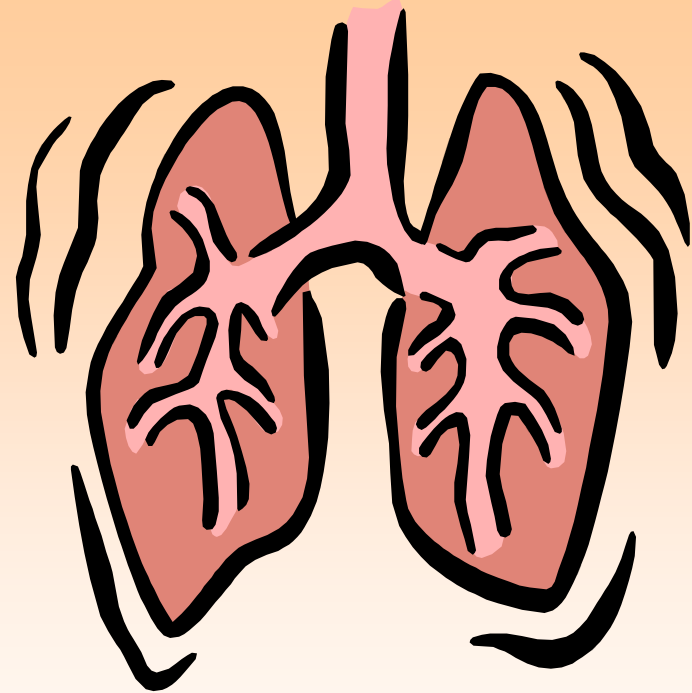


Respiratory Failure

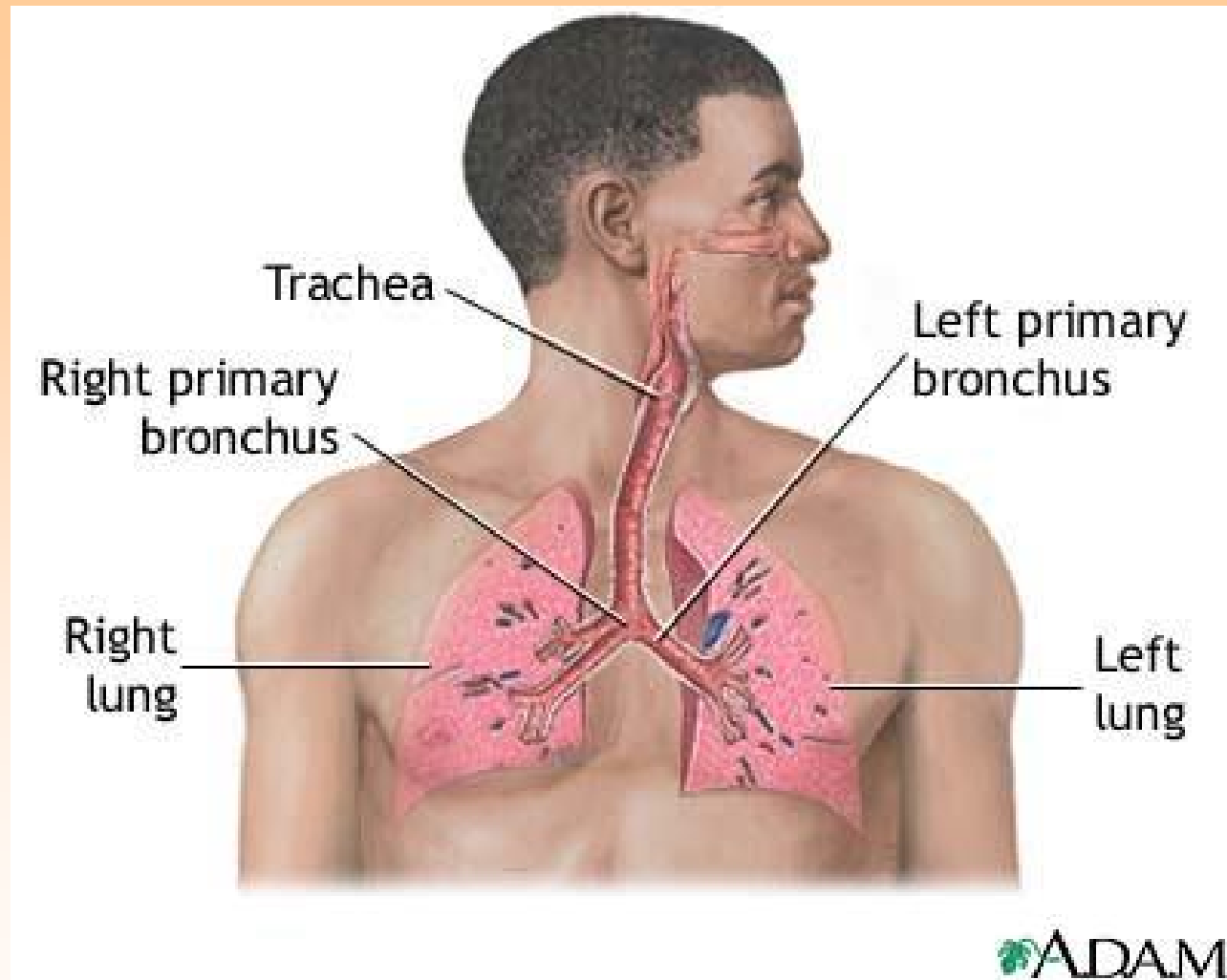
Presented by:

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Msc in critical care nursing

Faculty of Nursing & Midwifery



Lung Anatomy



Respiratory system includes:

CNS (medulla)

Peripheral nervous system (phrenic nerve)

