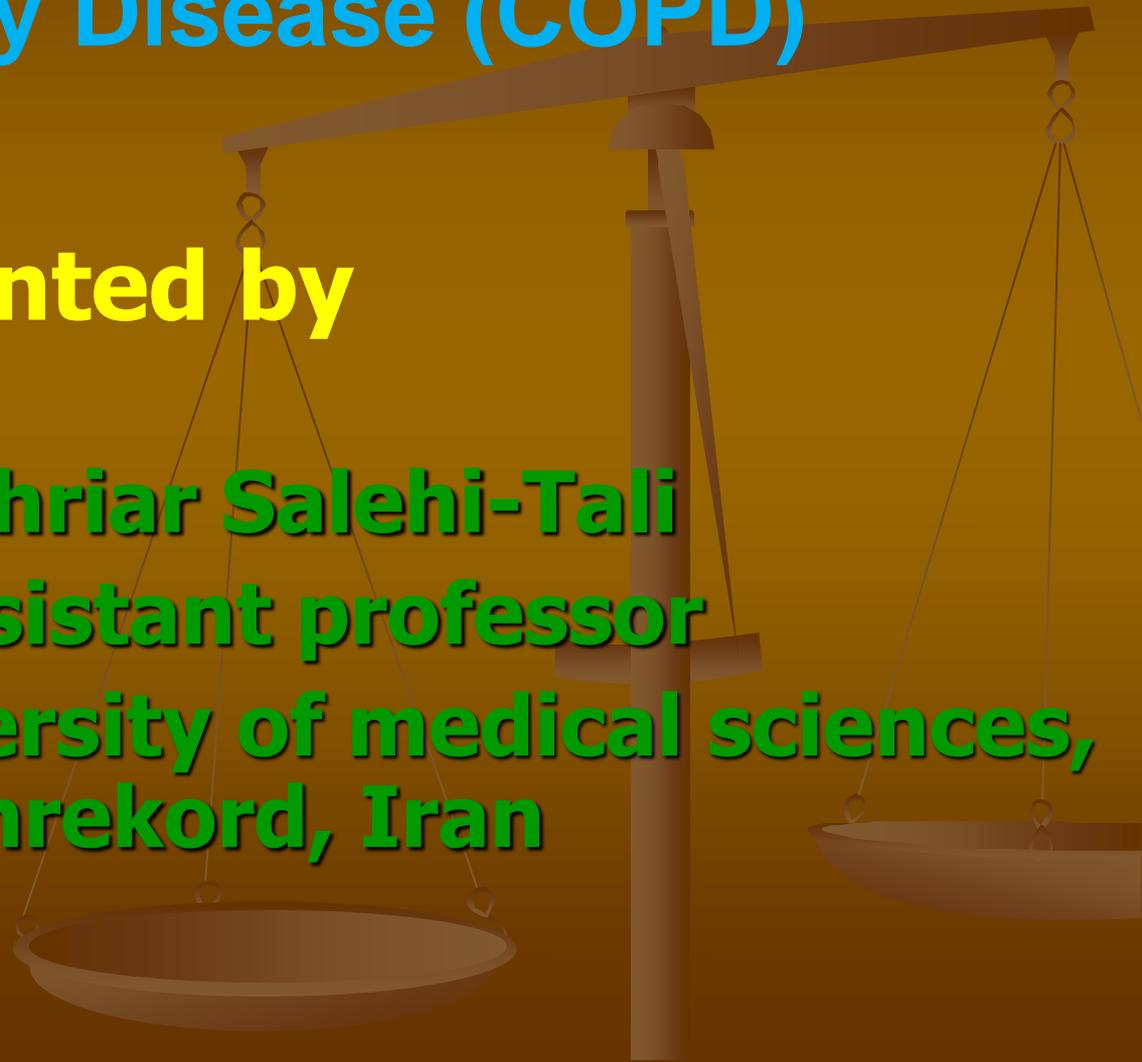


nursing care plans (NCP) and nursing
diagnosis (NDX) for Chronic Obstructive
Pulmonary Disease (COPD)

presented by

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COPD

- Chronic
- Obstructive
- Pulmonary
- disease



- Air way obstructed by
- EMPHYSEMA.
- CHRONIC BRONCHITIS
- OR BOTH
- ASTHMA



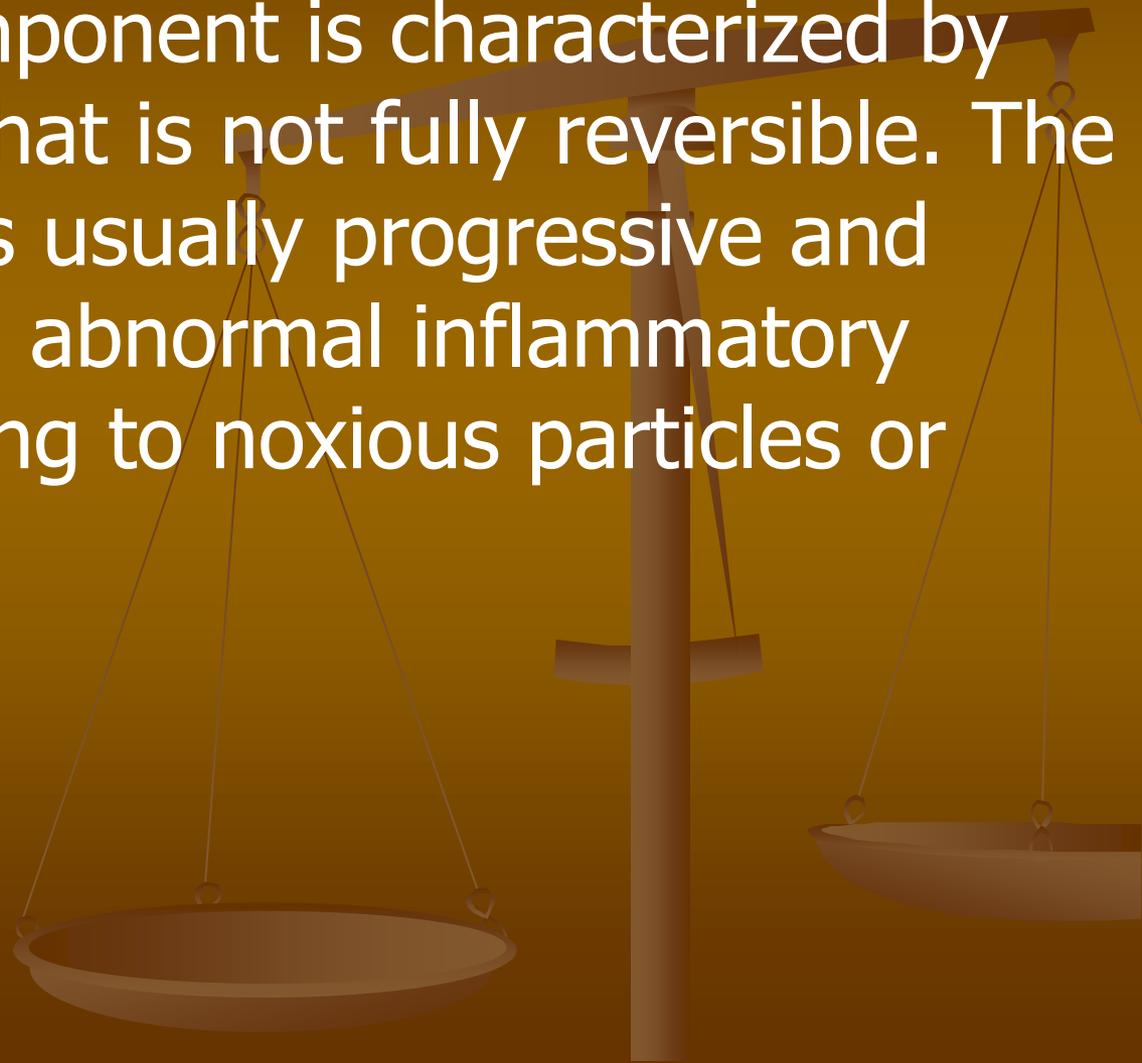
this kind disease is

- Progressive
- Irreversible



Pathophysiology and pathway

- Its pulmonary component is characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases

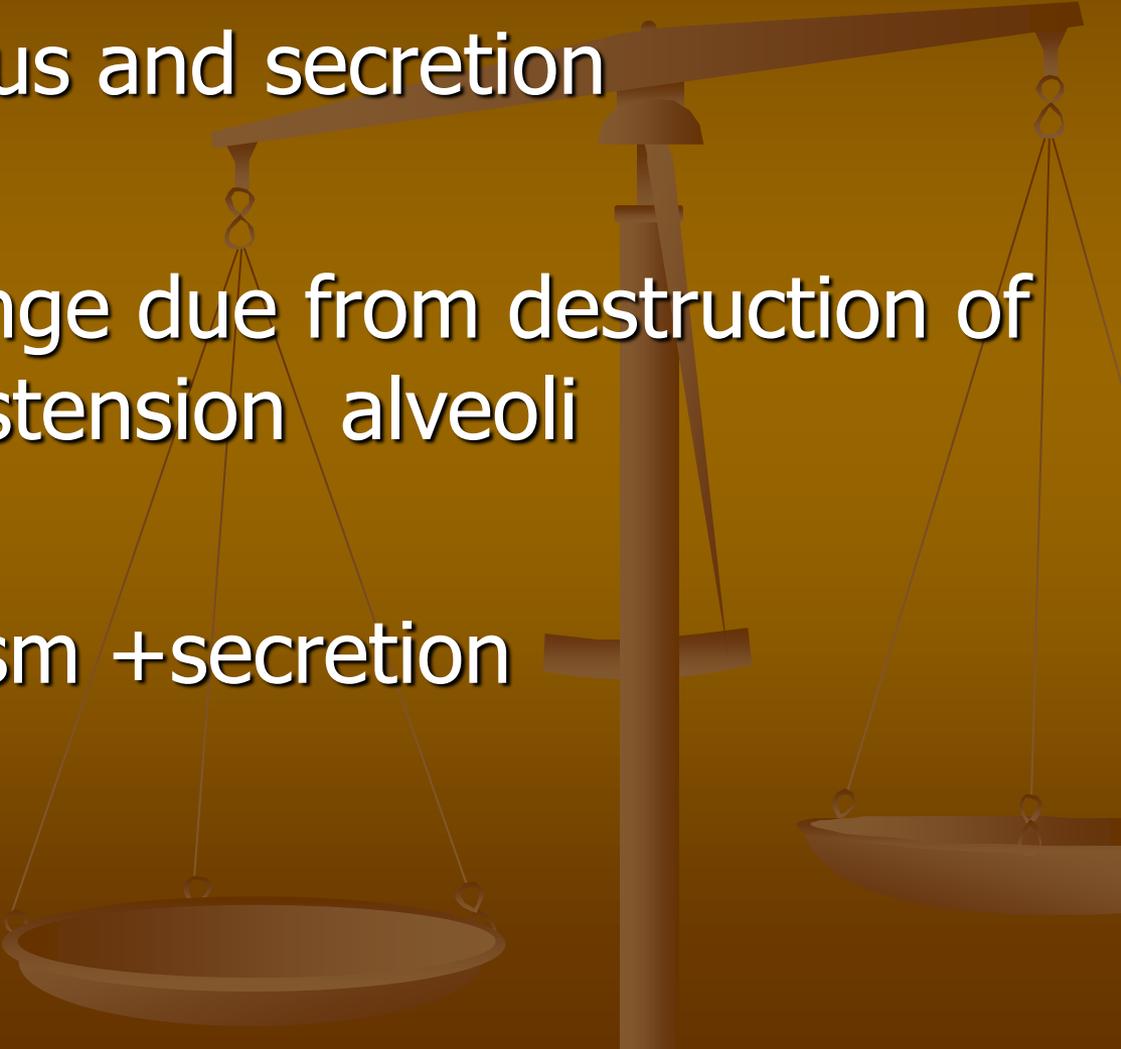


ETIOLOGY

- Smoking
- Air pollution
- Occupational exposure to respiratory irritant
- Allergic
- Autoimmune
- Genetic
- aging



Why obstructed



1- Chronic bronchitis :

- Accumulation mucus and secretion

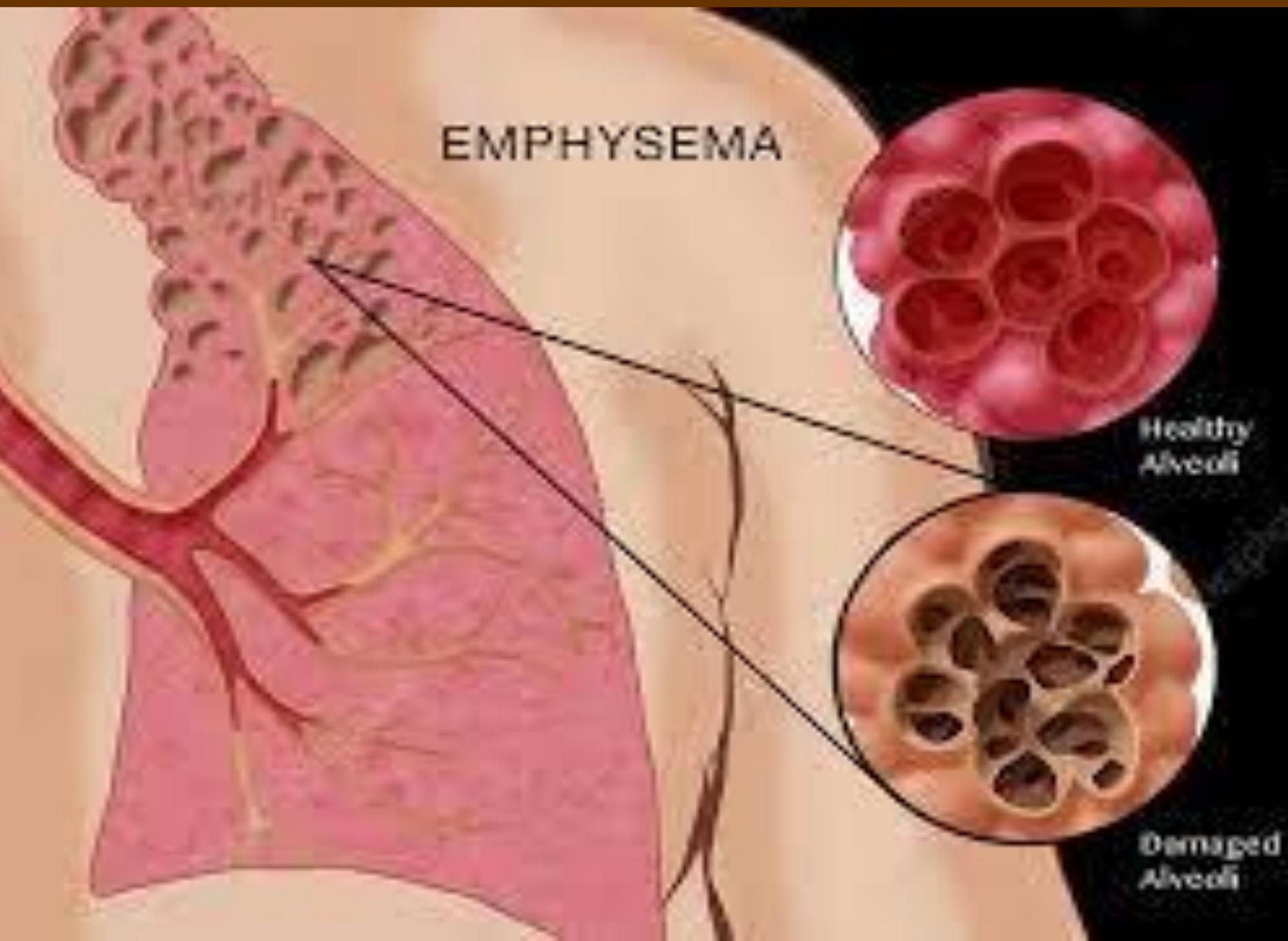
2- emphysema .

