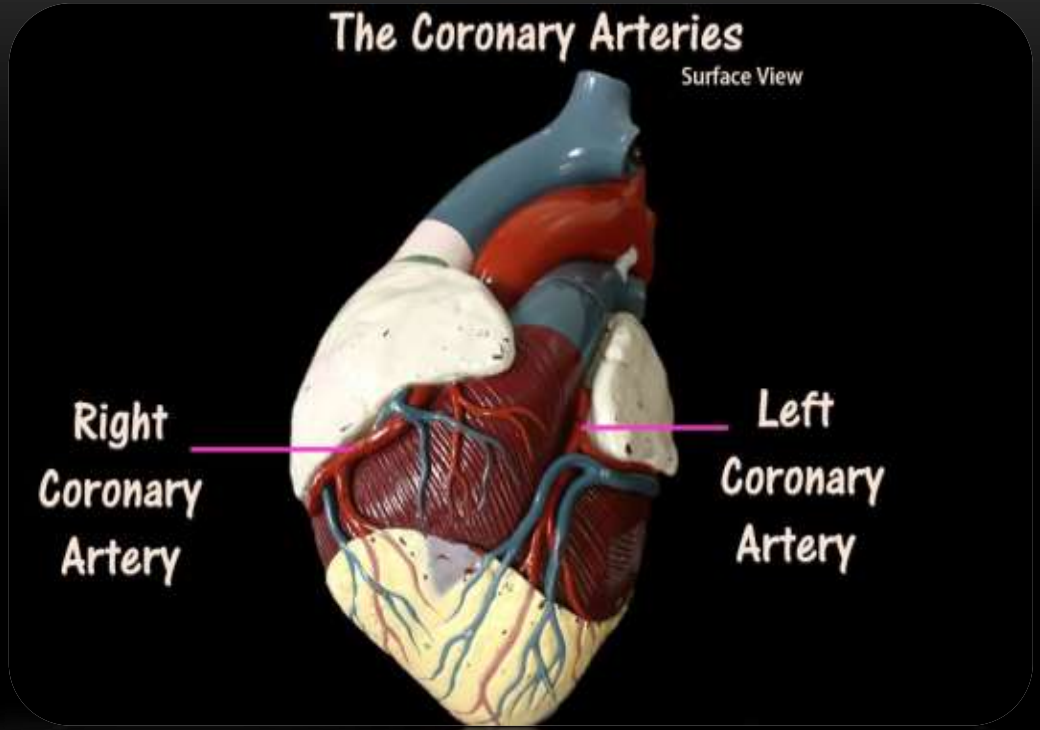


19. **The coronary arteries primarily arise from which part of the heart?**

A) Pulmonary artery
B) Right atrium
C) Aorta
D) Left ventricle

Correct answer: C) Aorta

The coronary arteries arise from the base of the aorta and supply oxygenated blood to the heart muscle.



20. **What term describes the volume of blood ejected by each ventricle per minute?**

A) Stroke volume

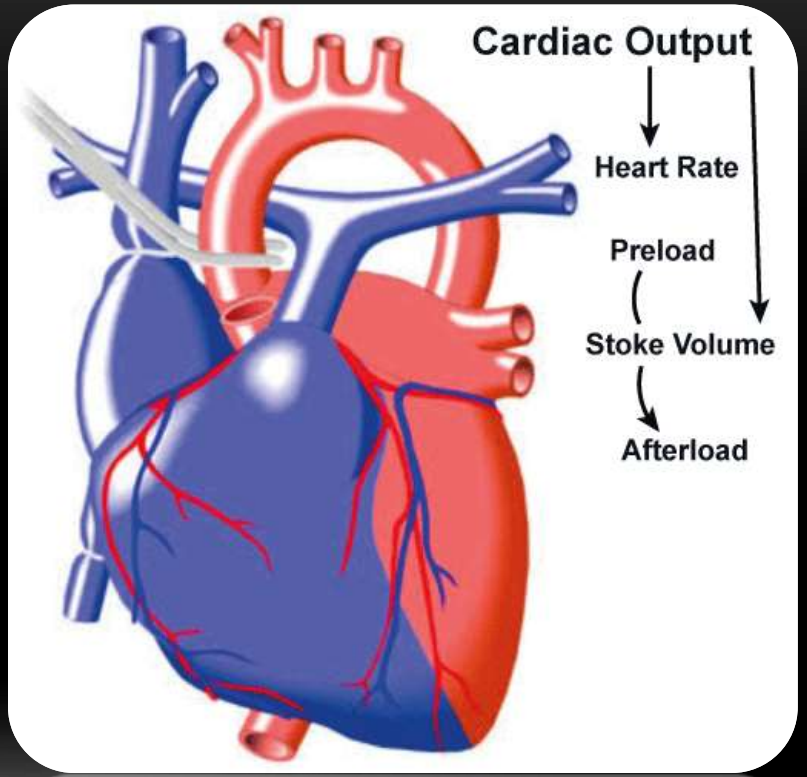
B) End-diastolic volume

C) Cardiac output

D) Ejection fraction

Correct answer: C) Cardiac output

Dendrites are branched extensions of the neuron that receive electrical signals from the synapses of other neurons and transmit these signals to the cell body (soma).



21. **Which valve prevents blood from flowing back into the right ventricle?**

A) Pulmonary valve

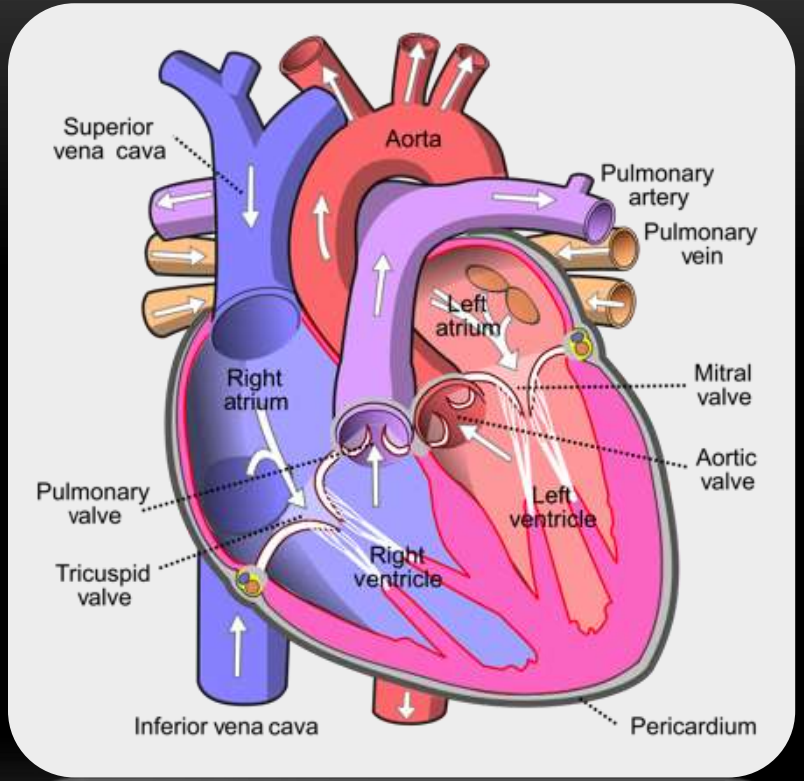
B) Tricuspid valve

C) Aortic valve

D) Mitral valve

Correct answer: A) Pulmonary valve

The pulmonary valve prevents backflow from the pulmonary artery into the right ventricle.

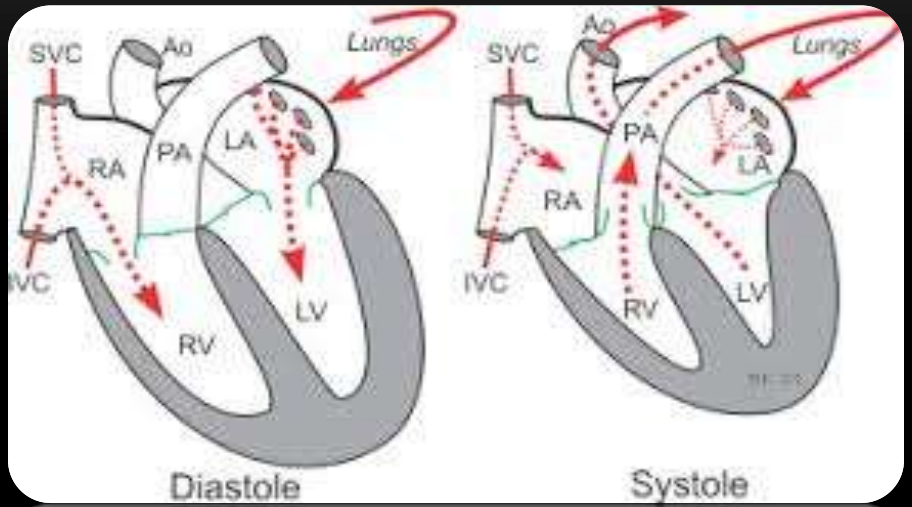


22. **Which phase of the cardiac cycle corresponds with the filling of the ventricles?**

A) Isovolumetric contraction
B) Ventricular diastole
C) Atrial systole
D) Ventricular systole

Correct answer: B) Ventricular diastole

During ventricular diastole, the ventricles relax and fill with blood from the atria.



23. **Which of the following is an example of a modifiable risk factor for cardiovascular disease?**

A) Family history
B) Age
C) Smoking
D) Gender

Correct answer: C) Smoking

Smoking is a modifiable risk factor for cardiovascular disease, meaning it can be changed to lower the risk.

