SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE TECHNOLOGY

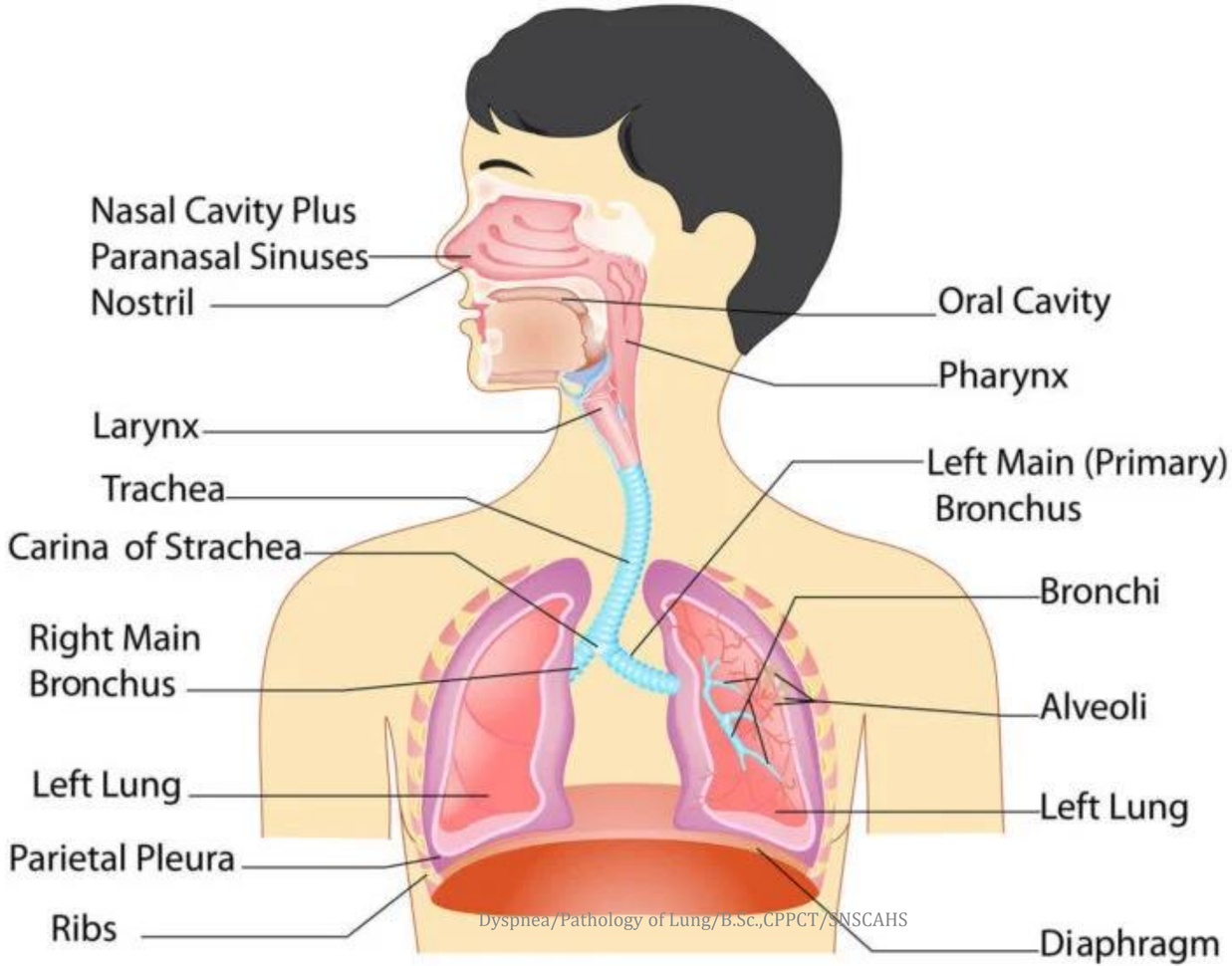
COURSE NAME: PATHOLOGY II

II YEAR

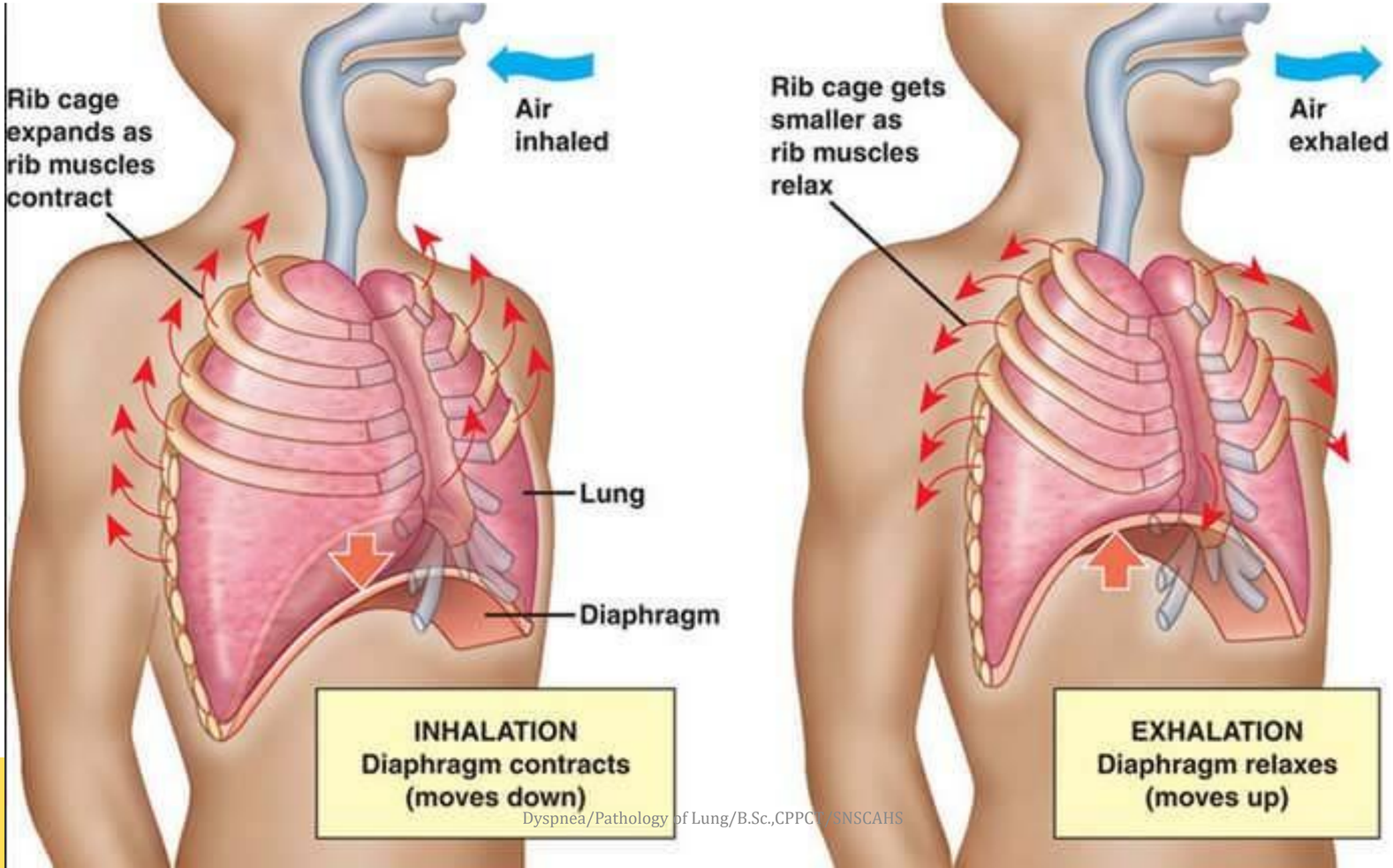
UNIT II : PATHOLOGY OF LUNG

TOPIC : DYSPNEA

Anatomy of Respiratory System



Mechanism of Breathing



Dyspnoea

- Dyspnoea derived from greek word meaning **“hard breathing”**
- It is also referred to as **shortness of breath**
- Dyspnoea is a subjective sensation of breathing from mild discomfort to feelings of suffocation

Indication of Dyspnoea are

- Inadequate ventilation
- Insufficient amount of oxygen in the circulating blood

