Tikrit University

College of Nursing

Basic Nursing Sciences

Second Year - 2023-2024

Health assessment and physical examination

(Cardiovasacular Assessment Part 1)

by:

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Position and Surface Landmarks

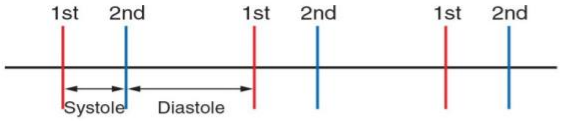
- **Cardiovascular System consists of:**
- Heart
- Blood vessels
- **Precordium:** the area on the anterior chest wall overlying the heart and great vessels.
- The heart extends from the second (2^{nd}) to the fifth (5^{th}) intercostal space, and from the right border of sternum to the left midclavicular line.
- The top of the heart is the base, and the bottom is the apex.

Overview of Anatomy and Physiology

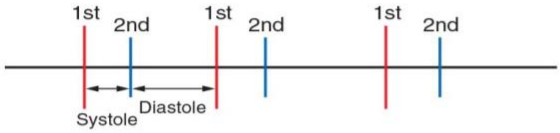
- **Three Layers:**
  - Pericardium
  - Myocardium
  - Endocardium
- **Four Chambers:**
  - Right Atrium & Ventricle
  - Left Atrium & Ventricle
- **Atrioventricular Valves**:
  - Tricuspid (Right side)
  - Bicuspid (Mitral) Left side
- **Semilunar Valves:**
  - Pulmonic (Right side)
  - Aortic (Left side)
- **Cardiac cycle:** two phases
  - Systole: Contraction
  - Diastole: Relaxation

Heart Sounds

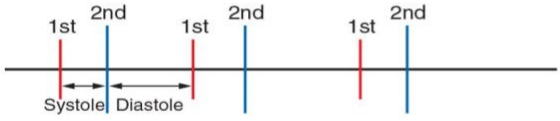
- **The first heart sound (S1):** occurs with closure of atrioventricular (AV) valves.
- **S1** heard over all the precordium, but usually <u>loudest at the apex</u>, (5^{th}) intercostal space.
- **The second heart sound (S2):** occurs with closure of semilunar valves.
- **S2** heard over all the precordium, but usually <u>loudest at the base</u>.
- **Extra heart sounds:**
- **The third heart sound (S3):** occurs immediately after S2.
- **The fourth heart sound (S4):** occurs immediately before S1.



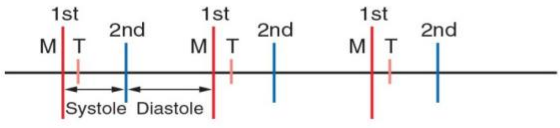
Normal: S_1 is produced by the closure of the AV valves and correlates with the beginning of ventricular systole. It is heard best in the apical or mitral area.



Loud First Sound: The intensity of the first heart sound may be incerased when the PR interval is shortened, as in tachy-cardia, or when the valve leaflets are thickened as in mital stenosis.

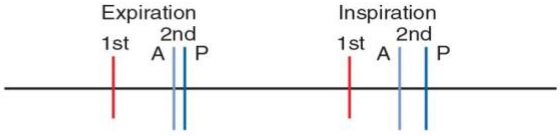


Soft First Sound: A soft S_1 is heard when the PR interval is prolonged.

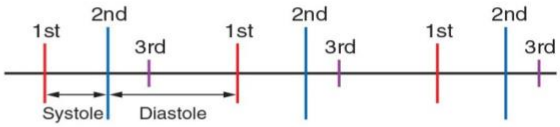


Split First Sound: A split S_1 is heard when right ventricular emptying is delayed. The mitral valve closes before the tri-cuspid valve and "splits" the sound into its two components.

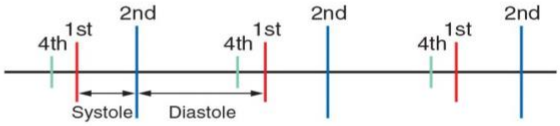
A. First heart sound (S_1)



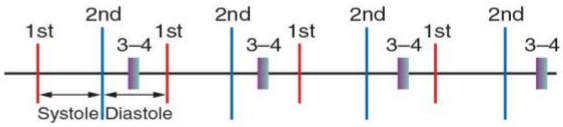
B. Second heart sound (S_2)



