What is Pulmonary Circulation?

Worksheet

Pulmonary circulation moves blood from the right ventricle through the pulmonary arteries to the lungs, where it picks up oxygen and releases carbon dioxide, then returns via the pulmonary veins to the left atrium.

Questions

1. Pulmonary circulation begins in which heart chamber?

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

2. What is unusual about the pulmonary arteries compared to other arteries?

A) They carry oxygenated blood
B) They carry deoxygenated blood
C) They have no blood flow
D) They connect to the aorta

3. Where does gas exchange occur in pulmonary circulation?

A) Left atrium
B) Pulmonary veins
C) Alveolar capillaries
D) Aorta

4. After the lungs, oxygenated blood returns to the heart via the:

A) Pulmonary arteries
B) Vena cava
C) Pulmonary veins
D) Coronary arteries

5. Pulmonary artery pressure is about 25/8 mmHg, much lower than the aorta's 120/80 mmHg. Why is pulmonary pressure so low?

6. Blood entering the lungs has an oxygen saturation of about 75%; blood leaving has about 98%. What caused the increase?

7. A pulmonary embolism blocks a branch of the pulmonary artery. What immediate effect does this have on gas exchange?

8. Define: What is pulmonary circulation?

9. Define: Which chamber starts pulmonary circulation?

10. Define: Why do pulmonary arteries carry deoxygenated blood?

Answer Key

1. D) Right ventricle - The right ventricle pumps deoxygenated blood into the pulmonary trunk toward the lungs.

2. B) They carry deoxygenated blood - Pulmonary arteries are the only arteries in the body that carry deoxygenated blood.

3. C) Alveolar capillaries - Gas exchange happens in the capillaries surrounding the alveoli in the lungs.

4. C) Pulmonary veins - Pulmonary veins carry oxygen-rich blood from the lungs to the left atrium.

5. The right ventricle only needs to pump blood a short distance to the nearby lungs Low pressure protects the thin-walled pulmonary capillaries from fluid leaking into the alveoli High pulmonary pressure would cause pulmonary edema

6. Deoxygenated blood arrives via the pulmonary arteries at about 75% saturation In the alveolar capillaries, O2 diffuses from air into blood and CO2 diffuses out Oxygen-rich blood leaves at about 98% saturation via the pulmonary veins

7. The blocked pulmonary artery branch can't deliver blood to that lung region Alveoli in that region are ventilated but not perfused, creating dead space Gas exchange in that area drops, and overall blood oxygenation can fall

8. The loop that carries blood between the heart and lungs for gas exchange.

9. The right ventricle, which pumps deoxygenated blood to the lungs.

10. Because arteries and veins are named by direction, not oxygen content - pulmonary arteries carry blood to the lungs to be oxygenated.