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1. What is the main purposes of the circulatory system? **Distribute nutrients and O₂ to healthy tissue and remove CO₂ and waste products.**
2. Describe the role of each of the following:
 - a. Arteries **Carries blood from the heart to tissues**
 - b. Veins **Carries blood back to the heart**
 - c. Hearth. **The physical pump that keeps blood flowing**
3. How does the hearth work? Clearly discuss the flow of blood relative to the lungs vs. other tissue. Please include the main parts of the heart in your discussion and the role of the left and right side. **Blood flows into the right side of the heart from the veins. It exits the right side and is directed toward the lungs for CO₂ removal and O₂ loading. Blood from the lungs enters into the left side of the heart and is then pumped out to the arteries.**
4. O₂ and CO₂ are each transported through your blood.
 - a. Describe how each gets transported. If there are proteins involved, name them and describe their role. **O₂ is transported while bound to hemoglobin. CO₂ is converted to H₂CO₃ by carbonic anhydrase for transport through the blood.**
 - b. What locations (you should be able to identify two) are O₂ and CO₂ exchanged? **The lungs and capillaries**
5. What is atherosclerosis? **Deposition of fat (primarily cholesterol in the form of LDL) in the arteries. This leads to the hardening of arteries and clogging.**
6. Describe the process of atherogenesis. **An external stress stimulates blood cells to travel to the intima where they are converted to macrophages. These macrophages collect LDL and get converted to foam cells. As the foam cells collect, they begin to form fatty streak, which is the beginning of atherosclerosis.**
7. What are common causes of atherosclerosis? **Hypertension, turbulent blood flow, free radicals, high concentrations of LDL**
8. Fat Transport:
 - a. What are chylomicrons and what role do they play in your body? **Lipoproteins that take dietary fat to tissue and liver for use or processing.**
 - b. What does HDL stand for? **High Density Lipoprotein**
 - c. What does LDL stand for? **Low Density Lipoprotein**
 - d. What role does HDL play in your body? **Takes cholesterol to the liver for removal.**
 - e. What role does LDL play? **Delivers cholesterol and fat to tissues for use.**
 - f. What is the difference between the two (in terms of what they are made out of)? **They are made of similar components (fat, protein, cholesterol), but LDL has much more cholesterol than HDL.**
9. How is exercise and lifestyle important in cardiovascular health? **It reduces the risk of atherosclerosis.**
10. What role does diet play in the risk of atherosclerosis? **It allows your body to have the correct levels of HDL vs. LDL, which will decrease the risk of atherosclerosis.**