C. Third heart sound (S_3)

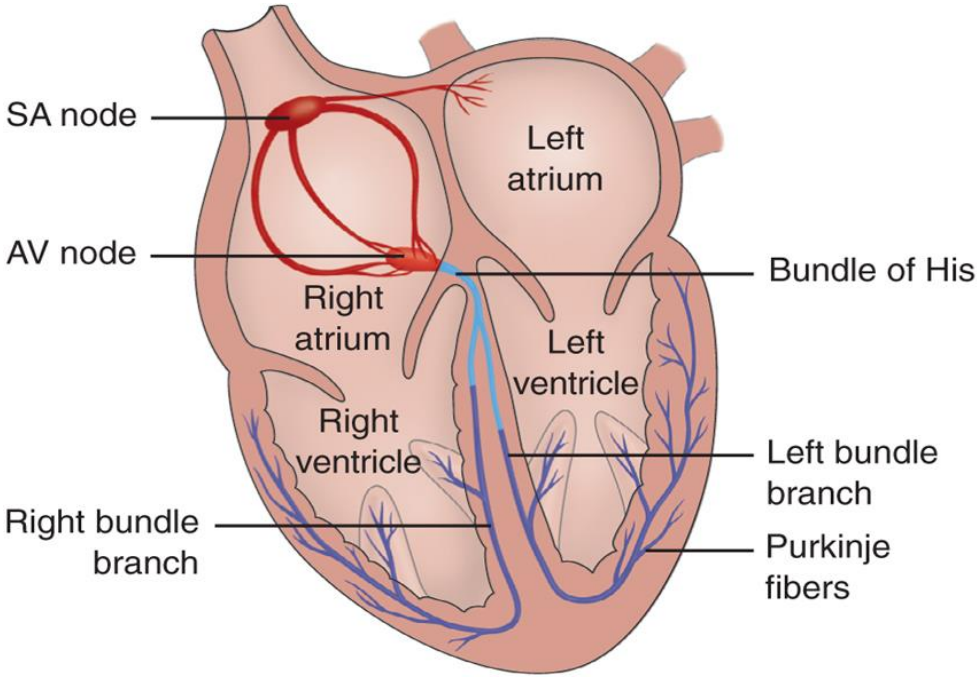


D. Fourth heart sound (S_4)

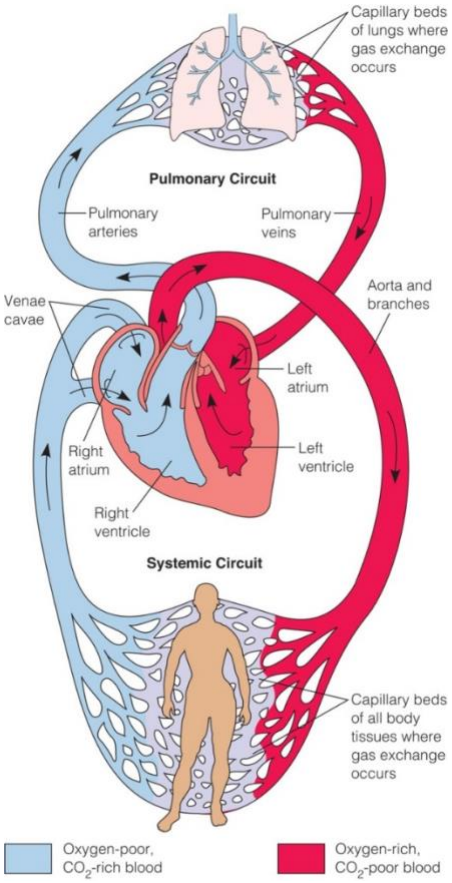


E. Summation gallop

Cardiac Conduction System



Pulmonary and Systemic Circulation



I- Subjective Data

a. Chest pain- Angina
b. Dyspnea
c. Orthopnea
d. Cough
e. Fatigue
f. Cyanosis or Pallor
g. Edema
h. Nocturia
i. Past cardiac history
j. Family cardiac history
k. Patient-centered care (cardiac risk factors

II-Objective Data/ Preparation

- Privacy
- Room: warm & quiet
- Examiner stand on Rt side to facilitate exam
- **Position:**
  - Sitting position when assessing the Carotid Arteries.
  - Supine position with head and chest slightly elevated when assessing the Jugular Veins and precordium.
- **Equipment's:** marking pen, small ruler, stethoscope, Alcohol wipe.

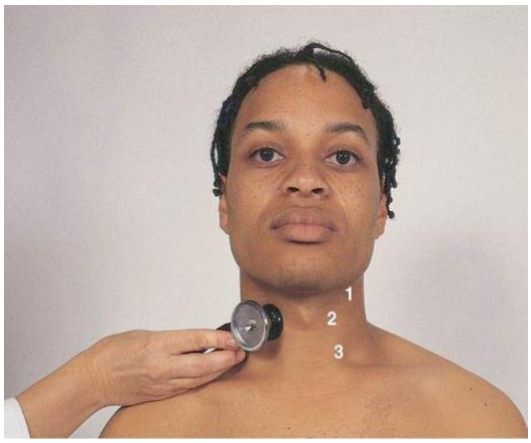
II-Objective Data/ Neck Vessels

- **Palpate the Carotid Artery**

- Medial to the sternomastoid muscle in the neck
- Check contour, amplitude, & symmetry
    - Avoid excessive pressure
    - Gentle palpation, keep neck in a neutral position
    - One carotid artery at a time
    - **Pulse amplitude scale:**
        - 0 = absent
        - 1+ = Weak
        - **2+ = Normal**
        - 3+ =Increased, full, bounding

❑ **Auscultate the Carotid Artery**, if required

- At the angle of the jaw, mid cervical, base of neck.
- Use the **bell** of the stethoscope and ask the client to take a breath, exhale & hold it briefly while you listen.
- **Check for a Bruit** (blowing, swishing sound indicating blood flow turbulence).
- Normal Findings: None is present.
- Abnormal Findings: Bruit due to local vascular cause- Atherosclerotic narrowing.



1: Angle of the jaw

2: Mid cervical

3: Base of neck