Aetiology of dyspnoea

Cardiac Effects

Congestive heart failure

Coronary artery disease

Cardiomyopathy

Ventricular dysfunction

Arrhythmias

Pericarditis

Pulmonary Effects

COPD

Asthma

Restrictive lung disease

Pneumothorax

Non cardiac and pulmonary effects

Metabolic conditions (acidosis)

Pain in the chest wall

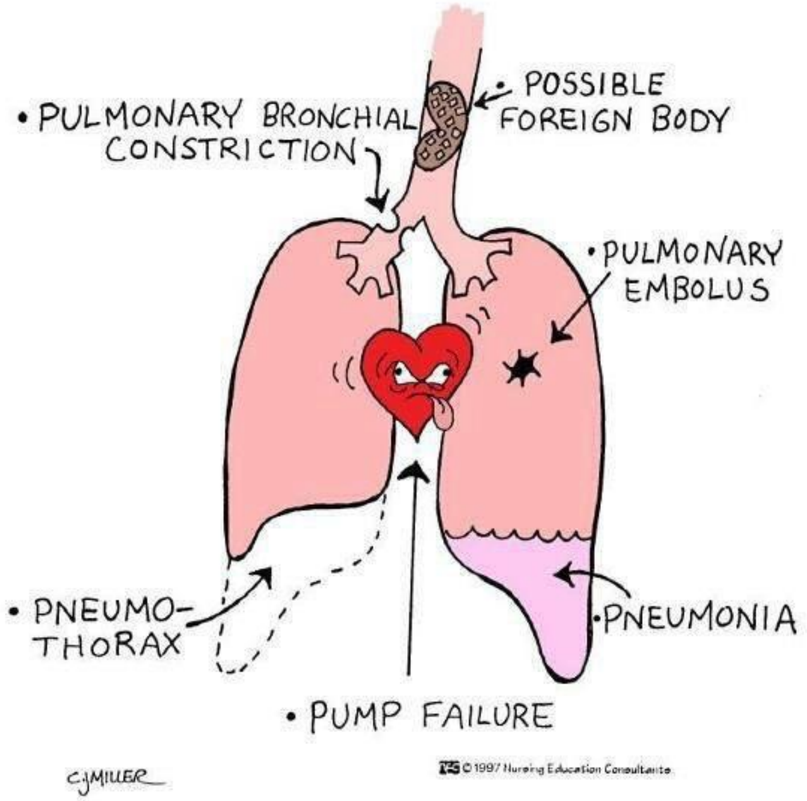
Neurovascular disorders

Mixed cardiac and pulmonary effects

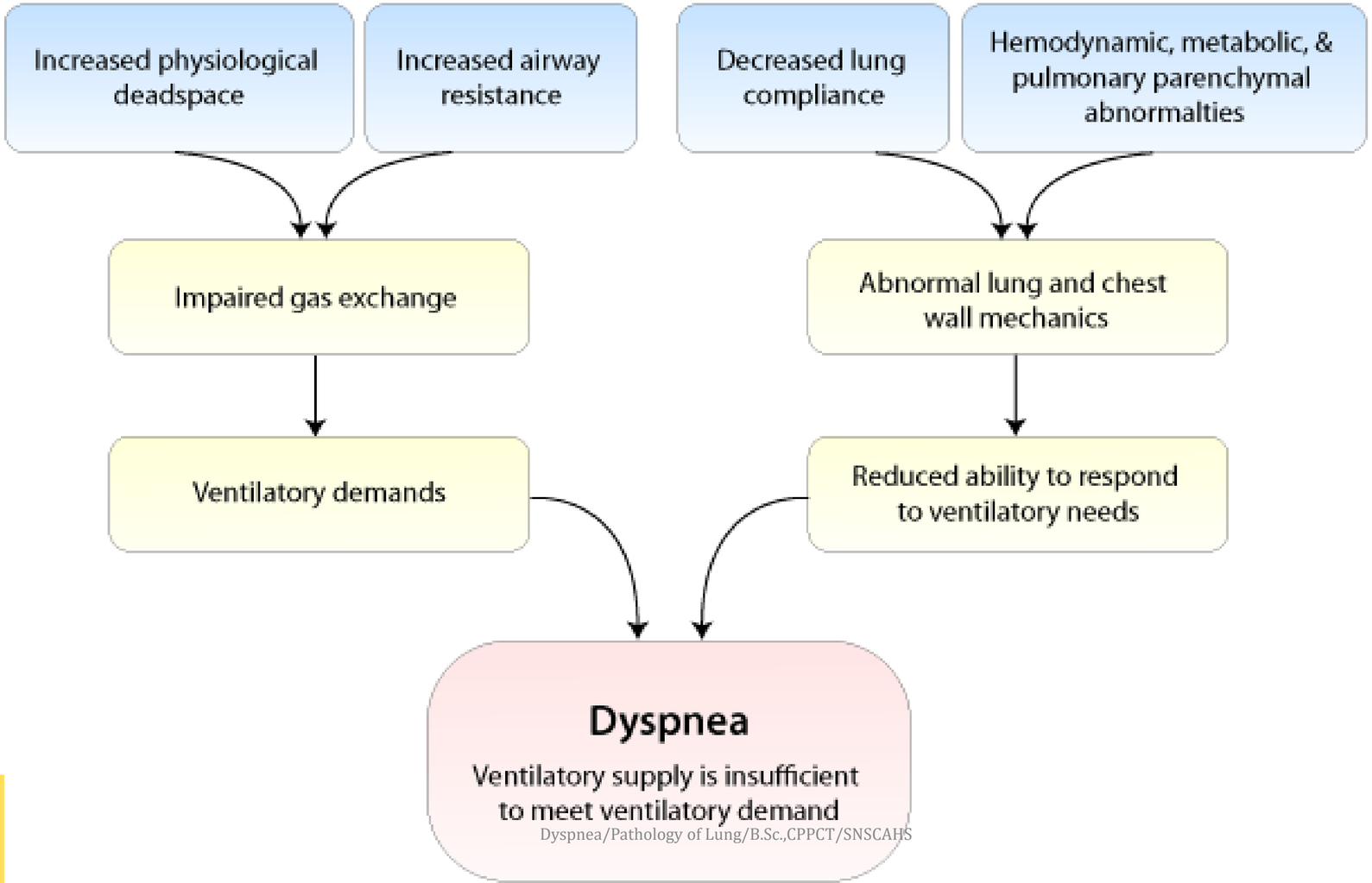
