The Cardiovascular System

What is the CARDIOVASCULAR SYSTEM?
pertains to:

- cardio= vascular=

Function of the CV System:

-

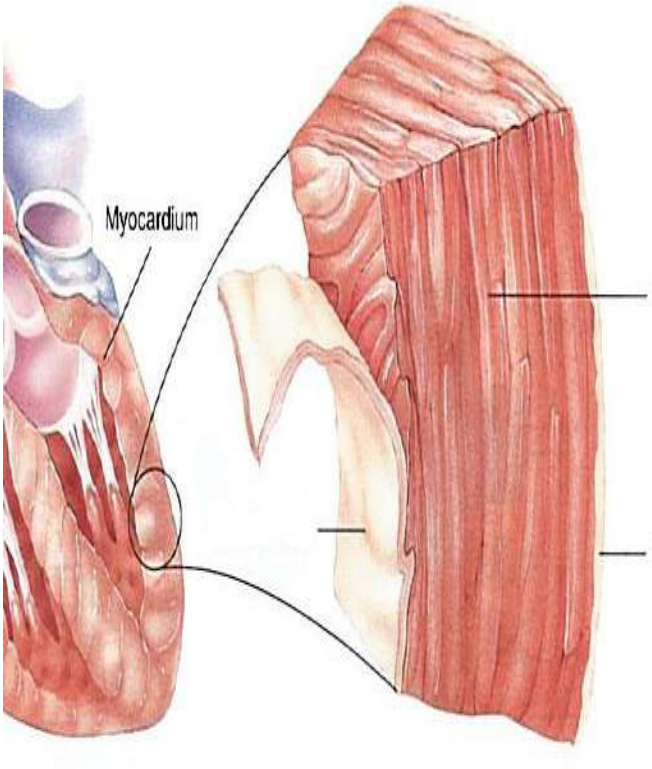
Structures of CVS

1. 2. 3.

THE HEART - hollow muscular organ

- Is an effective _____ that supplies _____ to maintain _____
- The size of your fist

Structure:
The heart has 3 layers and is divided into 4 chambers



Pericardium -

Layers

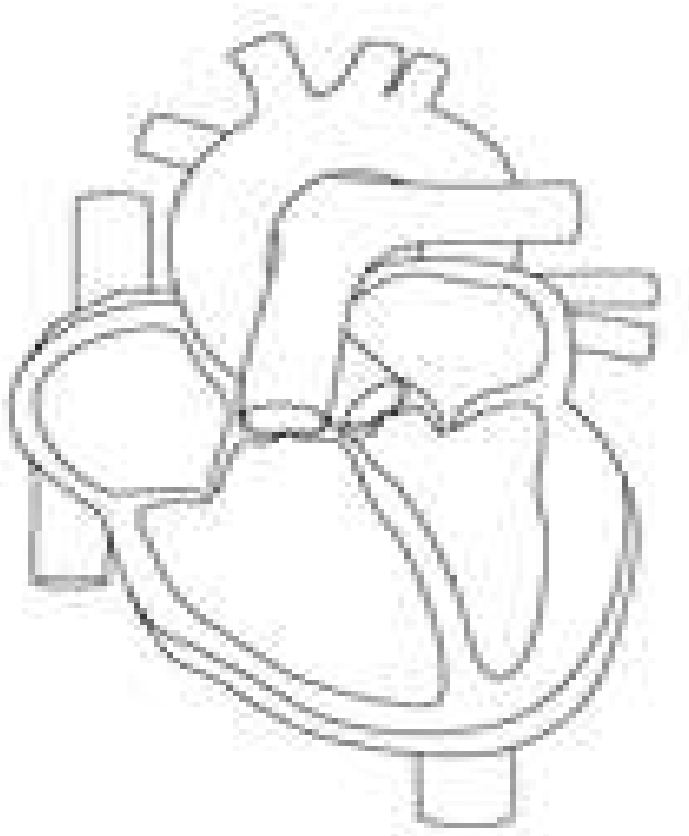
1. **Epicardium-**

2. **Myocardium-**
   a. Supplied by the coronary arteries and veins

3. **Endocardium-**

Label the four Chambers:

{RA/RV/LA/LV} –



- atria-
- ventricles-
- septum- a separating wall or partition
  - *interatrial septum:*
  - *interventricular :*
- Cardiac apex:

Valves:

- The flow of blood through each area of the heart is controlled by the opening & shutting of _____**.**

1. **Tricuspid**
2. **pulmonary semilunar**
3. **bicuspid/mitral**
4. **aortic semilunar**