- Impair gas exchange due from destruction of the wall of over distension alveoli

3- Asthma

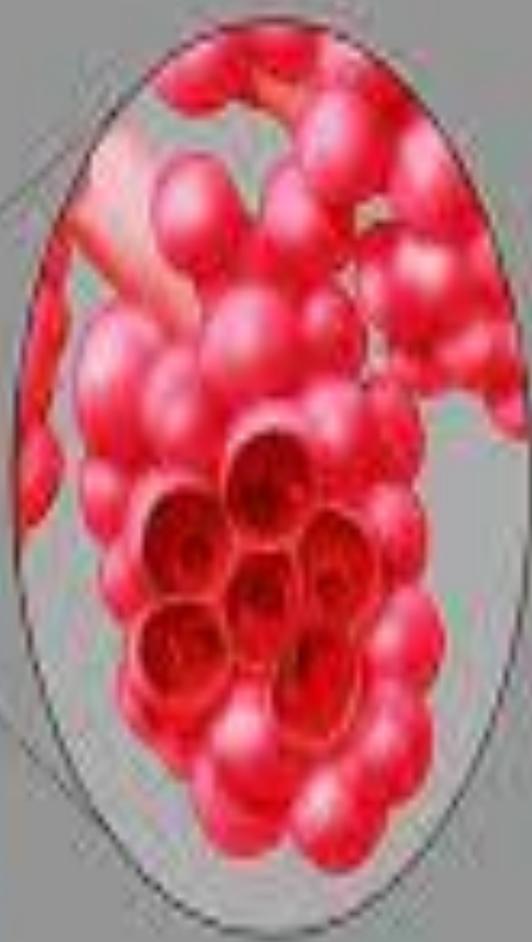
Inflammation + spasm +secretion

EMPHYSEMA



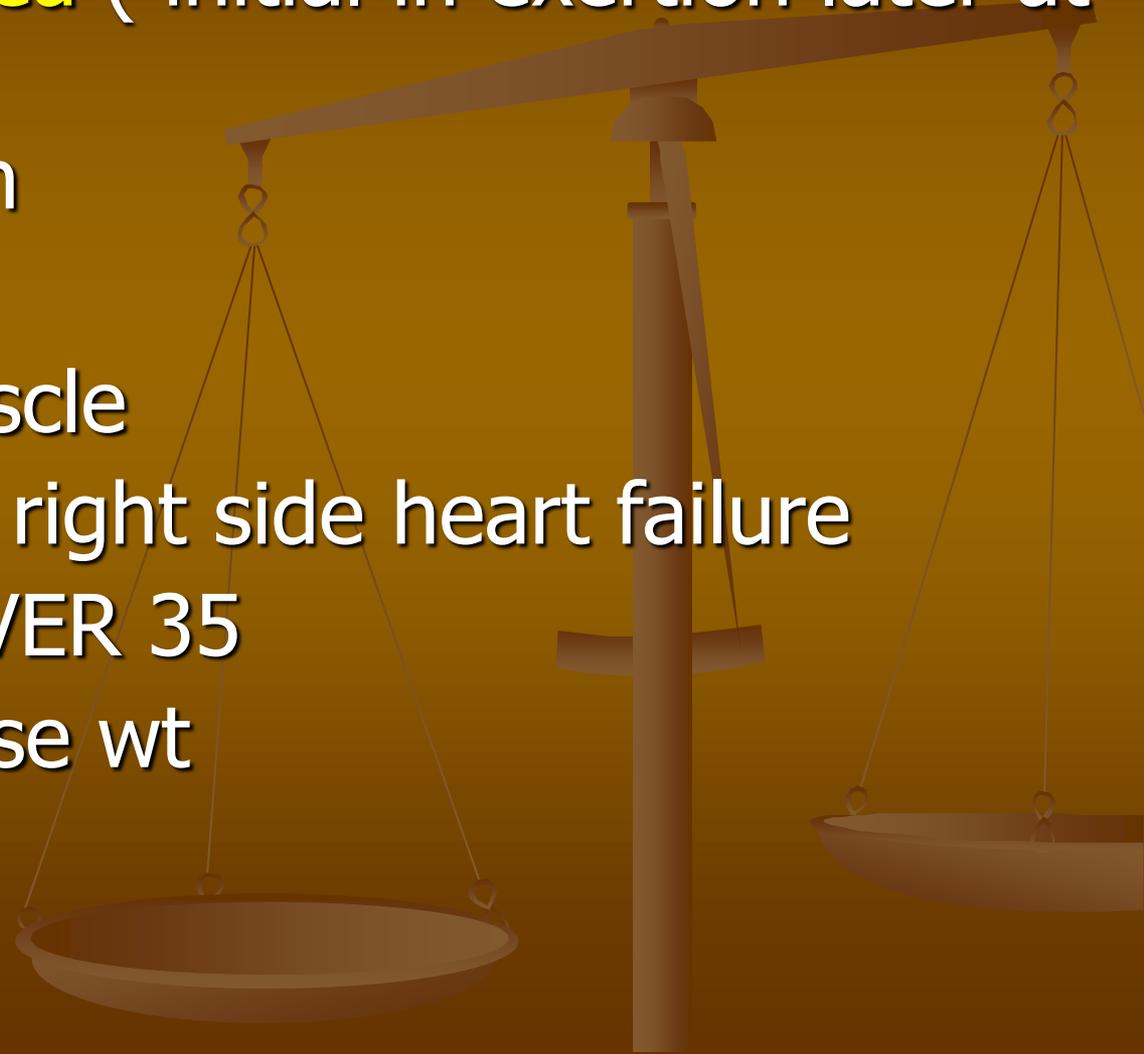
Healthy
Alveoli

Damaged
Alveoli

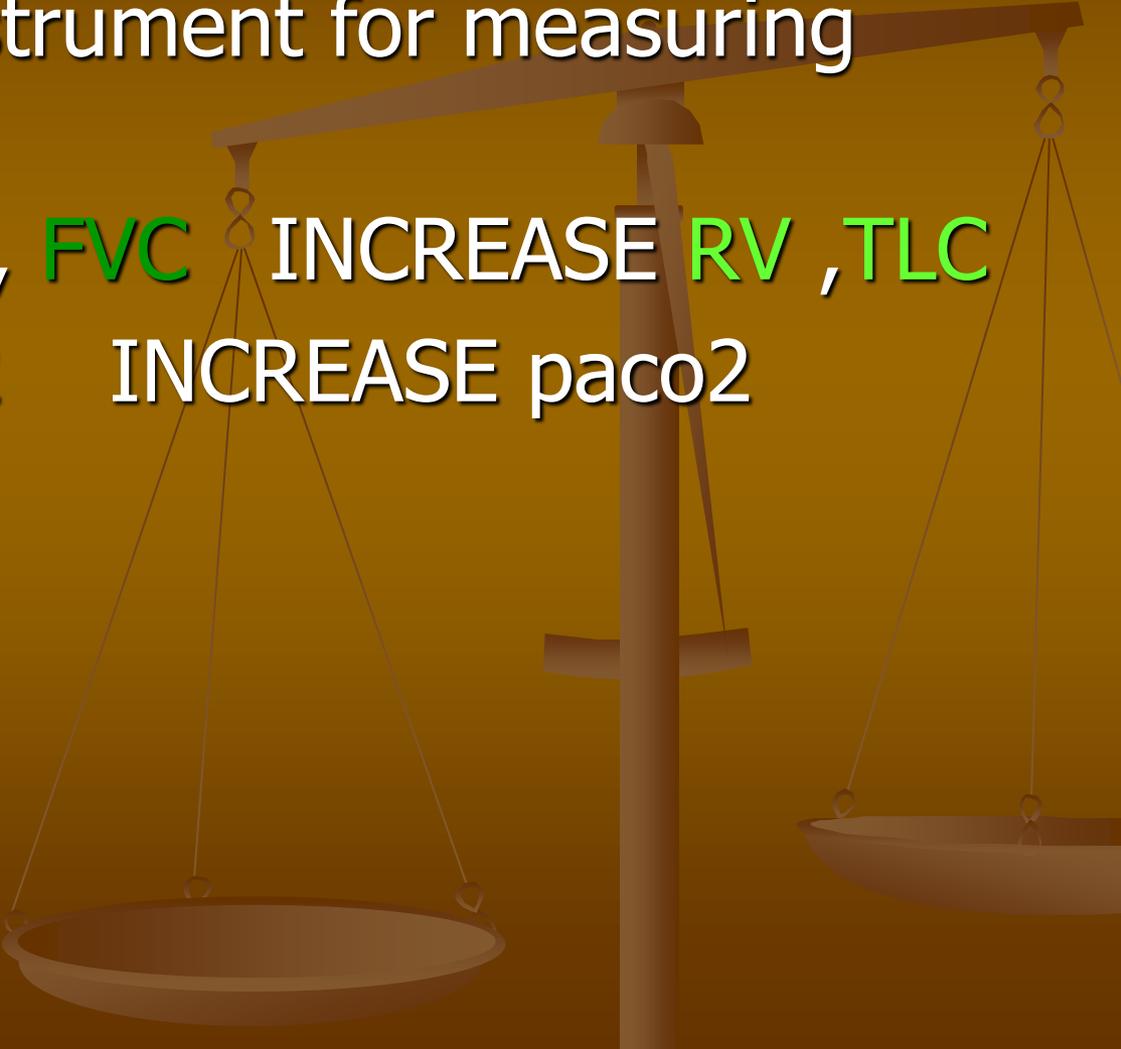


Clinical manifestation emphysema

- Progressive **dyspnea** (initial in exertion later at rest)
- Progressive cough
- Sputum
- Use accessory muscle
- Cor – pulmonal or right side heart failure
- NR- 15-30OVER 35
- Anorexia – decrease wt
- Cyanosis
- Clubbing - finger



Lab – finding

- Spirometer . Instrument for measuring lung function
 - Decrease **FEV** , **FVC** INCREASE **RV** , **TLC**
 - Decrease **pao2** INCREASE **paco2**
 - Barrel chest
 - polycythemia
- 

Lung Volumes and Lung Capacities

Symbol	Description	Normal Value*	Significance
V_T or TV	The volume of air inhaled and exhaled with each breath	500 mL or 5–10mL/kg	The tidal volume may not vary, even with severe disease.
IRV	The maximum volume of air that can be inhaled after a normal inhalation	3000 mL	
ERV	The maximum volume of air that can be exhaled forcibly after a normal exhalation	1100 mL	Expiratory reserve volume is decreased with restrictive disorders, such as obesity, ascites, pregnancy.
RV	The volume of air remaining in the lungs after a maximum exhalation	1200 mL	Residual volume may be increased with obstructive disease.
VC	The maximum volume of air exhaled from the point of maximum inspiration $VC = TV + IRV + ERV$	4600 mL	A decrease in vital capacity may be found in neuromuscular disease, generalized fatigue, atelectasis, pulmonary edema, and COPD.
IC	The maximum volume of air inhaled after normal expiration $IC = TV + IRV$	3500 mL	A decrease in inspiratory capacity may indicate restrictive disease.
FRC	The volume of air remaining in the lungs after a normal expiration $FRC = ERV + RV$	2300 mL	Functional residual capacity may be increased with COPD and decreased in ARDS.
TLC	The volume of air in the lungs after a maximum inspiration $TLC = TV + IRV + ERV + RV$	5800 mL	Total lung capacity may be decreased with restrictive disease (atelectasis, pneumonia) and increased in COPD.

Treatment

- Bronchodilator . Aminophylline. Theophylline .
- O2 therapy (low dose + moisture +continued)
- Smoking cessation
- Breathing exercise such as diaphragmatic breathing or **(Pursed-lips Breathing)** تنفس لب غنچه ای
- Avoid fatigue
- Intake adequate fluid
- deep breathing during walking ,climbing stair and bathing

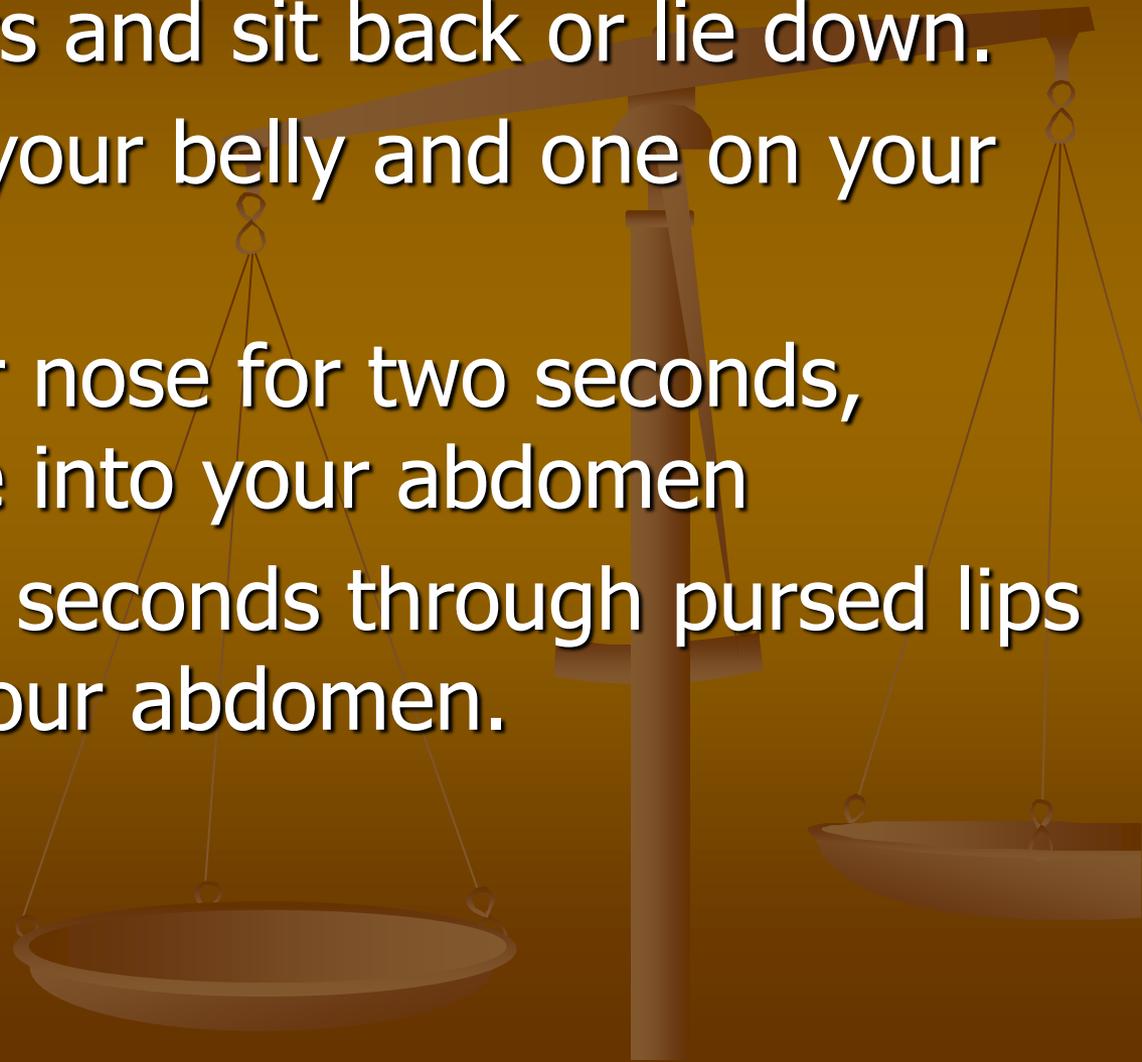
Diaphragmatic breathing or (Pursed-lips Breathing)

Relax your shoulders and sit back or lie down.

Place one hand on your belly and one on your chest.

Inhale through your nose for two seconds, feeling the air move into your abdomen

Breathe out for two seconds through pursed lips while pressing on your abdomen.



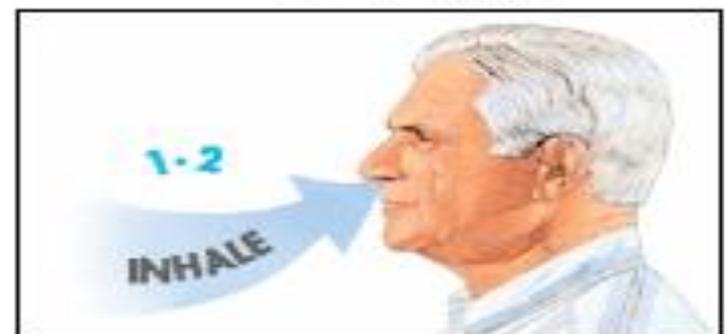
این تنفس نوعی تمرین درمانی است که باعث بهبود عملکرد ریه می گردد و بیمار فرا می گیرد چگونه نوعی نظم (ریتم) را بصورت کنترل شده در سیستم تنفسی بوجود آورده که در نهایت منجر به بهبود عملکرد ریه گردد.

این نوع تنفس همچنین باعث ایجاد نوعی آرامش روانی با استفاده از تکنیک "تنفس ریتمیک" می گردد که می تواند در بیماران مزمن ریوی و آشفته کارایی داشته باشد.

این روش بصورت ایستاده، نشسته و خوابیده قابل اجرا می باشد.

مراحل اجرا شامل :

۱- فرد به آرامی از طریق بینی یا دهان بسته هوا را به درون ریه می کشد.



۲- در مرحله بعد لب ها به صورت گنچه در آمده و از طریق مرکز لب ها بازدم به آرامی صورت می پذیرد.



۳- بازدم باید کمی حالت دمیدن داشته باشد و به آرامی ادامه یابد.

۴- زمان بازدم باید دو برابر دم باشد.



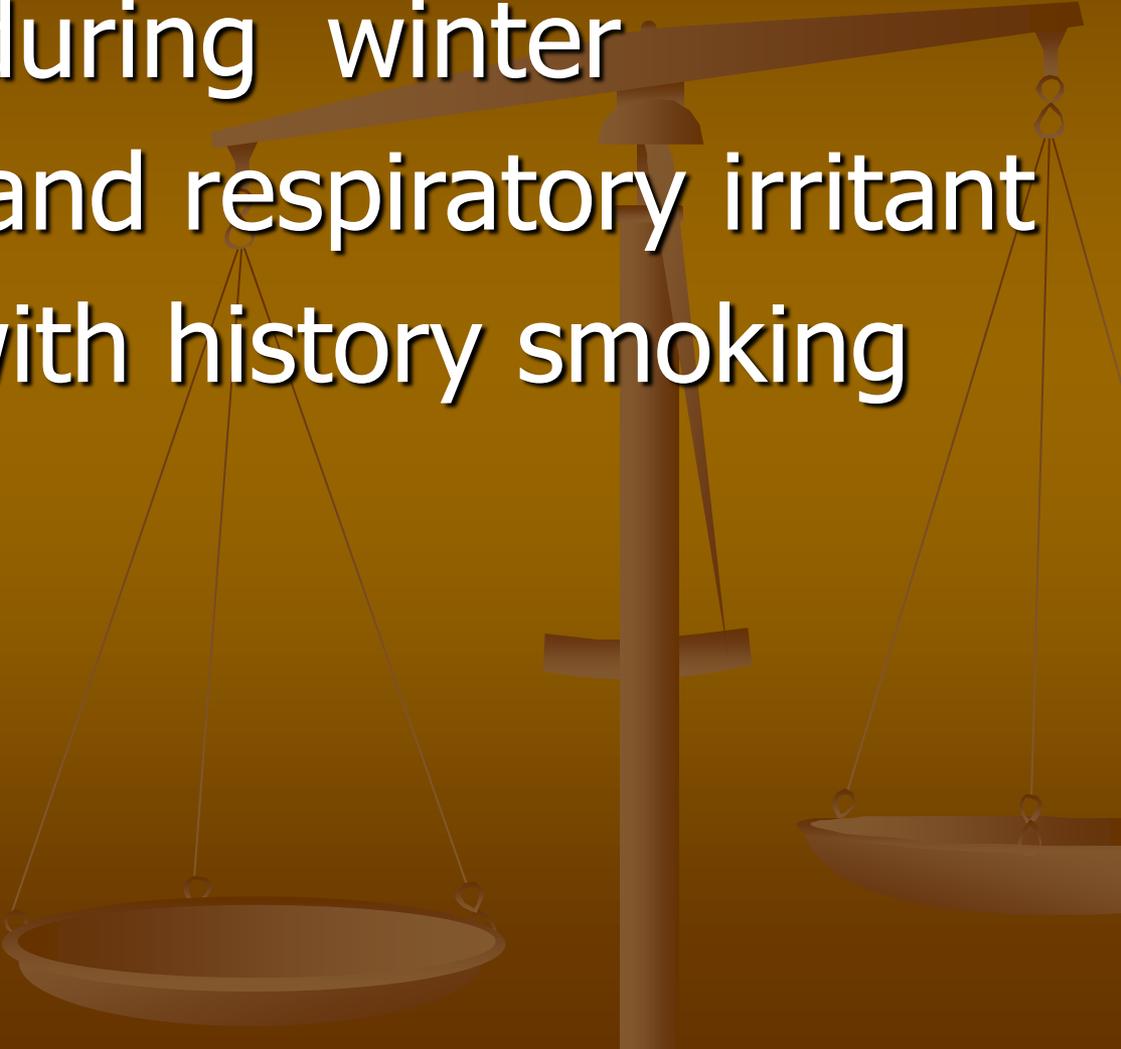
Chronic bronchitis

1-Hyper secretion bronchial mucus gland Leading increase sputum and bronchial congestion and narrowing .

2-Productive cough 3 month per year for 2 consecutive year exacerbation winter

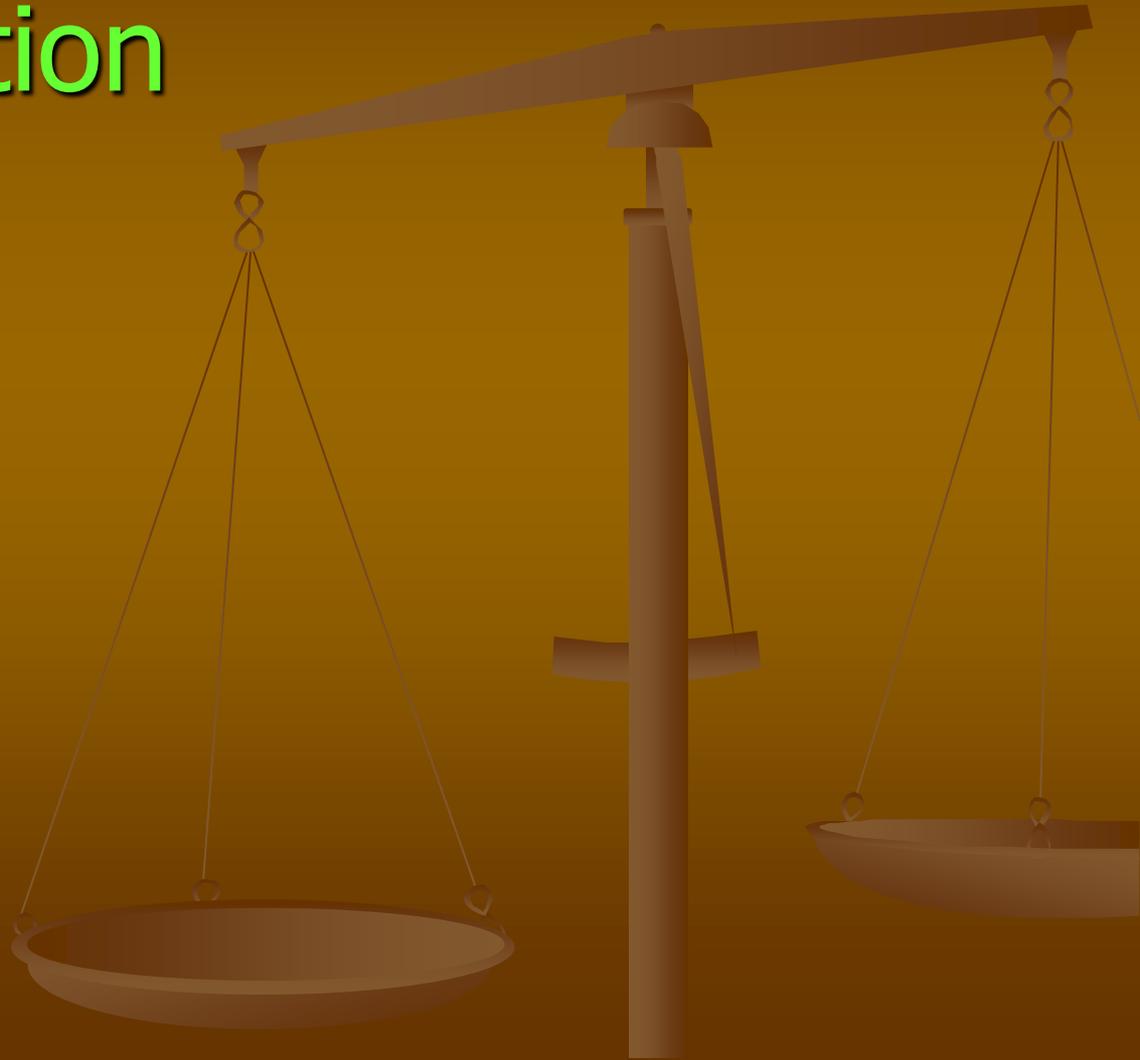
3-Recurrent acute respiratory infection

4- pink –puffer appearance.

- 
- 5-Exacerbation during winter
 - 6-Cold weather and respiratory irritant
 - 7-Fifth decade with history smoking

Curing

- Over hydration
- Antibiotic
- Mucolytic
- Steroid
- Drainage



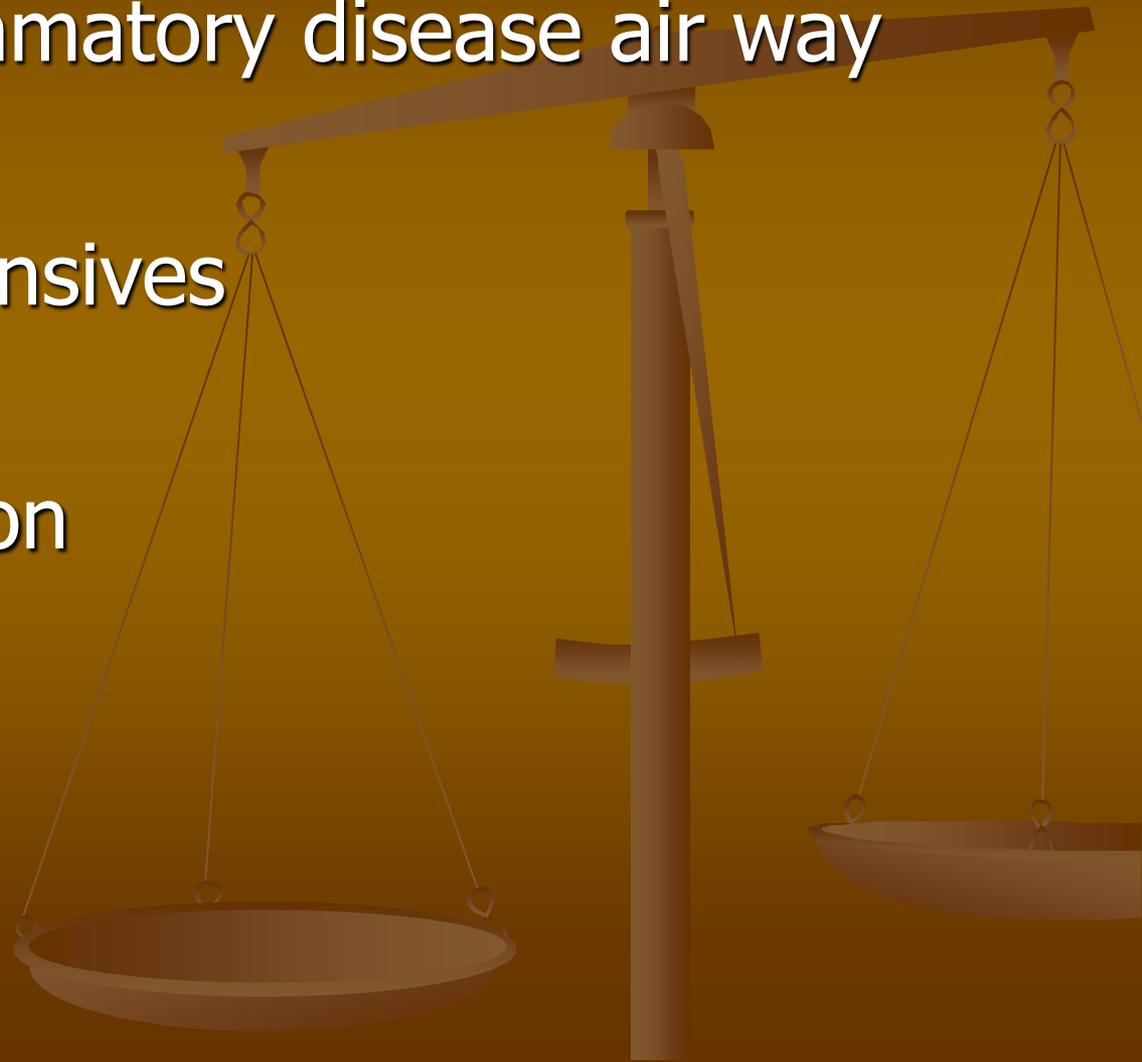


asthma

- A chronic inflammatory disease air way

Etiology

- Air way hypertensives
- Mucosal edema
- Mucus production
- Air way spasm



CM

- Cough
- Wheezing
- Dyspnea
- Hypoxia
- Central cyanosis
- Diaphoresis
- Tachycardia
- Widened pulse pressure