COPD with HTN

Chronic Pulmonary Emboli and Pleural Effusion

6-Ps OF DYSPNEA



Pathophysiology of Dyspnoea



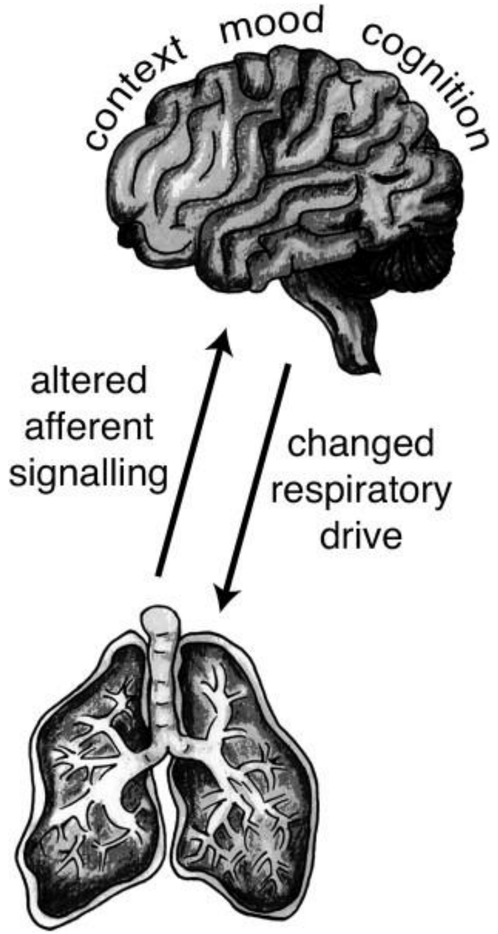
Types of Dyspnoea

- **Nocturnal dyspnoea –** Dyspnoea occurs at night
- **Orthopnoea –** dyspnoea occurs when lying down
- **Trepopnea –** appearance of breathlessness only in the left or right lateral lying position
- **Platypnea –** breathlessness occurs in the upright position