Non-modifiable	Modifiable	Lifestyle	Social
• Age • Gender • Family history of CVD • Ethnicity • Genetic evidence • Previous history of CVD	• Blood pressure • Total cholesterol • HDL cholesterol • Smoking • Blood sugar/diabetes • BMI • Markers of chronic inflammation	• Smoking • Diet • Exercise • Stress	• Income • Social deprivation • Environment

24. **Which structure electrically connects the atria and ventricles?**

A) SA node

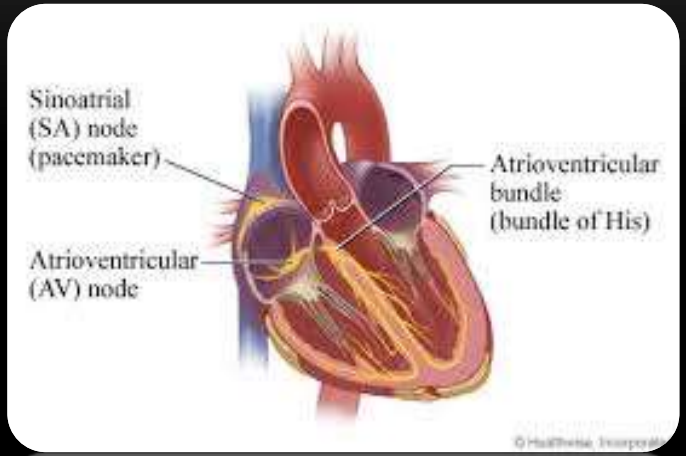
B) AV node

C) Bundle of His

D) Purkinje fibers

Correct answer: B) AV node

The atrioventricular (AV) node connects the atria and ventricles and helps coordinate the heart's contractions.



25. **What is the normal resting heart rate for an adult?**

A) 40–60 beats per minute
B) 60–100 beats per minute
C) 100–120 beats per minute
D) 120–140 beats per minute

Correct answer: B) 60–100 beats per minute

A normal resting heart rate for an adult typically ranges from 60 to 100 beats per minute.

26. **Which disease is often referred to as the "silent killer" due to its asymptomatic nature?**

A) Atherosclerosis

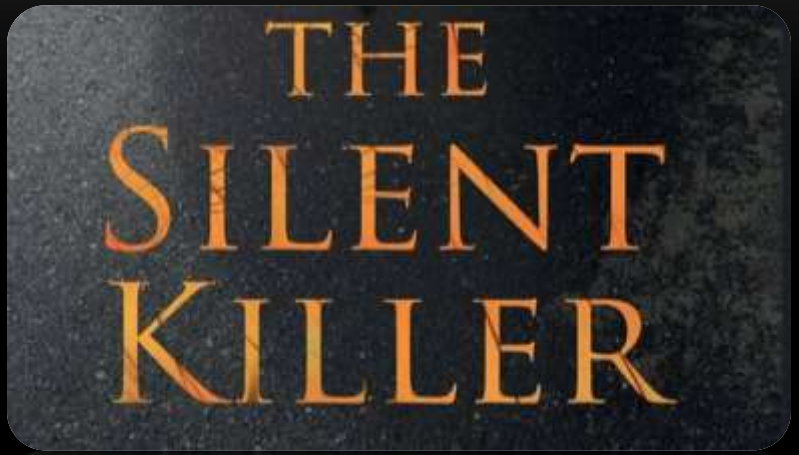
B) Hypertension

C) Angina

D) Heart failure

Correct answer: B) Hypertension

Hypertension is often called the "silent killer" because it usually has no symptoms but can lead to serious cardiovascular issues.



