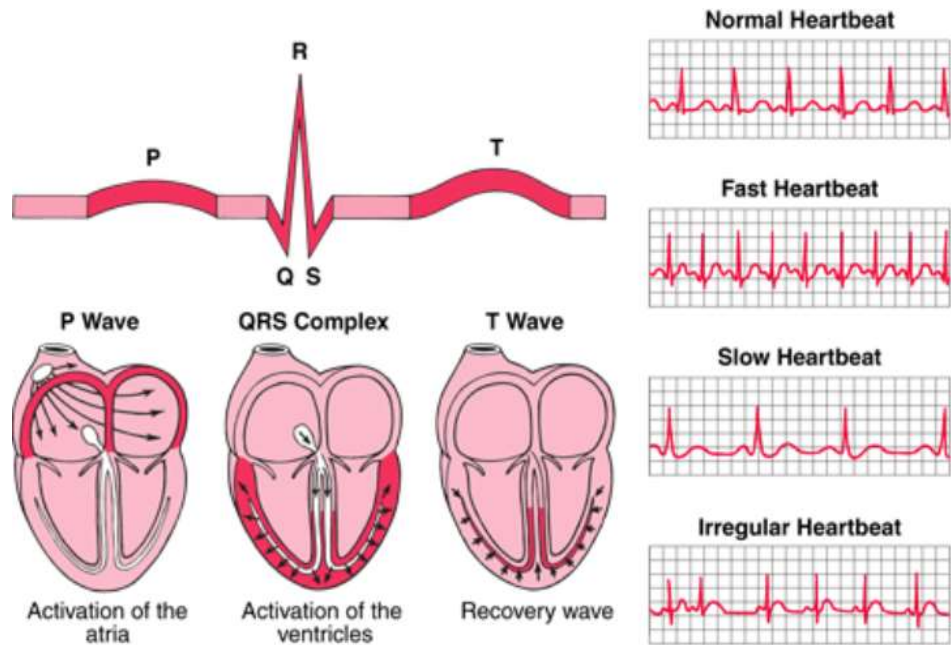


Heart Physiology

EQ: Where does the lub dub sound of a heart beat originate?

- I. Cardiac Cycle
 - a. A cardiac cycle is one complete heartbeat
 - b. When a heart chamber contracts it is called systole
 - c. When a chamber is relaxing it is called diastole
 - d. Preventing back flow
 - i. The cusps (flaps) of the bicuspid and tricuspid valves are anchored to the ventricle walls by fibrous "cords"
 1. called chordae tendineae
 2. attach to the wall by papillary muscles.
 - ii. This prevents the valves from being pushed up into the atria during ventricular systole.
- II. Heart Sounds
 - a. Sounds like "Lub Dub"
 - b. "Lub" comes from Tricuspid and bicuspid valves close
 - i. "1st heart sound"
 - ii. Also when the semilunar valves are opening (just WAY quieter)
 - c. "Dub" comes from semilunar valves closing
 - i. "2nd heart sound"
 - ii. Also when the AV valves are opening
- III. Making a Heart Beat – Cardiac Conduction
 - a. Electrical signal moves through the intercalated discs of the cardiac muscle
 - b. It takes the same path through the heart each beat
 - i. Starts at S-A Node
 - ii. Moves around right atrium
 - iii. Bundles at A-V Node
 - iv. Through A-V Bundle (Bundle of His)
 - v. Through Bundle Branches
 - vi. Purkinje Fibers release into ventricle cells
 - vii. Cells around ventricle contract with electrical signal
 - viii. Travels back up to SA node
 - c. Regulation of Cardiac Cycle
 - i. controlled by the cardiac center within the medulla oblongata.
- IV. ECGs (AKA EKGs)
 - a. An ECG is printed on paper covered with a grid of squares.
 - b. The width of a single small square on ECG paper represents 0.04 seconds.
 - c. A common length of an ECG printout is 6 seconds; this is known as a "six second strip."
 - d. SADS (Sudden Arrhythmia Death Syndromes or Sudden Adult Death Syndrome)
 - i. Routine ECG Screening may help prevent deaths in young people



e.

f. Analyze an ECG

i. Each one of the figures represents an ECG pattern displaying three types of abnormal rhythms:

1. Tachycardia
2. Bradycardia
3. Arrhythmia

ii. Defibrillator

1. common treatment for life-threatening cardiac arrhythmia