

# Respiratory Diseases Relevant to Dentistry

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# Respiratory Diseases Relevant to Dentistry

- Common respiratory diseases
- Oral manifestations of respiratory diseases
- Oral complications to commonly used respiratory medication
- When to defer dental treatment, and request P. opinion?
- How to deal with patients with some respiratory disease?
- Management some acute cases?
- Conclusion

# Respiratory Diseases Relevant to Dentistry

What Dentist should know?

# Pulmonary Diseases

- The most common cause of presentation to FP
- The second cause of death
- COPD = forth cause of death
- Bronchial Carcinoma the first cause of death from cancer
- Respiratory Infections > 70% of infections
- Respiratory Infections > 25% of presentation to GP
- Asthma occurs >10% in developed countries.
- PE = third cause of cardiovascular diseases
- Sleep Apnea Syndrome = third most common cause of chronic respiratory diseases after asthma and COPD

# Points in the history of patients with respiratory disease

- Smoking history
- Coughing, sputum and color
- Hemoptysis
- Dyspnea
- ARTI/LRTI
- TB, Sarcoidosis, Cancer

- Oral manifestations of respiratory diseases :
  1. Ulceration (TB)
  2. Hyper pigmentation (lung cancer)
  3. Xerostomia
  4. Gingival swelling (sarcoidosis)

# Respiratory diseases implicated in dental care

- How to deal with patients with:
  1. COPD
  2. Asthma
  3. Cystic Fibrosis and Bronchiectasis
  4. OSA (Preparing and fitting oral devices? )
  5. Tuberculosis
  6. Inhalation medication
  7. Foreign body aspiration

# COPD

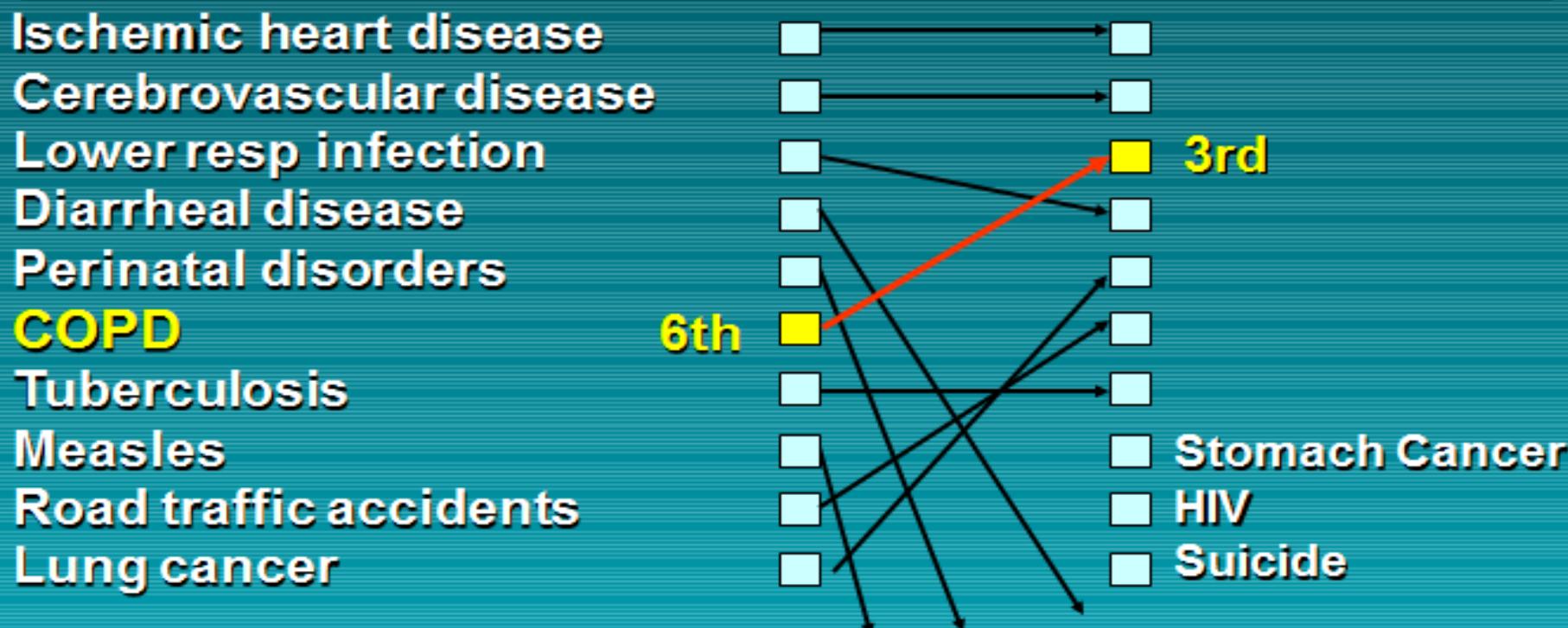
- Definition:

