

Circulatory System Notes

- **Function:**
 - Transport materials from the respiratory and the digestive system to the cells.
- **Structures:**
 - Heart
 - Blood
 - Blood vessels

Heart

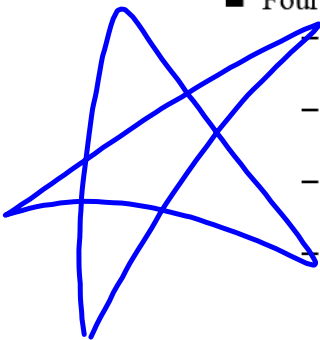
- **Two pumps:**
 - Right side pumps oxygen-poor blood to the lungs
 - Left side pumps oxygen-rich blood to the entire body
- **Four Chambers:**
 - Atrium: Locations at the top of the heart where blood is pumped from/to the body.
 - Ventricle: Locations at the bottom of the heart where blood is pumped from the atrium to other organs of the body.

Blood Flow

- Oxygen-poor blood flows from the body to the right atrium of the heart.
- The heart pumps it to the right ventricle, then to the lungs, where it releases CO₂ and picks up O₂.
- Then the blood flows into the left atrium of the heart and is pumped to the left ventricle.
- From there it is sent out to the body, and the cycle repeats.

Blood

- **Four components:**
 - **Plasma:** 60% of blood containing liquid - straw / yellow proteins, glucose, hormones, gases, and others.
 - **Red Blood Cells:** pick up oxygen in the lungs and transport it through the body
 - **White Blood Cells:** help fight infections by attacking disease-causing organisms
 - **Platelets:** form blood clot when a blood vessel is injured



Blood Vessels

- Network of tube-shaped structures
- Three types:
 - Arteries: vessels that take blood Away from the heart, have strong walls, most carry oxygen-rich blood (not the pulmonary arteries)
 - Veins: vessels that carry blood back to the heart, thinner walls than arteries but greater diameters, most carry oxygen-poor blood (not the pulmonary veins)
 - Capillaries: connect arteries and veins, materials in the blood are exchanged here (oxygen, carbon dioxide, nutrients, and waste material)

How does the circulatory system work with the other systems of the body?

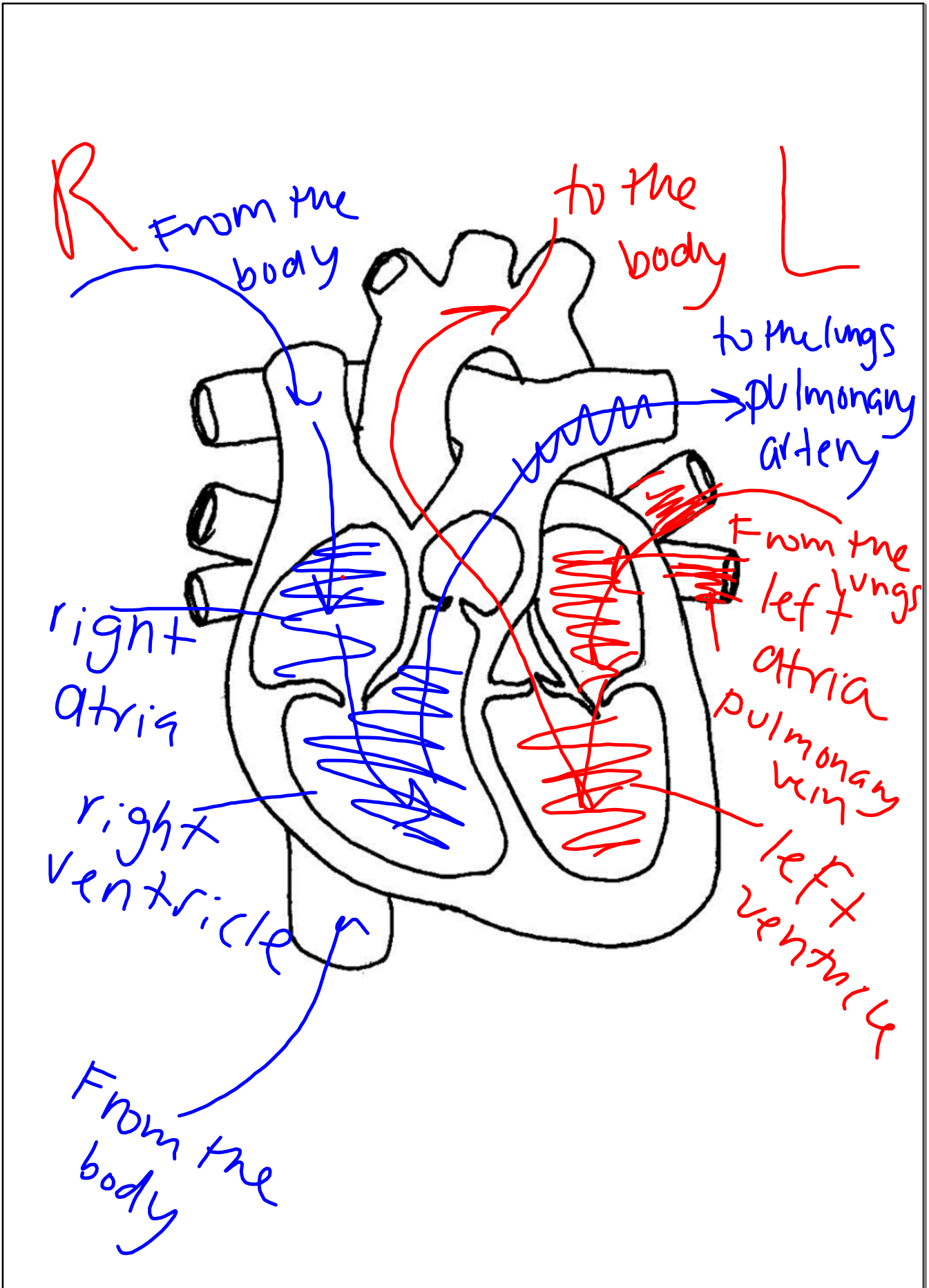
- Respiratory - carries oxygen from lungs to cells and removes waste
- Endocrine - carries hormones through the body; delivers chemical messages
- Digestive - delivers nutrients absorbed by intestines throughout the body