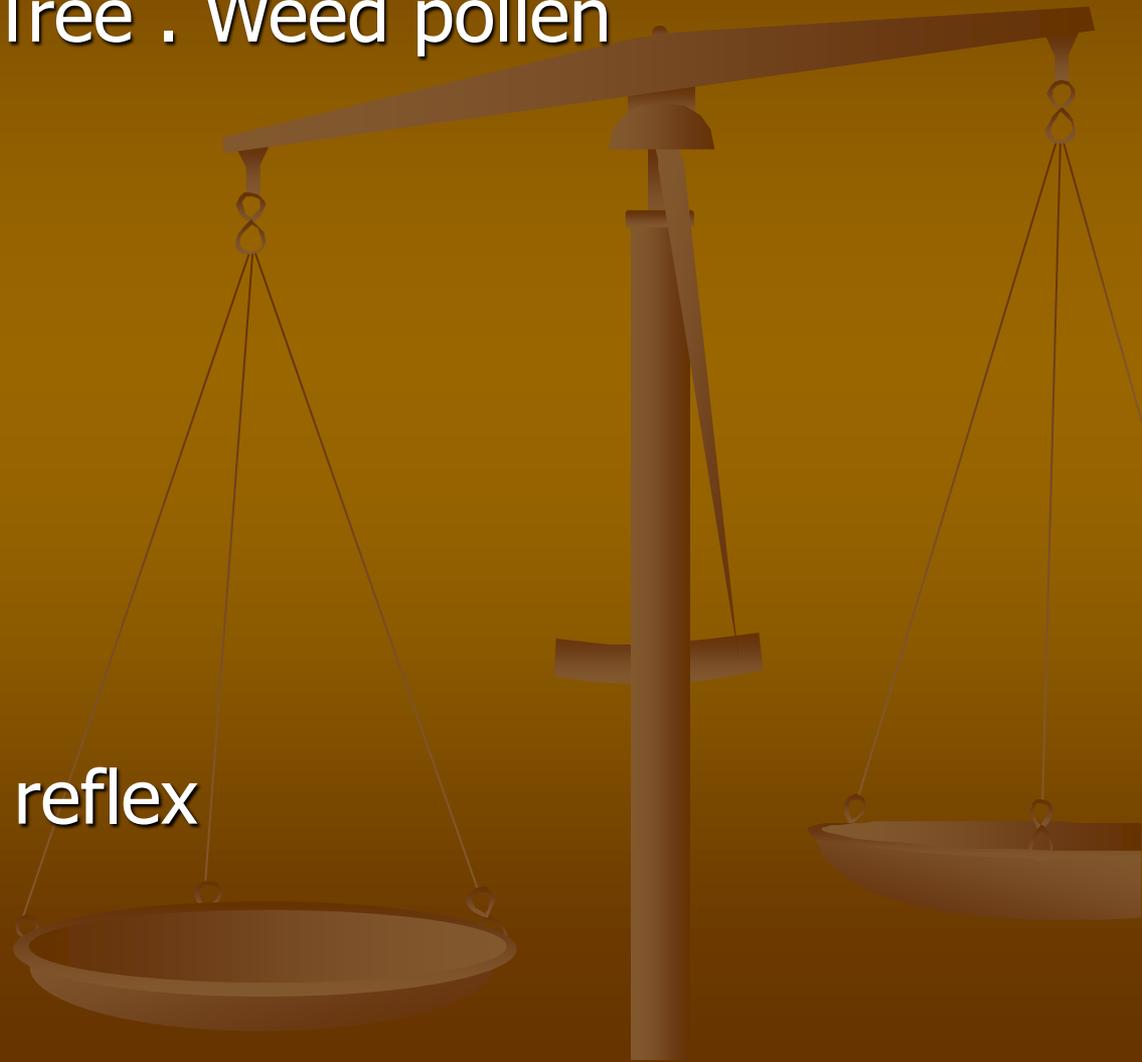
epidemiology

- Any age
- Childhood
- Affected**
- School
- Work attendance
- Occupational choice
- Physical activity
- Quality of life



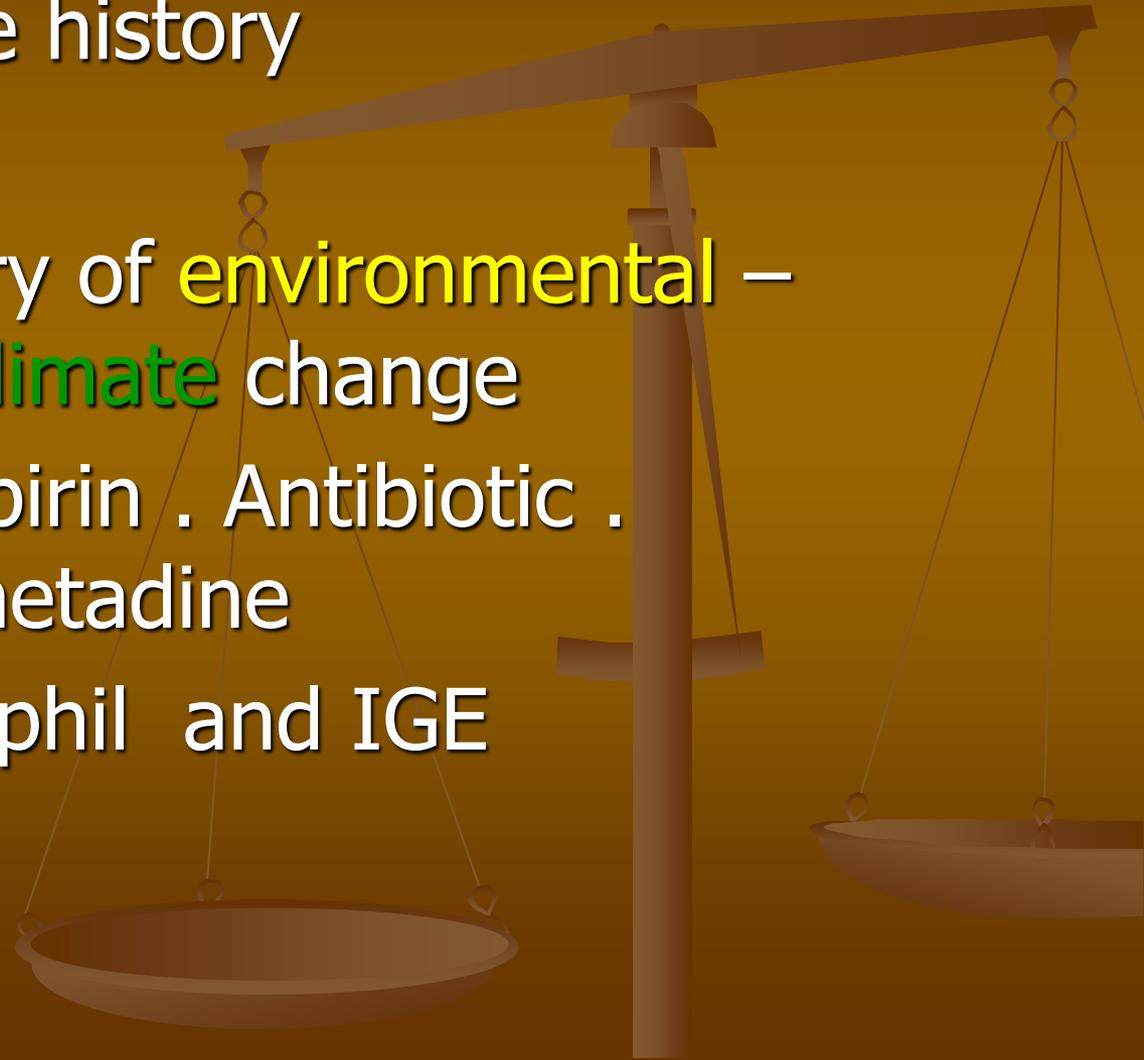
Air way irritant

- Allergen . Grass . Tree . Weed pollen
- Air pollutant
- Cold , heat
- Odor
- Smoke
- Exertion
- Stress
- Sinusitis
- Gastroesophageal reflex



Assessment

- Take a complete history
- Family history
- A positive history of **environmental** – **seasonal** and **climate** change
- Medication . Aspirin . Antibiotic . Piperazine . Cimetadine
- Elevated eosinophil and IGE