COPD a common preventable and treatable disease, characterized by persistent airflow limitation, usually progressive, associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases.

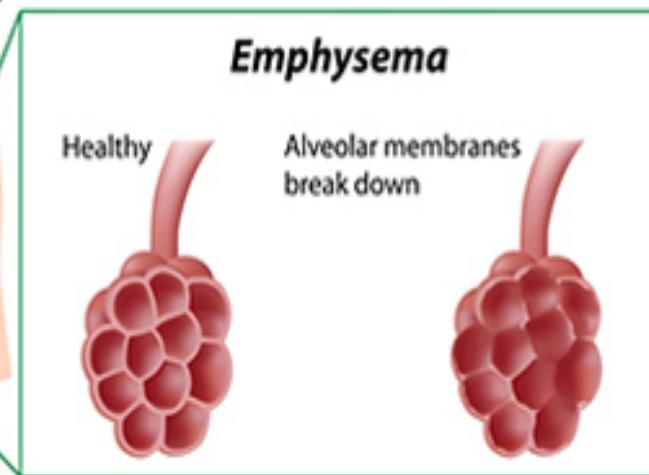
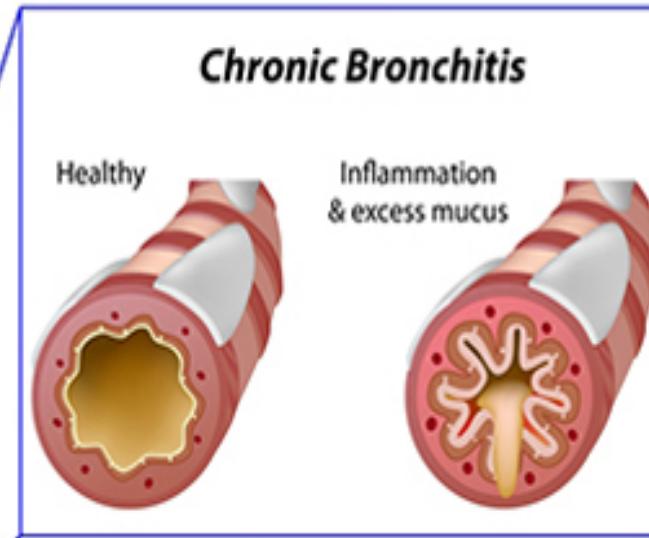
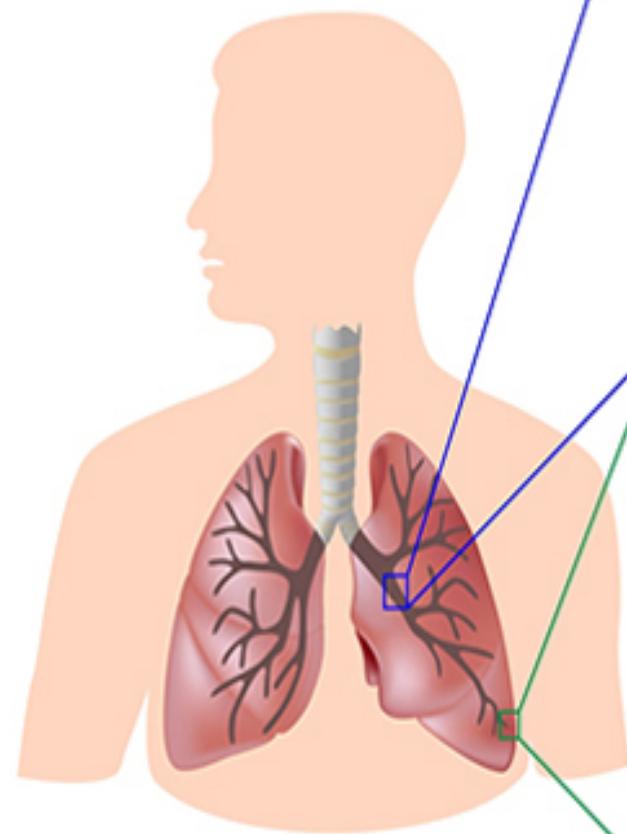
# COPD