Respiratory muscles

Chest wall

Lung

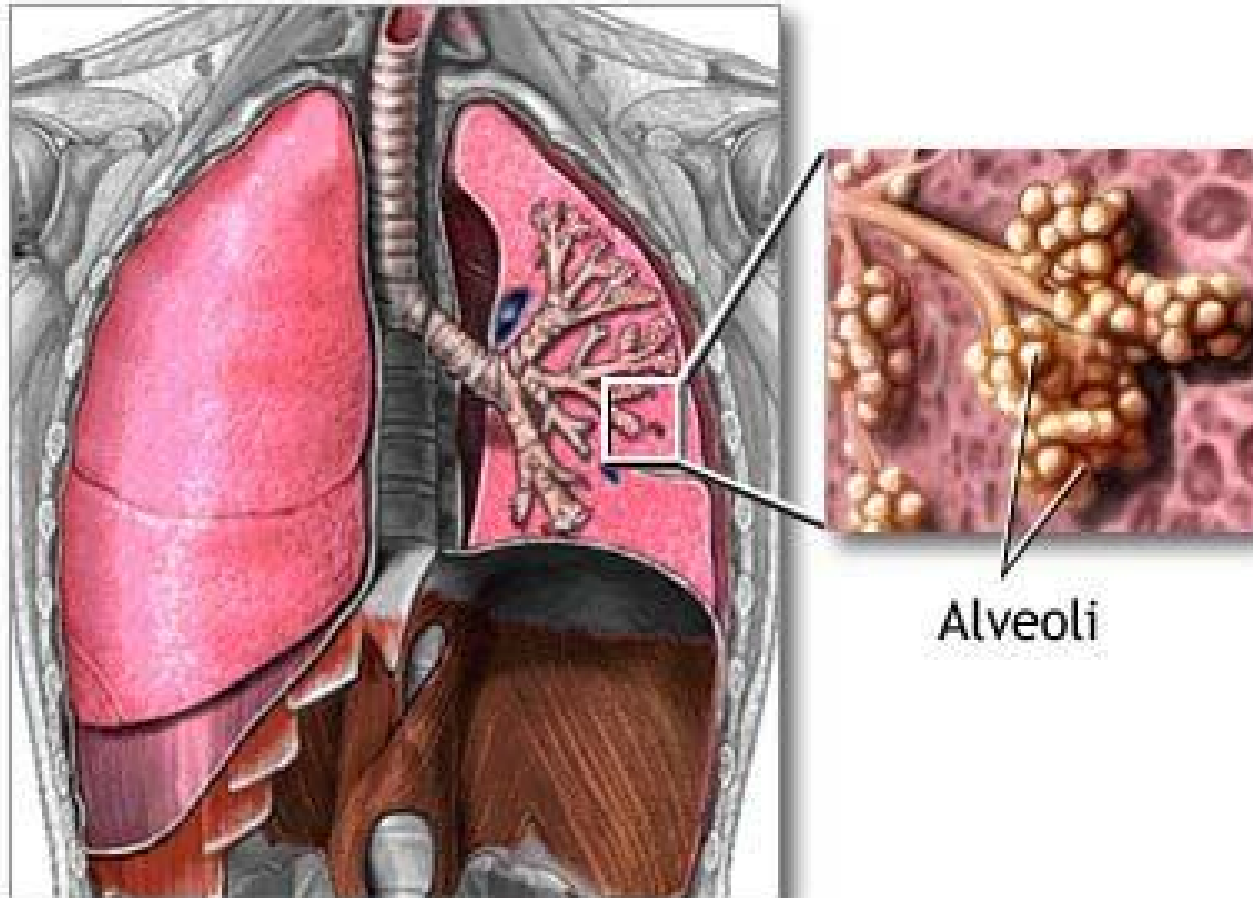
Upper airway

Bronchial tree

Alveoli

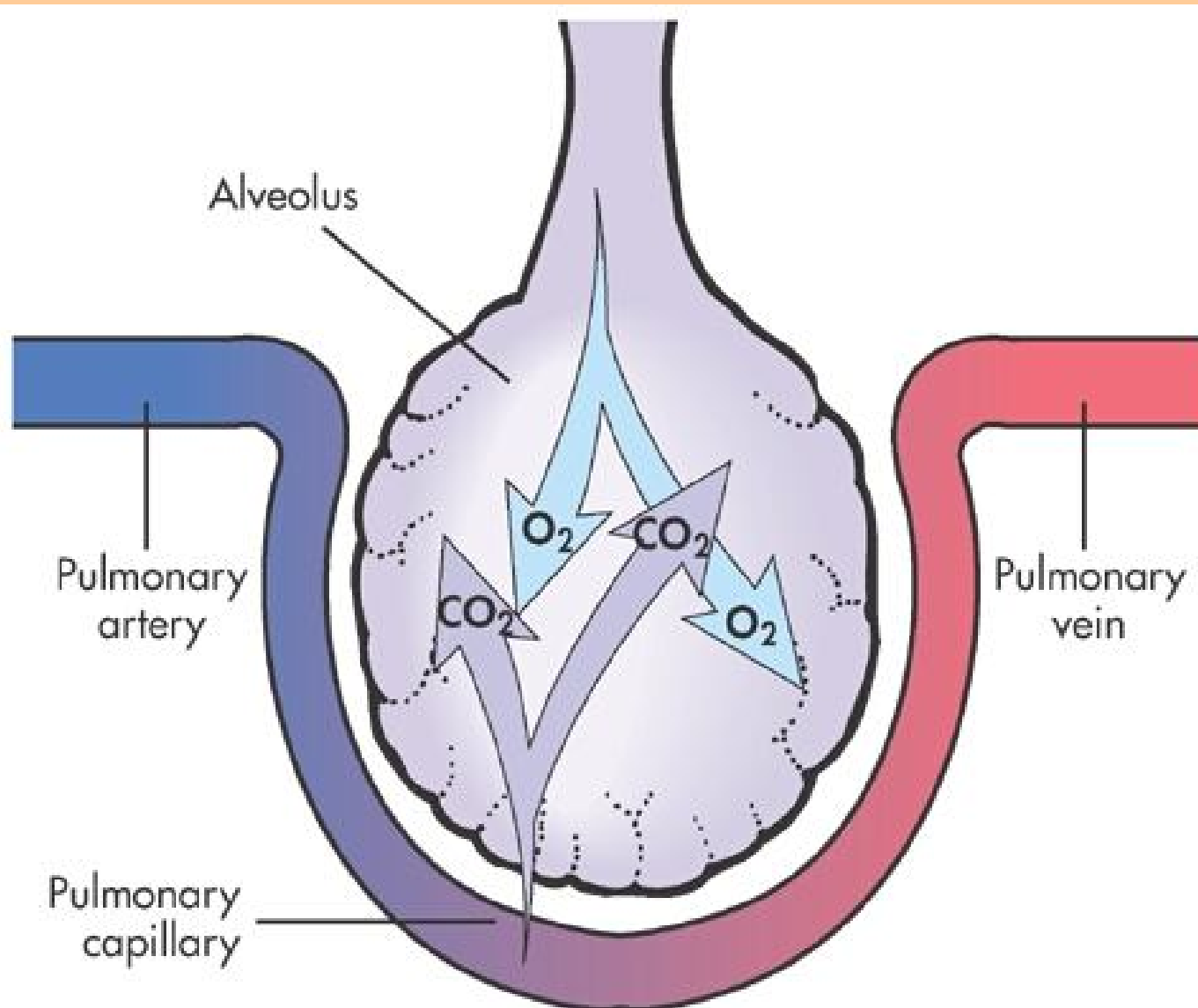
Pulmonary vasculature

Normal Alveoli



Younger lungs

Gas Exchange Unit



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RESPIRATORY FAILURE

- **Definition**

Respiration is gas exchange between the organism and its environment. Function of respiratory system is to transfer O_2 from atmosphere to blood and remove CO_2 from blood.

- In fact the role of the **respiratory system** is to ***maintain normal*** arterial blood PO_2 , PCO_2 , and pH

RESPIRATORY FAILURE

- “inability of the lung to meet the metabolic demands of the body.
- This can be from failure of tissue oxygenation and/or failure of CO₂ homeostasis.”

