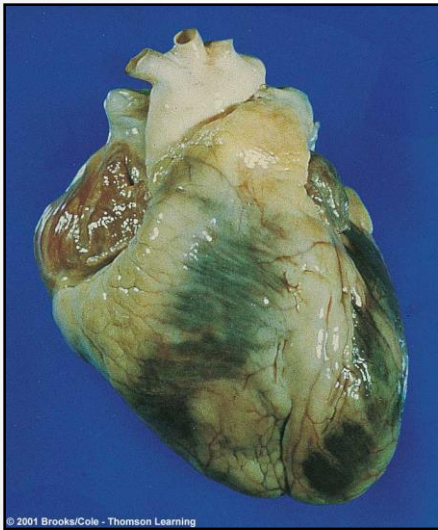


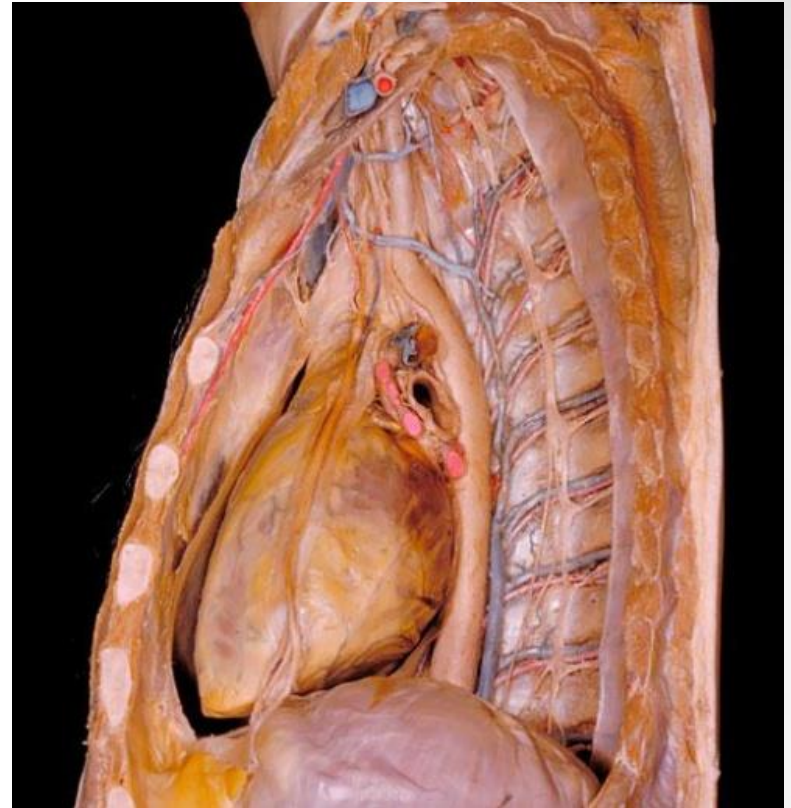
Cardiovascular System



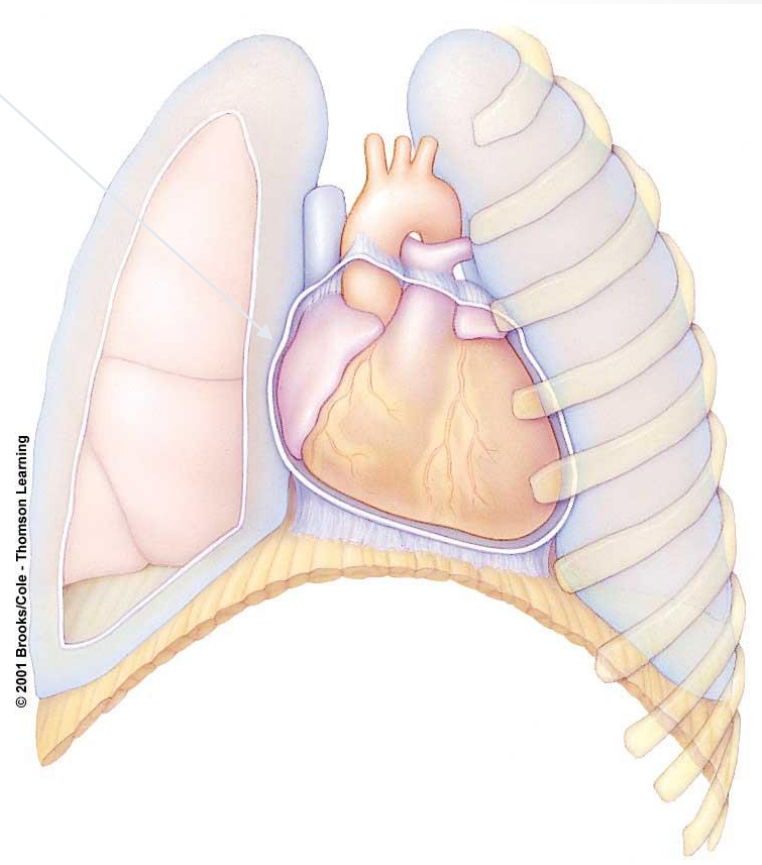
EQ: Why is having a 4 chambered heart so important?

I. General Info:

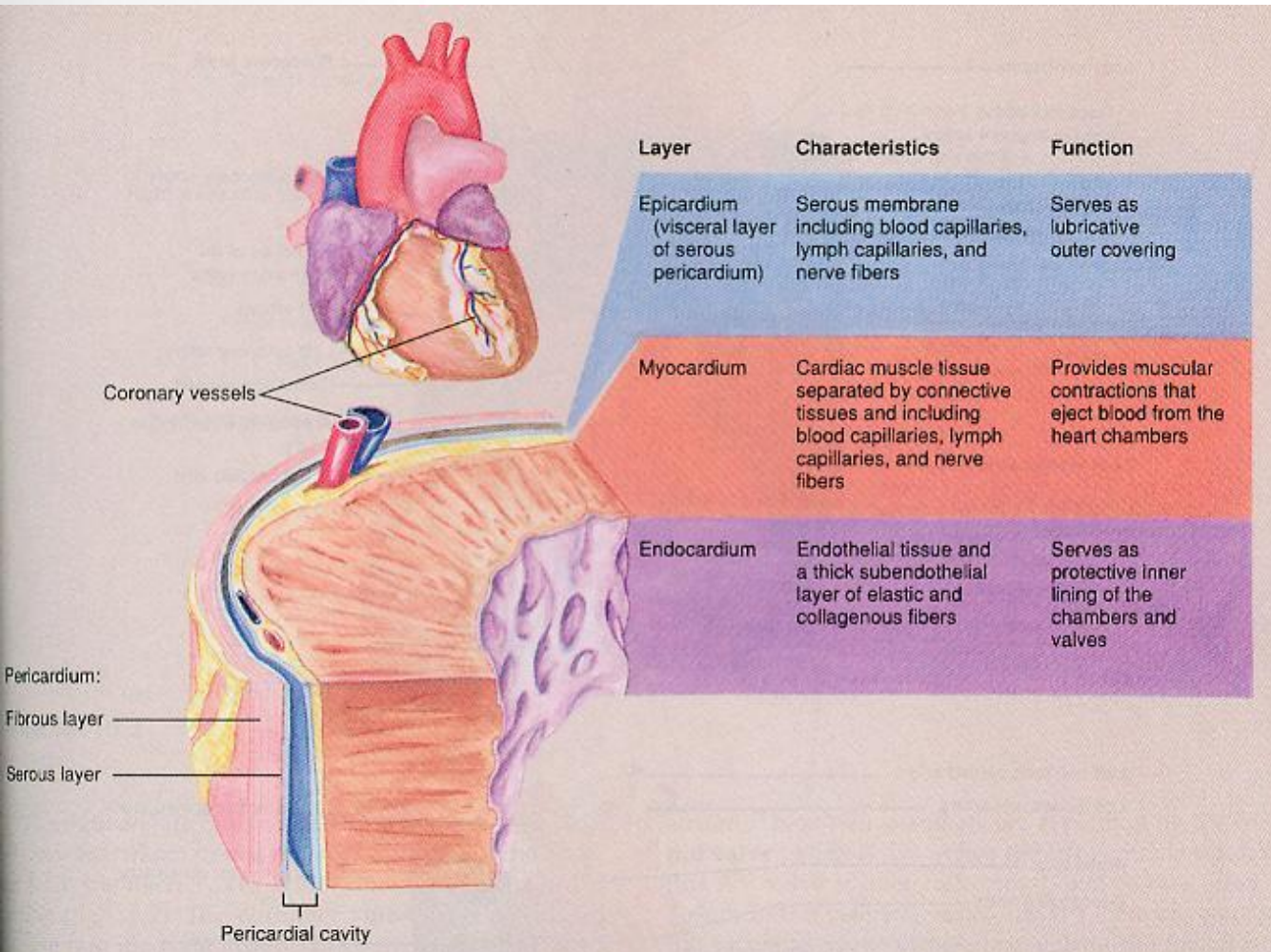
- a. 4 Chambers
- b. About the size of a fist
- c. Triangular in shape with **apex** pointed down (distal end)
- d. The **base** of the heart is the superior portion
- e. The great vessels attach to the base