## Future Mortality Worldwide



# COPD



# COPD

- Symptoms:
- Chronic cough: May be intermittent
- Chronic sputum production
- Dyspnea: Progressive

# COPD

## Diagnosis

Syndrome obstructive =  $\text{FEV}_1/\text{FVC} < 70\%$

# COPD

- Oral manifestations:
  - Periodontitis
  - Oral thrush, dental plaque, gingival bleeding, pocket depth, tooth loss

# COPD

## Respiratory Failure

- No AECOPD
- Vertical position
- Able to offer O<sub>2</sub>
- Avoid: hypnotics, narcotics
- Avoid interaction: theophylline with macrolide
- Ambulatory general anesthesia is contraindication

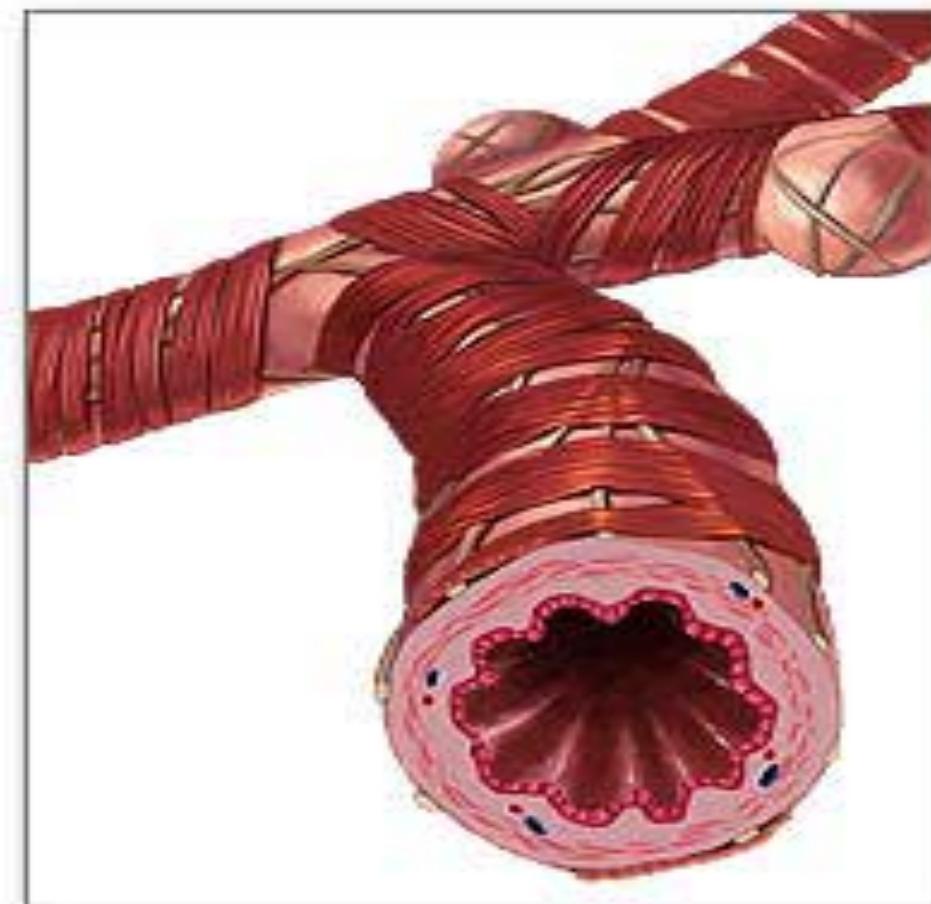
# Asthma

## Definition

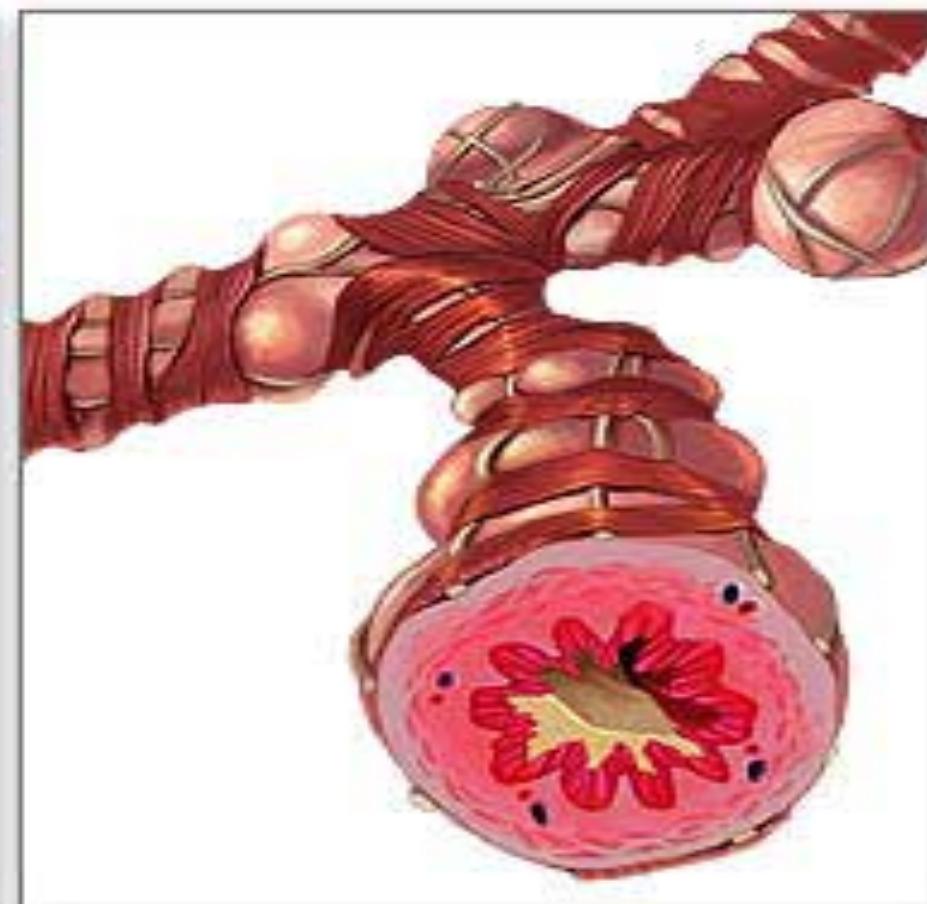
Chronic inflammatory disorder of the airways associated with narrowing and hyperresponsiveness, leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, reversible spontaneous or by treatment