27. **Which of the following describes angina pectoris?**

A) Inflammation of the heart muscle

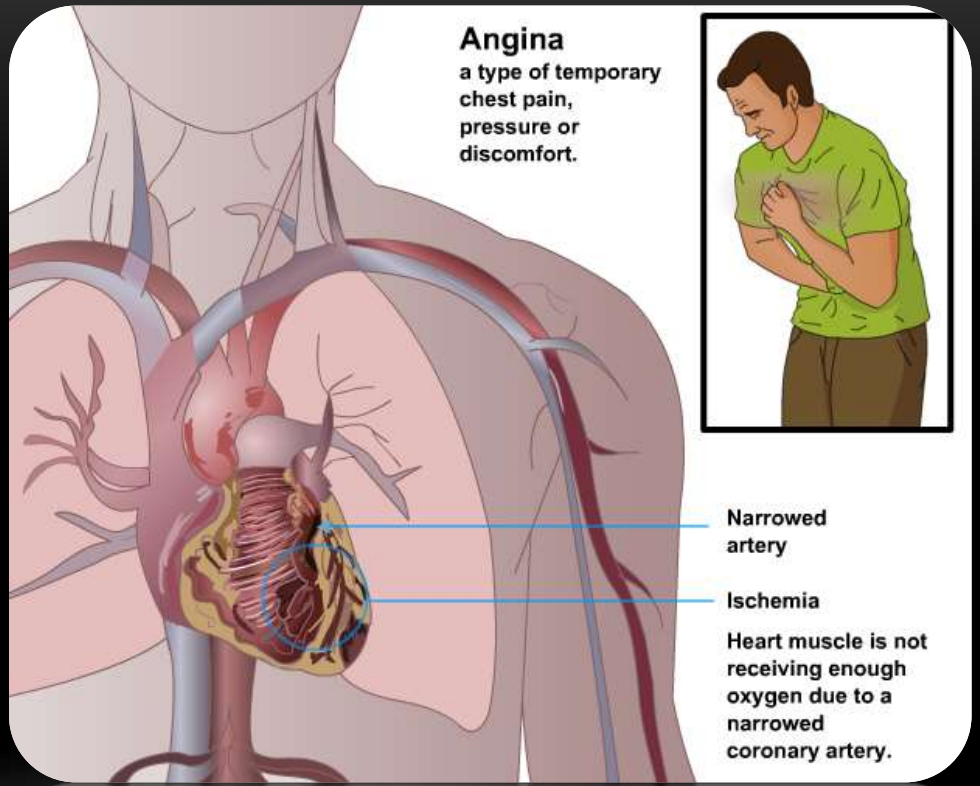
B) A condition involving valve dysfunction

C) Chest pain due to myocardial ischemia

D) Irregular heart rhythm

Correct answer: C) Chest pain due to myocardial ischemia

Angina pectoris is chest pain caused by reduced blood flow to the heart muscle (ischemia).



28. **Which of the following cardiac conditions is characterized by the abnormal rapid heart rate?**

A) Bradycardia

B) Tachycardia

C) Atrial fibrillation

D) Ventricular fibrillation

Correct answer: B) Tachycardia

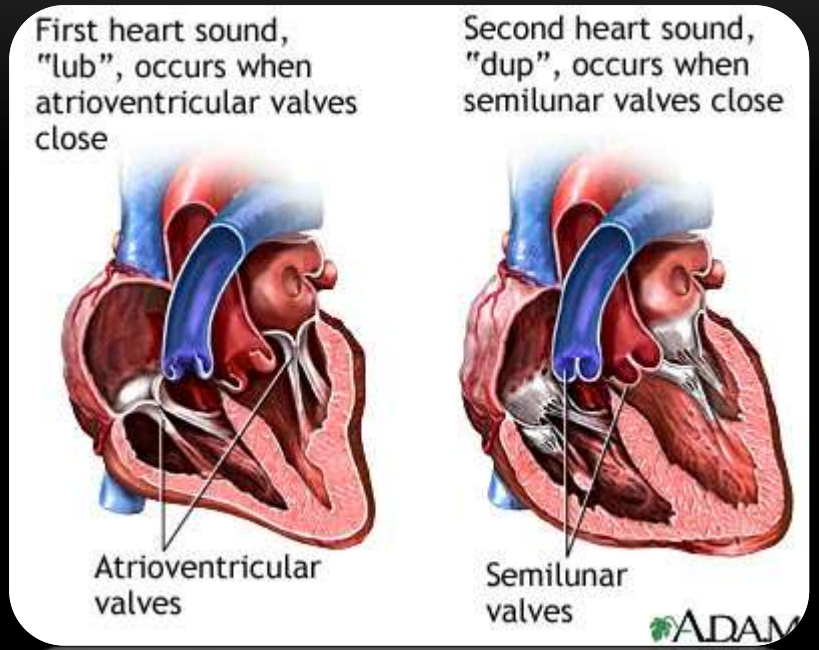
Tachycardia refers to an abnormally rapid heart rate, usually above 100 beats per minute.

29. **Which heart sound is produced by the closure of the semilunar valves?**

A) S1
B) S2
C) S3
D) S4

Correct answer: B) S2

The "dub" (S2) sound occurs when the semilunar valves (aortic and pulmonary) close at the end of ventricular systole.

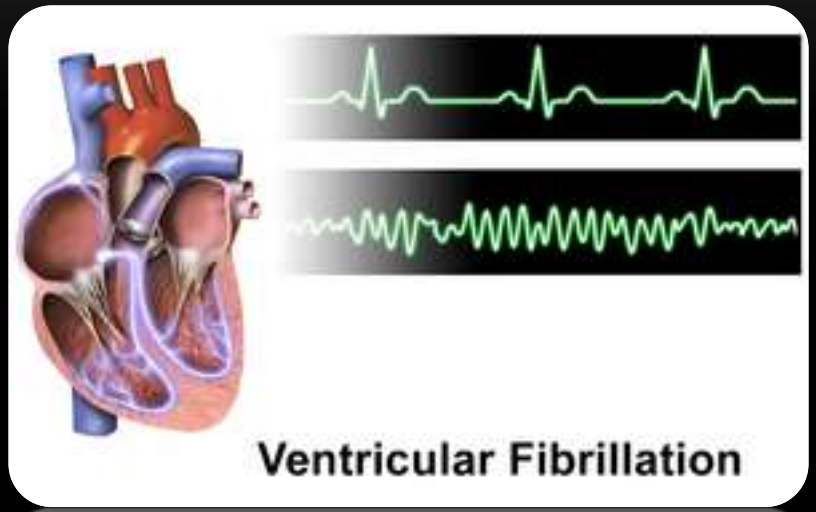


30. **What is the most common cause of sudden cardiac death?**

A) Hypertrophic cardiomyopathy
B) Myocarditis
C) Ventricular fibrillation
D) Pericarditis