Epidemiology

- Incidence: about 360,000 cases per year in the United States
- 36% die during hospitalization
- Morbidity and mortality rates increase with age and presence of comorbidities

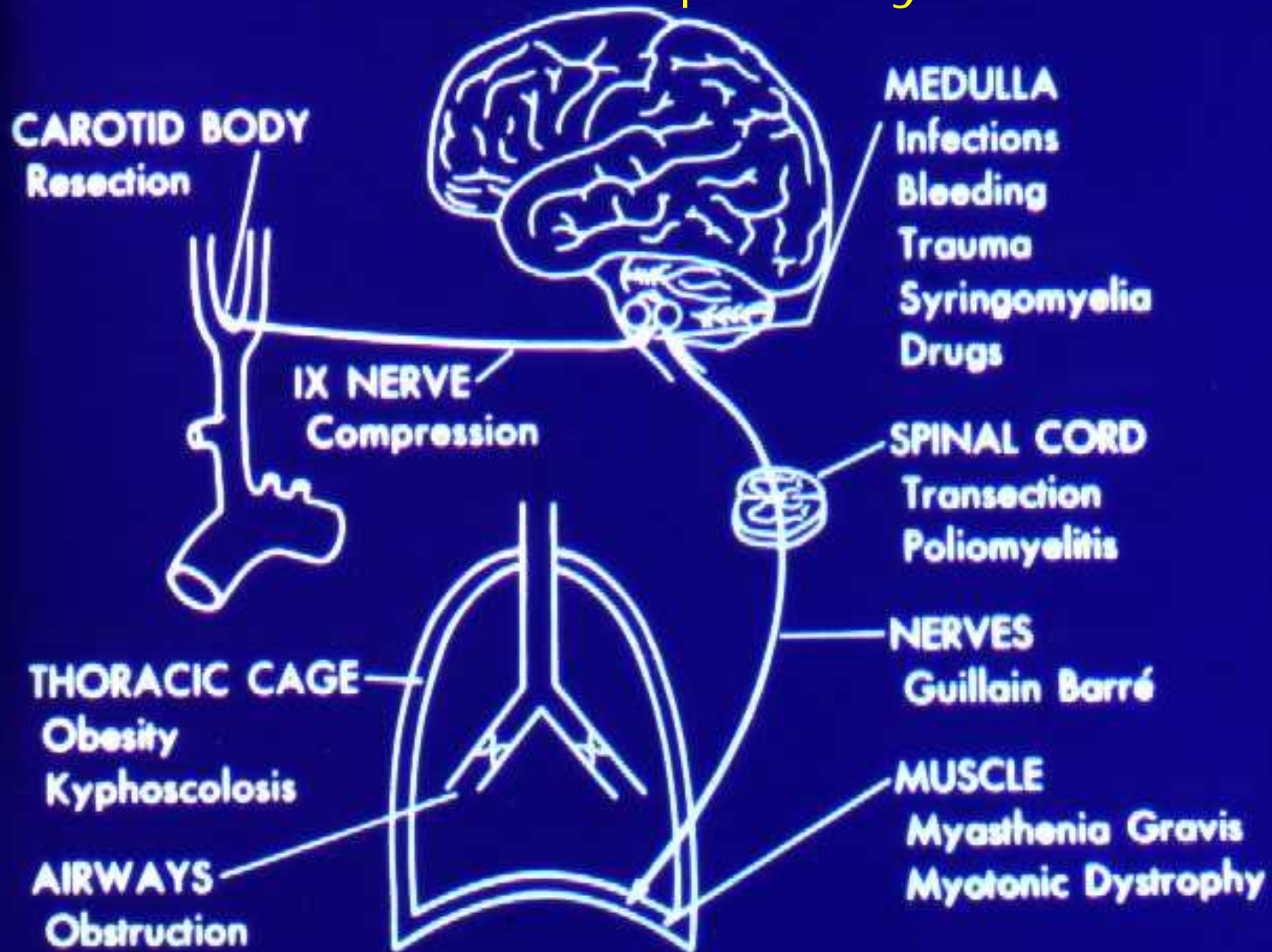
Definition

- Respiratory failure is present :
 - (1) if arterial *PO₂ (PaO₂) is less than 60 mm Hg*
 - (2) if arterial *PCO₂ (PaCO₂) is greater than 45-50 mm Hg*
- PaO₂ determines the effectiveness of oxygenation
- PaCO₂ measures the effectiveness of ventilation

PATHOPHYSIOLOGY OF RESPIRATORY FAILURE

- Respiratory failure can result from disorders of the *lungs*, *heart*, *chest wall*, *respiratory muscles*, and *central ventilatory control mechanisms*

Potential causes of Respiratory Failure



Acute Respiratory Failure: Terminology

- **Hypoxemia-** is a PaO₂ below 80 mm Hg. It is the lack of oxygen in the arterial blood plasma. Causes are hypoventilation, V/Q mismatch, or a shunt
- **Hypoxia-** is inadequate oxygenation of the tissues. Causes include hypoxemia, anemia, CO and cell poisoning

