

The Role of Capillaries in the Circulatory System

Biology · Practice Test · 15 Questions

1. What is the primary function of capillaries?

- A) Transporting blood away from the heart
- B) Exchanging substances between blood and tissues
- C) Filtering waste products from the blood
- D) Pumping blood into the body

2. Capillaries are described as what kind of vessels?

- A) Large arteries
- B) Tiny vessels
- C) Veins
- D) Lymphatic vessels

3. What makes up the thin wall of a capillary?

- A) Muscle tissue and elastic fibers
- B) Endothelium and a basement membrane
- C) Connective tissue and nerve cells
- D) Cartilage and bone

4. Capillaries allow the exchange of which substances?

- A) Only oxygen and carbon dioxide
- B) Nutrients, proteins, waste products, and gases
- C) Hormones and antibodies only
- D) Blood cells and platelets

5. Capillaries are organized into what structures?

- A) Arteries
- B) Veins
- C) Capillary beds
- D) Aorta

6. What supplies blood to capillary beds?

- A) Arterioles
- B) Venules
- C) Metarterioles
- D) Capillary sphincters

7. What regulates the blood flow through capillaries?

- A) The heart's pumping action
- B) The contraction and relaxation of precapillary sphincters
- C) The elasticity of arteries
- D) The pressure in veins

8. In most resting tissues, what proportion of capillaries are actively involved in blood flow?

- A) All of them
- B) A large proportion
- C) A small proportion
- D) None of them

9. What happens to capillaries during increased demand, such as during exercise?

- A) They close off completely
- B) Additional capillaries can open up
- C) They shrink in size
- D) Their walls thicken

10. Where does blood go after leaving the capillaries?

- A) Into arteries
- B) Into arterioles
- C) Into postcapillary venules
- D) Back into the heart directly

11. The thickness of a capillary wall is only one cell layer thick, specifically an endothelial cell. This statement is:

- A) False
- B) True
- C) Partially true
- D) Depends on the tissue

12. What is a metarteriole?

- A) A large artery
- B) A small vein
- C) A vessel connecting arterioles to capillaries
- D) A type of capillary

13. Precapillary sphincters are located at the junction of a metarteriole and a capillary. This statement is:

- A) False
- B) True
- C) Only in certain organs
- D) Not relevant to blood flow

14. Capillary beds are highly branched and present a significant surface area for exchange. This statement is:

- A) False
- B) True
- C) Only in active muscles
- D) Only in resting tissues

15. What are the components of the capillary wall mentioned in the text?

- A) Muscle and elastic tissue
- B) Endothelium and basement membrane
- C) Nerve fibers and fat cells
- D) Bone and cartilage