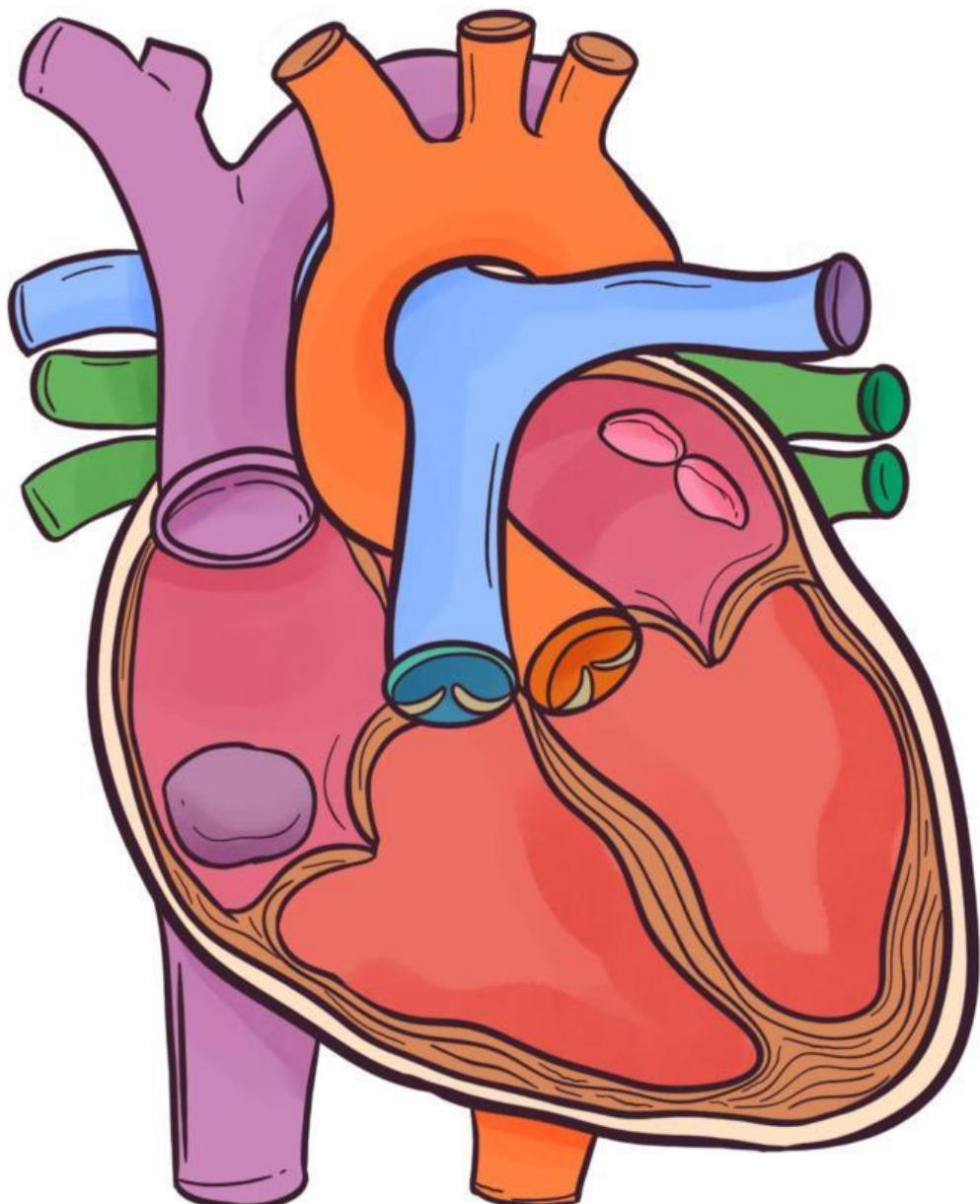


LIVEWORKSHEET

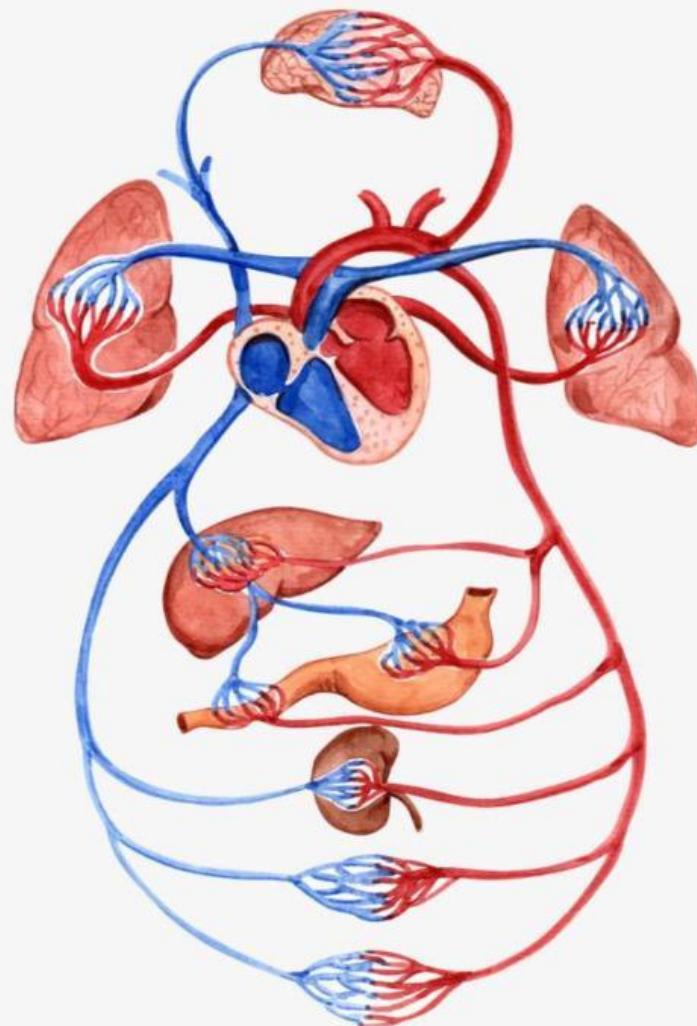
Human Circulatory System

For 8th Grade Junior High School



By: Ani Mariani

2nd Meeting



BLOOD VESSEL & CIRCULATORY PROCESS

Keywords

Artery, vein, capillaries, heart, atrium, ventricle, oxygen & carbondioxyde

Your Name :
Class :

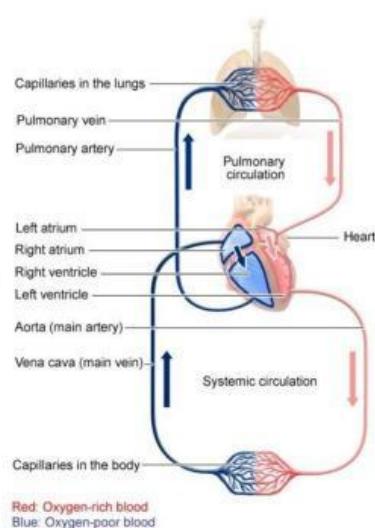
2nd Meeting

Learning Objectives

1. Students are able to analyze the structure of the heart and its function
2. Students are able to differentiate between different types of blood vessels
3. Students are able to sequence blood circulation correctly

Materials

The heart consists of 4 parts that is left ventricle, right ventricle, left atrium and right atrium. The left ventricle pumps oxygen-rich blood throughout the body. We can call it great blood circulation. while the right ventricle pumps blood rich in carbon dioxide to the lungs, which is called the small circulation. (www.ncbi.nlm.nih.gov)



Our bodies have a network of blood vessels that stretches for more than 150,000 km. Most tissue consists of small capillaries that pass through the tissue, these capillaries connect arteries and veins. Arteries and veins make up the "main arteries" of the circulatory system. Capillaries are the "little passageways" that lead to and leave cells. (Pujiyanto, 2020)

Humans have 2 types of blood circulation, large blood circulation (systemic circulation) and small blood circulation (pulmonary circulation). systemic circulation carries blood from the heart throughout the body and back to the heart. while the pulmonary circulation carries blood from the heart to the lungs and then back to the heart. (Pujiyanto, 2020)

A. PRE-MEETING ACTIVITY

In this pre meeting activity we will use See Think Wonder (STW) thinking routine.