- **What kinds of respiratory failure are?**

1. ACUTE RESPIRATORY FAILURE

2. CHRONIC RESPIRATORY FAILURE

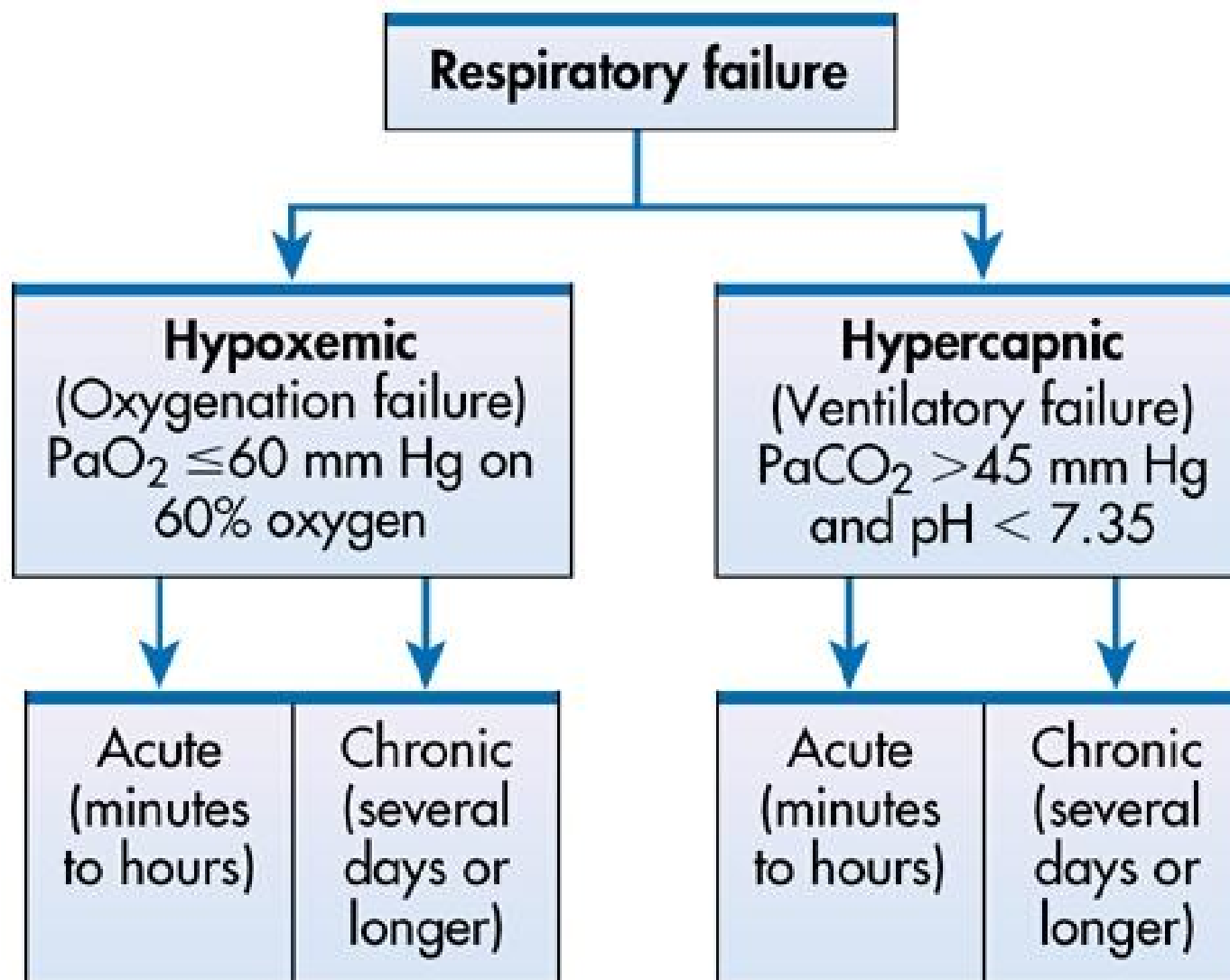
- **DIFFERS?**

ACUTE RESPIRATORY FAILURE

CLASSIFIED AS "HYPOXEMIC OR HYPERCAPNIC

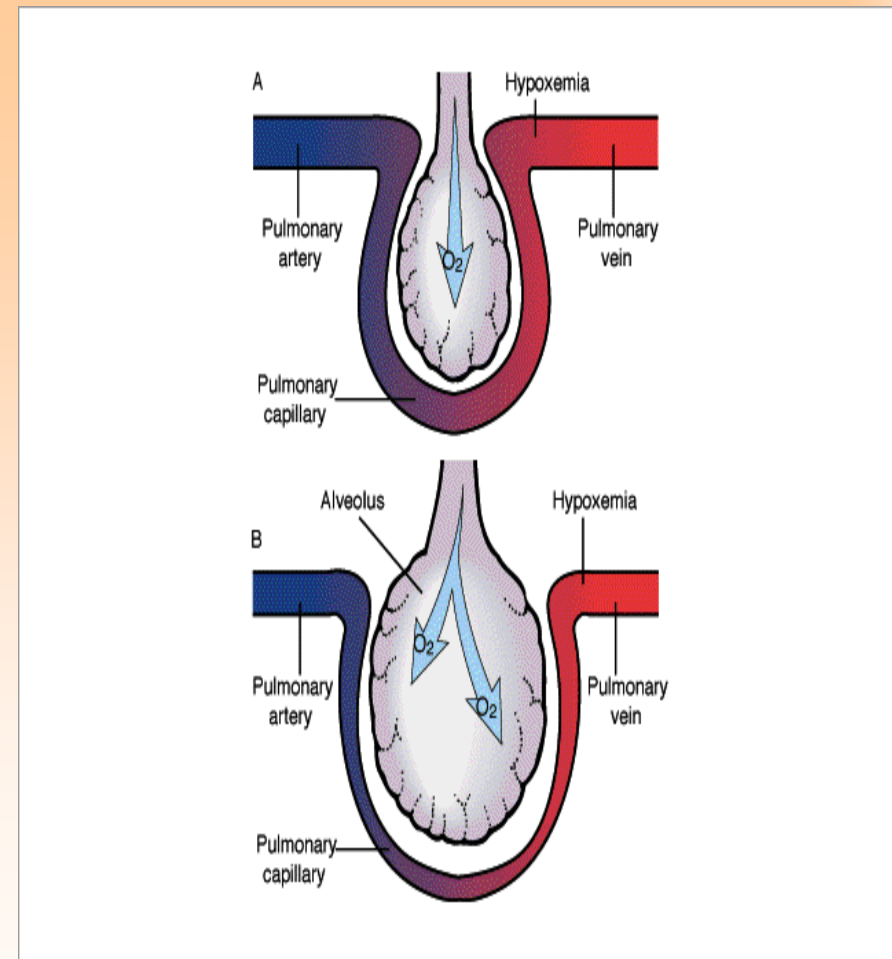
- **In Acute Respiratory Failure, the Respiratory System cannot carry out its two main functions:**
 - 1. Delivery of an adequate amount of O₂ into arterial blood.**
 - 2. Removal of a corresponding amount of CO₂**

Classification of Respiratory Failure



Pathophysiology of Respiratory Failure

- **Type I RF –Usually results from V/Q Mismatch & Intrapulmonary Shunting.**
- **Type II RF results from alveolar hypoventilation, which may or may not have V/Q Mismatch & IS**



HYPOXEMIC RESPIRATORY FAILURE

- **V/Q MISMATCH**
- **Normal Lung, volume of blood perfusion the lungs each minute (4-5L).**
- In a perfectly matched system, each portion of the lung would receive about 1ml of air for each 1ml of blood flow.
- This match of ventilation and perfusion would result in a V/Q RATION OF 1:1 (e.g., 1ml of air per 1ml/blood), which is expressed $V/Q=1$. Ventilation is matched with perfusion.

V/Q MISMATCH



- Diseases that alter overall V/Q Mismatch are mostly those in which increased secretions are present in the airways.
- COPD
- Alveoli- plugged(pneumonia) - alveoli collapse *atelectasis*
- Bronchospasm[asthma]

