Chapter 12 – The Circulatory System

3 main components of Cardiovascular System
Heart, Blood vessels, Blood

Heart
Anatomy
Layers of heart wall
Chambers & valves
Circuit of blood flow
Coronary Circulation
Cardiac cycle
Electrical activity
Autorhythmic cells
Spread of electrical activity
ECG
Mechanical activity

Blood vessels
Arteries
“pulse”
aneurysm
Arterioles
Capillaries
site of gas, nutrient, and waste exchange
Venules & veins
Unidirectional valves
varicose veins
Skeletal muscle pump
Respiratory activity

Blood pressure
Cardiovascular Disorders
Hypertension
Heart attacks and strokes
Atherosclerosis

Lymphatic System
Anatomy
Functions
Objectives:
1. What are the main components of the Cardiovascular system?
2. Describe the anatomy of the heart (i.e. chambers, valves).
3. Identify the three layers of the heart wall. Which is the muscular layer?
4. What is the pericardium?
5. Be able to draw and describe the circuit of blood flow through the heart. Where in the circuit is the blood oxygenated? Deoxygenated?
6. What is the purpose of the coronary circulation?
7. Name the populations of autorhythmic cells in the heart. Where are they located?
8. What is the stimulus for a heart chamber to contract?
9. Correlate electrical activity with the mechanical events of the cardiac cycle.
10. What are the major waveforms observed on an ECG? What do they represent?
11. What is the systemic circulation? Pulmonary circulation? Where do they start and stop? Do they carry oxygenated or deoxygenated blood?
12. What is the main function of the arteries? Where are some points on the body where the pulse can be detected? What is the pulse?
13. What is an aneurysm?
14. Why are arterioles important?
15. Describe the role of capillaries in transfer of nutrients and gases to and from the tissues.
16. What is the main function of veins?
17. What is the importance of unidirectional valves in veins? The skeletal muscle pump? The respiratory pump?
18. What two pieces of equipment are needed to take blood pressure? What is systolic pressure? Diastolic pressure? What are korotkoff sounds?
19. How might high blood pressure cause a heart attack or stroke?
20. What is atherosclerosis?
21. What are the major functions of the lymphatic system?
22. What are the major lymphatic structures?
23. What is lymph? How is it made?