- f. The heart is surrounded by a loose-fitting sac called the **pericardium**
- g. Beats 42,000,000 times/year
- h. Pumps 700,000 gallons of blood



II. Heart Wall – 3 Layers



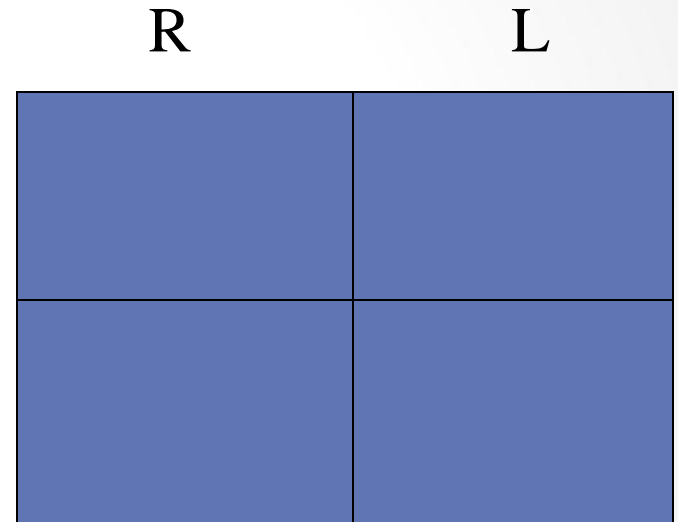
a. **Epicardium** – the heart's surface

b. **Myocardium** – middle layer, all muscle

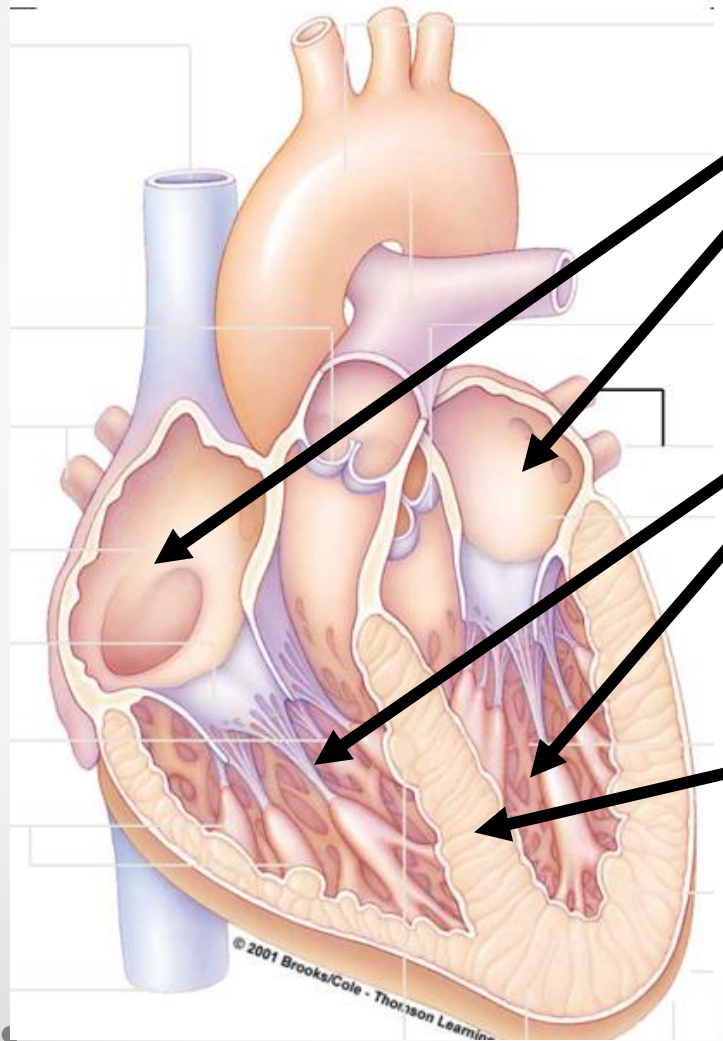
c. **Endocardium** – the inner layer

III. Heart Chambers

- a. A double pump
 - i. Atria (L/R)
 - ii. Ventricles (L/R)
- b. A double circuit –
(two circulatory systems in one)
 - i. Pulmonary (lungs only)
 - ii. Systemic (rest of the body)



