



**University of Basrah**  
**College of Nursing**  
**Fundamentals of Nursing Department**  
**Second stage Adult Nursing (1)**



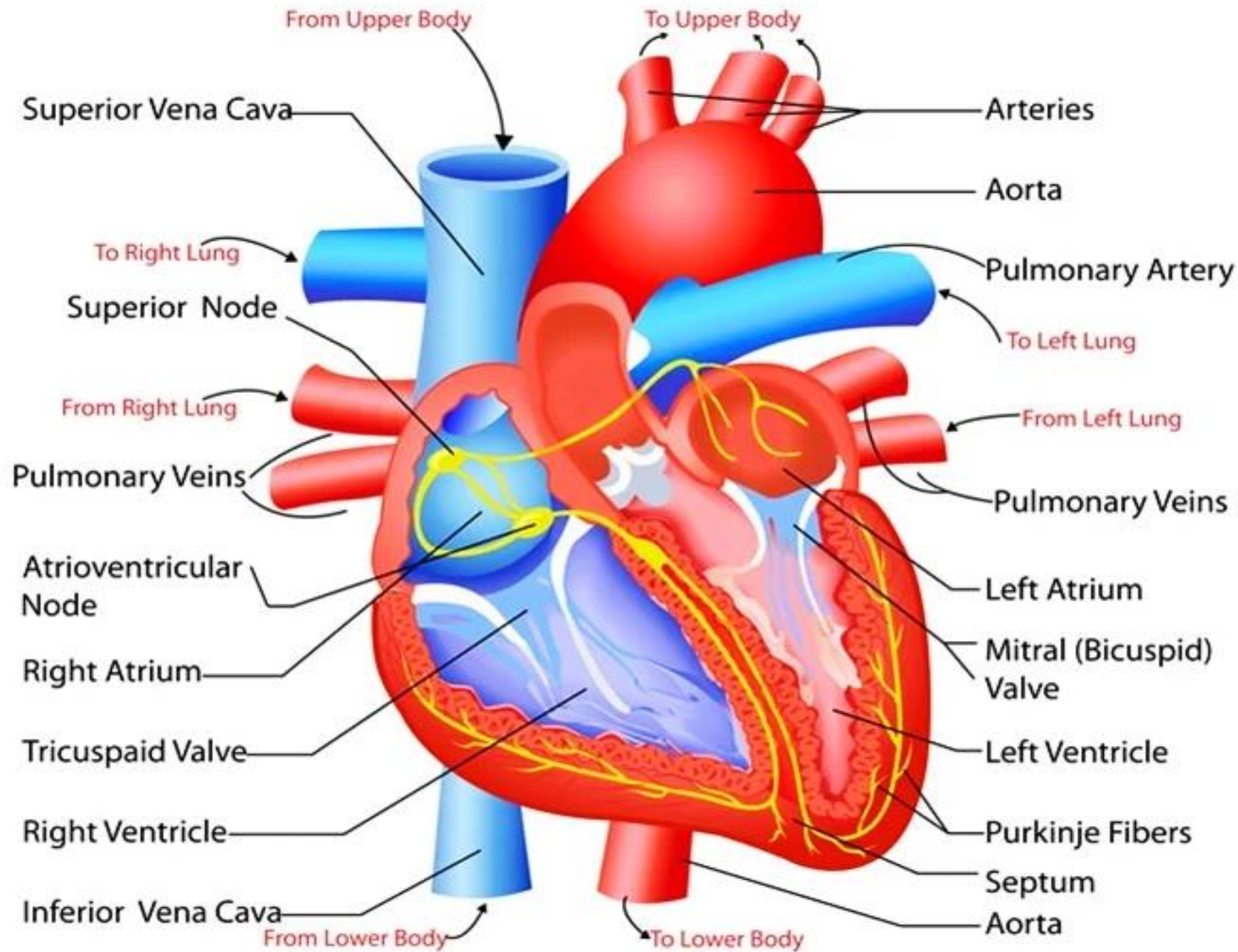
**Practical- Review of system**

# **2- Cardiovascular System (CVS)**

**BY**

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# Cardiovascular System Assessment

## 1- Chest Pain.

### Causes of Chest Pain:

1- **Respiratory** (pneumonia, tuberculosis, pleurisy).

2- **Cardiac** (angina, myocardial infarction).

