

## Circulatory System Notes

### Heart:

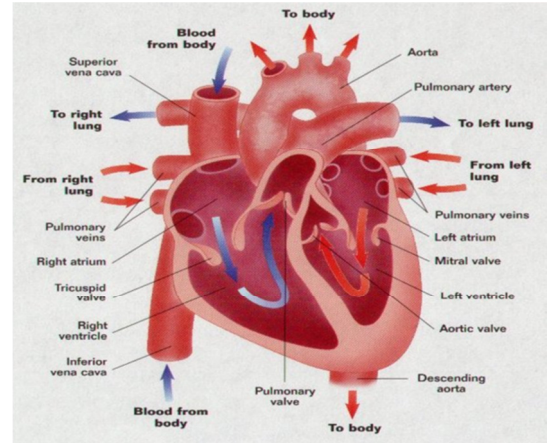
- Beats about 100,000 times a day and circulates all \_\_\_\_\_ of blood every \_\_\_\_\_ seconds
- Diameter of aorta is about the same size around as a garden hose
- Human circulatory system is a closed system
- Leading cause of death in the US is \_\_\_\_\_

### Major Functions of the Circulatory System:

1. Carries \_\_\_\_\_
2. Transports gases (\_\_\_\_\_ & \_\_\_\_\_)
3. \_\_\_\_\_
4. Distributes heat

### Structures:

- 4 chambered heart
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- Arteries, veins, and capillaries
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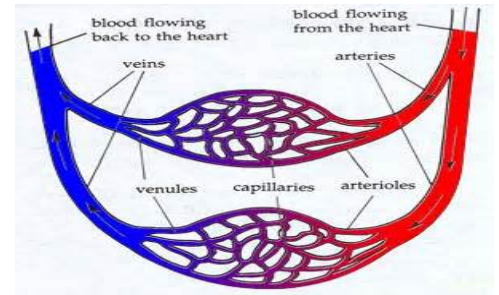


What is a heartbeat? SA node gives off an electrical signal that starts wave of contractions



“Roads that carry blood”

- Arteries** = carry blood away from heart
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- Veins** = carry blood to the heart
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- Capillaries** = networks that move blood in and out of organs and tissue
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### Valves:

- Flaps of tissue that \_\_\_\_\_

Heart Disease: leading cause of death in the U.S.

- Arteriosclerosis* is when artery walls become thick and inflexible.
- Arthrosclerosis* is when blood flow is partially or fully blocked by plaque.
- Both diseases can lead to \_\_\_\_\_

### Blood:

Delivery system = fluids, gases, nutrients, distributes heat, components fight infection and control bleeding

### Red Blood Cells:

- Function: \_\_\_\_\_
- 40-50% of blood composition
- Produced from \_\_\_\_\_
- Biconcave shape = like donut with solid center
- Live for \_\_\_\_\_ days; recycled by liver/spleen
- Hemoglobin* = part that attaches to \_\_\_\_\_ and \_\_\_\_\_

**White Blood Cells:**

- Function: \_\_\_\_\_
- Very small amount of total blood composition
- \_\_\_ WBC for every \_\_\_\_\_ RBC
- Different types of white blood cells play different roles
- Also part of the \_\_\_\_\_: able to pass into lymphatic system and attack pathogens

**Platelets:**

- Function: \_\_\_\_\_
- Made in bone marrow
- Very small amount of total blood composition
- Form complex net to seal wound and begin repair process
- Disorders include forming large clots (in arteries) and the inability to clot (hemophilia)

**Plasma:**

- Function: \_\_\_\_\_
- \_\_\_\_\_ of total blood composition
- Mostly water: also glucose, vitamins, minerals, proteins, electrolytes, hormones and wastes

Is blood ever blue?

- It's always varying shades of \_\_\_\_\_
- The \_\_\_\_\_ in hemoglobin on red blood cells give it the red color
- Becomes bright red when it absorbs oxygen
- Publishers use blue color to distinguish blood with low oxygen from blood with high oxygen

Why do veins look blue? (Challenge yourself to find and explain this answer)