Blood Types

- Important to know for transfusions as the blood from the donor must match the blood of the recipient
- Four Types:

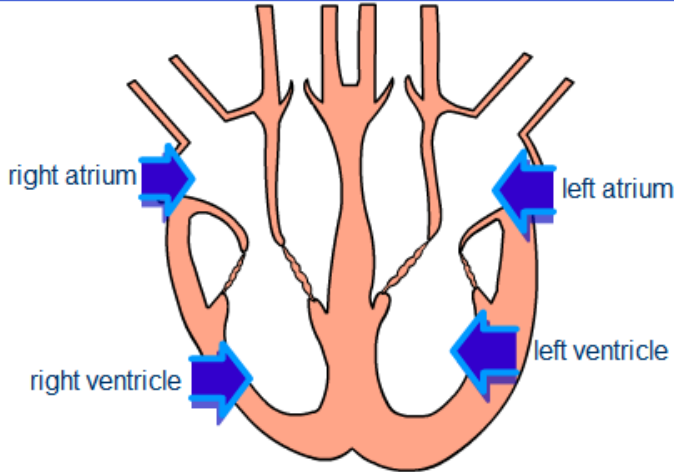
	Group A	Group B	Group AB <i>Universal recipient</i>	Group O <i>Universal donor</i>
Red blood cell type				
Antibodies in Plasma	 <u>Anti-B</u>	 Anti-A	None	 Anti-A and Anti-B
Antigens in Red Blood Cell	A antigen 	<u>B antigen</u> 	<u>A and B antigens</u> 	None

Proteins





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The Structure of the Heart Scene 2 of 9

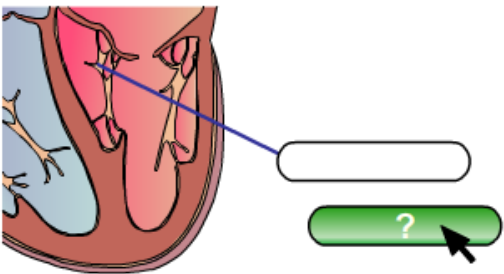
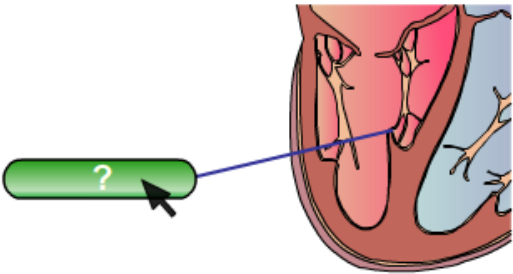


The top chamber or atrium collects blood from the veins and then pumps it through a valve into the bottom chamber or ventricle.

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