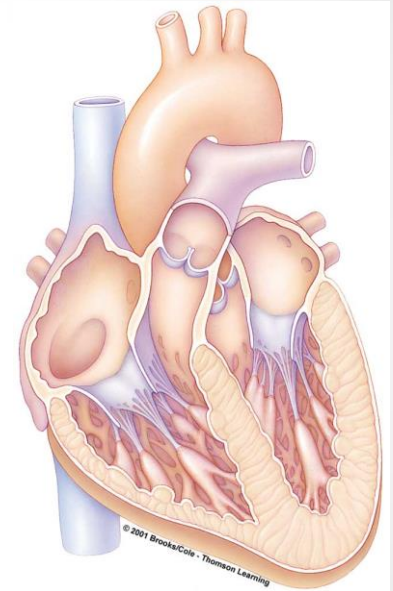
III. Heart Chambers

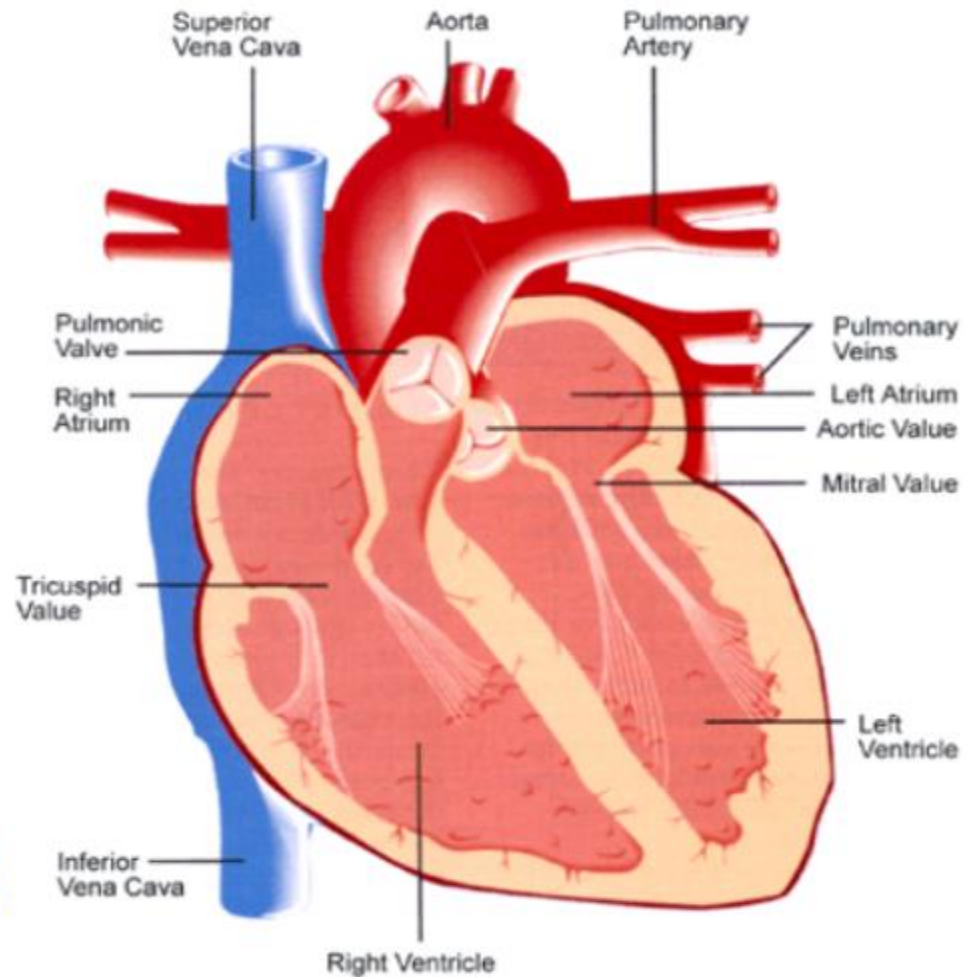
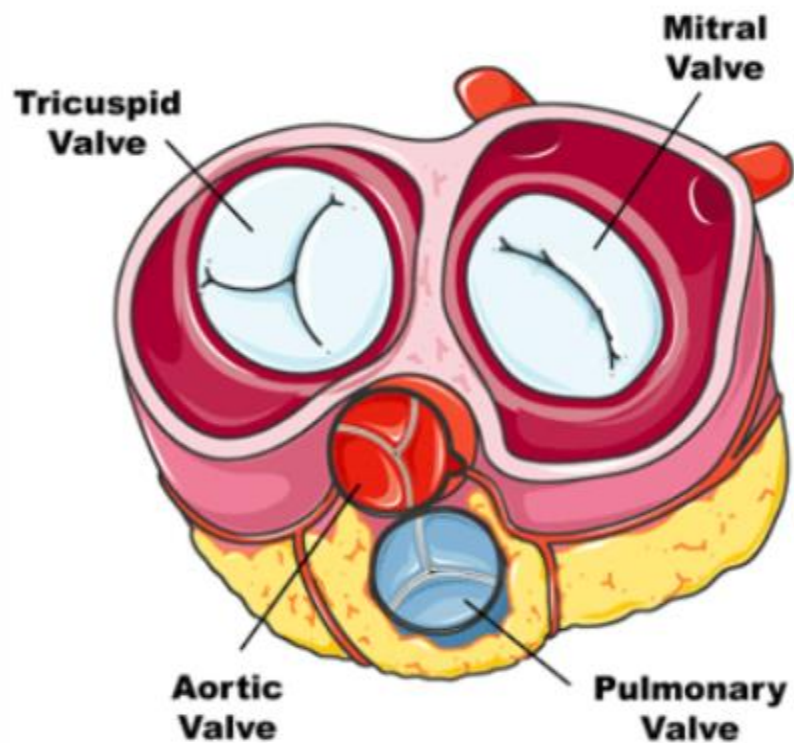