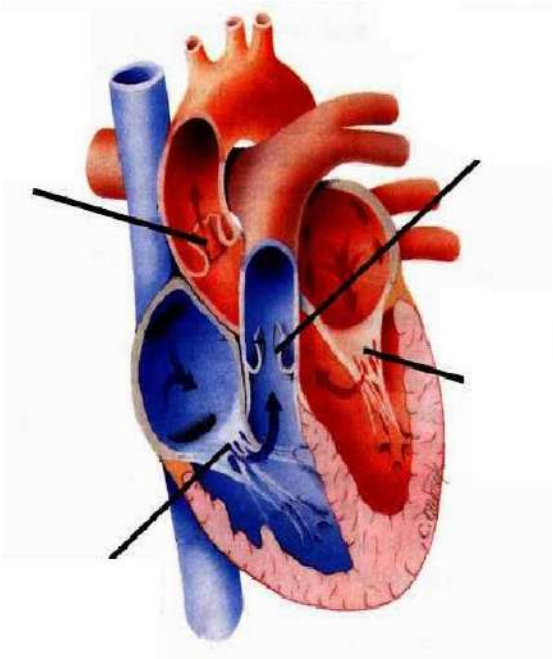


Table 5.1

BLOOD FLOW THROUGH THE HEART

The **right atrium (RA)** receives oxygen-poor blood from all tissues, except the lungs, through the **superior** and **inferior venae cavae.** Blood flows out of the RA through the **tricuspid valve** into the right ventricle.

The **right ventricle (RV)** pumps the oxygen-poor blood through the **pulmonary semilunar valve** and into the **pulmonary artery,** which carries it to the lungs.

The **left atrium (LA)** receives oxygen-rich (oxygenated) blood from the lungs through the **four pulmonary veins.** The blood flows out of the LA, through the **mitral valve,** and into the left ventricle.

The **left ventricle (LV)** receives oxygen-rich blood from the left atrium. Blood flows out of the LV through the **aortic semilunar valve** and into the **aorta,** which carries it to all parts of the body, except the lungs.

Oxygen-poor blood is returned by the venae cavae to the right atrium and the cycle continues.

The Cardiovascular System

Systemic vs. Pulmonary Circulation

- **systemic-**

- **pulmonary-**

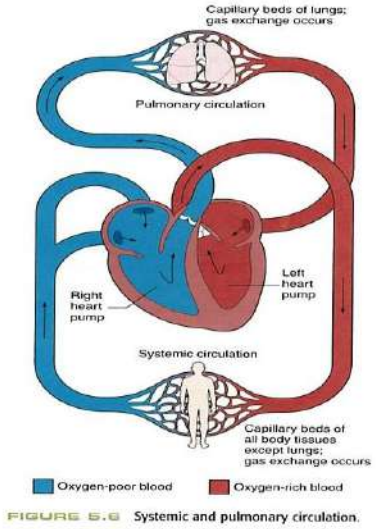


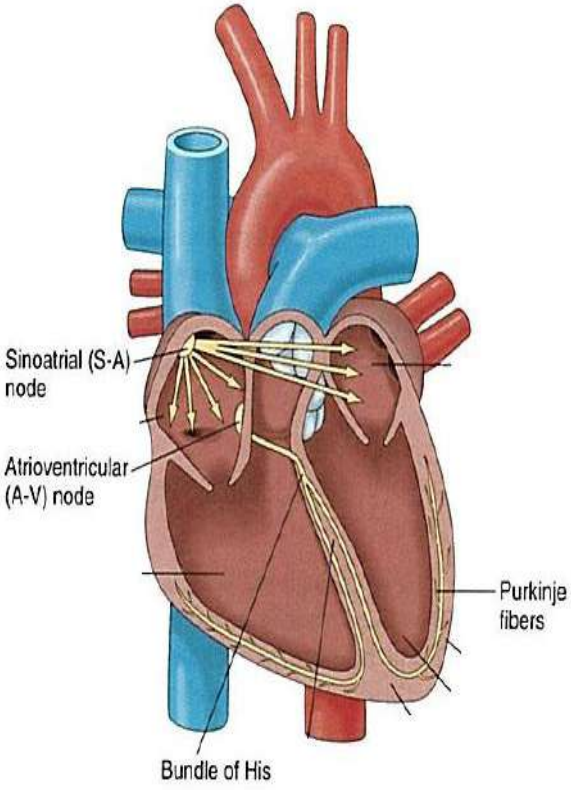
FIGURE 5.6 Systemic and pulmonary circulation.

The Heartbeat

The heartbeat is controlled by a series of _____ known as the

_____ that stimulates the myocardium muscle and tell it to contract.

__NODE=__ __an intersection/junction/crossing__



(written in order of electrical activation!)