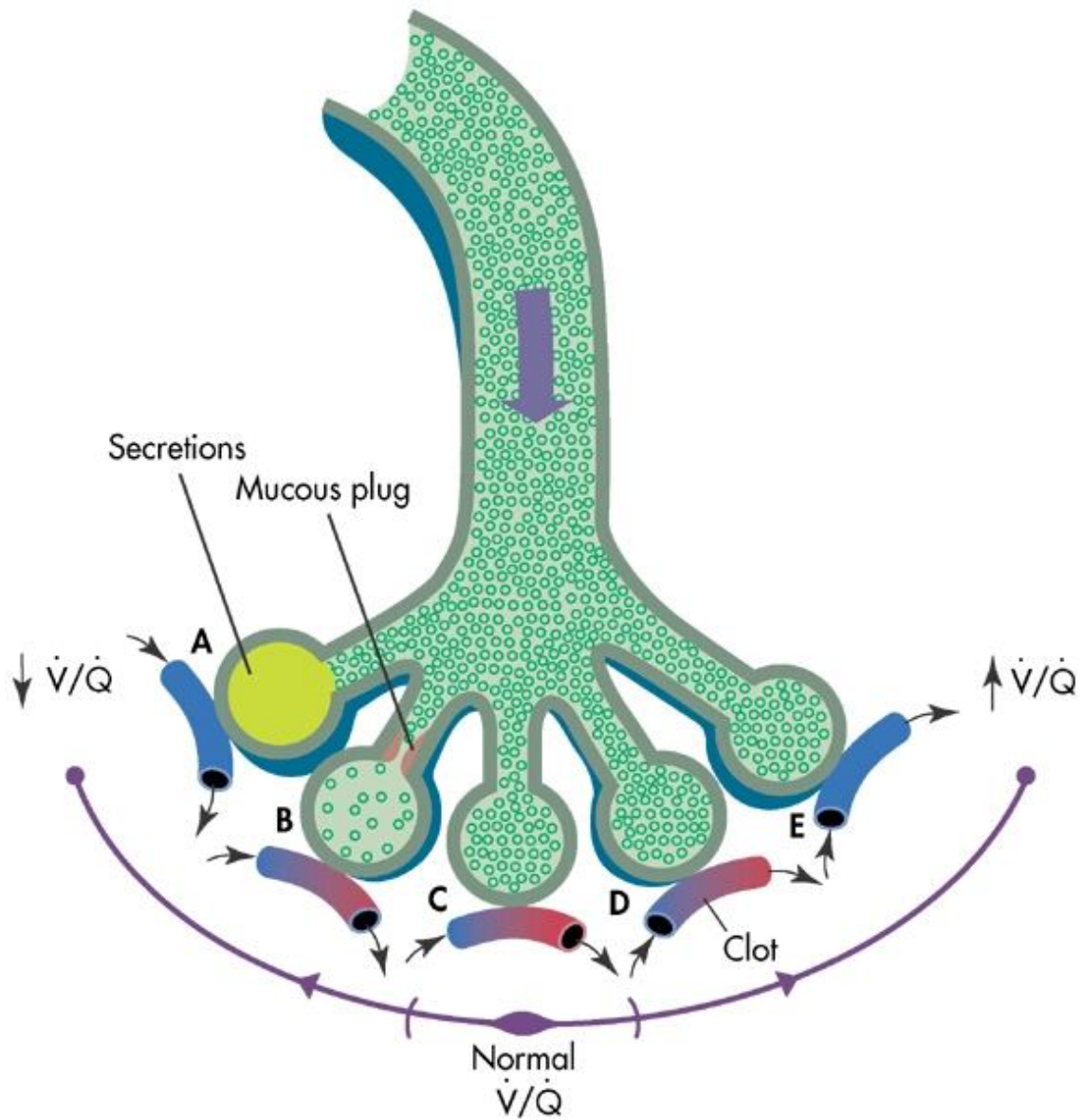
SHUNT-

- Occurs when blood exists the heart without being exposed to O₂.
- A shunt can be viewed as an extreme V/Q mismatch.
- **2 Types - Anatomic & Intrtapulmonary**
 - **Anatomic Shunt** occurs when blood passes through an anatomic channel in the heart [VSD; patent ductus arteriosus], & therefore does not pass thru the lungs
 - **Intrapulmonary** - shunt occurs when blood flows thru pulmonary capillaries without participating in gas exchange

Intrapulmonary Shunts

- are seen in conditions in which the alveoli fill with fluid
- ---ARDS ----- Pulmonary Edema
- **TREATMENT** - O₂ therapy may be ineffective in increasing the PaO₂, if hypoxemia is due to shunt because
 - 1) Blood passes from the Right to Left side of the heart without passing thru the lungs [anatomic shunt]
 - 2) Alveoli are filled with fluid, which prevents gas exchange (intrapulmonary shunt]. Pts with shunt are usually more hypoxemic than pts with V/Q mismatch, & may require mechanical ventilation

Range of V/Q Relationships



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DIFFUSION LIMITATION

- Occurs when gas exchange across the alveolar-capillary membrane is compromised by a process that thickens or destroys the membrane.
- Pulmonary capillary blood flow may be reduced as a result of obstruction, or destruction of vessels such as severe emphysema or recurrent pulmonary emboli.

**DISEASES THAT CAUSE
ALVEOLAR THICKENING
INCLUDE:**

- Pulmonary Fibrosis
- Interstitial Lung Disease
- ARDS

HYPOXEMIC RESPIRATORY FAILURE(TYPE 1)

- $\text{PaO}_2 < 60\text{mmHg}$ with normal or low $\text{PaCO}_2 \rightarrow$ normal or high pH
- Most common form of respiratory failure
- Physiologic causes: V/Q mismatch and shunt

Hypercapnic Respiratory Failure (Type II)

- $\text{PaCO}_2 > 50 \text{ mmHg}$
- Hypoxemia is always present
- pH depends on level of HCO_3
- HCO_3 depends on duration of hypercapnia
- Renal response occurs over days to weeks

ALVEOLAR HYPOVENTILATION

- Alveolar hypoventilation is generalized decrease in ventilation that results in an **increase in the PaCO₂** & a subsequent decrease in PaO₂.
- **Hypoventilation may be the result of:**
 - lung disease
 - central nervous system;
 - Chest wall dysfunction
 - Neuromuscular Disease

HYPERCAPNIC RESPIRATORY FAILURE

- **Hypercapnic respiratory failure results from an imbalance between ventilatory supply & ventilatory demand.**
- **Ventilatory supply is the maximum ventilation (gas flow in & out of the lungs)**
- Ventilatory Demand is the amount of ventilation needed to keep the PaCO_2 within normal limits.
- Normally, ventilatory supply far exceeds ventilatory demand.
- When ventilatory demand exceeds ventilatory supply the PCO_2 can no longer be sustained.

DISEASES THAT CAUSE LIMITED SUPPLY

- Respiratory centre (medulla) dysfunction
- Drug over dose, CVA, tumor, hypothyroidism, central hypoventilation
- Neuromuscular disease
Guillain-Barre, Myasthenia Gravis, polio, spinal injuries
- Chest wall/Pleural diseases
kyphoscoliosis, pneumothorax, massive pleural effusion
- Upper airways obstruction
tumor, foreign body, laryngeal edema
- Peripheral airway disorder
asthma, COPD

CHEST WALL CONDITIONS

- Chest wall conditions limit lung expansion, leading to Hypercapnic Resp. Failure
- Prevents normal movement of the chest wall & hence limits lung expansion.
- 1. Flail chest; rib fx;
- 2. Massively Obese pts

Adult Respiratory distress Syndrome (ARDS)

- Variety of unrelated massive insults injure gas exchanging surface of Lungs
- First described as clinical syndrome in 1967 by Ashbaugh & Petty
- Clinical terms synonymous with ARDS
 - Acute respiratory failure
 - Capillary leak syndrome
 - Shock Lung
 - Traumatic wet Lung
 - Adult hyaline membrane disease

Risk Factors in ARDS

Sepsis	3.8%
Cardiopulmonary bypass	1.7%
Transfusion	5.0%
Severe pneumonia	12.0%
Burn	2.3%
Aspiration	35.6%
Fracture	5.3%
Intravascular coagulopathy	12.5%
Two or more of the above	24.6%

PATHOPHYSIOLOGY AND PATHOGENESIS

- Diffuse damage to gas-exchanging surface either alveolar or capillary side of membrane
- Increased vascular permeability causes pulmonary edema
- Pathology: fluid and RBC in interstitial space, hyaline membranes
- Loss of surfactant: alveolar collapse

