

Unit Three Homework Assignment

Chapter 20 Blood Vessels, Lymphatic System, and Hemodynamics

Structure of Arteries and Veins (28 sec)

1. How many layers make up arteries and veins?
2. What are the layer's types from outside to the inside?
3. How are arteries different than veins?
4. How are veins different than arteries? Why?
5. What causes blood to move toward the heart in veins?
6. What prevents back flow of blood in veins?

Blood Flow (1:22 min)

1. How fast is blood flowing in the aorta?
2. How fast is blood flowing in the capillaries?
3. How many miles of blood vessels are estimated to exist in humans?
4. What segment makes up most of the length of the vascular system?

Venous Valves (2 min)

1. Where will "stuff" start to accumulate in a vein?
2. As a mass builds in the space above the semilunar valve, what form element will add to the mass?
3. If this mass breaks away from the wall of the vein, then what organ will it most likely move into?

How Capillaries Work (3 min)

1. What happens in capillaries?
2. How thick is the wall of a capillary?
3. What causes a continuous leakage of fluid from a capillary?
4. What type of fluid surrounds almost all cells of the body?
5. How do RBC pass through a capillary?
6. What is the maximum distance a cell will be from a capillary?

Capillary Fluid Exchange (8 min)

1. What is capillary exchange?
2. What do we call the process that moves fluid out of the capillary and into the tissue spaces?
3. What do we call the process that moves fluid back into the capillary?
4. How much pressure do we find in the aorta?
5. What is the pressure at the arteriole side of the capillary bed?
6. What is in the blood at the capillaries?
7. What stuff in capillaries can not enter the interstitial space?
8. What is the force trying to move water back into the capillary?
9. What is COP at arterial end?
10. What is the net filtration pressure at the arteriole end of the capillary?
11. What happens at the venule end of the capillary?
12. What is the general trend of fluid movement at the beginning and end of the capillary bed?
13. What leaves on arteriole side?
14. What reenters on the venule side?

Lymphatic System (3 min)

1. What are the three main duties of the lymphatic system?
2. About how much fluid is lost across the capillary bed?
3. What is the function of the lymph nodes?
4. What organs are also included in the lymphatic system?

What are the four types of shock?

1. What is the definition of shock?
2. What three physiologic conditions will lead to shock?
3. What occurs during compensated shock?
4. What causes hypovolemic shock?
5. What causes cardiogenic shock?
6. What causes neurogenic shock?
7. What other conditions may cause arterioles to dilate?

Baro Receptor Reflex (1:30 min)

1. Where are baro receptors located?
2. Where are pressure changes from baro receptors send?
3. What occurs if baro receptors send more action potentials to medulla oblongata?
4. What would happen if the baro receptors sent fewer signals to the medulla oblongata?

Deep Venous Thrombosis (2 min)

1. What three contribute to deep venous thrombosis?
2. Where does this condition usually occur?
3. What usually happen to small blood clots?
4. What happens to larger blood clots?
5. What do we call a blood clot attached to the lining of a vein?
5. What do we call a blood clot if it breaks away from the lining of a vein and moves in the blood flow?
6. Where will the embolism most likely lodge itself?
7. If the embolism passes through the lungs then where may the embolism move into?

Hepatic Portal Circulation (5 min)

1. Where is blood to the liver coming from?
2. How many functions occur in the liver?
3. What is the major vein to deliver blood to the liver?
4. As blood moves through the liver, where will it drain into?
5. What is a portal system?
6. Where are the two capillary beds located?
7. How much blood to liver comes from the hepatic portal vein?
8. How much blood to liver comes from the hepatic artery?
9. What is unusual about the liver's capillaries?
10. What type of capillaries are in the liver?
11. How are endothelial cells in liver different?

Fetal Circulation (4:39 min)

1. What happens to blood in the placenta?
2. What is connected by the umbilical vein?
3. What is the first shunt?
4. What is the second shunt? Purpose?
5. What is the third shunt?
6. Where do the umbilical arteries originate from? Go to?