1.Sinoatrial Node	
2. Atrioventricular Node	
3. Bundle of His	
4. Purkinje Fibers	

Electrical Waves

What is an **EKG (electrocardiogram)?:**

_____ due to the contraction of the atria

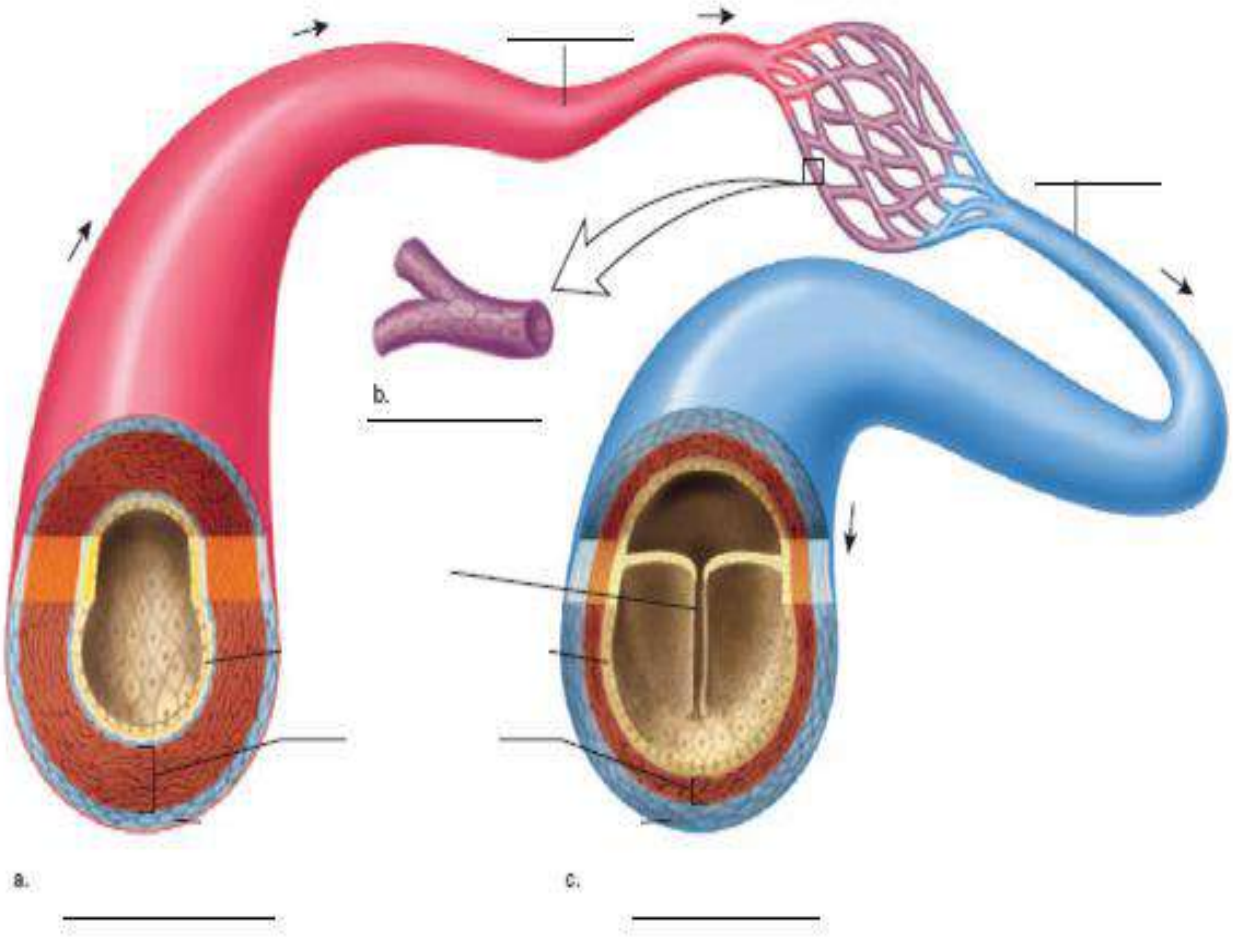
_____ shows the contraction of the ventricles. The atria relax as the ventricles contract.