Correct answer: C) Ventricular fibrillation

Ventricular fibrillation is the most common cause of sudden cardiac death as it disrupts the heart's ability to pump blood.



31. Which of the following is a characteristic feature of heart failure?

A) Increased cardiac output

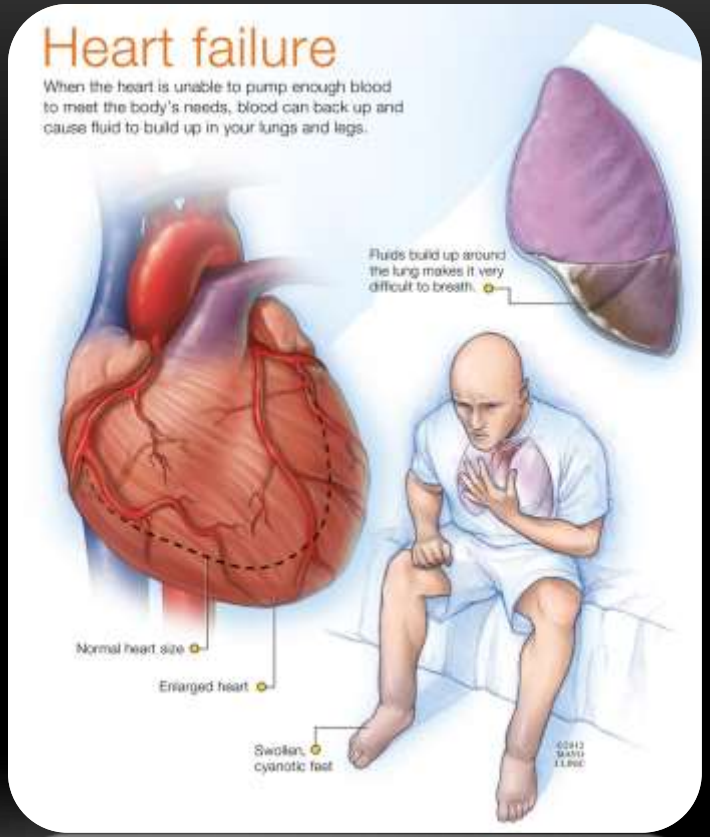
B) Inability of the heart to meet the body's demands

C) Abnormalities in the conduction system

D) Chronic chest pain

Correct answer: B) Inability of the heart to meet the body's demands

Heart failure occurs when the heart cannot pump enough blood to meet the body's needs..



32. **What is the term for the amount of blood ejected from the left ventricle with each contraction?**

A) Cardiac output

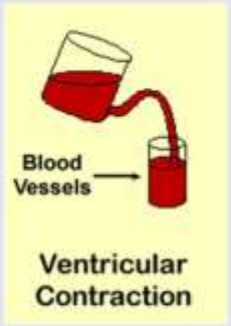
B) Stroke volume

C) End-systolic volume

D) Ejection fraction

Correct answer: B) Stroke volume

Stroke volume is the amount of blood ejected by the left ventricle during each contraction..



Stroke Volume: The volume of blood ejected by each ventricle per beat, at rest, averages 70 ml/beat
Recall SV = EDV - ESV