- c. 2 Atria: thin upper chambers
 - i. receive blood via **veins**
- d. 2 Ventricles: Thick and powerful
 - i. blood from atria and pump blood out of heart through **arteries**
- e. **Septum**: Separates the right & left sides of the heart

IV. Heart Structures

- a. Valves: allow one-way flow of blood (4 total)
 - i. 2 Atrioventricular valves (AV)
 - 1. L AV or bicuspid or mitral valve between L atrium & ventricle
 - 2. R AV or tricuspid valve between r atrium & ventricle
 - ii. 2 Semilunar valves
 - 1. Aortic Semilunar; between L ventricle and the aorta
 - 2. Pulmonary Semilunar; between R ventricle and the pulmonary artery





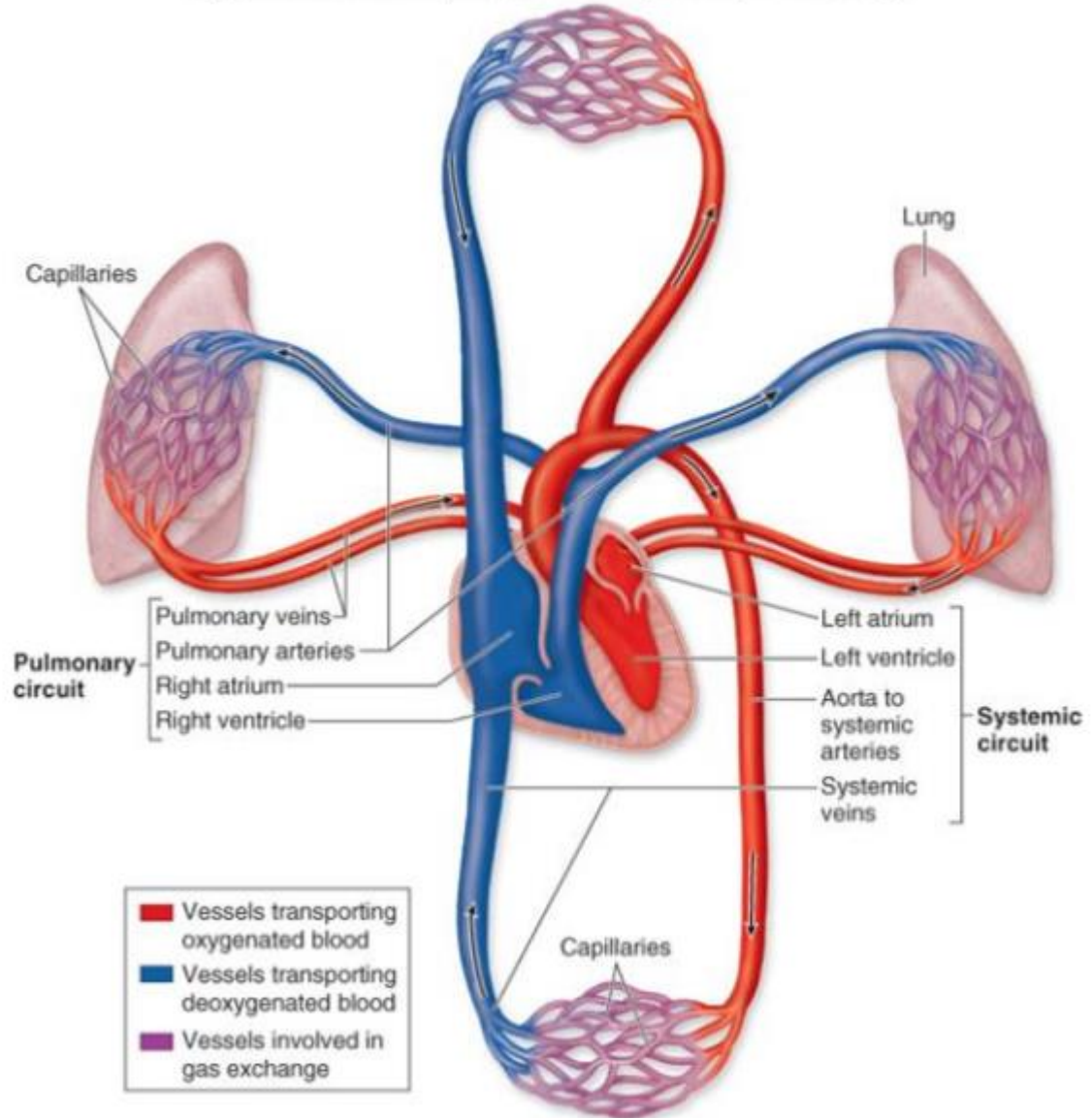
Mitral = bicuspid (left side)
 Tricuspid (right side)