3- **Gastrointestinal** (esophagitis).

4- **Musculoskeletal** (Trauma, rib fracture).

5- **Anxiety.**

Chest pain related to CVS is caused by:

1- **Angina.**

2- **Myocardial Infarction.**

3- **Pulmonary embolism.**

4- **Pericarditis.**

Items	Angina	Myocardial Infarction
1- Location	Substernal	Across chest
2- Onset	Gradual	Sudden
3- Radiation	Not radiated	Radiated to the shoulder, neck, jaw, and back
4- Duration	5-15 minute	> 15 minute
5- Character	Aching, burning, squeezing	Tightness, Pressure
6- Aggravating factors	Heavy meals, stress, cold weather, activity	At rest
7- Relieving factors	Angesid (GTN), rest	Opioid analgesic (morphine)
8- Associated Symptoms	No vomiting	Diaphoresis, nausea, vomiting

**2- Dyspnea:** breathlessness, shortness of breath (SOB), and difficulty breathing.

Causes of dyspnea related to CVS

**1- Acute coronary syndrome.**

**2- Valvular heart disease.**



**3- Orthopnea:** Shortness of breath that occurs during lying flat position caused by:

**1- Heart Failure.**

**2- Left ventricular hypertrophy.**

**4- Paroxysmal Nocturnal Dyspnea:** Shortness of breath that occurs at night. That cause wakes up the patient. The most common cause is heart failure. Relieved by **upright position.**

## **Common questions asked to patients with SOB:**

**1- Position (upright, standing, sitting).**

**2- Onset.**

**3- Duration.**

**4- Occur at rest or exertion.**

**5- Severity (by asking about the distance that the patient can be walking).**

**6- Any increase and decrease factors.**

**7- Associated symptoms.**

**8- Number of pillows(patient with orthopnea).**

**9- Timing (at night, day).**

**5- Palpitation:** Awareness of heartbeats.

**Causes of palpitation:**

1- Cardiac causes (arrhythmia, hypertension, and mitral stenosis).

**2- Non-cardiac causes include:**

A- Asthma and emphysema.

B- Blood loss.

C- Anxiety and stress.

D- Drugs (digoxin, antidepressant), caffeine, tobacco.

## Common questions asked to patients with palpitation:

- 1- Onset:** when they started (**rest, exercise**), sudden or gradual, previous episodes.
- 2- Timing:** continuous/intermittent, frequency and duration (seconds/hours), time of day (the night when quiet).
- 3- Character:** fast/slow.
- 4- Associated symptoms:** chest pain, faintness, syncope/loss of consciousness, and breathlessness.



**6- Syncope:** Brief loss of consciousness.

## Causes of syncope

**1- Cardiovascular cause (pulmonary embolism).**

**2- Neurally mediated.**

**3- Orthostatic hypotension.**

**7- Claudication:** Impairment in walking or pain (discomfort) in the legs that occur during walking due to decrease blood flow to the legs and is relieved by rest.

## **Types of Claudication**

- 1- Intermittent Vesicular Claudication. Cramping pain, especially in the calf muscle.
- 2- Spinal or Neurologic Claudication.
- 3- Jaw Claudication.

## **Causes of Intermittent Claudication:**

- 1- Cardiovascular cause (acute arterial occlusion).
- 2- Hypertension.
- 3- Hyperlipidemia.
- 4- Diabetes Mellitus.

- During exercise, when your muscles need more blood, intermittent claudication can cause problems including:
  1. Cramping
  2. Numbness
  3. Pain
  4. Tingling
  5. Weakness
- You usually feel these symptoms in your legs, from your feet up to your buttocks. It gets better or goes away when you stop moving.

- **Common Questions asked to patient about claudication.**

1) Character

2) when did the pain start

3) increasing and decreasing factors

4) Distance that the patient can walk before pain start.

# 8- Edema:

- **Is swelling of soft tissue due to increased interstitial fluid.**

## Causes of edema:

### 1- Cardiovascular causes

- Heart failure
- Venous stasis
- Constrictive pericarditis

### 2- Other causes

- Nephrotic syndrome
- Liver disease
- Drugs (Steroid)

# 8- Edema:

- **Etiology of Edema**

**1- Generalized edema** is most commonly caused by

- [Heart failure](#)
- [Liver failure](#)
- [Kidney disorders](#) (especially nephrotic syndrome)

**2- Localized edema** is most commonly caused by

- [DVT](#) or another venous disorder or venous obstruction (eg, by tumor)
- Infection
- [Lymphatic obstruction](#)
- [Chronic venous insufficiency](#) may involve one or both legs.

