

# HEART ANATOMY

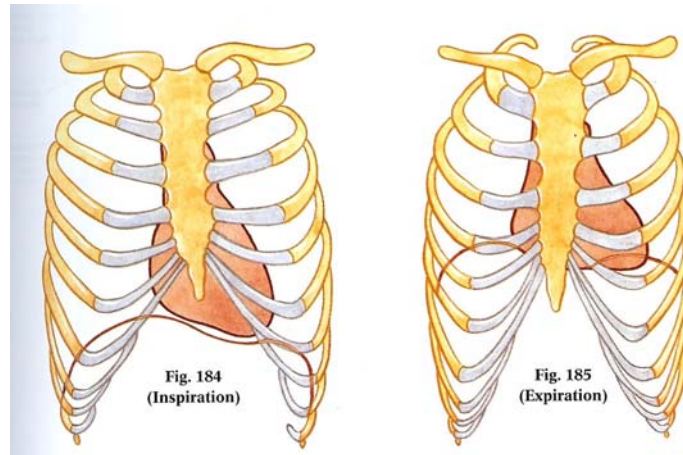
## Junior High School

### Location:

- The heart sits posterior to the sternum and costal cartilage and sits between ribs 2-5
- 2/3 of the heart sits to the left and 1/3 of the heart sits to the right of the median plane

### Heart Position During Breathing:

- Inspiration
  - Heart becomes oblong, its apex is lowered
- Expiration
  - Heart increases its transverse diameter and becomes shorter (less oblong)



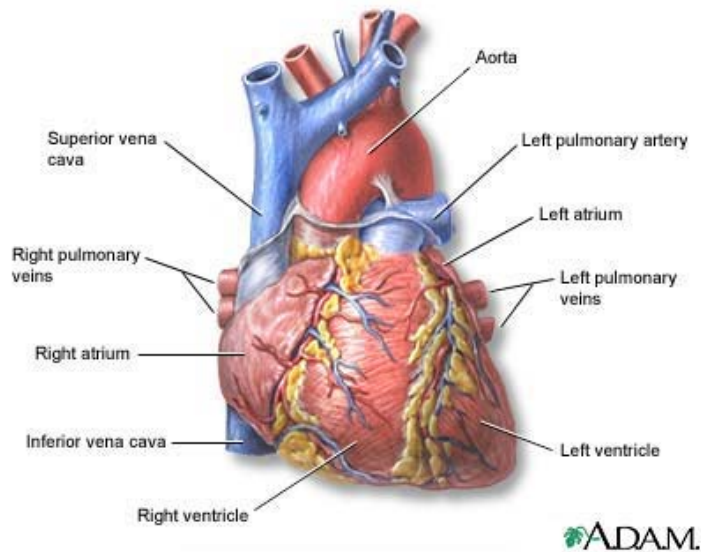
### Layers of the Heart:

- Pericardium – surrounds the heart and the roots of the great blood vessels
  - Fibrous Pericardium – strong, dense, fibrous outer layer (what you see when you open the thoracic cage)
  - Serous Pericardium – inner layer
    - Parietal Layer – lines inner surface of fibrous pericardium
    - Visceral Layer – is directly on the surface of the heart
- Pericarditis – inflammation of the pericardium. It becomes inflamed and the amount of fluid between the layers increases which squeezes the heart and restricts its action.

### Heart Anatomy:

- Dissected Hearts – Structures to Identify:
  - Right and Left Atria
  - Right and Left Ventricles – LV is much thicker than RV
  - Right Atrioventricular (Tricuspid) Valve and Left Atrioventricular (Bicuspid) Valve
  - Pulmonary Semilunar Valve and Aortic Semilunar Valve
  - Papillary Muscles – extend from ventricular walls and septum

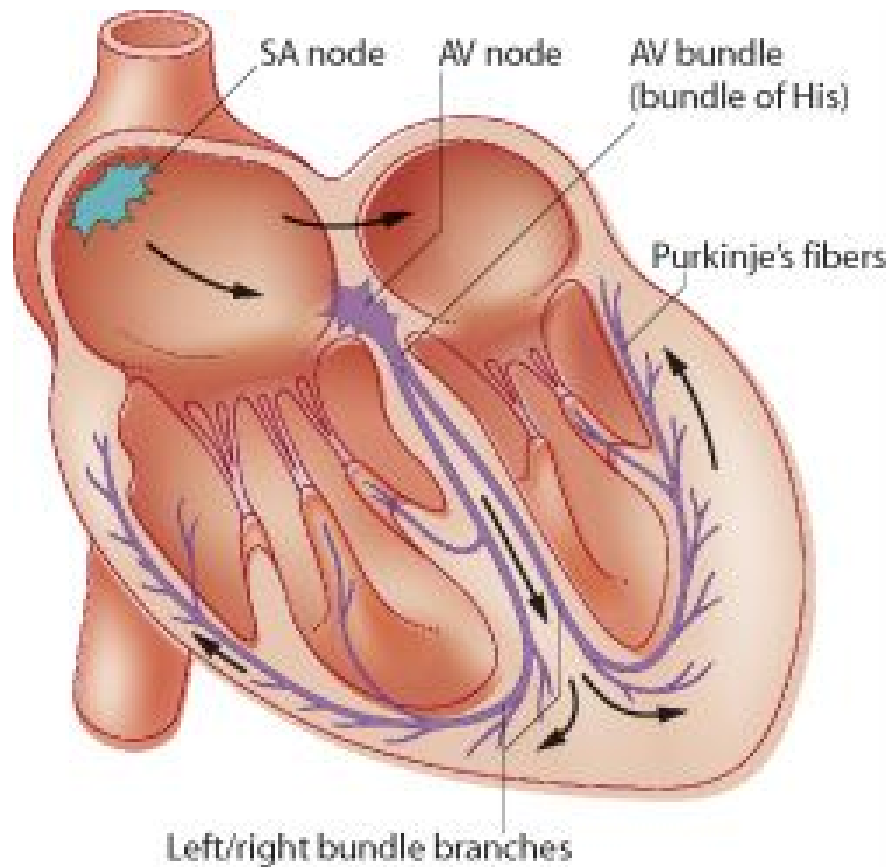
- Chordae Tendinae – extend from valve cusps to papillary muscles, prevents backflow of blood into the atria
- Right Auricle and Left Auricle – leftover from embryonic development



#### Heart Anatomy:

- Dissected Hearts – Structures to Identify:
  - Vessels of the Heart
    - Superior and Inferior Vena Cava – dump into the Right Atrium
    - Aorta
      - Branch off Ascending Aorta
        - Right Coronary Artery
          - Right Marginal Artery
          - Posterior Interventricular Artery
        - Left Coronary Artery
          - Anterior Interventricular Artery
          - Circumflex Artery
      - Pulmonary Trunk with Pulmonary Arteries ( $DO_2$ )
      - Pulmonary Veins ( $O_2$ )
      - There are 3 cardiac veins and all of them drain into the Coronary Sinus
      - Coronary Sinus – drains into the Right Atrium
    - Coronary Sulcus
      - Separates the 2 atria from the 2 ventricles
    - Anterior Interventricular Groove
      - Separates the two ventricles on the front
    - Posterior Interventricular Groove
      - Separates the two ventricles on the back

- Conduction System of the Heart
  - Sinoatrial (SA) Node – at junction of SVC and Right Atrium, known as the heart's pacemaker
  - Atrioventricular (AV) Node – near the opening of the coronary sinus in Right Atrium
  - AV Bundle – splits into right and left branches
  - Purkinje Fibers – spread into the ventricle walls



# Blood Flow through the Heart