V. Path of Blood Flow

a. Systemic Circulation – delivers blood to all body cells and carries away waste

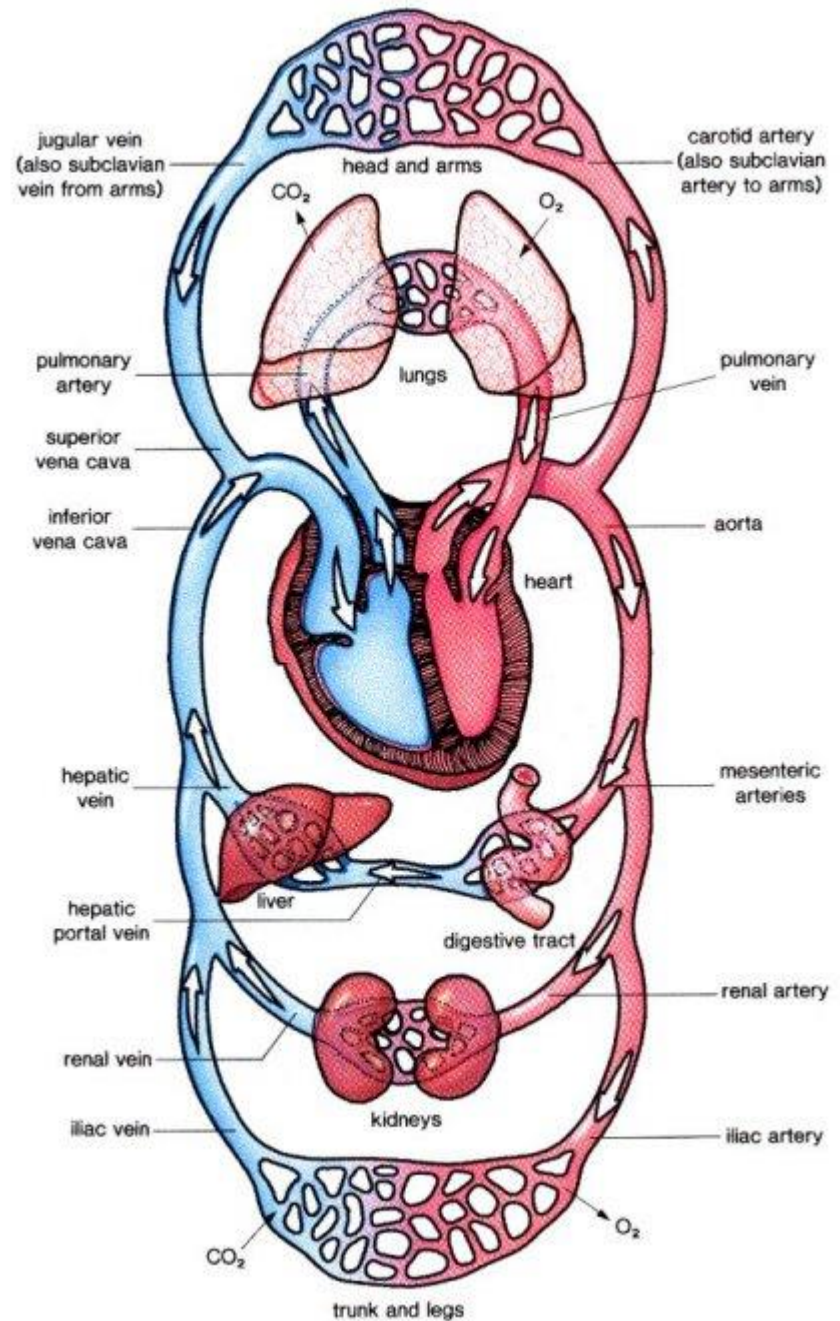
b.