CRITERIA FOR DIAGNOSIS OF ARDS

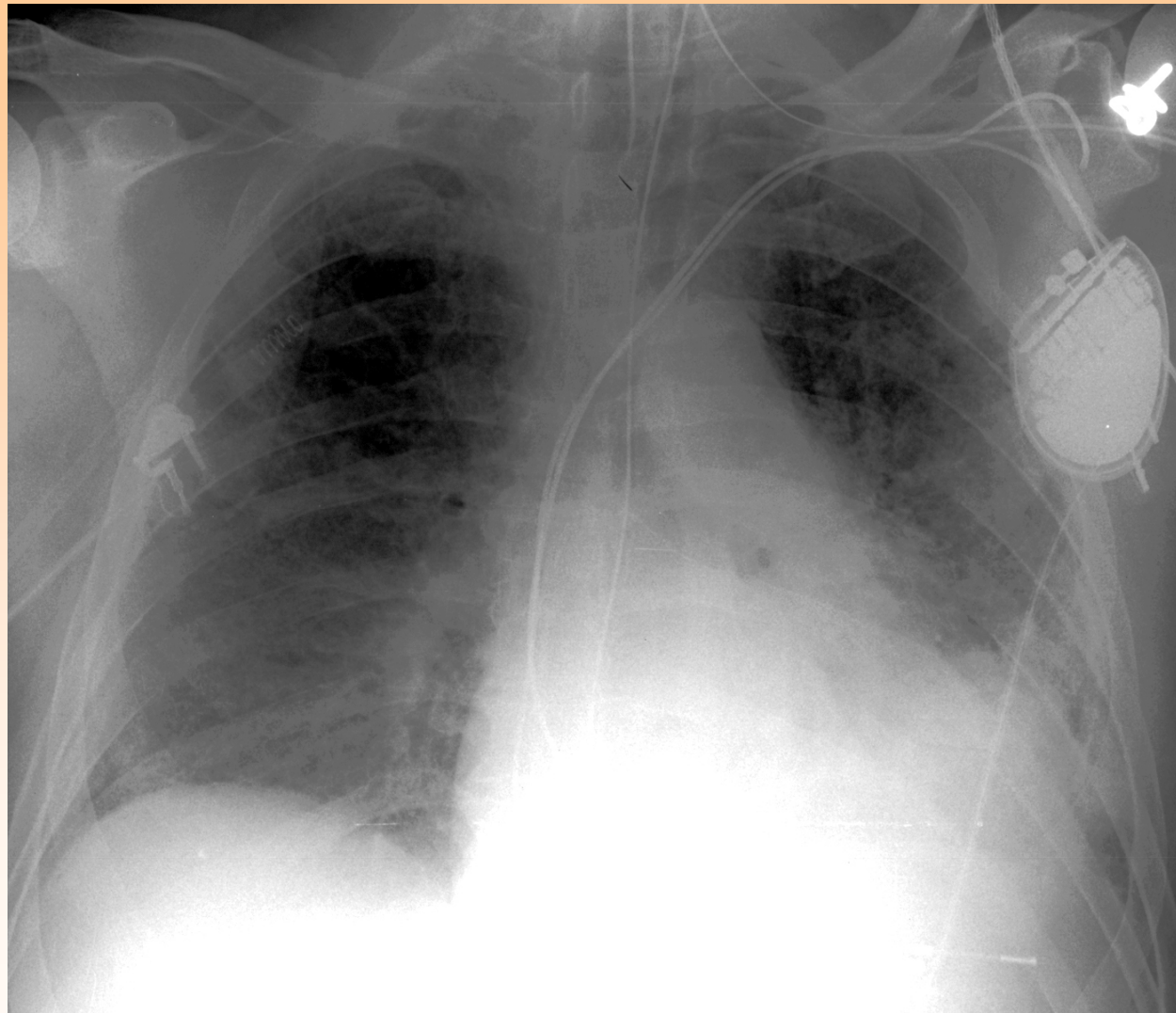
- Clinical history of catastrophic event
Pulmonary or Non pulmonary (shock, multi system trauma)

Must have respiratory distress

1. tachypnea >20 breath/minute
2. central cyanosis
3. CXR: diffuse infiltrates
4. $\text{PaO}_2 < 50\text{mmHg}$ $\text{FiO}_2 > 0.6$

Compliance $< 50 \text{ ml/cm H}_2\text{O}$ increased shunt and dead space

ARDS



Clinical and Laboratory Manifestation OF ARDS

(non-specific and unreliable)

- Cyanosis
 - bluish color of mucous membranes/skin indicate
- hypoxemia
- Dyspnea
 - secondary to hypercapnia and hypoxemia
- Paradoxical breathing
- Confusion, somnolence and coma
- Convulsions

ASSESSMENT OF PATIENT WITH RESPIRATORY FAILURE

- Careful history
- Physical Examination
- ABG analysis
 - classify RF and help with cause
- Chest Radiograph
- EKG

Clinical Manifestations OF RESPIRATORY FAILURE

- Circulatory changes
 - tachycardia, hypertension, hypotension
- Polycythemia
 - chronic hypoxemia
- Pulmonary hypertension
- Cor-pulmonale or right ventricular failure

ABG's

?

Clinical Features

Table 12-1. Clinical manifestations of hypercapnia and hypoxemia.

Hypercapnia	Hypoxemia
Somnolence	Anxiety
Lethargy	Tachycardia
Coma	Tachypnea
Asterixis	Diaphoresis
Restlessness	Arrhythmias
Tremor	Altered mental status
Slurred speech	Confusion
Headache	Cyanosis
Papilledema	Hypertension
	Hypotension
	Seizures
	Lactic acidosis

Management of Respiratory Failure

Principles

- Hypoxemia may cause death in RF
- Primary objective is to reverse and prevent hypoxemia
- Secondary objective is to control PaCO_2 and respiratory acidosis
- Treatment of underlying disease
- Patient's CNS must be monitored and treated

TREATMENT RESP. FAILURE

- Oxygen Therapy
- Mobilization of Secretions
- Effective Coughing & Positioning
- Hydration & Humidification
- Chest Physical therapy
- Airway Suction
- **Positive Pressure Ventilation**
- **Drug Therapy**
- **--Relief of Bronchospasm**
- **Reduction of Airway inflammation -steroids**
- **Reduce Pulmonary Congestion**
- **Treat Pulmonary Infections**
- **Reduce Anxiety & Restlessness**
- **Treat Underlying Cause**
- **Adequate nutrition**

Hypercapnic Respiratory Failure

- Because **hypercapnia** is synonymous with alveolar **hypoventilation**, **supportive care** restores alveolar ventilation to normal until the underlying disorder can be corrected
- **Alveolar ventilation sometimes can be improved by:**
 - **1. establishing an effective airway**
 - **2. suctioning to remove secretions**
 - **3. stimulation of cough**
 - **4. postural drainage, or chest percussion**
 - **5. or by establishing an artificial airway with an endotracheal tube or tracheostomy**

Hypoxemic Respiratory Failure

- Oxygen supplementation is the most important therapy for hypoxemic respiratory failure
- In some patients with nonuniform lung disease, dependent positioning of uninvolved or less involved lung areas may improve oxygenation

Oxygen

- Supplemental oxygen is required in almost all patients with respiratory failure

Oxygen Therapy

- Supplemental O₂ therapy essential
- titration based on SaO₂, PaO₂ levels and PaCO₂
- Goal is to prevent tissue hypoxia
 - Tissue hypoxia occurs (normal Hb & C.O.)
 - venous PaO₂ < 20 mmHg or SaO₂ < 40%
 - arterial PaO₂ < 38 mmHg or SaO₂ < 70%
- Increase arterial PaO₂ > 60 mmHg (SaO₂ > 90%) or venous SaO₂ > 60%
- O₂ dose either flow rate (L/min) or FiO₂ (%)

Table 12-5. Oxygen delivery devices.

