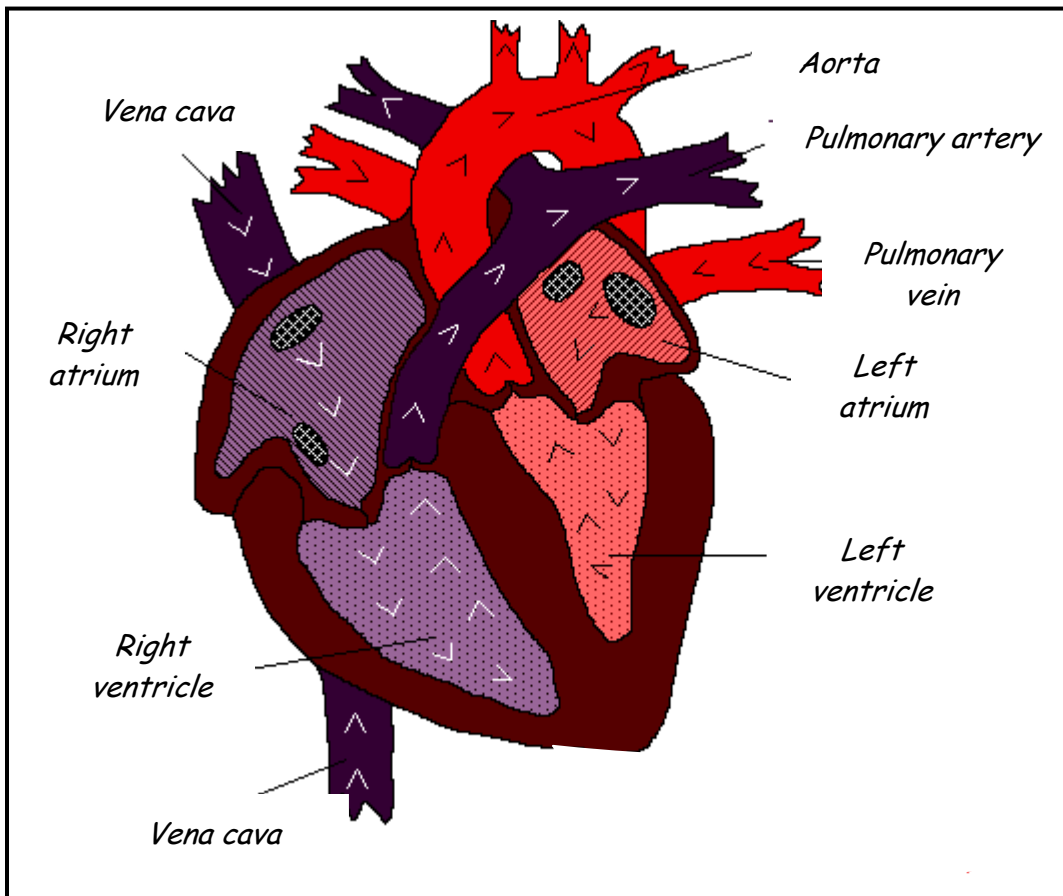


Intermediate 2 Biology - Unit 3: Mammalian Physiology  
Chapter 13 - Circulation and Gas Exchange

**Circulatory System**

The circulatory system is made up of the heart and blood vessels. The heart is made of muscles and pumps blood around the body. You should be familiar with the structure of the heart and know the names of the main blood vessels leading to/from it:



There are three types of blood vessels you should be familiar with:



*Artery - carries blood away from the heart. Thick muscular wall to prevent bursting.*