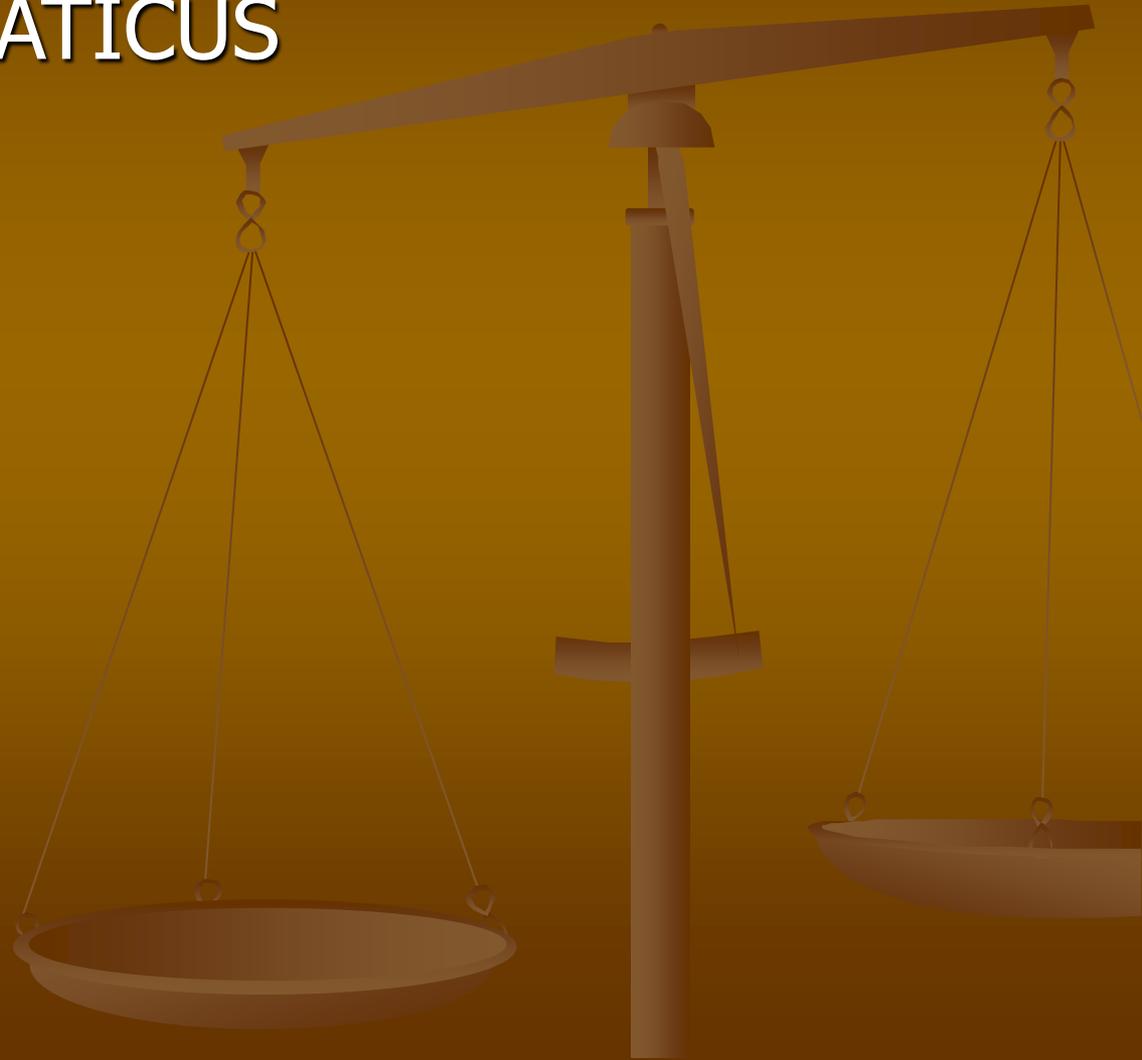




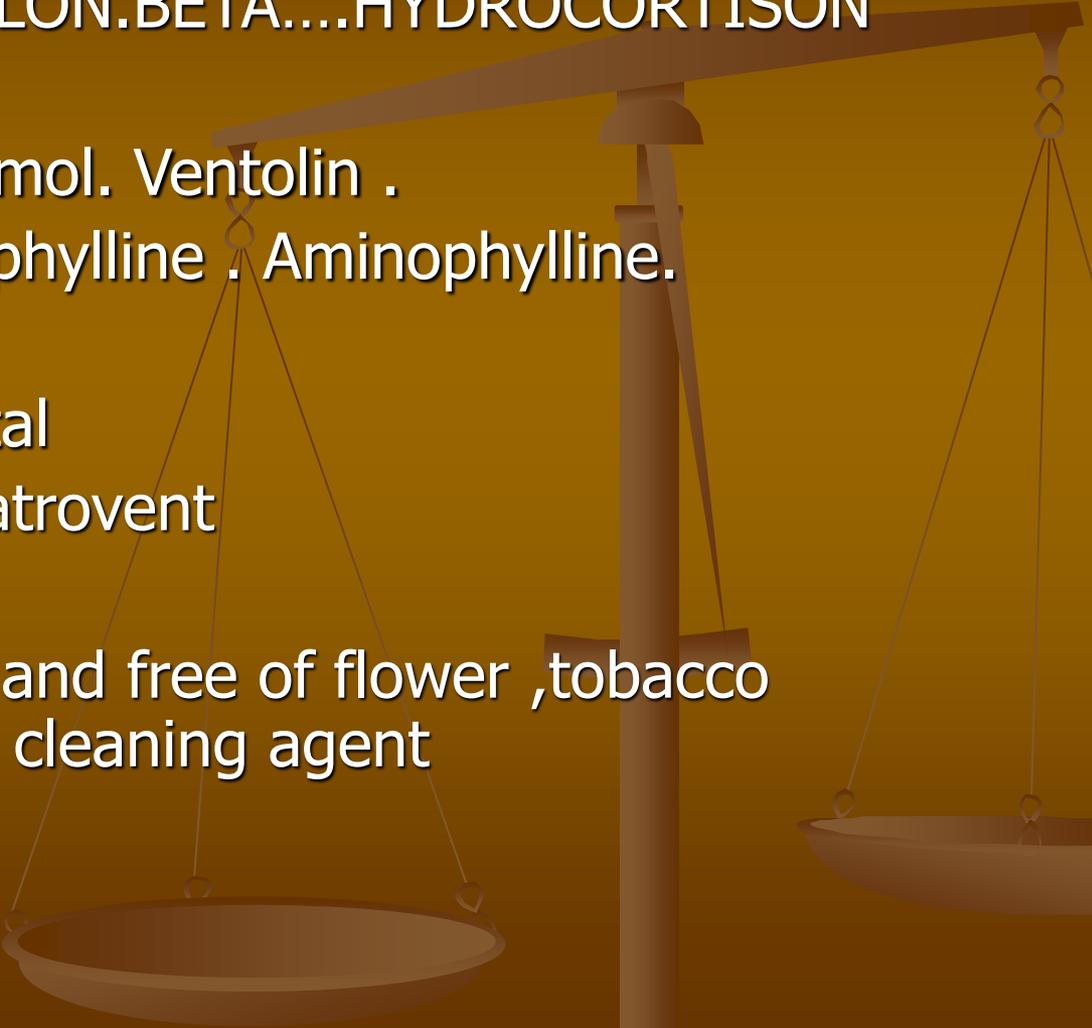
Niksalehri.com

COMPLICATION

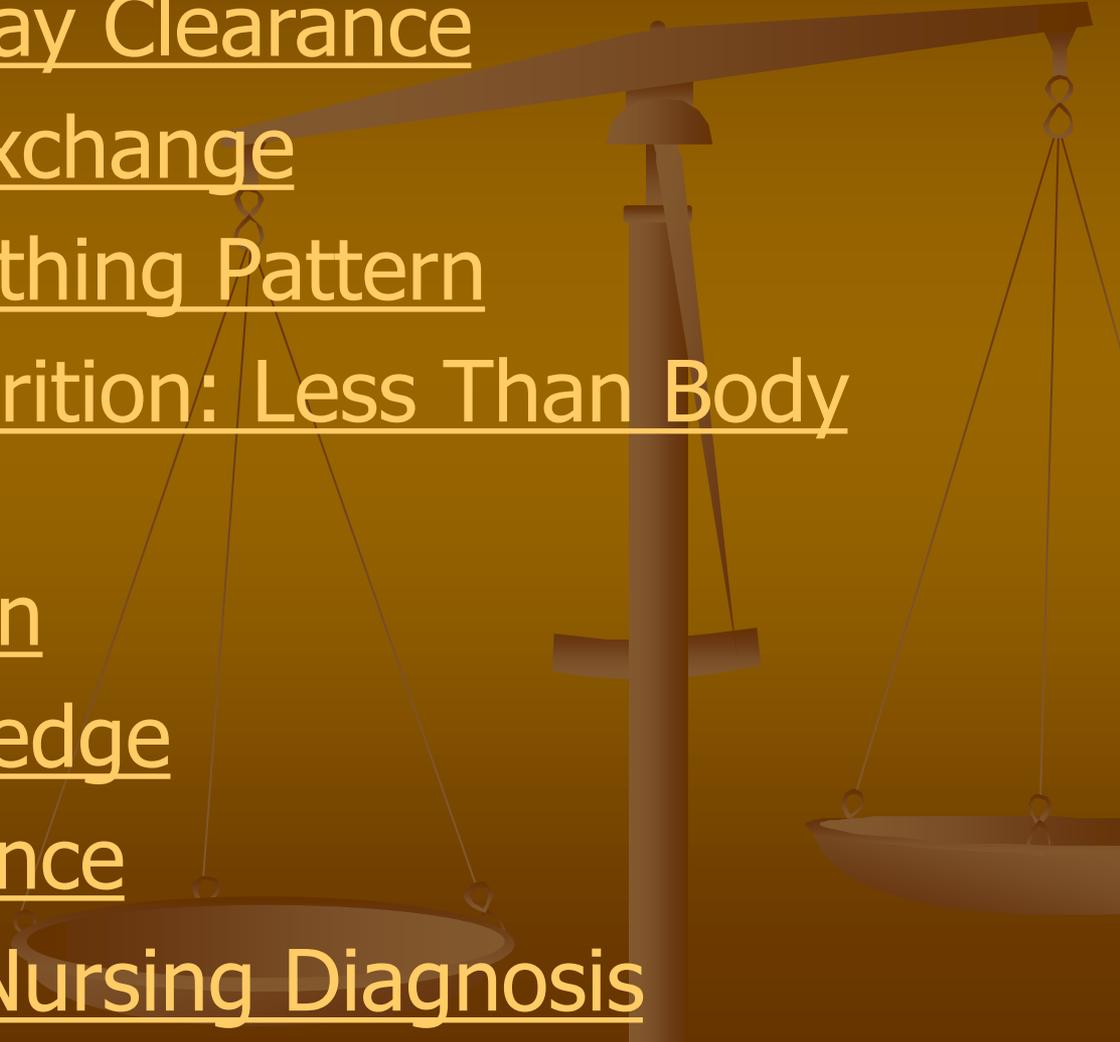
- STATUS ASTHMATICUS
- PNEUMONIA
- ATELECTASIS
- HYPOXIA
- DEHYDRATION



MANAGEMENT

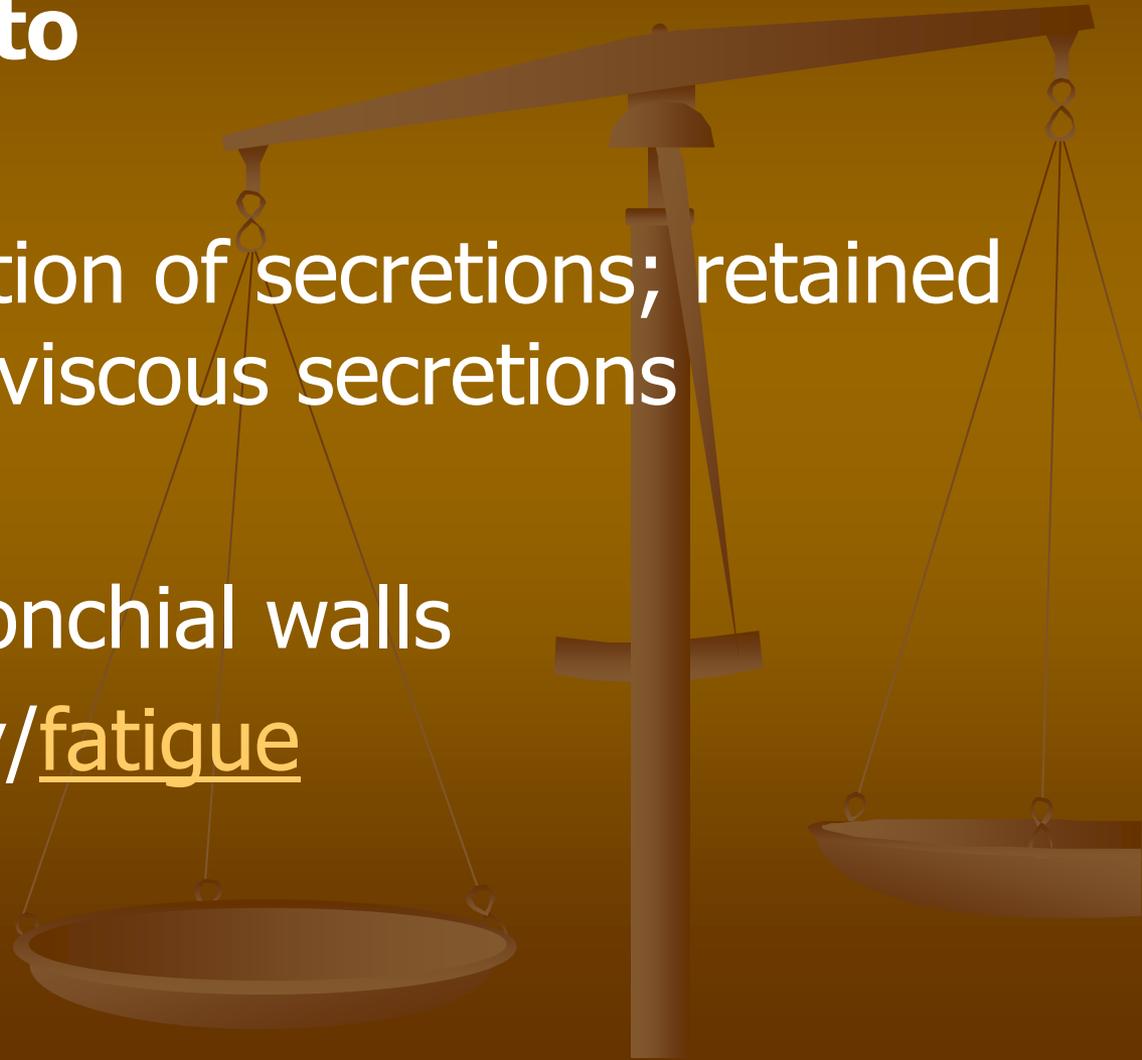
- STEROID. PREDNISOLON.BETA....HYDROCORTISON
SPRAY BECLOMETASON
 - B2 AGONIST. Salbutamol. Ventolin .
 - Methylxanthin – theophylline . Aminophylline.
 - Adrenaline
 - Mast cell blocker . Intal
 - Anticholinergic .spray atrovent
 - O2 therapy
 - Iv fluid + quite room and free of flower ,tobacco ,perfume and odor of cleaning agent
- 

nursing care plans (NCP) and nursing diagnosis

- Ineffective Airway Clearance
 - Impaired Gas Exchange
 - Ineffective Breathing Pattern
 - Imbalanced Nutrition: Less Than Body Requirements
 - Risk for Infection
 - Deficient Knowledge
 - Activity Intolerance
 - Other Possible Nursing Diagnosis
- 

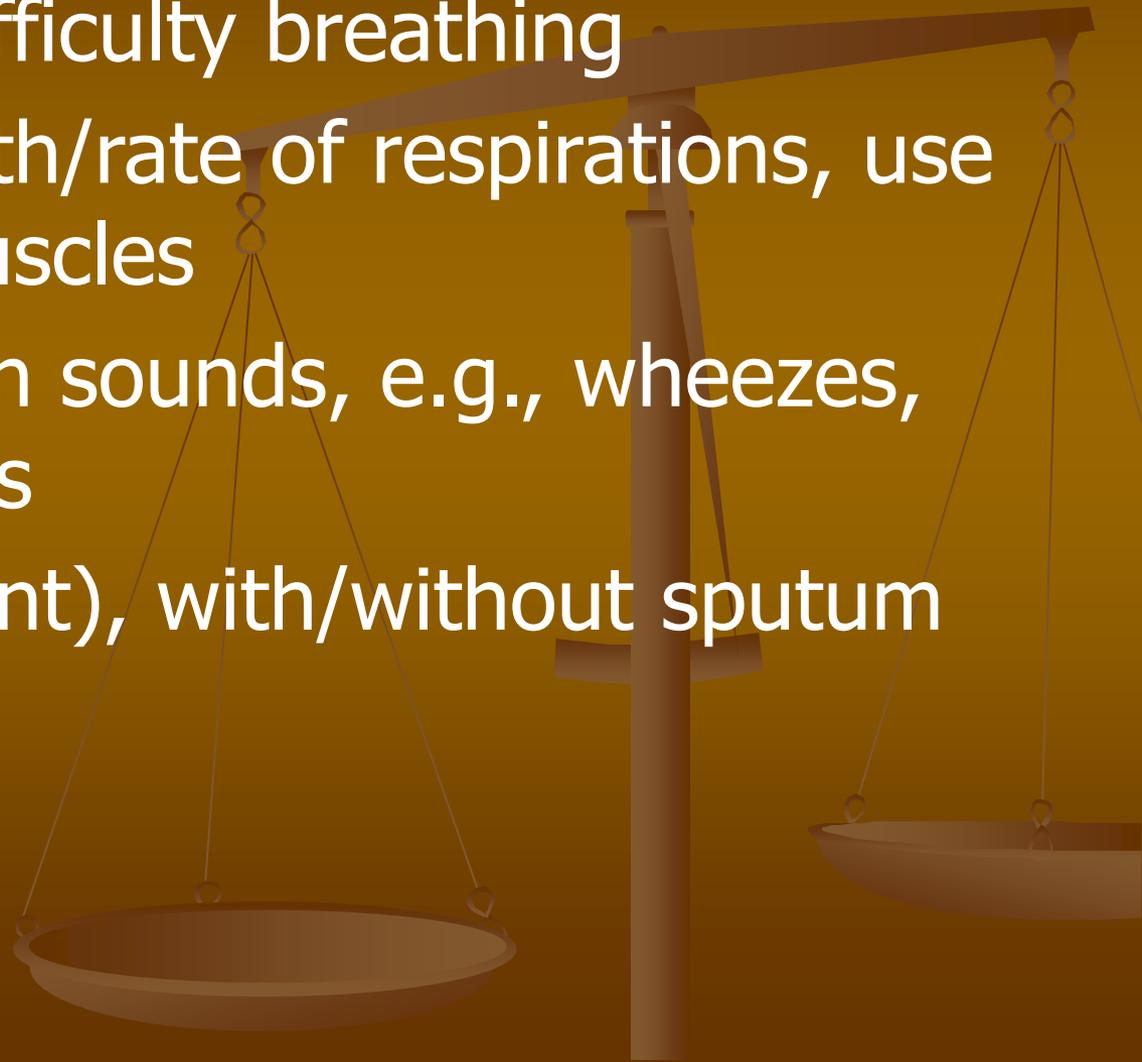
Ineffective Airway Clearance

- **May be related to**
- Bronchospasm
- Increased production of secretions; retained secretions; thick, viscous secretions
- Allergic airways
- Hyperplasia of bronchial walls
- Decreased energy/fatigue



Possibly evidenced by

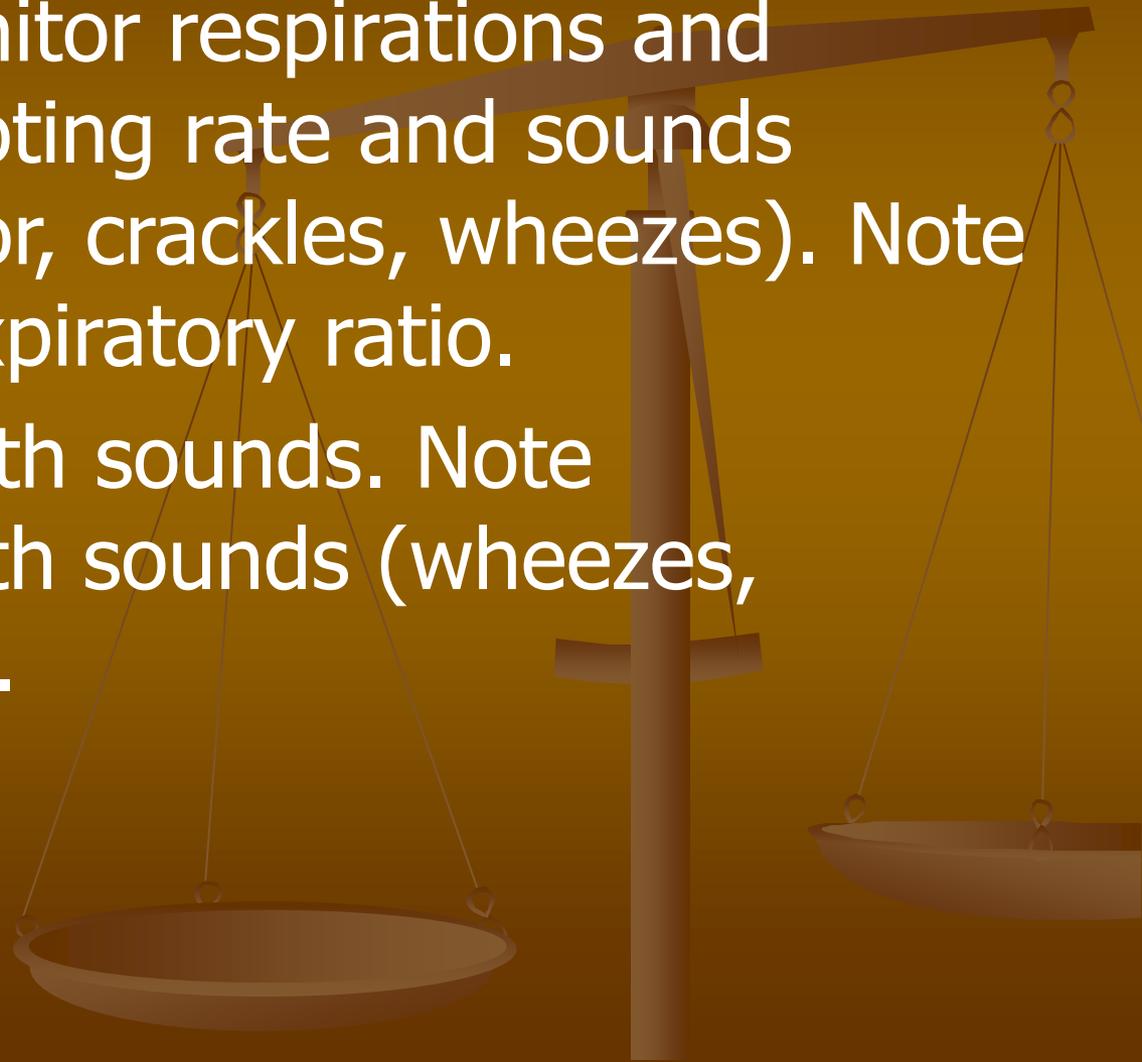
- Statement of difficulty breathing
- Changes in depth/rate of respirations, use of accessory muscles
- Abnormal breath sounds, e.g., wheezes, rhonchi, crackles
- Cough (persistent), with/without sputum production