Device	O ₂ Flow Rate (L/min)	F _{IO₂}	Advantages	Disadvantages
Low-flow delivery devices				
Nasal cannula	2–6	0.24–0.35	Patient comfort	F _{IO₂} varies with \dot{V}_E .
Simple mask	4–8	0.24–0.40	None	F _{IO₂} varies with \dot{V}_E .
High-flow delivery devices				
Venturi mask	2–12*	0.25–0.50	Constant F _{IO₂} with \dot{V}_E	Inadequate flow at high F _{IO₂} .
Nonrebreathing mask	6–15	0.70–0.90	High F _{IO₂}	Not comfortable; F _{IO₂} not adjustable. [†]
High-flow O ₂ blender [‡]	6–20	0.50–0.90	High F _{IO₂} at high total flow	

Risks of Oxygen Therapy

- **O₂ toxicity:**
 - very high levels(>100 mmHg) CNS toxicity and seizures
 - lower levels (FiO₂ > 60%) and longer exposure: - capillary damage, leak and pulmonary fibrosis
 - FiO₂ 35 to 40% can be safely tolerated indefinitely
- **CO₂ narcosis:**
 - PaCO₂ may increase severely to cause respiratory acidosis, somnolence and coma

POSITIVE END EXPIRATORY PRESSURE (PEEP)

- PEEP increases the end expiratory lung volume (FRC)
- PEEP recruits collapsed alveoli and prevents recollapse
- FRC increases, therefore lung becomes more compliant
- Reversal of atelectasis diminishes intrapulmonary shunt
- Excessive PEEP has adverse effects
 - decreased cardiac output
 - barotrauma (pneumothorax, pneumomediastinum)
 - increased physiologic dead space
 - increased work of breathing

MANAGEMENT OF ARDS

- Mechanical ventilation
corrects hypoxemia/respiratory acidosis
- Fluid management
correction of anemia and hypovolemia
- Pharmacological intervention
Dopamine to augment C.O.
Diuretics
Antibiotics
Corticosteroids - no demonstrated benefit
early disease, helpful 1 week later
- Mortality continues to be 50 to 60%

Nursing Diagnosis for ARF

- Impaired Gas Exchange
- Ineffective breathing pattern
- Activity intolerance
- Ineffective airway clearance
- Anxiety
- Potential for infection

Case report

Demographics

- Lives Alone
- No Children
- Unmarried
- No close relatives
- 51 years old



Events Leading to Admission

- Intubated and Transferred to hospital

Risk Factors

- Sedentary Lifestyle
- 190 lbs
- Age: 51 years old
- Muscle Weakness (Polymyositis)



Patient History

- Polymyositis
- Coronary Artery Disease
- Seizures
- Hyperlipidemia
- Hypertension
- Pneumonia
- Atrial Flutter with ablation 7/2007 and 11/07



Medical Diagnosis

- Acute Respiratory Failure
- Polymyositis
- Cardiomyopathy



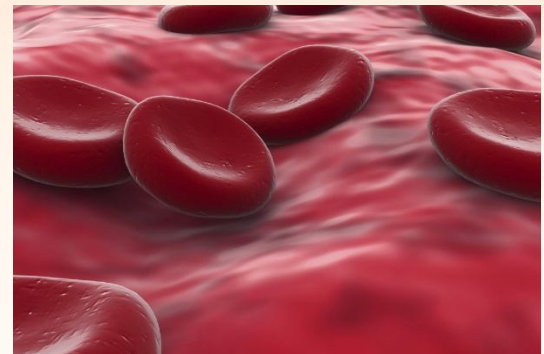
Abnormal Laboratory Data

- **ABG- 2/15/08**

- **pH- 7.45-** normal is 7.35 -7.45
- **pCO₂– 46.3 mmHg-** can be from COPD or over oxygenation in a patient with COPD. Patient is intubated and on a ventilator.(normal is 35-45 mmHg)
- **pO₂- 165 mmHg-** increased inspired O₂ and or hyperventilation.(normal is 80-100 mmHg)
- **HCO₃- 32.2 mmol/L-** chronic high volume gastric suctioning or COPD.(normal is 21-28 mmol/L)
- **O₂ Saturation: 100%**

Abnormal Laboratory Data

- **BUN- 26mg/dL-** (normal 10-20 mg/dL) can be increased from myocardial infarction and tube feeding.



Abnormal Laboratory Data

- **Cardiac Enzymes 2/14**
 - **CK- 1124 international units (IU)**-norm 30-135. indicates disease or injury to heart or skeletal muscle or brain tissue
 - Redrawn 2/20- 383 IU
 - **CK-MB- 45.0 ng/mL**- norm 0.2-5.0. indicates acute myocardial infarction
 - **Troponin- 0.6 ng/mL**- norm 0-0.3. indicates myocardial injury or infarction
 - Redrawn 2/15- 1.0 ng/mL
 - **BNP- 411 pg/ml**- norm 0-100. abnormal can be from myocardial infarction
 - Redrawn 2/19- 329 pg/mL

Abnormal Laboratory Data

- **WBC- 8.4** – norm 4.3 -10
- **RBC- 3.63**-norm 4-5.40- can be from chronic illness or nutritional deficiency
- **Hgb- 10.5**- norm 12-16- can be from nutritional deficiency
- **Hct- 34.2%**- norm 37- 47%- can be from dietary deficiency
- **Platelets- 253,000**- norm 150-400,000

Abnormal Laboratory Data

- **Coagulation**

- **2/14 INR: 4.02**- critical 3.99
- **2/19 INR: 1.33**- norm 0.86-1.14

- **Sputum**

- **2/14**: upper respiratory flora
- **2/22**: scant upper respiratory flora

Diagnostics

- **X-Ray of Abdomen Line Placement-** NG tube tip within the distal duodenum or jejunum.
- **Chest X-Ray-** Endotracheal Tube is in the mid trachea. Cardiomegaly noted. Bibasilar infiltrate. Bilateral effusions with mild/moderate compressive atelectasis. No pneumothorax. Lungs under inflated

Medications

Medication	Class	Dose & Route	Frequency
Vancomycin	Antiinfective	1,000 mg IV	Every 12 hours
Aspirin	Nonopioid analgesic	81 mg tab crushed PT	Every day
Enoxaparin (lovenox)	Anticoagulant antithrombotic	40 mg SQ	Every 24 hours
Esomeprazole (nexium)	Anti-ulcer	40 mg powder PT	Every day

Medications

Medication	Class	Dose & Route	Frequency
Folic Acid	Vitamin B	1mg tab crushed PT	Every day
Free Water Flush		250 ml PT	Every 6 hours
Furosemide (lasix)	Loop diuretic	40 mg IV	Every 8 hours
methylPREDNISolone (solumedrol)	Corticosteroid	60 mg IV	Every day

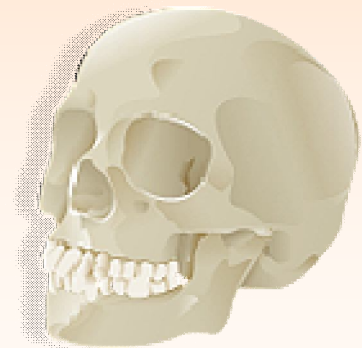
Vital Signs

- Blood Pressure: 86/55- 111/62 mmHg
- Heart Rate: 53-84 beats per minute
- Respirations: 14-25 per minute
- Temperature: 97.9-98.3
- Oxygen Saturation: 93-100%



Neurological Assessment

- Level of Consciousness
 - Both days: oriented to person, place, and time.
- Pupil Size
 - Pupils were 4 millimeters each and quickly respond to light