_____ is the relaxation of the ventricles

Heart Sounds

- The heart produces TWO distinct sounds known as " _____"
- **"lub"-** caused by:
- **"dub"-** caused by:

3 KINDS OF BLOOD VESSELS
& THEIR FUNCTIONS + DIFFERENCES

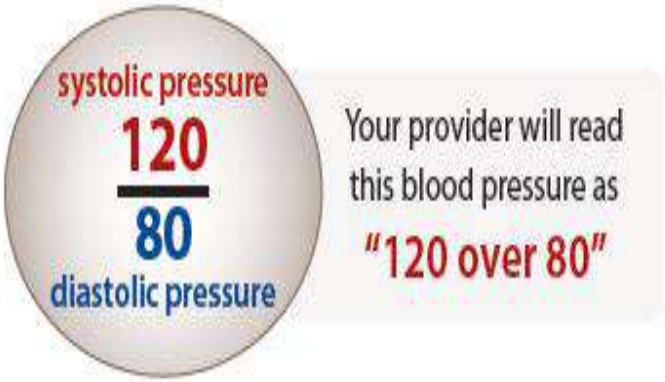


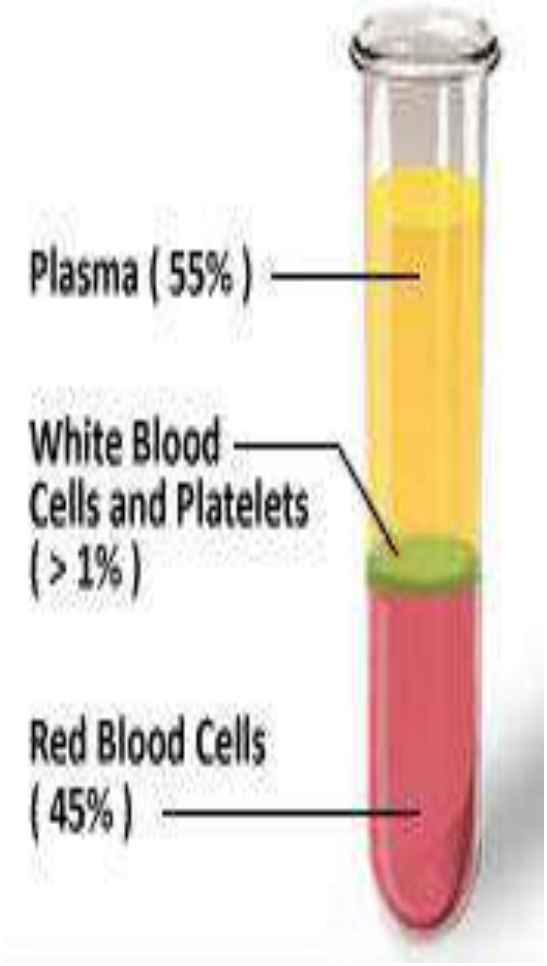
The Cardiovascular System

	Arteries	Capillaries	Veins
Where does blood go?			
Oxygenated/ deoxygenated?			*Why:
Pressure high/low?			
Wall Thickness?	*Why:	*Why:	
How does blood move to its destination?			*Why:
Blood Speed?	*Why:	*Why:	
Major structures	**arterioles-** **aorta-** **coronary artery-**		**venules-** **superior & inferior vena cava-**

Blood Pressure

- Pulse AKA Heart Rate-
- Blood pressure-
    - systolic-
    - diastolic-





Composition of Blood

Serum-

Plasma –

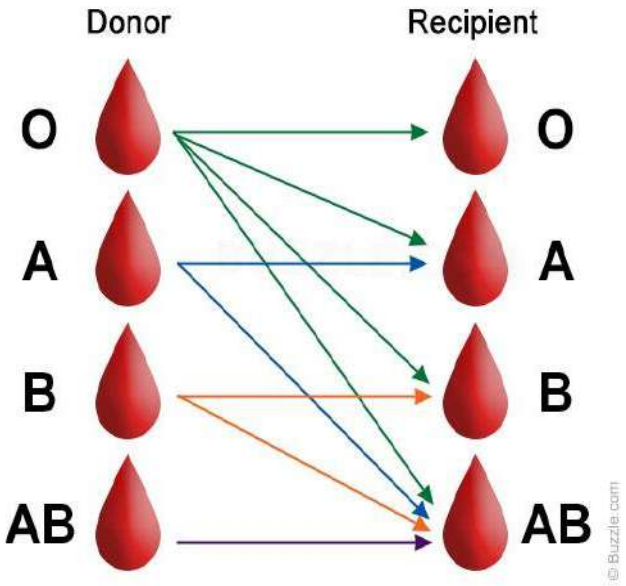
Erythrocytes –

- hemoglobin:

Leukocytes -

- neutrophils
-basophils
-eosinophils
- lymphocytes
- monocytes

Thrombocytes -



Blood Types

The RH Factor

An **RH antigen** is present on red and white blood cells, which also makes them important to consider when crossing blood types.

+ Who is the universal donor?

+ Who is the universal recipient?

Blood Gasses

Blood contains 3 major gasses:

1.

2.

3.