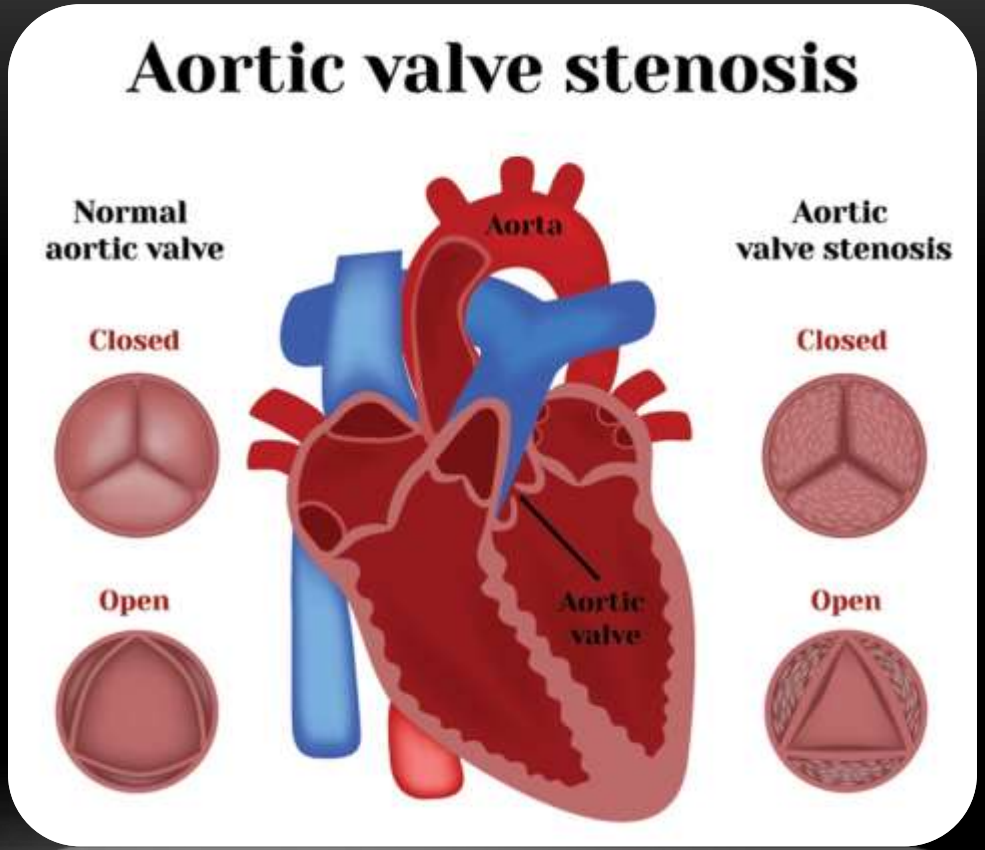
Heart Rate: the number of times that the heart beats per minute (the number of cardiac cycles per minute) at rest, averages 75/minute

33. **Which heart valve disorder involves a narrowed valve, restricting blood flow?**

A) Valve prolapse
B) Valve stenosis
C) Valve insufficiency
D) Valve regurgitation

Correct answer: B) Valve stenosis

Valve stenosis refers to a narrowing of a valve, which restricts blood flow.



34. **What is the function of the papillary muscles in the heart?**

A) Initiating heart contractions

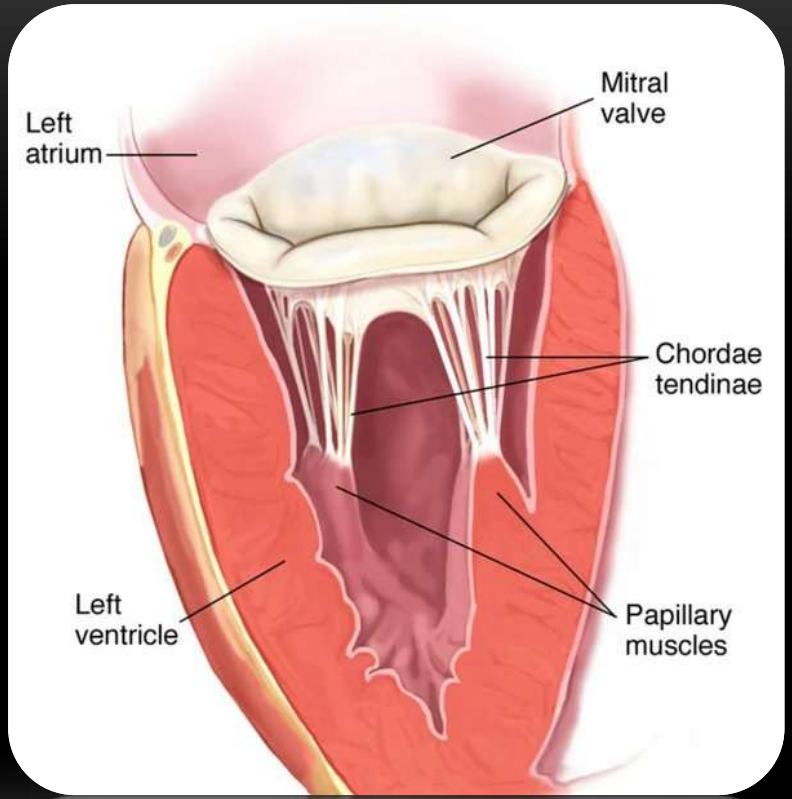
B) Preventing valve prolapse

C) Increasing the force of ventricular contraction

D) Coordinating electrical signals

Correct answer: B) Preventing valve prolapse

The papillary muscles, along with the chordae tendineae, help prevent the atrioventricular valves from prolapsing during ventricular contraction.