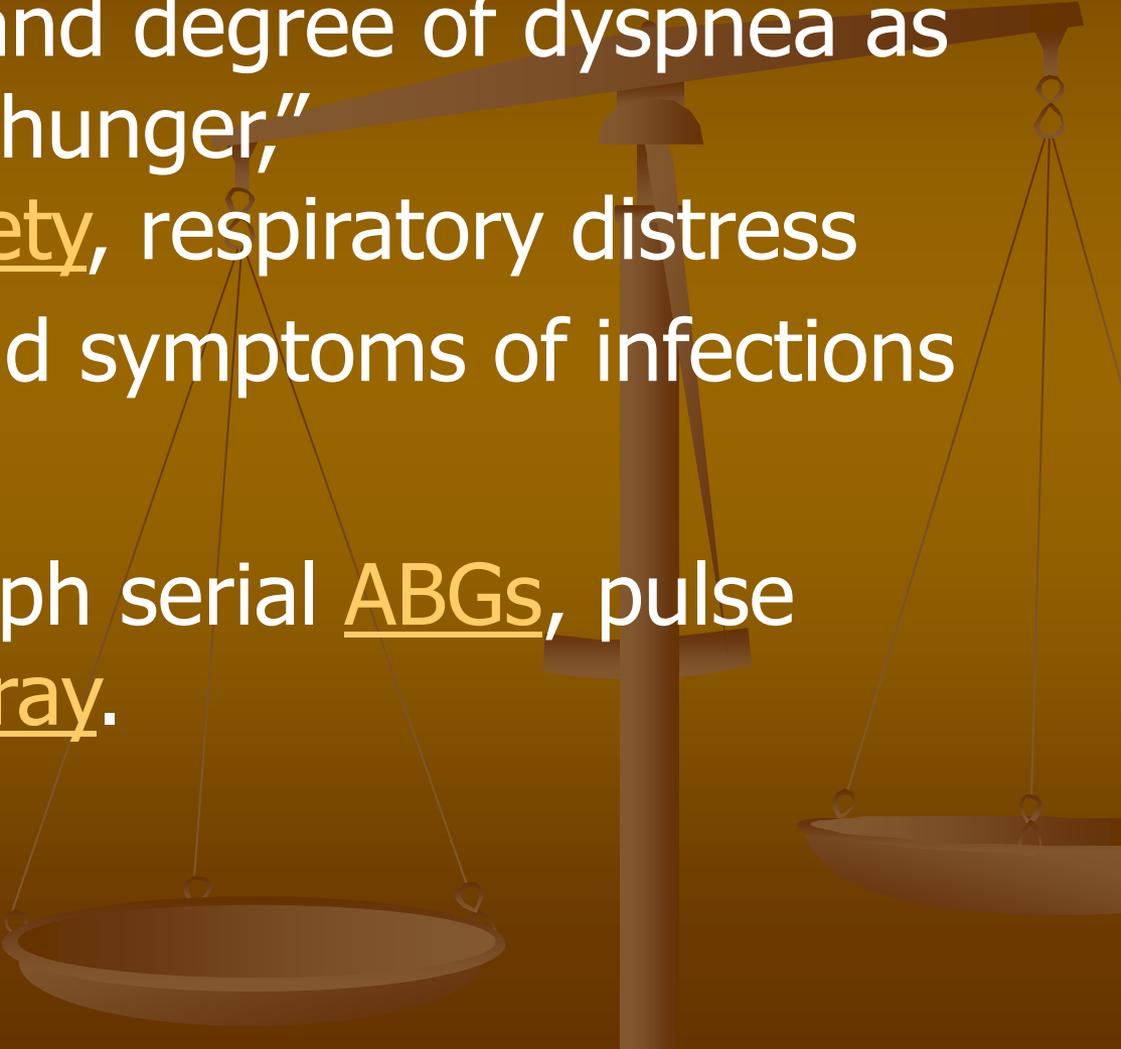


Nursing ASSESSMENT

1-Assess and monitor respirations and breath sounds, noting rate and sounds (tachypnea, stridor, crackles, wheezes). Note inspiratory and expiratory ratio.

2-Auscultate breath sounds. Note adventitious breath sounds (wheezes, crackles, rhonchi).





3-Note presence and degree of dyspnea as for reports of “air hunger,” restlessness, anxiety, respiratory distress

4-Observe sign and symptoms of infections

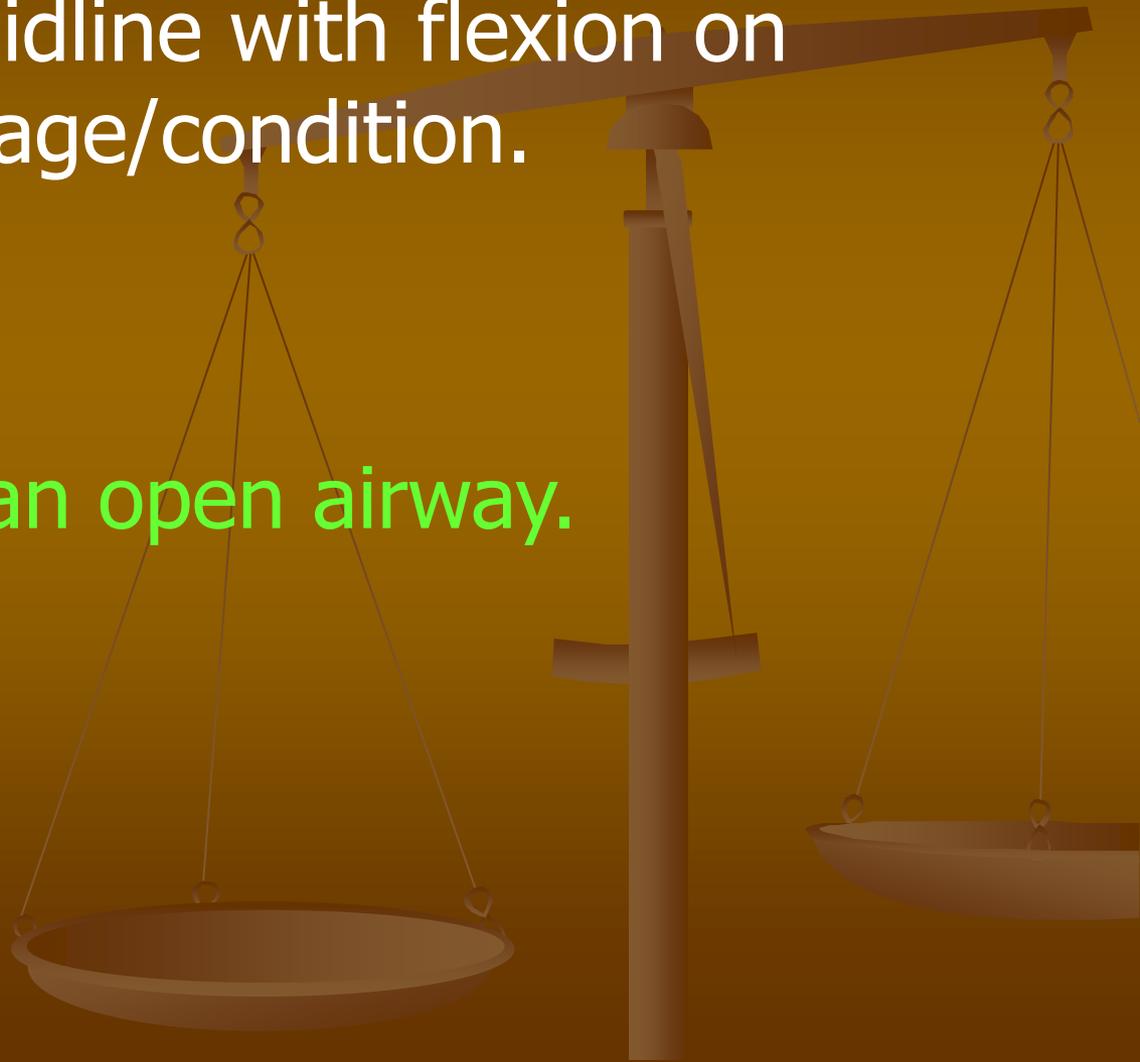
5-Monitor and graph serial ABGs, pulse oximetry, chest x-ray.

NURSING INTERVENTION

- Position head midline with flexion on appropriate for age/condition.

WHY ?

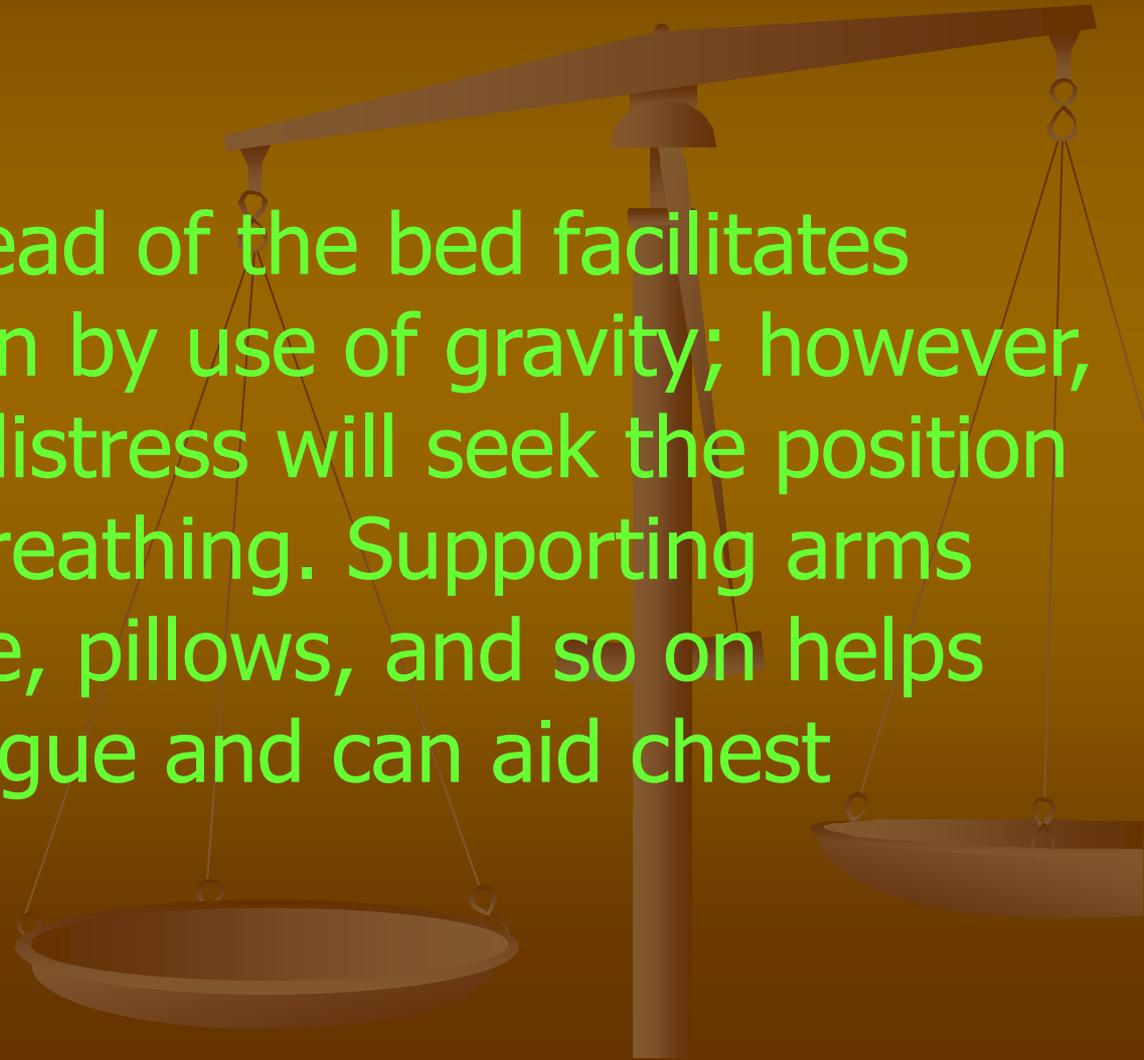
Gain or maintain an open airway.

