

HEART ANATOMY

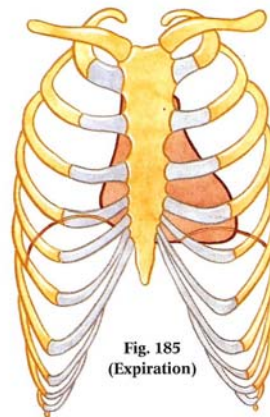
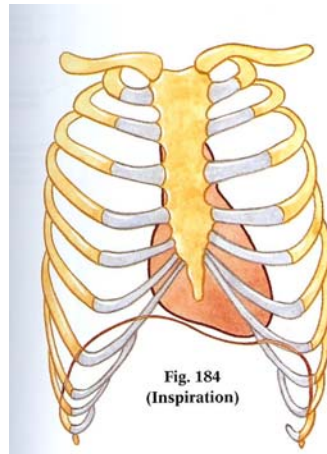
High School

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
- Apex of the heart lies posterior to the 5th left intercostals space
- Base of the heart faces posteriorly toward the bodies of T6-T9 vertebrae

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 – also called the Epicardium, forms outer 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

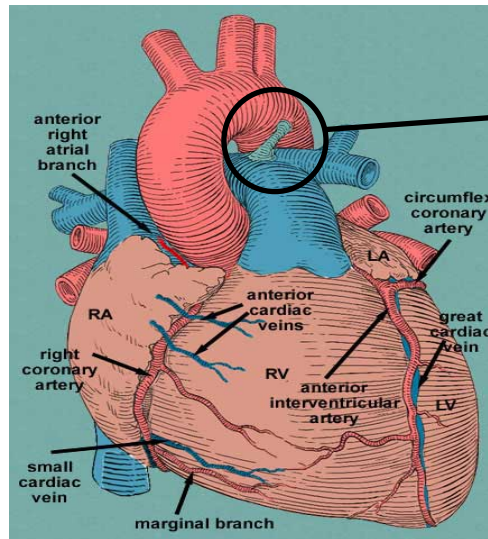
- Pulmonary Semilunar Valve and Aortic Semilunar Valve

**Opened
Right Atrium**

- Fossa Ovalis – between left and right atria, where the blood runs through the right and left atria before birth
- Crista Terminalis
- Pectinate Muscles

**Opened
Right
Ventricle**

- Moderator Band – only in right heart, forms the bridge between intraventricular septum and papillary muscles, part of the conduction system
- Papillary Muscles – extend from ventricular walls and septum
- Chordae Tendinae – extend from valve cusps to papillary muscles, prevents backflow of blood into the atria
- Trabeculae Carneae – irregular muscular elevation on inferior part of right ventricle
- Right Auricle and Left Auricle – leftover from embryonic development
- Ligamentum Arteriosum – connects the arch of the aorta with the pulmonary trunk

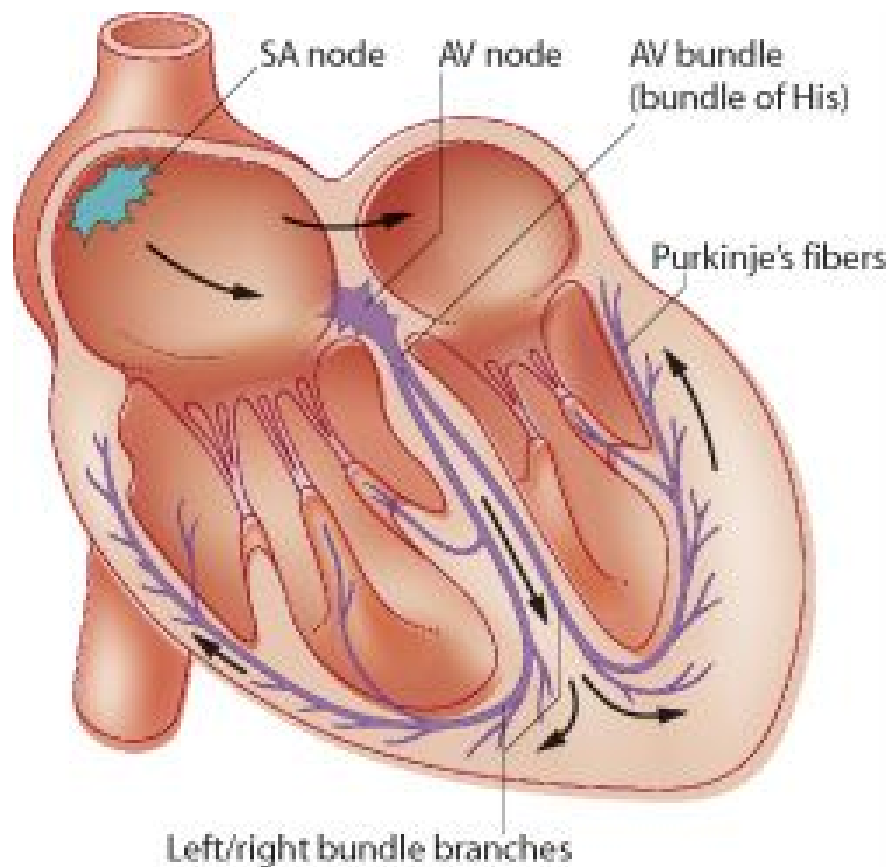


Ligamentum Arteriosum

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 (DO₂)
 - Pulmonary Veins (O₂)
 - Great Cardiac Vein
 - Middle Cardiac Vein
 - Small Cardiac Vein
- } All 3 veins dump into the Coronary Sinus on the back of the heart

- Coronary Sinus – drains into the Right Atrium
- Coronary Sulcus
 - Separates the 2 atria from the 2 ventricles
 - Contains the Right Coronary Artery, Small Cardiac Vein, Coronary Sinus, and Circumflex branch of Left Coronary Artery
- Anterior Interventricular Groove
 - Separates the two ventricles on the front
 - Contains Anterior IV Artery and Great Cardiac Vein
- Posterior Interventricular Groove
 - Separates the two ventricles on the back
 - Contains Posterior IV Artery and Middle Cardiac Vein
- 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

