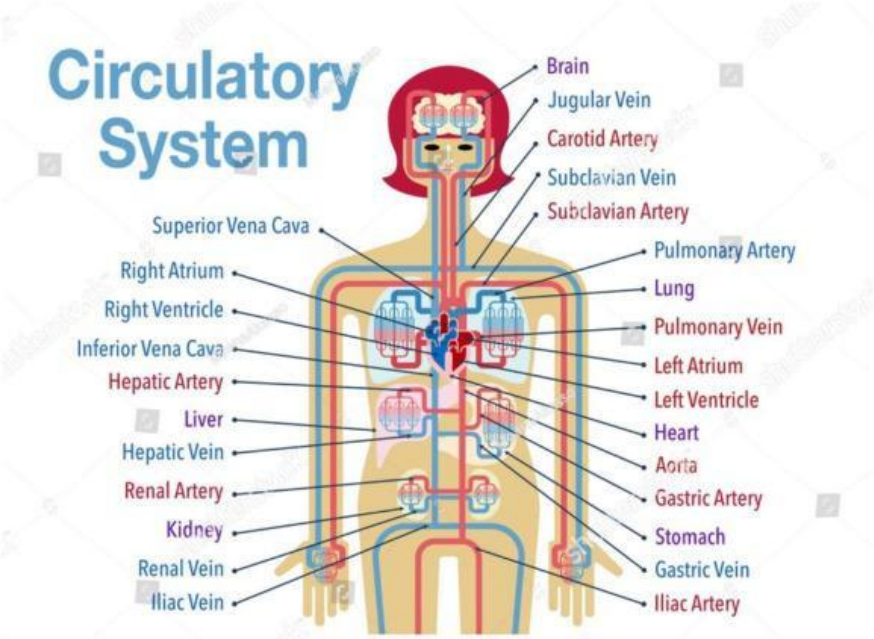
The Circulatory System: The Lifeline of the Human Body

Introduction

The **circulatory system** is a vital network responsible for transporting **oxygen, nutrients, and waste** throughout the body. It plays a key role in maintaining **homeostasis**, regulating temperature, and defending against infections. This system is composed of the **heart**, **blood vessels**, and **blood**, working together to sustain life.



Structure and Components

The circulatory system consists of three main components:

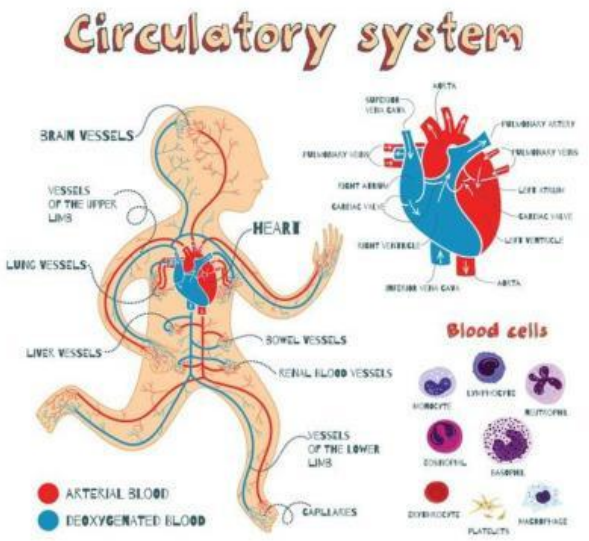
- The **heart**, a muscular organ, pumps blood throughout the body.
- **Blood vessels** include **arteries**, which carry blood away from the heart, **veins**, which return blood to the heart, and **capillaries**, where nutrient and gas exchange occurs.
- **Blood** contains **red blood cells** (transporting oxygen), **white blood cells** (fighting infection), **platelets** (aiding in clotting), and **plasma** (the liquid portion).

The Path of Blood Circulation

The circulatory system follows two primary circuits:

- **Pulmonary circulation**: Blood flows from the heart to the **lungs**, where it absorbs **oxygen** and releases **carbon dioxide**.
- **Systemic circulation**: Oxygen-rich blood is distributed to the entire body, delivering nutrients and collecting waste.