# Asthma

Normal bronchiole

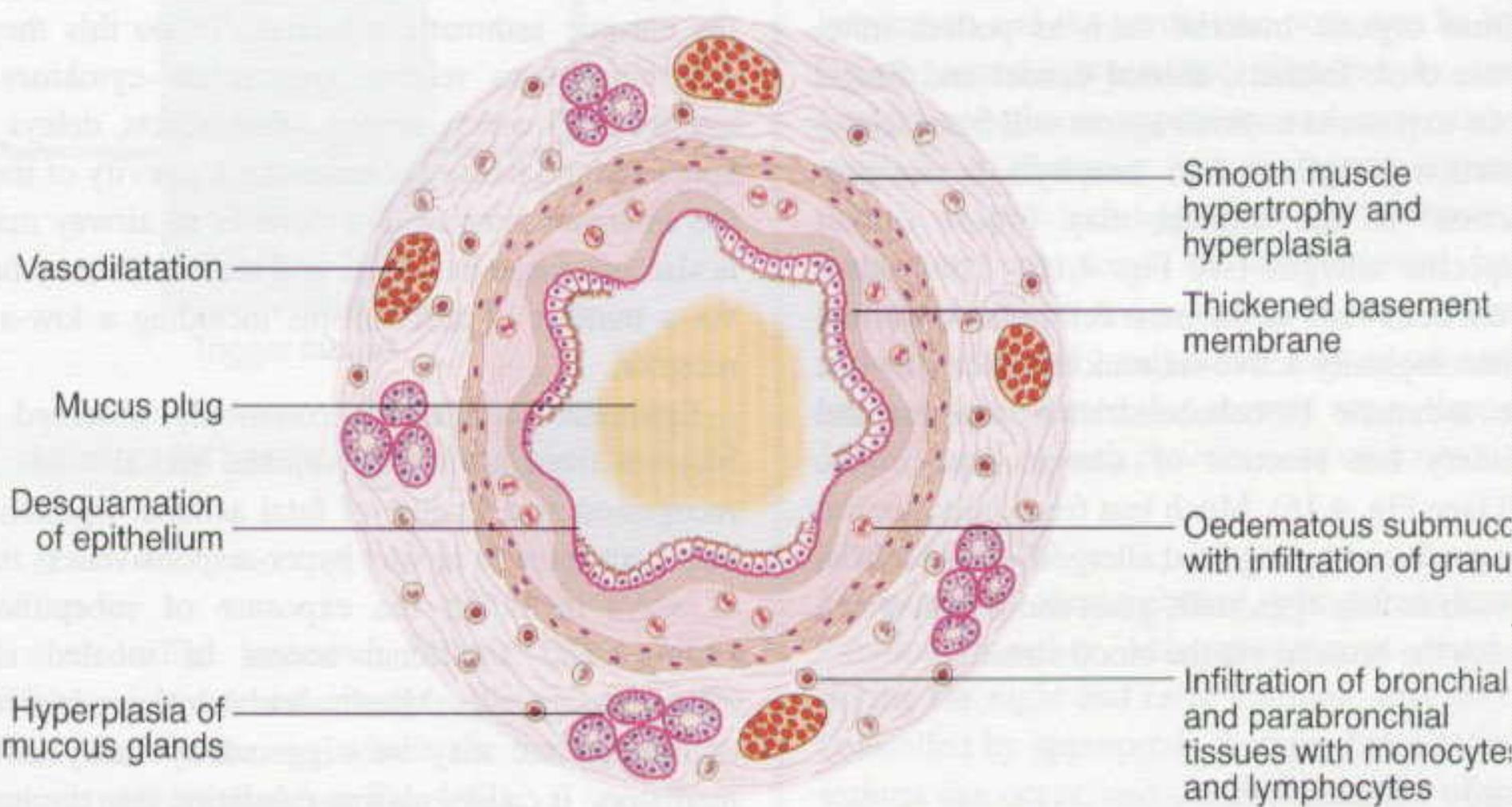


Asthmatic bronchiole



# Asthma

- Pathophysiology:



# Asthma

- Factors that Exacerbate Asthma:

- Allergens
- Respiratory infections
- Exercise and hyperventilation
- Weather changes
- Sulfur dioxide
- Food, additives, drugs

# Asthma

- Oral manifestations:
  - Dental cavities
  - Erosions
  - periodontal disease
  - Oral candidiasis
  - Beta-agonists reduce salivary secretion
  - Mouth breathing leads to gingival inflammation

# Asthma

- Treatment should be outside the asthma attack
- Patient with his medications
- Treatment carried out using LA if possible

# Asthma

- Management of asthma attack (Primary therapies ):
  1. Suspend the dental procedure
  2. Inhalation of B<sub>2</sub> agonist
  3. Administer O<sub>2</sub>
  4. Intravenous prednisolone
  5. Administer sc. Adrenaline ( i:1000 sol. 0.01mg/kg )
  6. Notify the emergency medical service

# Asthma

- Drugs to be avoided:
  1. Aspirin 10-28%
  2. NSAID ( Intrinsic asthma )
  3. Macrolide with theophylline
  4. Opiates
  5. Local anesthesia without adrenalin ( sulfite preservative )
  6. Prolong systemic corticosteroid treatment : Adrenal crisis (hypotension, collapse and death will occur)

# oxygen administered via nasal cannula



# Tuberculosis

- One-third of the world population are infected
- Highest rates in sub-Saharan Africa, India, China
- 95% occur in developing countries
- Half million of MDR TB occur annually

# Tuberculosis

- Systemic Symptoms of TB

- Fever
- Chills
- Night sweats
- Appetite loss
- Weight loss
- Fatigue

# Tuberculosis

- Symptoms of Pulmonary TB
  - Productive, prolonged cough (duration of 2-3 weeks)
  - Chest pain
  - Hemoptysis (bloody sputum)

# Tuberculosis

- Oral TB:
  1. Very rare
  2. Manifestation: irregular ulceration with polygonal margins, possible peripheral induration and dirty base ( similar to scc)
  3. Postpone all non-emergency dental treatment
  4. Emergency dental treatment: adaption respiratory protection

# Bronchiectasis

- Irreversibly bronchial dilatation
- Recurrent infections
- Sinusitis

# Cystic Fibrosis

- Genetic disorder caused by mutations in the gene (CFTR)
- Oral manifestations:
  - Tooth discoloration
  - Salivary gland enlargement
  - Increased risk of caries
  - Colonization of bacteria
  - Dental malocclusions