Copyright © The McGraw-Hill Companies, Inc. Permission required for reproduction or display.



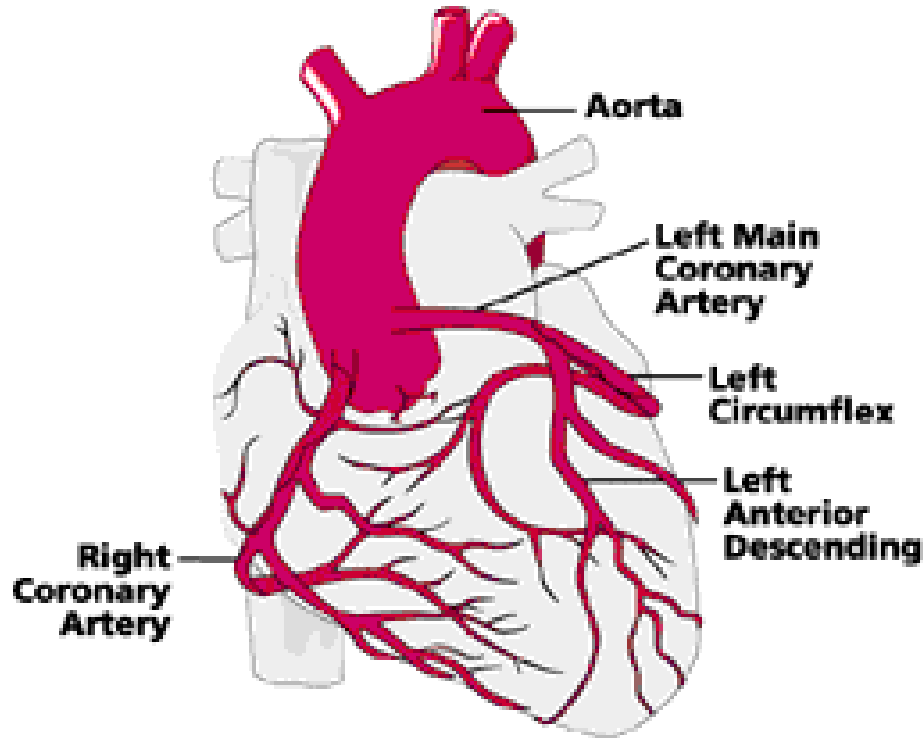
V. Blood Flow

- c. It is all ONE BIG LOOP
 - i. Superior Vena Cava
 - ii. Right Atrium
 - iii. past tricuspid valve to Right Ventricle
 - iv. past the semilunar valve to the pulmonary arteries
 - v. Lungs
 - vi. Left Atrium
 - vii. past bicuspid valve to Left Ventricle
 - viii. past aortic semilunar valve to the Aorta
 - ix. to the body



d. Coronary Circulation

© 1997 HeartPoint



- i. The heart gets its blood via the coronary circulation
- ii. This is before anything else in the body!
- iii. The blood leaves the heart via the coronary sinus