

## Human Physiology 110 Circulation Test Review

### 1. Define the following terms:

Circulation – the movement of blood through the body

Heartbeat – the pumping rhythm of your heart

Plasma - the liquid part of blood

Blood Groups – A, B, AB Atherosclerosis – hardening of the blood vessels due to plaque build up

Atherosclerosis – hardening of the blood vessels due to plaque build up

Stroke – occurs when a blood vessel leading to the brain is blocked

Heart – a double pump

Arteries – thick muscular vessels carry blood away from your heart

Platelets – controls clotting

Leukemia – cancer of the blood

Heart attack – occurs when a section of the heart is blocked and blood cannot flow into or out of that section

Congenital heart disease - Heart diseases present at birth usually caused by defects during fetal development.

Septum – thick wall that divides the heart into right and left

Veins – vessels that carry blood, thinner and less muscular than arteries

Hemoglobin – found in red blood cells; the iron-containing molecule

Blood pressure – the force that blood exerts against the wall of blood vessels

Systemic Circulation – the pathway of blood between your heart and your body

Atrium – top chamber of your heart that receives blood from your lungs/body

Capillaries – blood vessels that connect arteries and veins, one cell thick

Antigens – foreign substances that enters your body

Pulmonary Circulation – the pathway of blood from your heart to your lungs

Red Blood Cells – Gives blood its color, carries oxygen to the cells and carbon dioxide away from the cells

Heart inflammation – an increase in the hearts size due to infection

Ventricle – lower chamber of the heart pumps blood to lungs or body

Aorta – the largest artery in your body, carries blood from heart to all body parts through various branches

Antibodies – proteins that circulate in plasma to protect your body from foreign substances

White blood cells – defend your body against disease

Valves – a thin flap of tissue that opens/closes directing the flow of blood preventing it from moving backwards

Blood – contains various parts and is pumped throughout your body

Anemia – a blood disorder where your body does not carry enough oxygen to your body cells

## 2. Complete the following:

Pg 394 Vocabulary Review: Matching #1-5, 7-8

### Matching

1. Vessels that carry blood to the heart = veins
2. Movement of blood throughout the body = circulation
3. Blood cells needed for clotting = platelets
4. Separates the right and left sides of the heart = septum
5. Vessels that connect arteries and veins = capillaries
7. Oxygen- carrying compound of Red Blood cells = hemoglobin
8. located between the ventricles and arteries = Valves

### Applying Definitions # 1-10

1. atrium, ventricle

Atria receive blood and ventricles pump the blood

2. red blood cells, white blood cells

Red blood cells = carry oxygen to the cells and carbon dioxide away

White blood cells = fight disease

3. antibodies, antigens

Antibodies fight disease and antigens are the foreign substances antibodies fight

4. arteries, veins

Arteries are thicker and stronger carry blood away from the heart

Veins are thinner and weaker and carry blood to the heart

5. bicuspid valve, tricuspid valve

Bicuspid valve is between the left atrium and right ventricle

Tricuspid valve is between the right atrium and right ventricle

6. pulmonary circulation, systemic circulation

Pulmonary circulation circulates blood from the heart to the lungs

Systemic circulation circulates blood from the heart to the body

7. aorta, pulmonary vein

Aorta is the main artery that branches and move the blood throughout the body

The pulmonary vein brings oxygenated blood back to the heart from the lungs

8. anemia, leukemia

Anemia is a lack of oxygen in the blood caused by too few red blood cells

Leukemia is cancer of the blood

9. plasma, lymph

Plasma is the liquid part of blood

Lymph is the fluid inside your lymphatic system

10. pulse, heartbeat

Pulse is the blood pressure against the walls of your artery

Heartbeat is the opening and closing of your heart valves

1. False Carbon Dioxide
2. False Capillaries
3. True
4. True
5. False Atrium
6. True
7. False White

1. neck and head
2. renal artery
3. lungs
4. anti-B
5. B
6. Group 0
7. Group AB

## Critical Thinking #2,5

2. If blood entered the vein under the same pressure as blood enters an artery the vein would burst. The walls of the vein are much thinner and less muscular than the walls of an artery and therefore would not be able to withstand the increased pressure.

5. Untreated high blood pressure strains the heart because the heart has to work harder to get the blood around the body. This causes the muscles of the heart to weaken and work less efficiently.