Importance for Health



A healthy circulatory system is essential for **overall well-being**. Poor circulation can lead to conditions such as **hypertension**, **atherosclerosis**, or **stroke**. Maintaining cardiovascular health through **exercise**, a **balanced diet**, and avoiding smoking is crucial for preventing diseases.

Conclusion

The **circulatory system** is a complex yet essential network that keeps the body functioning. By transporting **oxygen**, nutrients, and removing waste, it ensures that all bodily systems operate efficiently. Understanding its structure and functions is vital for promoting **cardiovascular health** and preventing disease.

A. Choose the correct answer.

1. **What is the primary function of the circulatory system?**
   a) To produce hormones
   b) To transport oxygen, nutrients, and waste throughout the body
   c) To break down food into nutrients
   d) To create new cells
2. **Which of the following is NOT a component of the circulatory system?**
   a) Heart
   b) Blood vessels
   c) Lungs
   d) Blood
3. **What type of blood vessels carry blood away from the heart?**
   a) Veins
   b) Capillaries
   c) Arteries
   d) Venule

4. **What is the main function of red blood cells?**

   a) Fighting infections

   b) Transporting oxygen

   c) Clotting blood

   d) Regulating body temperature

5. **Which part of the circulatory system is responsible for exchanging nutrients and waste with tissues?**

   a) Arteries

   b) Capillaries

   c) Veins

   d) Aorta

6. **What is the purpose of pulmonary circulation?**

   a) To deliver oxygen-rich blood to the body

   b) To remove toxins from the bloodstream

   c) To transport blood between the heart and lungs

   d) To prevent blood clotting

7. **Which condition is caused by poor blood circulation?**

   a) Hypertension

   b) Diabetes

   c) Anemia

   d) Fractures

8. **Which blood cells are responsible for fighting infections?**

   a) Red blood cells

   b) White blood cells

   c) Platelets

   d) Plasma

9. **What carries oxygen-poor blood back to the heart?**

   a) Arteries

   b) Capillaries

c) Veins

d) Aorta

10. What lifestyle habit helps maintain a healthy circulatory system?

a) Smoking regularly

b) Eating a high-fat diet

c) Engaging in regular exercise

d) Avoiding hydration

Vocabulary

Instructions:

1.Read the following sentences taken from the text.
2.Identify the bold word and match it with its correct definition.
3.Then, complete the fill-in-the-blank section using the appropriate bold word.

Words:

1. **Circulatory system**
2. **Homeostasis**
3. **Arteries**
4. **Capillaries**
5. **Hypertension**
6. **Nutrients**
7. **Oxygen**
8. **Plasma**
9. **Platelets**
10. **Cardiovascular health**

Definitions:

a) The condition of having **high blood pressure**, which can increase the risk of heart disease.
b) Small **blood vessels** where the exchange of nutrients and waste occurs.
c) A network of organs and vessels that transports **blood** throughout the body.
d) The liquid part of **blood** that carries cells and nutrients.
e) Essential substances, such as **vitamins and minerals**, required by the body for growth and health.
f) The maintenance of a stable **internal environment** in the body.
g) Muscular tubes that carry **blood away from the heart**.
h) Disc-shaped cells in **blood** that help with clotting.
i) A gas necessary for **cellular respiration** and energy production.
j) The overall condition of the **heart and blood vessels**.

Use the **bold words** from the list to complete the following sentences:

1. The _____ carries oxygen and nutrients throughout the body.
2. When the body's _____ is disrupted, it can lead to imbalances and illness.
3. _____ are blood vessels that transport oxygen-rich blood away from the heart.
4. The exchange of nutrients and waste occurs in the _____.
5. People with _____ have an increased risk of heart disease and stroke.
6. Healthy food provides essential _____ that support bodily functions.
7. The lungs provide _____ to the blood, which is carried to the body's tissues.
8. _____ makes up more than half of the blood's volume.
9. When you get a cut, _____ help stop the bleeding by forming clots.
10. Regular exercise is essential for maintaining good _____.

T. Sue