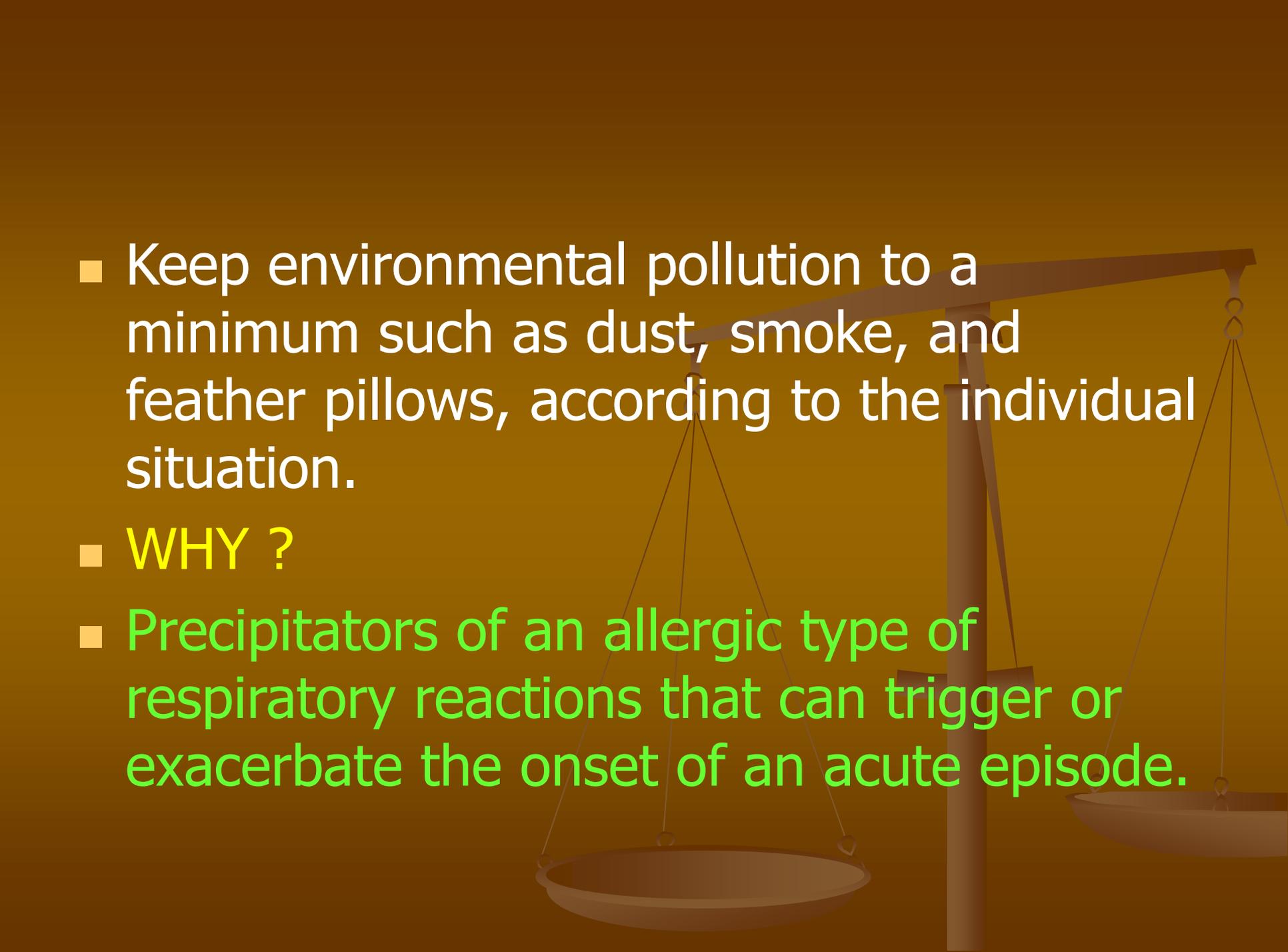


- Assist the patient to assume a position of comfort (elevate the head of the bed, have patient lean on an overbed table or sit on edge of the bed).

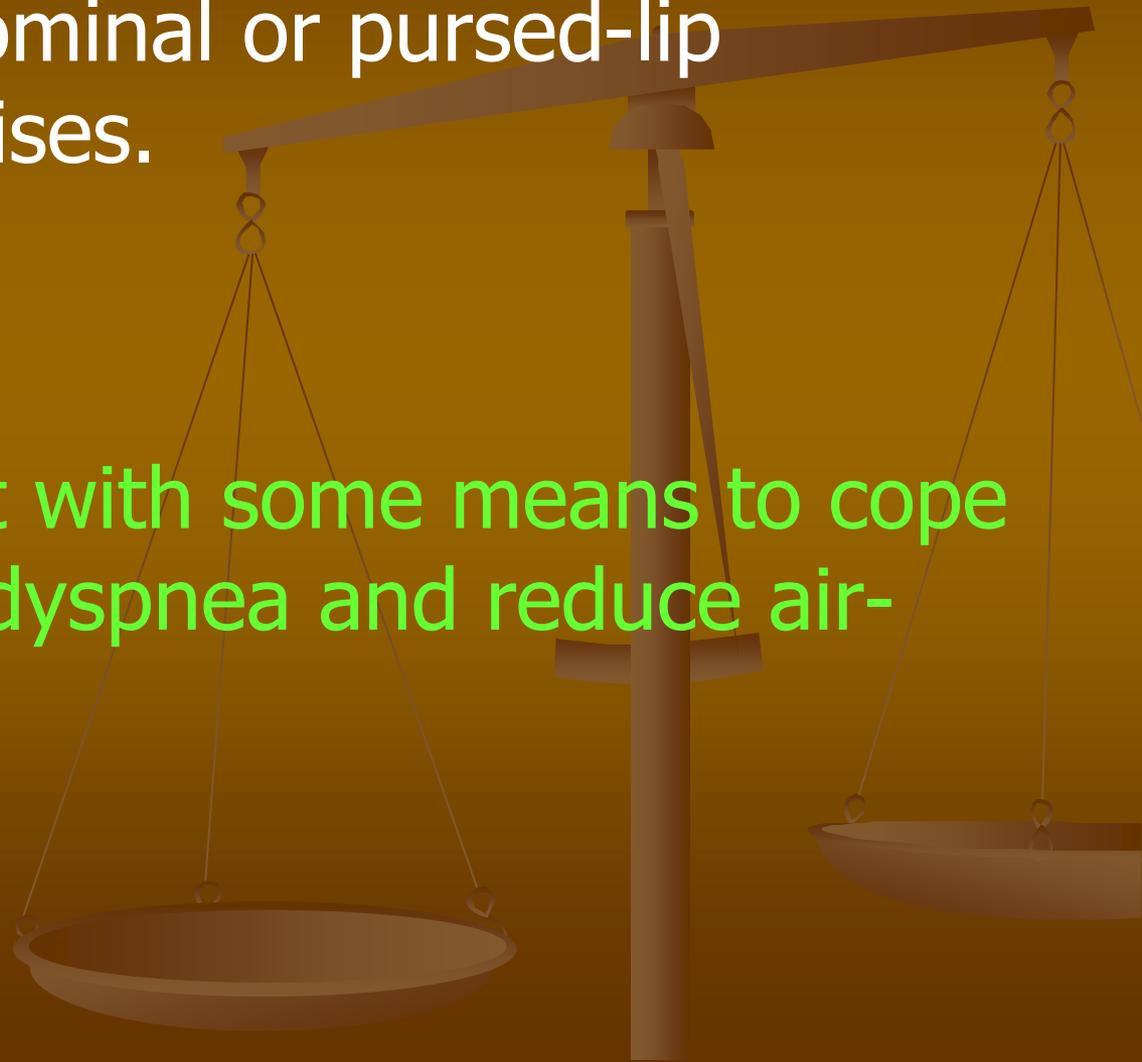
- **WHY?**

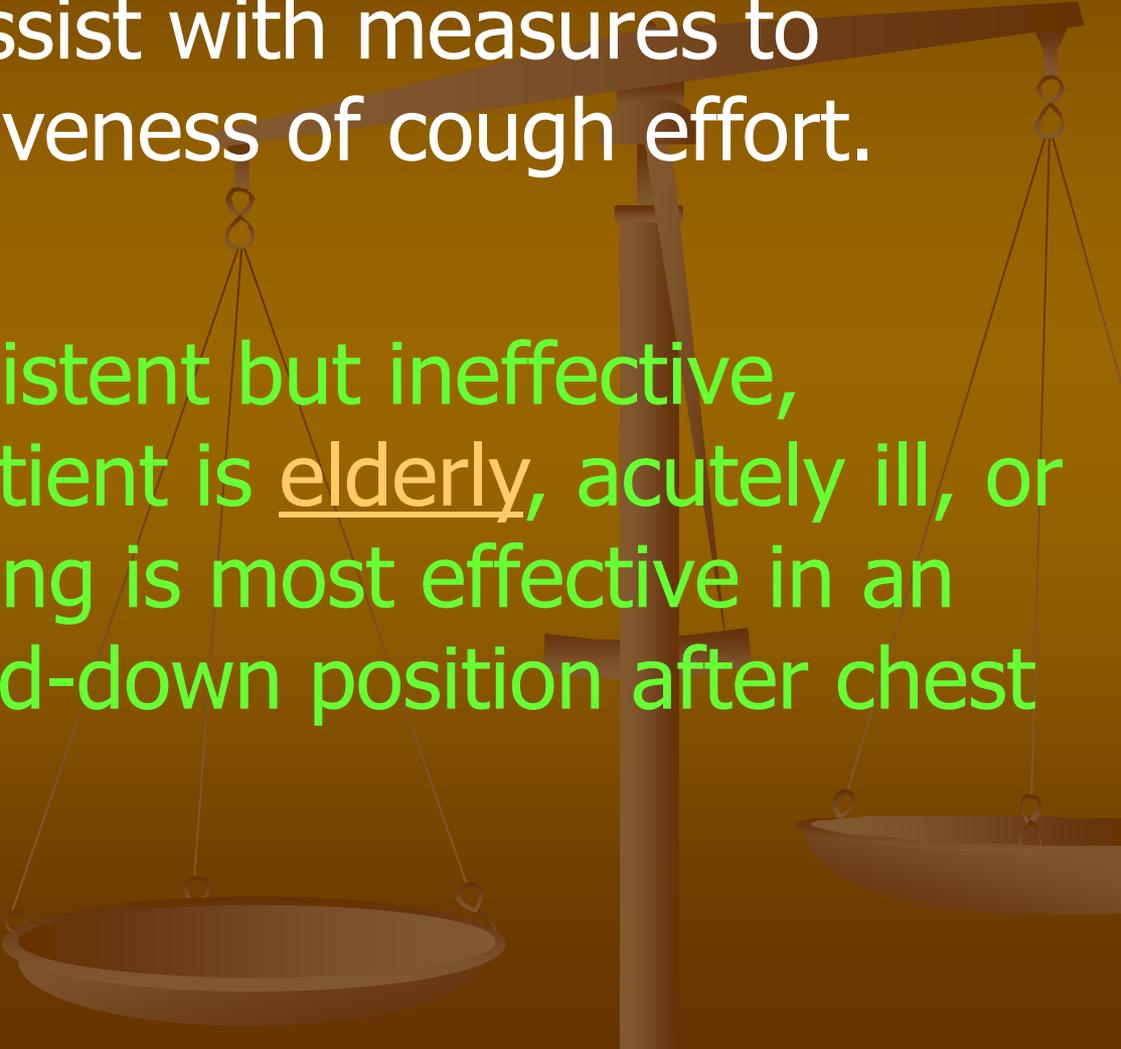
- Elevation of the head of the bed facilitates respiratory function by use of gravity; however, patient in severe distress will seek the position that most eases breathing. Supporting arms and legs with table, pillows, and so on helps reduce muscle fatigue and can aid chest expansion.



- 
- Keep environmental pollution to a minimum such as dust, smoke, and feather pillows, according to the individual situation.
 - **WHY ?**
 - Precipitators of an allergic type of respiratory reactions that can trigger or exacerbate the onset of an acute episode.

- Encourage abdominal or pursed-lip breathing exercises.
- WHY ?
- Provides patient with some means to cope with or control dyspnea and reduce air-trapping.

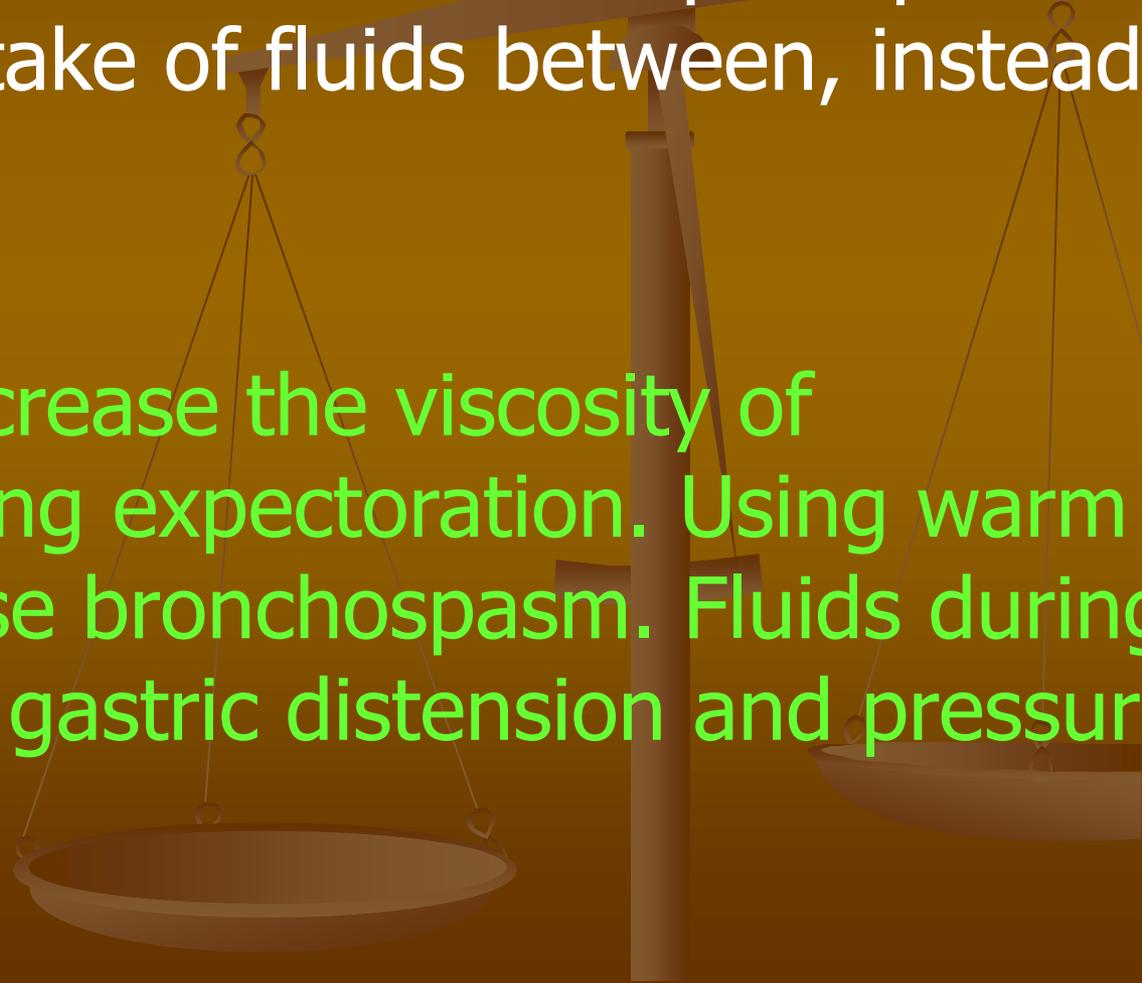


- 
- Observe characteristics of cough (persistent, hacking, moist). Assist with measures to improve the effectiveness of cough effort.
 - **WHY?.**
 - Cough can be persistent but ineffective, especially if the patient is elderly, acutely ill, or debilitated. Coughing is most effective in an upright or in a head-down position after chest percussion.

