

## Blood Vessels and Heart Physiology

Functions of blood vessels:

- 1.
- 2.
- 3.
- 4.

Types of blood vessels:

- 1.
- 2.
- 3.
- 4.
- 5.

Arteries

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(3) layers:

1. tunica interna-
2. tunica media-
3. tunica externa-

Arterioles

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Capillaries

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1. Capillary beds:

2. Precapillary sphincter:

## Veins

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## Venules

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Veins act as a \_\_\_\_\_ because more than half of the total blood volume is found in the veins and venules.

## Disorders of Blood Vessels:

1. Arteriosclerosis:

2. Varicose veins:

3. Hemorrhoids:

4. Phlebitis:

## **Physiology of the Heart**

### Heart Actions:

A. Specialized cardiac muscle has both \_\_\_\_\_ and \_\_\_\_\_ characteristics and is able to initiate impulses to contract.

B. Nodal tissue is located in two regions of the heart:

1. Sinoatrial node (S-A node):

2. Atrioventricular node (A-V node):

C. The \_\_\_\_\_ functions as the \_\_\_\_\_ because it initiates the \_\_\_\_\_ and it keeps it regular.

If SA node fails, \_\_\_\_\_ takes over.

D. The sequence of conduction events:

1. \_\_\_\_\_ initiates and sends out an impulse causing \_\_\_\_\_ to contract.
2. The \_\_\_\_\_ then gets an impulse from SA node and sends an impulse causing \_\_\_\_\_ to contract.

Cardiac Cycle:

1. Cardiac cycle includes all the events that occur during \_\_\_\_\_.
2. On average, heart beats \_\_\_\_\_.
3. Right and left sides of the heart \_\_\_\_\_ together and \_\_\_\_\_ together.

(3) Phases of Cardiac Cycle:

1. Atrial Systole =  
Both atria are in \_\_\_\_\_, while \_\_\_\_\_ are in diastole.  
AV valves are \_\_\_\_\_, while semilunar valves are \_\_\_\_\_.
2. Ventricular Systole =  
Both \_\_\_\_\_ are in systole, while the \_\_\_\_\_ are in diastole.  
Both semilunar valves are \_\_\_\_\_, but AV valves are \_\_\_\_\_.
3. Diastole =  
Both \_\_\_\_\_ and both \_\_\_\_\_ are in diastole.  
Both AV valves are \_\_\_\_\_ and semilunar valves are \_\_\_\_\_.

Heart Sounds:

1. A heartbeat produces "lub-dub" sounds:
  - The first sound is "lub" when the \_\_\_\_\_.
  - The second sound is "dub" when the \_\_\_\_\_.

Heart Murmurs: clicking or swishing sounds heard after the "lub" often due to

\_\_\_\_\_  
\_\_\_\_\_.

Cardiac output:

1. Cardiac output:

2. Cardiac output is dependent on 2 factors:

a. Heart rate:

b. stroke volume:

Pulse:

1. Pulse:

2. The pulse rate indicates \_\_\_\_\_.

3. The pulse is usually between \_\_\_\_\_.

Blood Pressure:

1. Blood pressure:

2. Normal blood pressure for a young adult is \_\_\_\_\_.

a. systolic pressure:

b. diastolic pressure:

Blood Pressure Disorders:

1. Hypertension:

2. Stroke:

3. Aneurysm: