

# What are the Cardiac Wall Layers?

## Worksheet

The heart wall has three layers, from inside out: the endocardium (thin inner lining), the myocardium (thick muscular layer that contracts), and the epicardium (thin outer protective layer).

## Questions

1. Which layer of the heart wall is in direct contact with blood?

- A) Epicardium
- B) Myocardium
- C) Endocardium
- D) Pericardium

2. Which layer generates the force of contraction?

- A) Endocardium
- B) Myocardium
- C) Epicardium
- D) Adventitia

3. The epicardium is also known as the:

- A) Parietal pericardium
- B) Visceral pericardium
- C) Endothelium
- D) Mediastinum

4. Why is the left ventricular myocardium thicker than the right?

- A) It pumps at lower pressure
- B) It pumps blood to the whole body at high pressure
- C) It has no valves
- D) It doesn't contract

5. The left ventricle's myocardium is about 8-12 mm thick, while the right ventricle's is about 3-5 mm. Why the difference?

6. A patient has pericarditis - inflammation of the sac around the epicardium. Which layer is directly affected first?

7. Endocarditis (infection of the endocardium) often damages heart valves. Why are valves at risk?

8. Define: What are the three layers of the heart wall?

9. Define: What is the endocardium?

10. Define: What is the myocardium?

## Answer Key

1. C) Endocardium - The endocardium lines the inner chambers and valves, directly touching blood.
2. B) Myocardium - The myocardium is thick cardiac muscle tissue that contracts to pump blood.
3. B) Visceral pericardium - The epicardium is the visceral (inner) layer of the pericardium.
4. B) It pumps blood to the whole body at high pressure - The left ventricle needs more muscle to generate systemic pressure (about 120 mmHg).
5. Myocardium thickness reflects the pressure a chamber must generate The left ventricle pumps blood through the whole body at about 120 mmHg systolic pressure The right ventricle only pumps to the nearby lungs at about 25 mmHg, so it needs less muscle
6. The epicardium is the heart's outermost layer and the visceral layer of the pericardium Inflammation of the pericardial sac directly irritates the epicardium This is why pericarditis causes sharp chest pain that worsens with breathing
7. The endocardium lines the inner chambers and also covers the heart valves Bacteria in the bloodstream can attach to endocardial and valve surfaces Infection here can scar or destroy valve tissue, causing regurgitation or stenosis
8. Endocardium (inner), myocardium (middle), epicardium (outer).
9. The thin inner lining in direct contact with blood inside the chambers.
10. The thick muscular layer responsible for the heart's contraction.

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