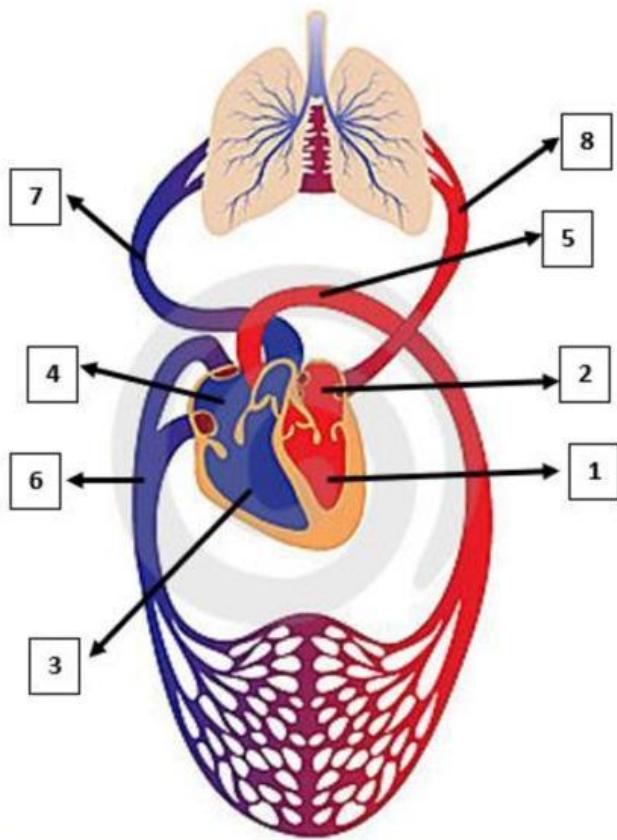
1. See: please click this following link to see the 3D animation of Heart anatomy. After you see it, you can write what do you see in the link.
2. Think: what do you think about the 3D animation that you see before.
3. Wonder: write down things that still make you curious (make them in the form of questions)

See Think Wonder

 SEE What do you see?	 THINK What do you think is going on?	 WONDER What does it make you wonder?

Adapted by Alice Vigors 2017

1. Please Write down the names of the parts of blood circulation and their functions!



Number 1:
Function:

Number 1:
Function:

Number 2:
Function:

Number 3:
Function:

Number 4:
Function:

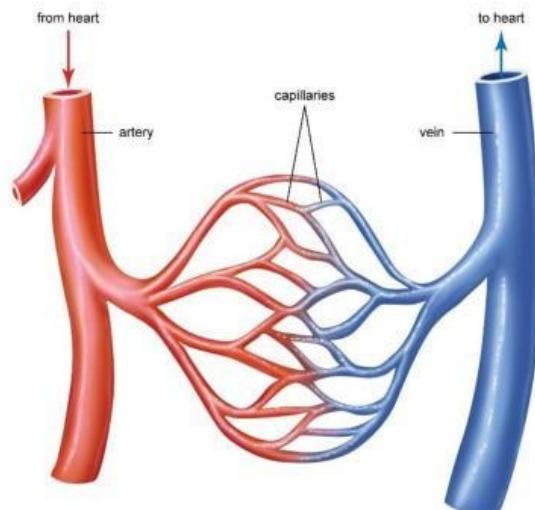
Number 5:
Function:

Number 6:
Function:

Number 7:
Function:

Number 8:
Function:

2. True or False: Read each statement below carefully. You can choose true or false on the statement.

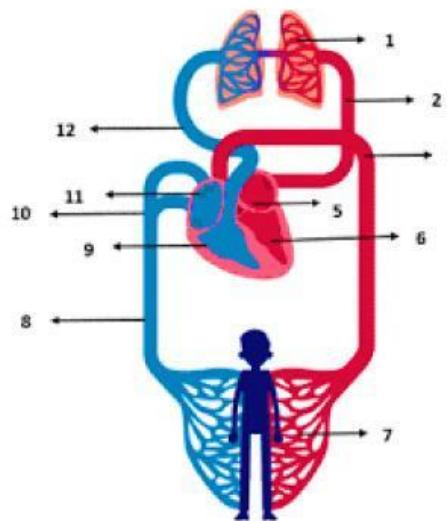


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1. There are 3 kinds of blood vessel: arteries, vein and capillaries
2. Pulmonary arteries carry the blood to the body, where it receives oxygen.
3. tiny blood vessels have thin walls called capillaries
4. capillaries connect arteries and veins
5. the main vein in our body is vein pulmonary
6. venules receive blood containing oxygen from capillaries
7. arteries are muscular blood vessels carry oxygen-rich blood from heart to body
8. Most veins have valves that open and close
9. Veins have strong, thick and elastic walls
10. The superior vena cava carries blood from head, neck arms and chest back to the heart

True False

3. Complex multiple choice: Answer these following questions (answer more than 1) by clicking the checklist on the statement

