

Circulatory System Worksheet

An adult learning worksheet on the heart, blood vessels and blood flow, with answer key.

Knowledge, not health. General education about typical adult anatomy. This worksheet tests what you know about the circulatory system. It does not measure your health or your risk of any condition, and your score says nothing about your heart or blood vessels.

Safety first. Call 9-1-1 for chest pain or other possible heart attack symptoms, even if you are not sure. Call 9-1-1 now for unexplained trouble breathing, chest pain or discomfort that worsens with a deep breath, coughing up blood, or fainting, which can be signs of a blood clot in the lungs. Do not wait for a callback. For a newly swollen, tender, painful leg without those emergency symptoms, get prompt medical care: call a healthcare provider right away.

Part 1: Match the word to its job

Write one word from the word bank next to each description. Each word is used once.

Word bank: artery, atrium, capillary, valve, vein, ventricle

1. A blood vessel that carries blood away from the heart. _____
2. A blood vessel that carries blood toward the heart. _____
3. The smallest blood vessel, where materials pass between the blood and the body's tissue cells.

4. One of the two upper chambers of the heart, which receive blood coming in from the body and lungs. _____
5. One of the two lower chambers of the heart, which pump blood out to the lungs and the rest of the body. _____
6. A set of flaps that opens to let blood through and closes to stop it from flowing backward.

Part 2: Follow the blood through the heart

Oxygen-poor blood from the body enters the heart through two large veins, the superior and inferior vena cava. Number steps A to H from 1 to 8 in the order the blood reaches them.

7. Put steps A to H in order, starting with the first place the blood goes after the vena cava.

Write 1 to 8 in the right-hand column.

Step	Place	Order (1 to 8)
A	Left ventricle	
B	Pulmonary artery	
C	Right atrium	
D	Aorta, then out to the body	
E	Lungs, where blood picks up oxygen	
F	Left atrium	
G	Pulmonary veins	
H	Right ventricle	

Part 3: Short questions

Answer in a word or a sentence.

8. True or false: every artery carries oxygen-rich blood. Explain your answer.

9. Which ventricle pumps blood through the lungs, and which pumps blood to the rest of the body?

10. What do the valves in medium and large veins do, and where are they especially important?

11. Name the liquid part of blood and the three solid parts. Which solid part helps blood clot after a cut?

12. Which arteries carry blood to the heart muscle itself, and where do they branch from?

13. A heartbeat sounds like “lub-DUB.” What makes the first sound, the “lub”?

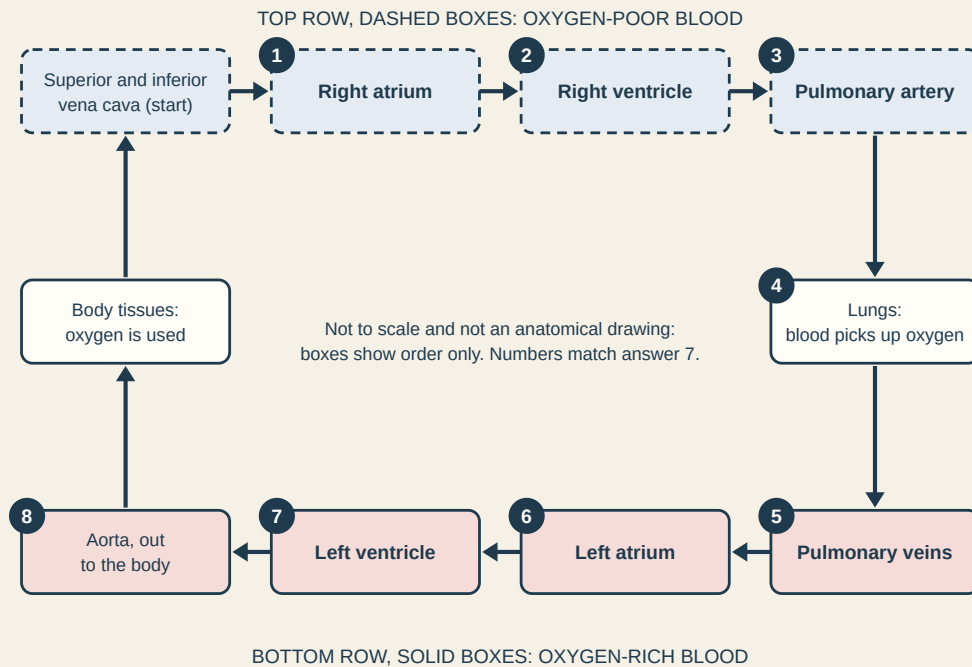
14. What is venous thromboembolism (VTE), and what are its two types?

15. Can this worksheet, or your score on it, tell you whether you have a blood clot or a heart problem?

Answer key

1. Artery. Arteries carry blood away from the heart.
2. Vein. Veins carry blood toward the heart.
3. Capillary. Capillaries are the smallest and most numerous blood vessels, and their main job is the exchange of materials between the blood and tissue cells.
4. Atrium. The two upper chambers are the atria. Blood flows from the body and lungs into the atria, then into the ventricles.
5. Ventricle. The ventricles pump blood out of the heart to the lungs and other parts of the body.
6. Valve. Heart valves keep blood moving in the right direction and stop it from flowing backward. Their flaps are called cusps or leaflets.
7. C, H, B, E, G, F, A, D: right atrium, right ventricle, pulmonary artery, lungs, pulmonary veins, left atrium, left ventricle, then the aorta and out to the body.
8. False. The pulmonary arteries carry blood with a low oxygen content from the right ventricle to the lungs. Systemic arteries carry oxygen-rich blood from the left ventricle to the body.
9. The right ventricle pumps blood through the lungs (the pulmonary circuit). The left ventricle pumps blood to the rest of the body (the systemic circuit).
10. They help keep blood flowing toward the heart. They are especially important in the arms and legs, where they stop blood from flowing back down with the pull of gravity.
11. The liquid part is plasma, made of water, salts and protein. The solid parts are red blood cells, white blood cells and platelets. Platelets help blood clot when you have a cut or wound.
12. The coronary arteries. They branch off from the aorta, so the heart gets oxygen-rich blood as well as the rest of the body.
13. The valves between the atria and the ventricles closing after the atria have pumped blood into the ventricles.
14. VTE is a condition in which a blood clot forms in a vein. Its two types are deep vein thrombosis (DVT), a clot in a deep vein, usually in the lower leg, thigh or pelvis, and pulmonary embolism (PE), when a clot breaks loose and travels through the bloodstream to the lungs.
15. No. It tests knowledge, not health. VTE symptoms are not the same for everyone, and VTE sometimes has no obvious signs. A healthcare provider uses tests to find out whether someone has the condition.

Answer 7: the order blood takes through the heart



Sources

National Heart, Lung, and Blood Institute (nhlbi.nih.gov): How the Heart Works; What Is Venous Thromboembolism?; Venous Thromboembolism Symptoms; Heart Attack Symptoms. Centers for Disease Control and Prevention (cdc.gov): About Venous Thromboembolism (Blood Clots). National Cancer Institute SEER Training Modules (training.seer.cancer.gov): Classification and Structure of Blood Vessels; Circulatory Pathways. MedlinePlus (medlineplus.gov): Blood; When to use the emergency room - adult.

General education about typical adult anatomy, not individual medical advice. Circulation before birth differs from the adult pattern described here. This worksheet does not measure your health or your risk of any condition.

From the Cardio Guardian Editorial Team. Online version with an accessible answer key: getcardioguardian.com/insights/circulatory-system-worksheets/