Pathophysiology of Dyspnoea

Three main components contribute to dyspnoea are,

- Afferent signals
- Efferent signals
- Central information processing - brain
- Mismatch between afferent and efferent signals leads to dyspnoea



Pathophysiology of Dyspnoea

- Dyspnoea happens when there is a mismatch between need and ability to breath
- Co2 build up in the body
- Oxygen deprivation happens, leads to dyspnoea

Physiological Mechanism of Diseases

- Mechanical interference with ventilation – any obstruction in the gas flow
- Resistance to expansion of lung – stiff lungs (fibrosis)
- Resistance to expansion of chest wall or diaphragm – pleural thickening
- Weakness of respiratory pump – neuromuscular diseases
- Psychological dysfunction – anxiety

Diagnostic Evaluation

History of ,

- Dyspnoea on exertion
- Medications like Beta blockers will cause bronchospasm
- Smoking
- Wheezing
- Coronary artery diseases
- High blood pressure --→ LV Hypertrophy
- Anxiety --→ Hyperventilation, panic attack
- Recent trauma
- Occupational Exposure ---→ dust, volatile chemicals, asbestos exposure

Physical examination

- Anxiety disorder
- Septal deviation
- Jugular vein distension -→ CHF
- Decreased pulse -→ peripheral vascular diseases
- Cyanosis, clubbing ---→ chronic severe hypoxemia
- Tachycardia
- Rales because of alveolar fluid

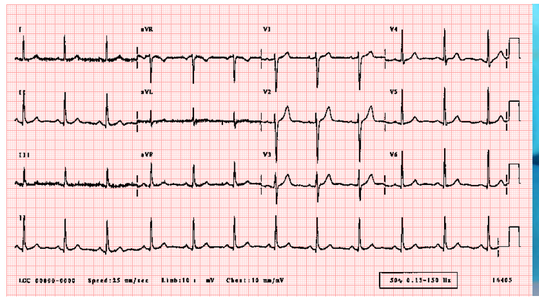
Investigations

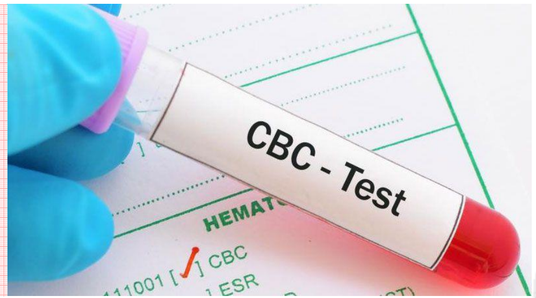
- **ECG –** Rhythm abnormality & Heart rate

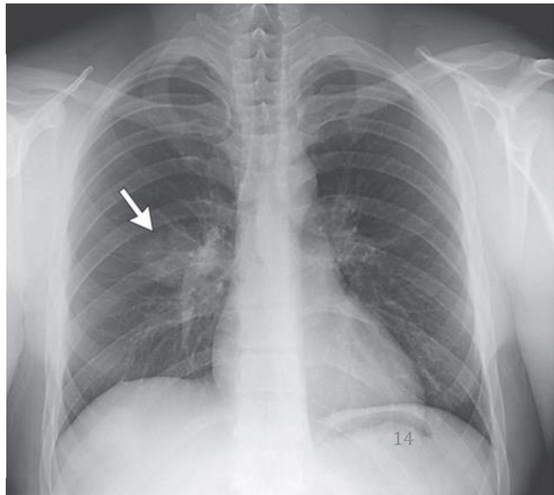
Chest Radiography is done to analyse,

- Identify skeletal abnormality – fractures, osteoporosis
- Parenchymal abnormality – atelectasis, pleural effusion, pneumothorax

- **Complete blood count to analyse anaemia**
- **Spirometer**
- **Pulse oximeter**
- **Arterial Blood gases**







Management

- The primary and definitive treatment of dyspnoea involves treating the **underlying health issue.**
- Individuals with low oxygen levels in blood can be treated **with ventilation** (invasive or non-invasive).
- Steroids
- Heart Failure Treatment
- Antibiotics
- Draining effusions

Thank You

References:

Text book of Pathology – Harsh Mohan

Concise text book of Pathology – Ganga S Pilli