# OSA

Definition : AHI > 5/H + symptoms  
                  >15/H

# OSA



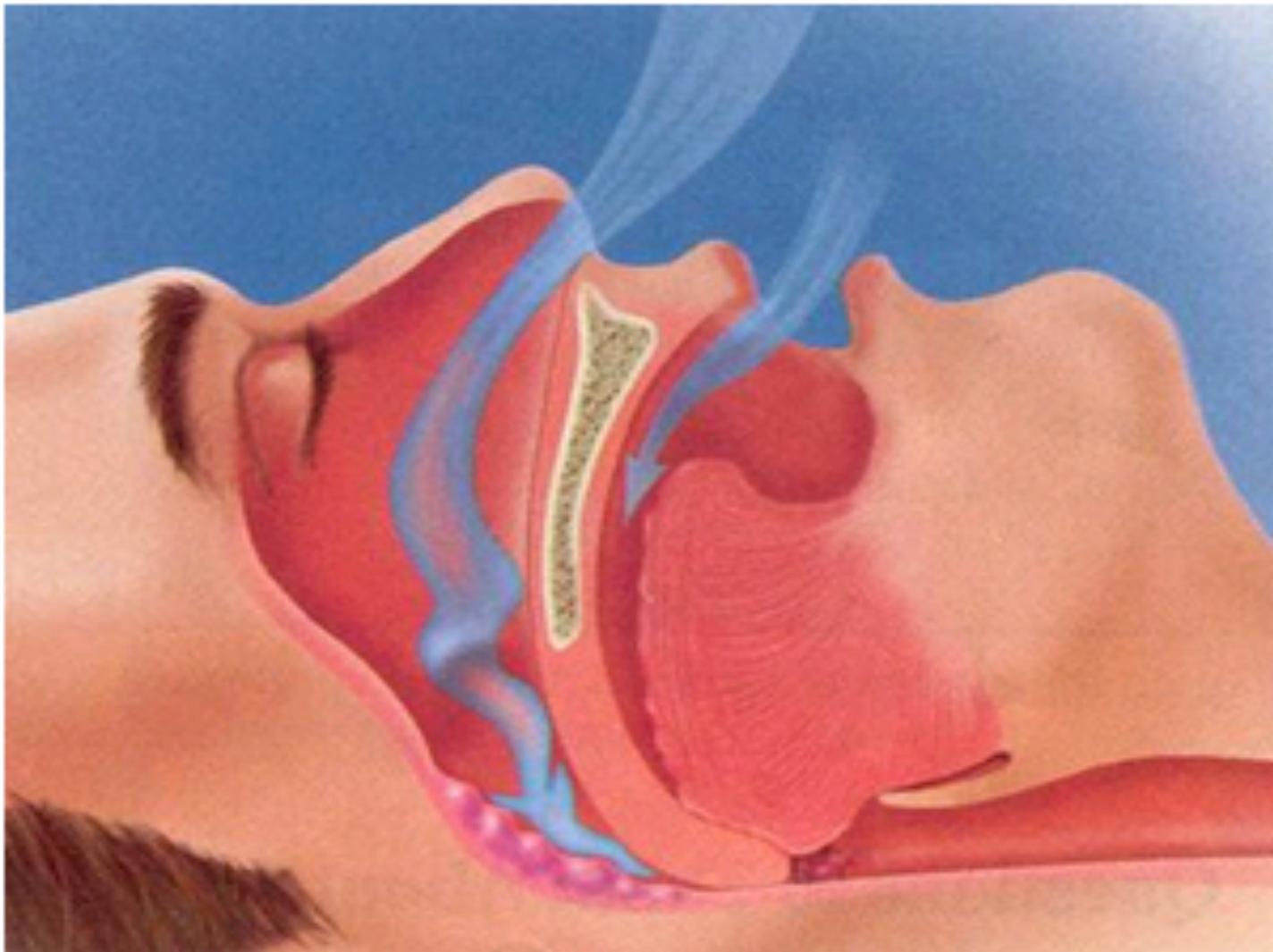
## Normal Breathing

- Airway is open
- Air flows freely to lungs



## Obstructive Sleep Apnea

- Airway collapses
- Blocked air flow to lungs



# OSA

- Prevalence:

- In male = 15%
- In female = 5%
- In children= 1-5 %

# OSA

- Clinical manifestations:
  - Snoring + daytime sleepiness : the most common

# OSA

- Preparing and fitting oral devices:
  1. Tongue retainer
  2. Mandible advancing device

# Foreign body aspiration

- Prevention is the best approach
- Sit up the patient and instructed to cough forcefully
- Heimlich maneuver
- Move the patient to the nearest emergency medical center

## Heimlich Maneuver



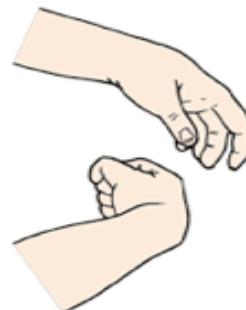
1. Lean the person forward slightly and stand behind him or her.



3. Put your arms around the person and grasp your fist with your other hand near the top of the stomach, just below the center of the rib cage.



