Heart Anatomy and Physiology Worksheet

Instructions: Answer the following questions based on your knowledge of the anatomy and physiology of the heart. Use the images provided to assist in answering the questions.

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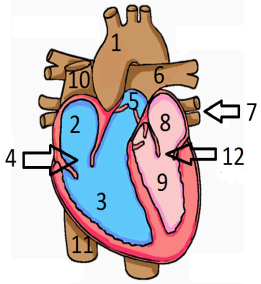
1. Label the following parts on the heart diagram:

- Right Atrium 2
- Left Atrium 8
- Right Ventricle 3
- Left Ventricle 9
- Aorta 1
- Pulmonary Artery 6
- Pulmonary Vein 7
- Superior Vena Cava 10
- Inferior Vena Cava 11



True/False Questions

The left ventricle pumps blood to the lungs.

True

False (The left ventricle pumps blood to the body; the right ventricle pumps blood to the lungs.)

The tricuspid valve is located between the left atrium and the left ventricle.

True

False (The tricuspid valve is between the right atrium and right ventricle.)

The sinoatrial (SA) node is known as the heart's natural pacemaker.

True

False

The aortic valve is found between the left atrium and left ventricle.

True

False (The aortic valve is between the left ventricle and the aorta.)

During diastole, the heart muscle contracts to pump blood out.

True

False (During diastole, the heart muscle relaxes to allow the chambers to fill with blood.)

The interventricular septum separates the left and right atria.

True

False (The interventricular septum separates the left and right ventricles.)

The pulmonary veins carry deoxygenated blood to the left atrium.

True

False (The pulmonary veins carry oxygenated blood from the lungs to the left atrium.)

The right atrium receives blood from the pulmonary veins.

True

False (The right atrium receives blood from the superior and inferior vena cavae.)

The mitral valve is also known as the tricuspid valve.

True

False (The mitral valve is also known as the bicuspid valve.)

The coronary arteries supply blood to the heart muscle itself.

True

False

Multiple Choice Questions

Which valve is located between the right atrium and the right ventricle?

A) Mitral Valve

B) Aortic Valve

C) Tricuspid Valve

D) Pulmonary Valve

Which of the following carries oxygenated blood?

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A) Pulmonary Artery

B) Superior Vena Cava

C) Pulmonary Vein

D) Inferior Vena Cava

What is the primary role of the coronary sinus?

A) To carry oxygenated blood to the heart

B) To collect deoxygenated blood from the heart muscle

C) To separate the ventricles

D) To regulate heart rate

What is the name of the muscle layer of the heart?

A) Endocardium

B) Myocardium

C) Epicardium

D) Pericardium

Which part of the heart receives blood from the superior and inferior vena cava?

A) Left Ventricle

B) Right Ventricle

C) Left Atrium

D) Right Atrium

What does the term “cardiac output” refer to?

A) The volume of blood in the heart’s chambers

B) The rate of electrical impulses in the heart

C) The amount of blood pumped by the heart per minute

D) The pressure in the arteries

Which structure prevents backflow of blood into the left atrium?

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A) Tricuspid Valve

B) Pulmonary Valve

C) Mitral Valve

D) Aortic Valve

Which of the following structures is responsible for the delay in electrical conduction between the atria and ventricles?

A) SA Node

B) AV Node

C) Bundle of His

D) Purkinje Fibers

The heart's ability to pump blood effectively is primarily dependent on which factor?

A) Blood volume

B) Heart rate

C) Cardiac muscle strength

D) All of the above

What is the purpose of the papillary muscles and chordae tendineae?

A) To open and close the heart valves

B) To ensure the correct timing of the heartbeat

C) To prevent the backflow of blood through the valves

D) To control heart rate

21. What is the primary function of the heart?

Answer: The primary function of the heart is to pump blood throughout the body, delivering oxygen and nutrients to tissues and removing carbon dioxide and waste products.

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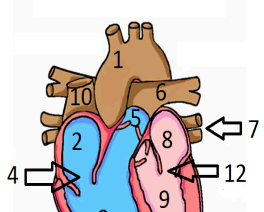
22. What is the name of the valve located between the right atrium and the right ventricle (# 4)?



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Answer: The Tricuspid Valve

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23. Which valve prevents backflow of blood from the left ventricle into the left atrium (#12)?

Answer: The Mitral Valve (also known as the Bicuspid Valve)

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24. Identify and describe the function of the semilunar valves.

Answer: The semilunar valves are the Pulmonary Valve and the Aortic Valve. They prevent backflow of blood from the pulmonary artery and aorta into the ventricles.

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25. What is the name of the heart's pacemaker, and where is it located?

Answer: The Sinoatrial (SA) Node, located in the right atrium.

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26. What is the purpose of the coronary arteries?

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

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27. Describe the pathway of blood through the heart, starting from the right atrium.

Answer: Blood enters the right atrium from the superior and inferior vena cava, flows through the tricuspid valve into the right ventricle, is pumped through the pulmonary valve into the pulmonary artery, travels to the lungs for oxygenation, returns via the pulmonary veins to the left atrium, passes through the mitral valve into the left ventricle, and is then pumped through the aortic valve into the aorta and to the rest of the body.

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28. What is systole, and how does it differ from diastole?

Answer: Systole is the phase of the heartbeat when the heart muscles contract and pump blood out. Diastole is the phase when the heart muscles relax and the chambers fill with blood.

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29. What role do the atrioventricular (AV) nodes play in heart function?

Answer: The AV node delays the electrical signal from the SA node before it passes to the ventricles, ensuring that the atria have time to contract and fill the ventricles with blood.

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30. Which part of the heart receives deoxygenated blood from the body?

Answer: The Right Atrium

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31. Which part of the heart receives oxygenated blood from the lungs?

Answer: The Left Atrium

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32. Name the two main branches of the aorta.

Answer: The Thoracic Aorta and the Abdominal Aorta

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33. What is the significance of the foramen ovale in fetal circulation?

Answer: The foramen ovale is an opening between the right and left atria in the fetus that allows blood to bypass the non-functioning lungs.

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34. How does the structure of the left ventricle differ from the right ventricle?

Answer: The left ventricle has a thicker muscular wall than the right ventricle because it needs to generate higher pressure to pump blood throughout the entire body, while the right ventricle only pumps blood to the lungs.

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35. What is the role of the papillary muscles and chordae tendineae?

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Answer: Papillary muscles and chordae tendineae help prevent the prolapse of the atrioventricular valves by holding the valve cusps in place during ventricular contraction.

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36. What causes the “lub-dub” sounds of the heart?

Answer: The “lub” sound is caused by the closing of the atrioventricular valves (tricuspid and mitral), and the “dub” sound is caused by the closing of the semilunar valves (pulmonary and aortic).

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37. How does exercise affect heart rate and blood flow?

Answer: Exercise increases heart rate and cardiac output, improving blood flow to the muscles and organs.

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