EENT Assessment



- Eyes
 - Conjunctiva clear and sclera intact
 - Vision normal, does not use glasses or contacts
- Ears
 - No drainage present
 - Hearing normal
- Nose
 - Nares were patent, pink, moist and free of drainage
 - Right nare was tender from nasogastric tube placement
- Mouth/Throat
 - Mouth pink and moist with no signs of infection
 - Endotracheal tube sits to right side of mouth with no irritation
 - Missing top teeth, bottom teeth are black near the gums

Cardiovascular Assessment

- Heart Sounds
 - S1 and S2 were heard softly at all anatomical positions with no murmurs, S3, or S4 heart sounds being heard.
 - Heart beats were irregular
 - No carotid bruit, JVD, or apical thrills noted.
- Heart Rate and Rhythm
 - Heart Rate was between 53-70 which is normal
 - No Tachycardia noted
 - Heart Rhythm was Sinus Rhythm with occasional Premature Atrial Beats

EKG Strips



- 0700: Sinus Bradycardia with 1 Premature Atrial Beat
 - Rate: 53
 - PRi: .16
 - QRS: .12
 - QT_i: .46
 - ST: .28
- 1500: Normal Sinus Rhythm with 1 PVC and PAB
 - Rate: 81
 - PRi: .16
 - QRS: .10
 - QT_i: .40
 - ST: .30

Peripheral Vascular Assessment

- Pulses
 - Bilateral brachial, radial, dorsalis pedis, and posterior tibialis pulses were all present at equal rate and rhythm.
 - Capillary Refill < 3 seconds
 - Edema +1 noted in upper and lower extremities. No pitting or weeping noted.

Respiratory Assessment

- Breath Sounds
 - Bronchial, bronchovesicular, and vesicular breath sounds were present in all lobes. But were coarse and diminished in right and left lower lobes.
 - No crackles or wheezes noted
- Respiratory Rate
 - Respiratory rate was between 11-23
 - Her respirations went up when she became uneasy or anxious
 - She would have periods of apnea while resting

Respiratory Assessment

- Mucous Drainage
 - There was scant thick yellow mucous. She liked to be suctioned a lot, so she began to have pain in her throat.
- Oxygen Saturation
 - During ventilation Oxygen Saturation stayed between 96-100% until she was turned on her side and it would drop to 89-92%.

Ventilator Settings

- 2/21: IMV with FiO₂ 50%, PEEP of 5, Pressure Support: 15, Tidal Volume 750
- Changed on 2/21 @ 0700 to SIMV with FiO₂ 50%, PEEP of 5, Pressure Support: 15, Tidal Volume 750. 10 Respirations
- 2/22: Same settings with 6 respirations
- Changed on 2/22 @ 1315 to CPAP with FiO₂ 50%, PEEP 5, Pressure Support: 12, Tidal Volume 750

Integumentary Assessment

- Skin
 - Pink, warm trunk and extremities
 - Double lumen PICC line in right upper arm
 - Skin very dry and flaky
 - Painful intermittently spaced non-raised rash

Gastrointestinal Assessment

- Bowel Sounds
 - Bowel sounds present in all four quadrants
 - Abdomen soft distended and nontender
 - 2-3 bowel movements a day during care that were soft
- Nasogastric Tube
 - Traumatic placement in route to hospital in ambulance
 - Pulmocare running at 40cc/hr
 - Also used to administer medications and free water

Genitourinary Assessment

- Foley Catheter Urinary Output
 - Between 50-400 milliliters an hour
 - Clear yellow urine
 - No vaginal discharge or lesions
- Intravenous Fluid Intake
 - Receiving $\frac{1}{2}$ Normal Saline at 50 ml/hr
 - Intravenous Ativan and Lasix

Musculoskeletal Assessment

- Motor Strength- Upper and Lower Extremities
 - Extremity movements within normal limits and no difficulty
 - Is not able to rise or push up in bed
 - Generalized weakness
 - Muscles and joints symmetrical, no swelling or deformities



Psychosocial Assessment

- Coping Mechanisms
 - Patient has no family to help her cope with being hospitalized
 - She had trouble dealing with the idea she may have to have a tracheostomy and had to be given some ativan to calm down
 - By second day and after explanation of procedure she was more comfortable with her plan of care

Nursing Diagnosis #1: Impaired Spontaneous Ventilation

- Impaired Spontaneous Ventilation related to weakened muscles secondary to Polymyositis as evidenced by increased partial pressure of arterial carbon dioxide, bicarbonate, and oxygen.

Desired Outcomes for Impaired Spontaneous Ventilation

- Patient's respiratory rate will remain within five breaths/min of baseline (>12 breaths/minute)
- Patient will begin to take breaths on own when ventilator settings are decreased
- Patient's oxygen saturation will remain at or above 92%

Interventions for Impaired Spontaneous Ventilation

- Monitor vital signs every hour
- Monitor ABGs
- Monitor Hemoglobin and Hematocrit
- Position patient with head of bed at 30 degrees
- Avoid respiratory depressants such as opioids, sedatives, and paralytics
- Monitor pulse oximetry
- Monitor patient for spontaneous breathing and gradually wean as ordered from ventilation with help of respiratory therapists

Goals Met for Impaired Spontaneous Ventilation

- Patient's respiratory rate remained between 12 and 17 breaths per minute unless being turned
- Patient tolerated weaning ventilator settings for the entire 12 hours shift

Nursing Diagnosis #2: Ineffective Breathing Pattern

- Ineffective breathing pattern related to inability to maintain adequate rate and depth as evidenced by the need for mechanical ventilation.

Desired Outcomes for Ineffective Breathing Pattern

- Patient's oxygen saturation will remain at or above 92%.
- Auscultation will reveal no abnormal breath sounds
- Patient will demonstrate adequate breathing pattern with easy unlabored respirations while on CPAP

Interventions for Ineffective Breathing Pattern

- Auscultate breath sounds every shift and as needed
- Suction airway as needed
- Elevate head of bed to semi-fowlers position
- Monitor the patient for any signs of respiratory distress while on CPAP, such as use of accessory muscles, cyanosis, periods of apnea, or dyspnea
- Monitor oxygen saturation with pulse oximetry

Goals Met for Ineffective Breathing Pattern

- Patient's oxygen saturation stayed at or above 92% for a 12 hour shift
- Patient did not have any signs of respiratory distress while on CPAP

Nursing Diagnosis #3: Anxiety

- Anxiety related to situational crisis as evidenced by fear, restlessness, increased respiratory rate, and crying.

Desired Outcomes for Anxiety

- Patient will cope with current medical situation without signs of anxiety
- Patient will learn and practice relaxation techniques when feeling anxious

Interventions for Anxiety

- Give patient clear, concise explanations of any procedures
- Educate patient on how to use imagery and relaxation techniques when feeling anxious
- Identify and reduce as many environmental stressor as possible
- Remain with the patient when experiencing an episode of anxiety
- Administer Ativan as ordered as needed

Goals met for Anxiety

- Patient demonstrated the use of relaxation techniques during times of anxiety

Other Nursing Diagnosis

- Knowledge Deficiency related to tracheostomy procedure
- Pain related to suctioning
- Altered Nutrition less than body requirements related to mechanical intubation

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Questions?