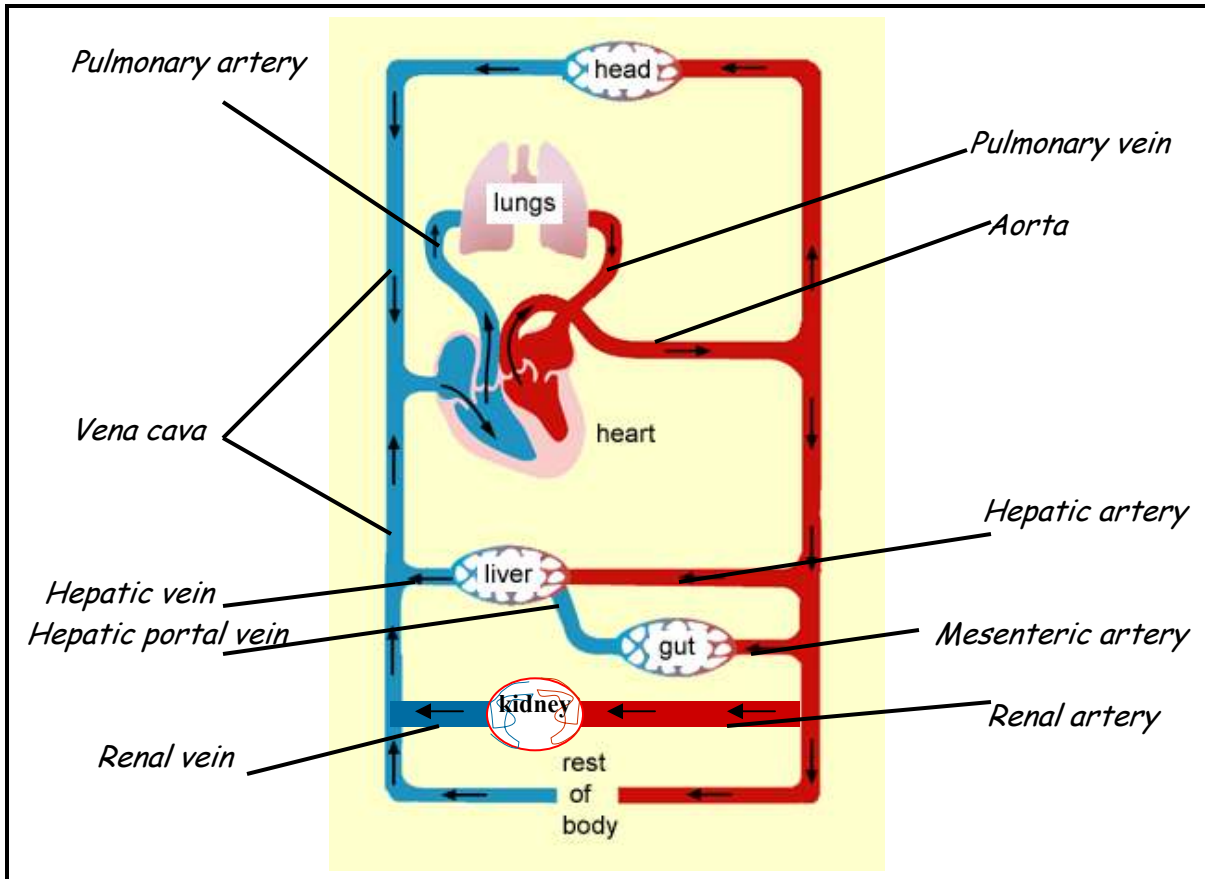


*Vein - carries blood to the heart. Contains valves.*



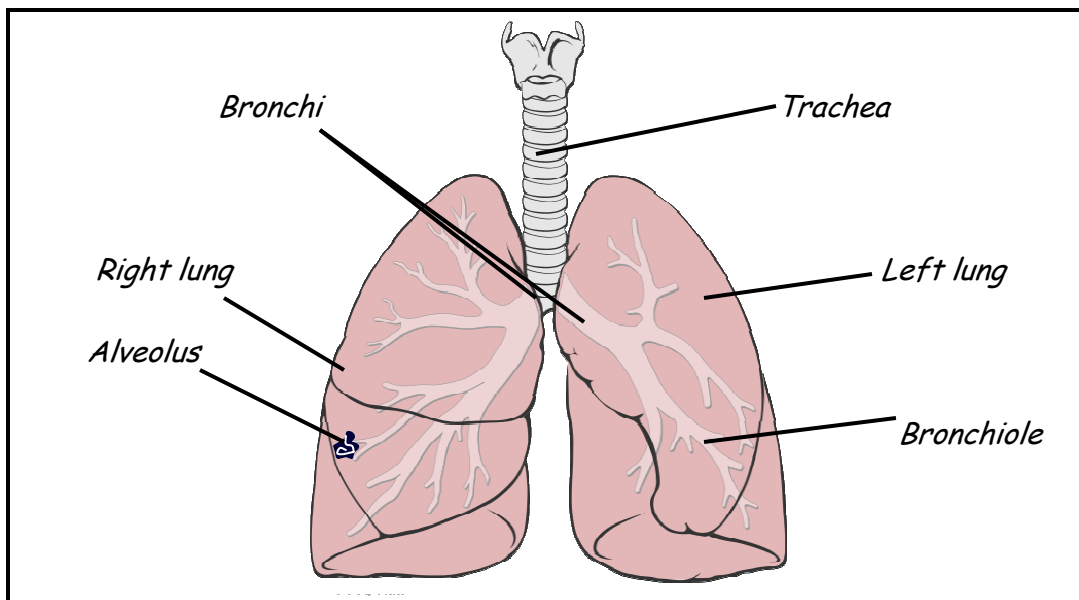
*Capillary - allows materials to diffuse into/out of cells. One cell thick to allow diffusion to occur easily.*

You should also know the names of specific blood vessels:



## Gas Exchange

In mammals the respiratory system is responsible for passing oxygen needed for cellular respiration into the blood and removing carbon dioxide.



The lungs have many alveoli. These structures are found at the ends of bronchioles. Alveoli are where gas exchange takes place. Alveoli are highly efficient structures for gas exchange because:

1. they have a very large surface area
2. they are moist (allowing oxygen to dissolve)
3. they have thin walls (rapid diffusion)
4. surrounded by a capillary network