35. **Which artery supplies the majority of the blood to the left ventricle?**

A) Right coronary artery

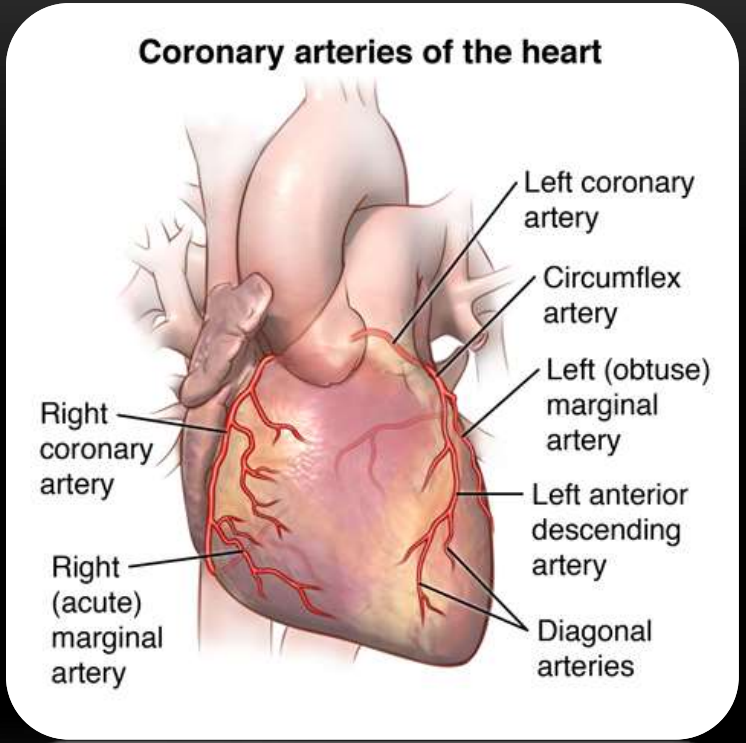
B) Left anterior descending artery

C) Circumflex artery

D) Pulmonary artery

Correct answer: B) Left anterior descending artery

The left anterior descending artery (LAD) supplies most of the blood to the left ventricle.



36. **What is the main function of the heart's conduction system?**

A) Pump blood

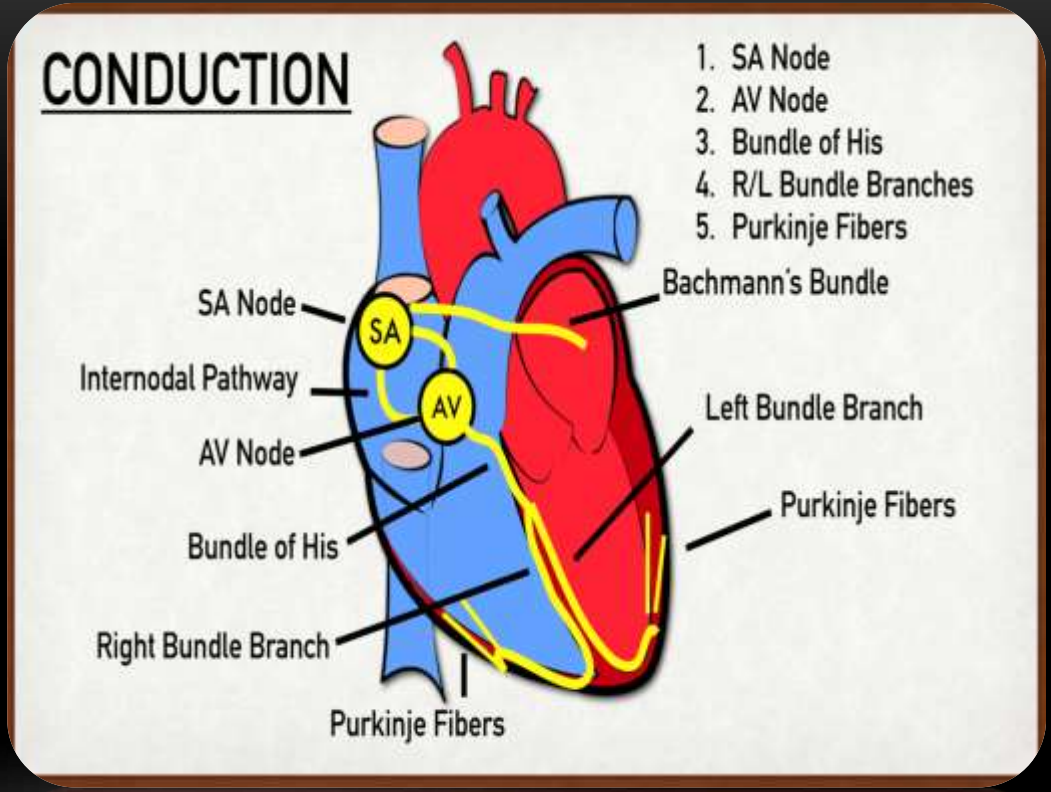
B) Circulate oxygen

C) Transmit electrical impulses

D) Generate pressure

Correct answer: C) Transmit electrical impulses

The heart's conduction system generates and transmits electrical impulses that control the heartbeat.