# Question about Edema

- **History of present illness** should include:

- 1- location and duration.

- 2- presence and degree of pain or discomfort.

- 3- Female patients should be asked :

whether they are pregnant? and whether edema seems related to menstrual periods.

- 4- Having patients with chronic edema keep a log of weight gain or loss is valuable.

- 5- Disorders known to cause edema, including heart, liver, and kidney disorders and cancer (including any related surgery or radiation therapy).

- 6- Drug history should include specific questions about drugs known to cause edema. Patients are asked about the amount of sodium used in cooking and at the table.

# *Edema*



Pitting edema



Non-pitting edema



## *Pitting Scale*

- Pitting Edema overpressure of **10 seconds** and monitor duration of indentation
  - 1 cm indentation 1+
  - 2 cm indentation 2+
  - 3 cm indentation 3+
  - 4 cm indentation 4+

Since the degree of edema is influenced by posture, documenting weight loss is another component of monitoring the efficacy of diuretic therapy.

# NURSING DIAGNOSIS

## **1) Fluid Volume Deficit**

### Related Factors

- 1- Inadequate fluid intake
- 2- Active fluid loss (diuresis, abnormal drainage or bleeding, diarrhea)
- 3- Fluid shifts (edema or effusions)

### Manifested by:

- 1- Decreased urine output
- 2- Output greater than intake
- 3- Decreased venous filling
- 4- Hypotension
- 5- Decreased skin turgor

# Actions/Interventions/

(i) independent

(c) collaborative

(i) Monitor and document vital signs.

(i) Assess skin turgor and mucous membranes for signs of dehydration.

(i) Assess color and amount of urine. Concentrated urine denotes fluid deficit.

(i) Document baseline mental status and record during each nursing shift.

(i) During treatment, monitor closely for signs of circulatory overload (headache, flushed skin, tachycardia, venous distention, elevated central venous pressure [CVP], shortness of breath, increased BP, tachypnea, cough)

# Therapeutic Interventions

- (c) Encourage patient to drink prescribed fluid amounts.
  - (i) Assist patient if unable to feed self and encourage caregiver to assist with feedings as appropriate.
  - (i) Plan daily activities for more severe hypovolemia:
  - (c) Obtain and maintain a large-bore intravenous (IV) catheter.
- Parenteral fluid replacement is indicated to prevent shock

- **2- Fluid Volume Excess**

### Related Factors

- 1-Excessive fluid intake
- 2-Excessive sodium intake
- 3-Steroid therapy

### Manifested by:

- 1-Weight gain
- 2-Edema
- 3-Abnormal breath sounds: crackles
- 4-Change in respiratory pattern

## • Therapeutic Interventions

### • Actions/Interventions/Rationale

- (c) Institute/instruct patient regarding fluid restrictions as appropriate.
- (c) Restrict sodium intake as prescribed.
- (c) Administer or instruct patient to take diuretics as prescribed.
- (i) Instruct patient to avoid medications that may cause fluid retention, certain vasodilators, and steroids.
- (l) elevate edematous extremities.
- (i) Reduce constriction of vessels (use appropriate garments, avoid crossing of legs or ankles). To prevent venous pooling.
- (c) Instruct in need for ant embolic stockings or bandages as ordered.
  - ##To help promote venous return and to minimize fluid accumulation in the extremities.
- (i) Apply heparin lock on IV line.
  - ##To maintain patency but to decrease fluid delivered to patient in a 24-hour period.
- (c) Administer IV fluids through infusion pump.
- (i) Provide adequate activity or position changes as able.
  - ##To prevent fluid accumulation in dependent areas.

## • Actions/Interventions

- (i) Assess or instruct patient to monitor weight daily and consistently
- (i) Monitor and document vital signs.
- (i) Monitor for distended neck veins and ascites
- (i) Assess for crackles in lungs, changes in respiratory pattern, shortness of breath, and orthopnea.
- (i) Assess for presence of edema by palpating over, ankles, feet, and
- (c) monitor hemodynamic status including CVP, PAP if available.

This direct measurement serves as optimal guide for therapy.

**THANK YOU**