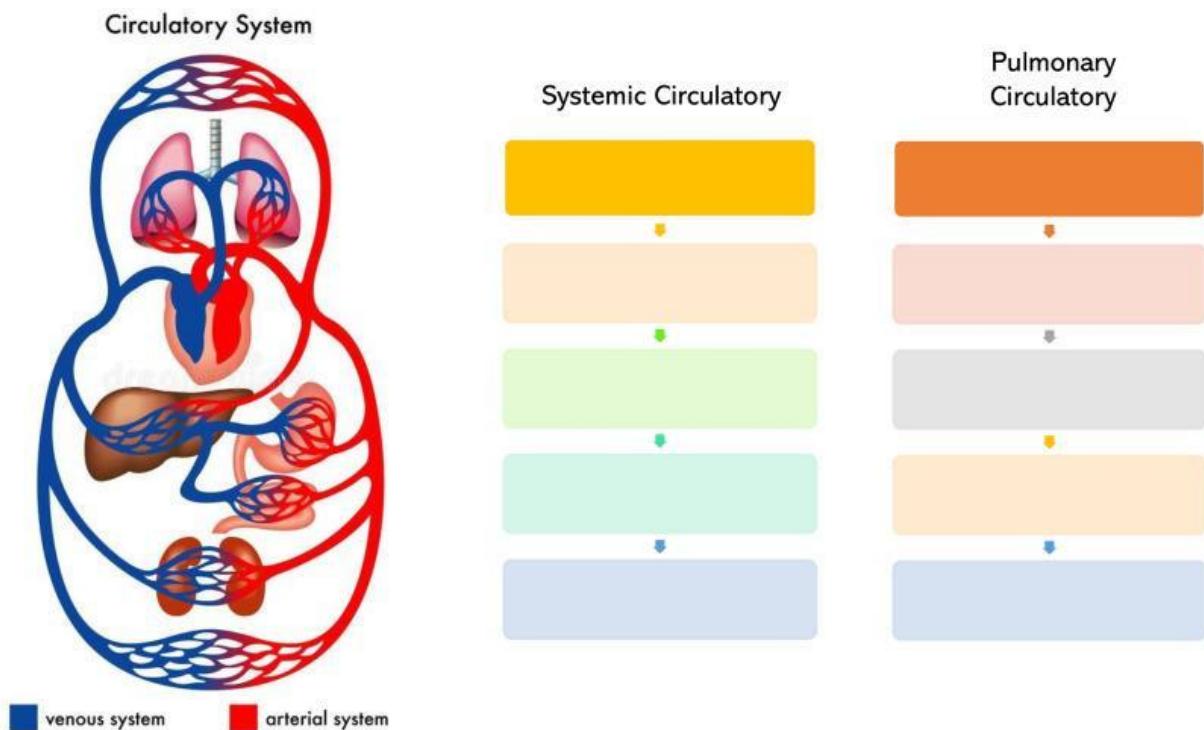


Look at the following image!

If there is a problem in part number 3, then the possibility that will occur is.... (select 3 possible answer)

- Oxygen can't distribute to our body
- There is distraction of transport carbondioxyde to the body
- the body lacks carbondioxyde
- gas cannot exchange in body tissues
- the body lacks oxygen gas
- Carbon dioxide cannot be pumped to the lungs

4. Short answer: Complete the order of circulatory process below!



C. POST MEETING ACTIVITY

Read the article carefully!

Nanoplastics linked to heart attack, stroke and early death, study finds

People with microplastics or nanoplastics in their carotid artery tissues were twice as likely to have a heart attack, stroke or die from any cause over the next three years than people who had none, a new study found. Carotid arteries, which lie on each side of the neck and carry blood to the brain, can become clogged with fatty cholesterol plaques in a similar fashion as the arteries leading into the heart, a process known as atherosclerosis.

"Should exposure to microplastics and nanoplastics be considered a cardiovascular risk factor? What organs in addition to the heart may be at risk? How can we reduce exposure?" asked Landrigan, who was not involved in the new study. Nanoplastics have been found in human blood, lung and liver tissues, urine and feces, mother's milk, and the placenta. Until now, however, research has yet to determine just what impact those polymers may have on the body's organs and functions.

However, calling the study results "a direct link to cardiovascular disease is a stretch for the findings," she added. "I think that with more work, we may find these exposures to be a risk factor ... more particles, more inflammation, more risk for poor cardiovascular outcomes." Avoiding plastic contamination is "challenging, if not impossible," yet "each of us, in our small way could start using less plastic and direct our daily choices towards other materials,".

(source: <https://edition.cnn.com/2024/03/06/health/nanoplastics-heart-attack-study-wellness/index.html>)

Based on the article, please write your opinion regarding the impact of microplastics on circulatory health!

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