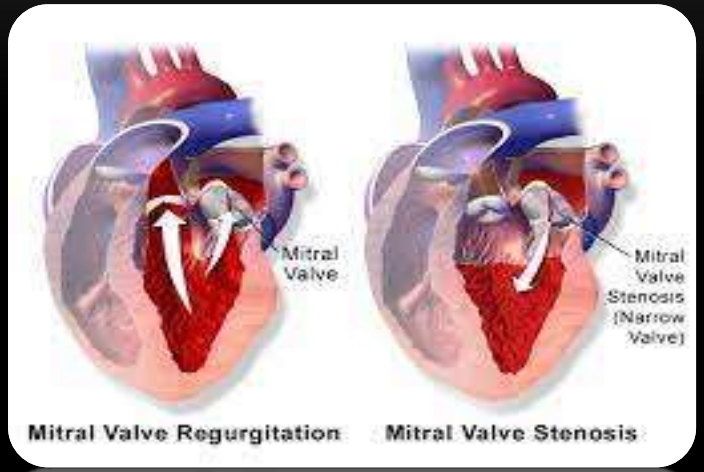


37. **Which cardiac valve disorder results in backward flow of blood?**

A) Valve stenosis
B) Valve regurgitation
C) Valve prolapse
D) Valve fibrosis

Correct answer: B) Valve regurgitation

Valve regurgitation occurs when a valve does not close properly, allowing blood to flow backward.



38. **Which of the following describes atrial fibrillation?**

A) Slow, irregular heart rhythm

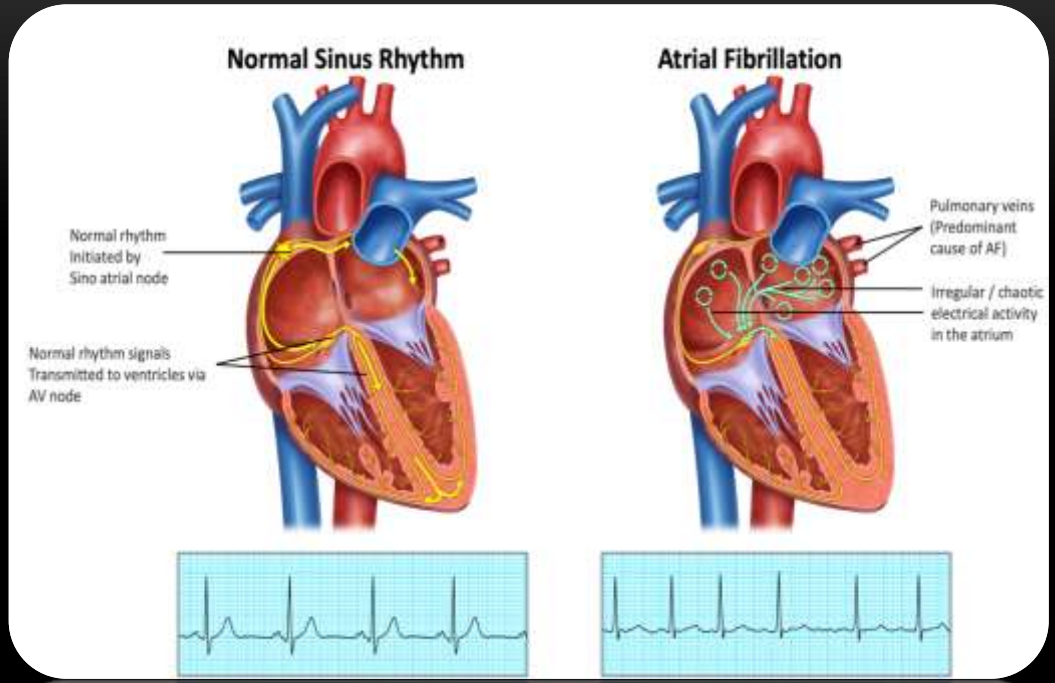
B) Rapid, chaotic contractions of the atria

C) Failure of the atria to contract

D) Complete heart block

Correct answer: B) Rapid, chaotic contractions of the atria

Atrial fibrillation is characterized by rapid and irregular electrical impulses that cause the atria to quiver instead of contracting efficiently.



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39. **What type of blood vessel carries blood away from the heart?**

A) Veins

B) Arteries

C) Capillaries

D) Venules

Correct answer: B) Arteries

Arteries carry oxygenated blood away from the heart to the rest of the body.

40. **What is the most common site of coronary artery blockages that can lead to myocardial infarction?**

A) Right coronary artery
B) Left anterior descending artery
C) Circumflex artery
D) Pulmonary artery

Correct answer: B) Left anterior descending artery

The left anterior descending (LAD) artery is the most common site for blockages that cause myocardial infarction (heart attack).