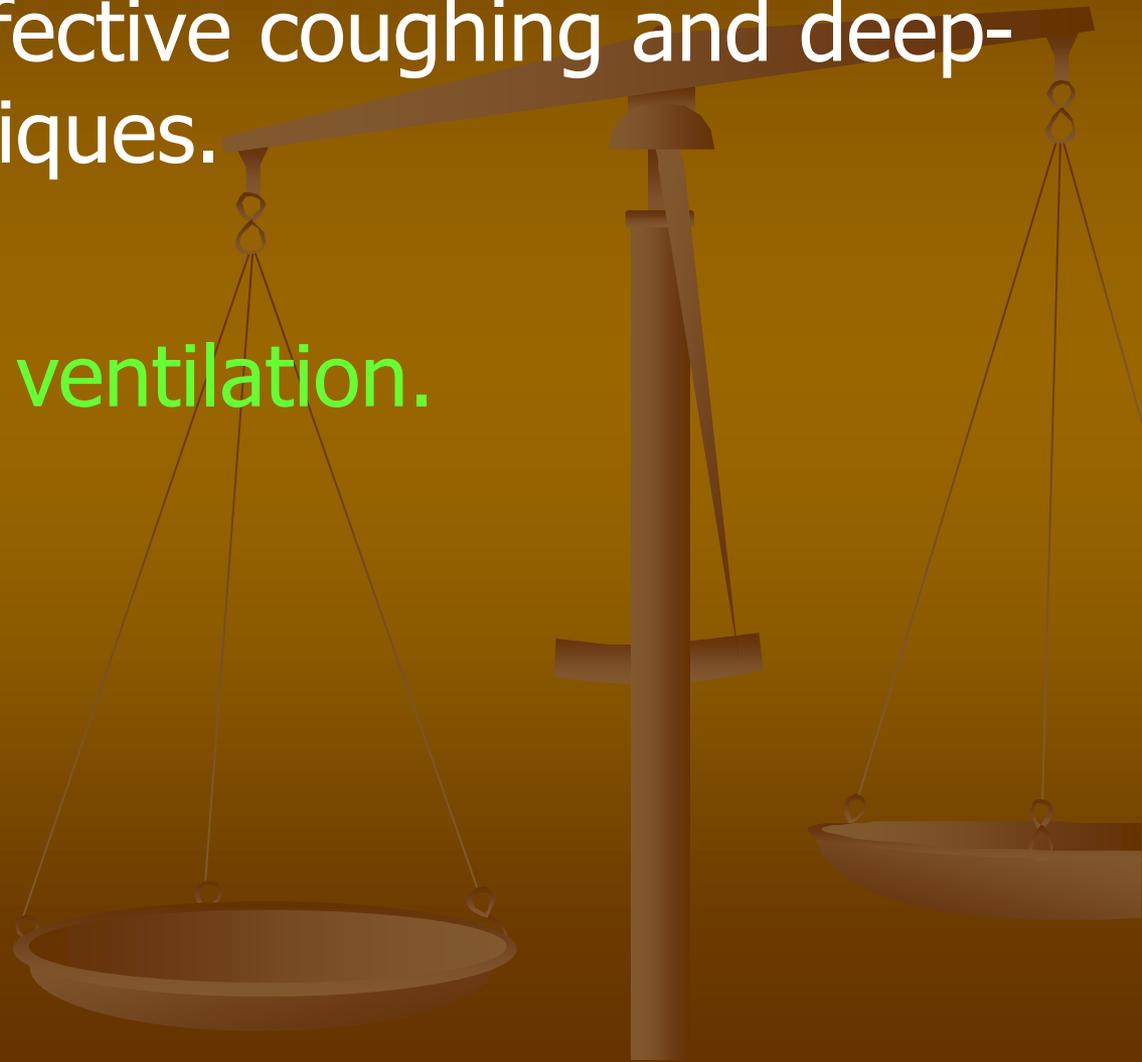
■ Increase fluid intake to 3000 mL per day within cardiac tolerance. Provide warm or tepid liquids. Recommend the intake of fluids between, instead of during, meals.

■ WHY?

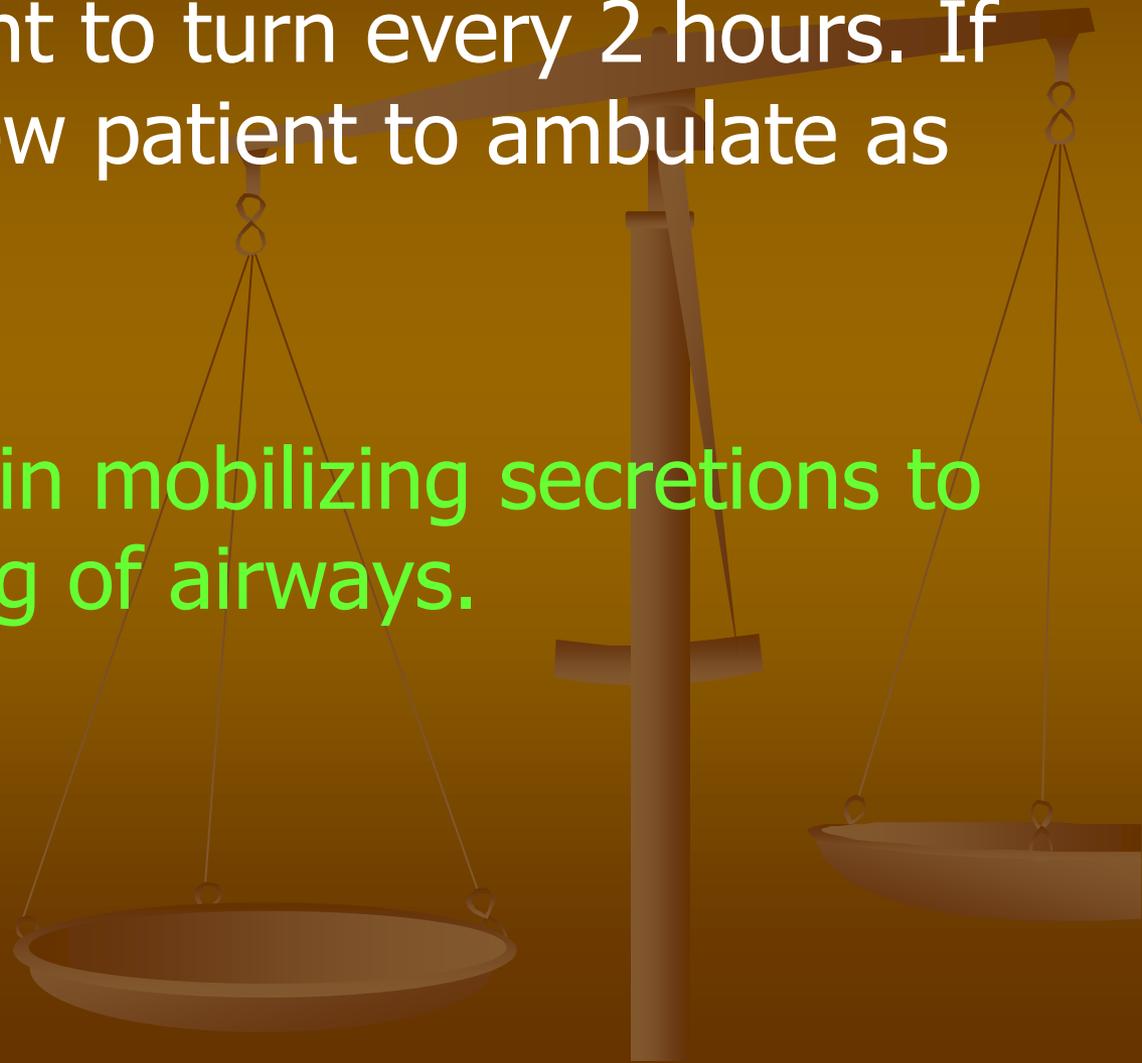
■ Hydration helps decrease the viscosity of secretions, facilitating expectoration. Using warm liquids may decrease bronchospasm. Fluids during meals can increase gastric distension and pressure on the diaphragm



- Demonstrate effective coughing and deep-breathing techniques.
- WHY ?
- Helps maximize ventilation.

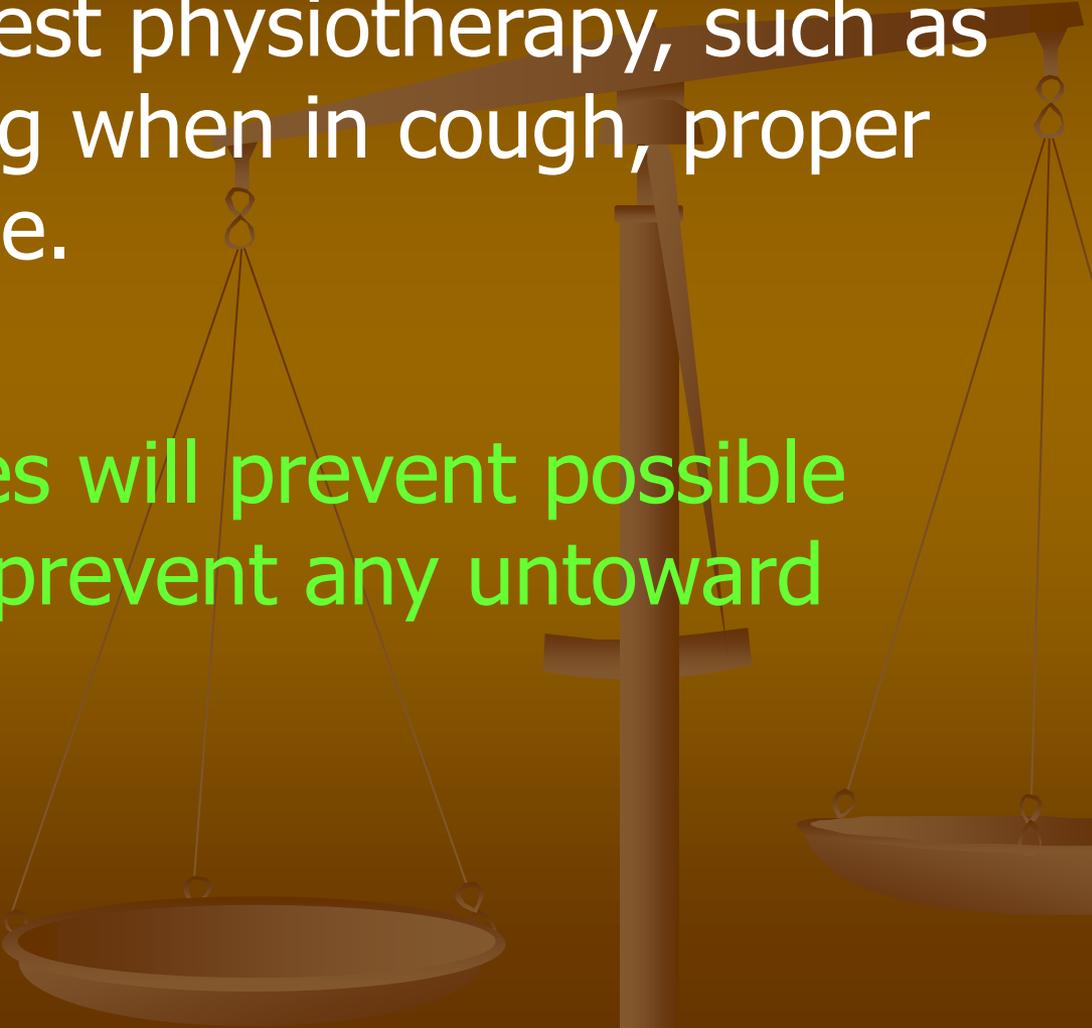


- Assist the patient to turn every 2 hours. If ambulatory, allow patient to ambulate as tolerated.
- WHY ?
- Movement aids in mobilizing secretions to facilitate clearing of airways.

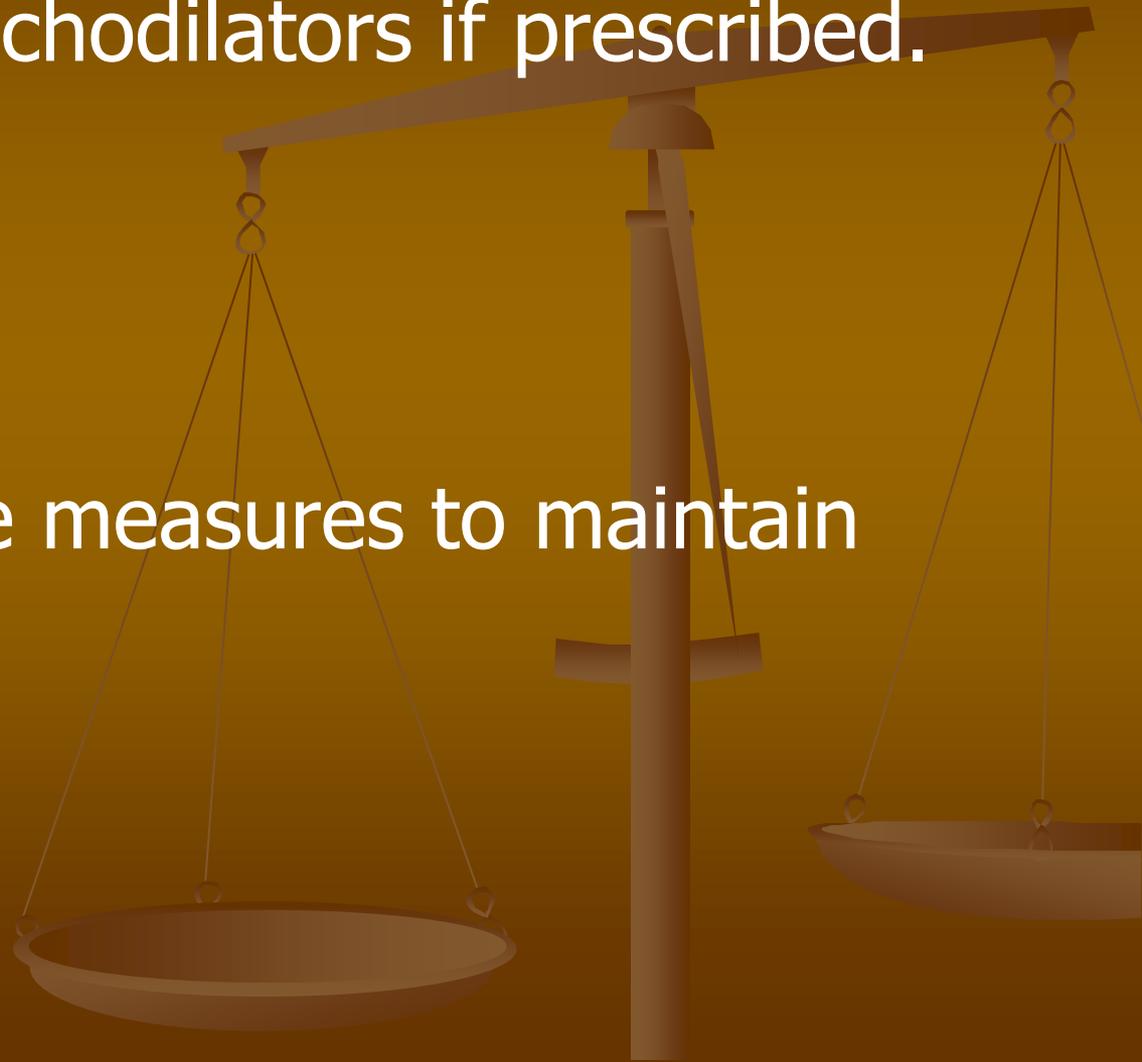


- Suction secretions as needed.
- WHY ?
- Suctioning clear secretions that obstruct the airway therefore improves oxygenation.



- 
- Demonstrate chest physiotherapy, such as bronchial tapping when in cough, proper postural drainage.
 - WHY ?
 - These techniques will prevent possible aspirations and prevent any untoward complications

- Administer bronchodilators if prescribed.
- WHY ?
- More aggressive measures to maintain airway patency.





Dedicated to you