**3. Complete Handout: Skills Worksheet #33**

1. Capillaries
2. Systemic Circulation
3. Veins
4. Platelets
5. Atrium
6. Lymph nodes
7. Ventricle
8. White Blood Cells
9. Plasma
10. Arteries

**4. Name the ventricles, atriums, valves, organs, arteries and veins involved in the pathway of**

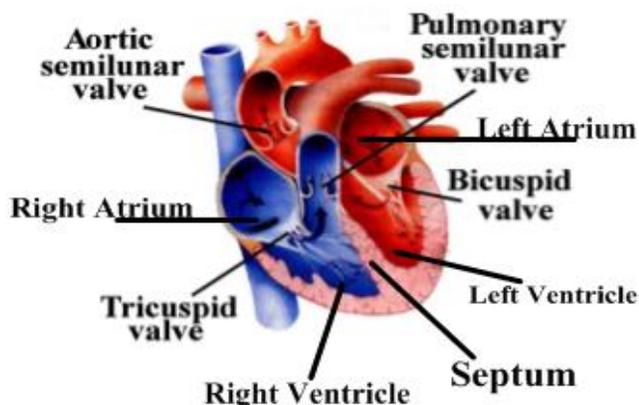
## a. Pulmonary Circulation

- Right Atrium
- Tricuspid Valve
- Right Ventricle
- Pulmonary Artery
- Lungs
- Pulmonary Vein
- Left Atrium

## b. Systemic Circulation

- Left Atrium
- Bicuspid valve
- Left Ventricle
- Aorta
- Various arteries
- Body
- Various Veins

5. Know diagram of heart and be able to label it. You do not need to know the aortic semilunar valve or the pulmonary semilunar valve. The picture I had would not paste here so had to use this one sorry.



## 6. Short Answer Questions

1. List the three main functions of blood. What is the average volume of circulating blood in the body?

The three main functions of blood are:

- transports oxygen and nutrients throughout the body (through the arteries)
- carries carbon dioxide and other wastes away from the cells (through veins)
- blood helps fight against disease and infections, repairs tissues, transports hormones and controls pH.

The average volume of blood circulating in the body is 5 liters.

2. Name the four blood types in the ABO system. What antigens and antibodies if any are found in people with each type?

The four blood types in the ABO system are A, B, O and AB.

People with blood type A have B antibodies and A antigens

People with blood type B have A antibodies and B antigens

People with blood type AB have no antibodies and A and B antigens

People with blood type O have A and B antibodies and no antigens

3. What are some symptoms of atherosclerosis, and how are these produced?

The symptoms of atherosclerosis are high blood pressure, chest pain, shortness of breath and fatigue. These symptoms are produced because as the blood vessels narrow there is less room for the blood to pass through and the pressure increases on the walls of the blood vessel this causes the high blood pressure. The chest pain is caused by this increase in pressure, but also can be due to a blockage of a blood vessel near the heart. The shortness of breath and fatigue are caused because the blood is not flowing as quickly around the body and the oxygen doesn't get to the cells as fast as it should or normally would.

4. What causes the "lub dub" sound heard at the chest wall?

The lub dub sound at the chest wall is caused by the heart valves closing.

5. Some babies are born with a hole between the right and left ventricles? Why does this happen and why is this a problem?

Some babies are born with a hole between the right and left ventricles because this hole is present while the fetus is in utero to pass the oxygenated blood from the right atrium to the left atrium because the lungs are not being used, once the baby is born the hole closes off and the lungs are used to oxygenate the blood. This hole however can remain open after birth and cause problems because the blood doesn't flow properly to the lungs to receive oxygen.

6. What would be more life threatening a cut in an artery or a cut in a vein? Why? Explain.

A cut in an artery is more life threatening than a cut in a vein. Arteries carry oxygenated blood away from the heart at high pressure, if there is a cut in this area of the body it is going to be spurting rather than oozing and you will lose more blood at a faster rate than blood from a vein. Also a cut in this area means that the oxygen rich blood is not getting to that area of the body that the cut is around and those cells in that area will die without oxygen. Veins carry oxygen poor blood back to the heart and it is under lower pressure, so it doesn't cause as great of a risk if the vein is cut.