4. Make a quick, hard movement, inward and upward.



2. Make a fist with one hand.

Place the infant stomach-down across your forearm and give five thumps on the infant's back with heel of your hand

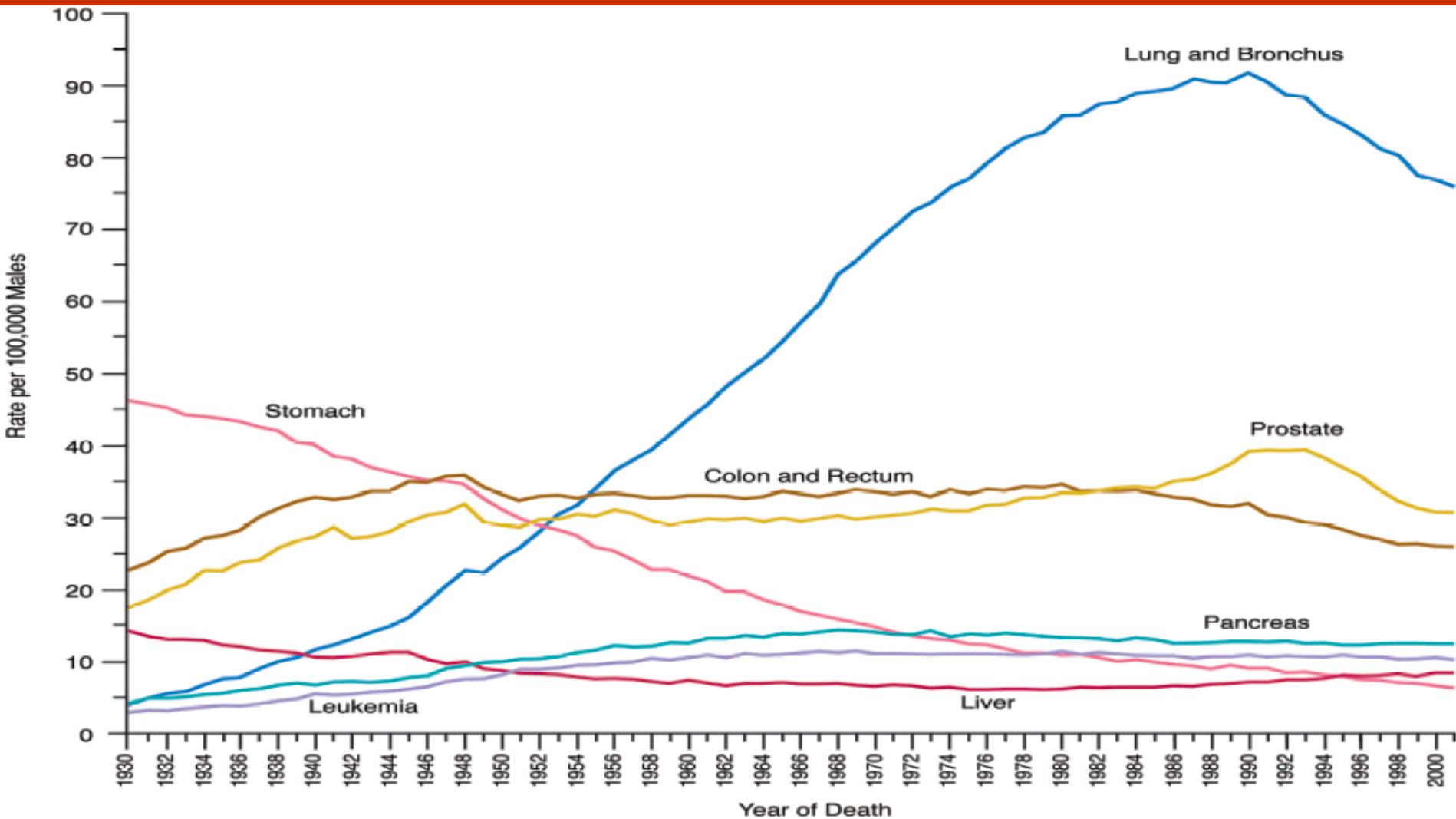


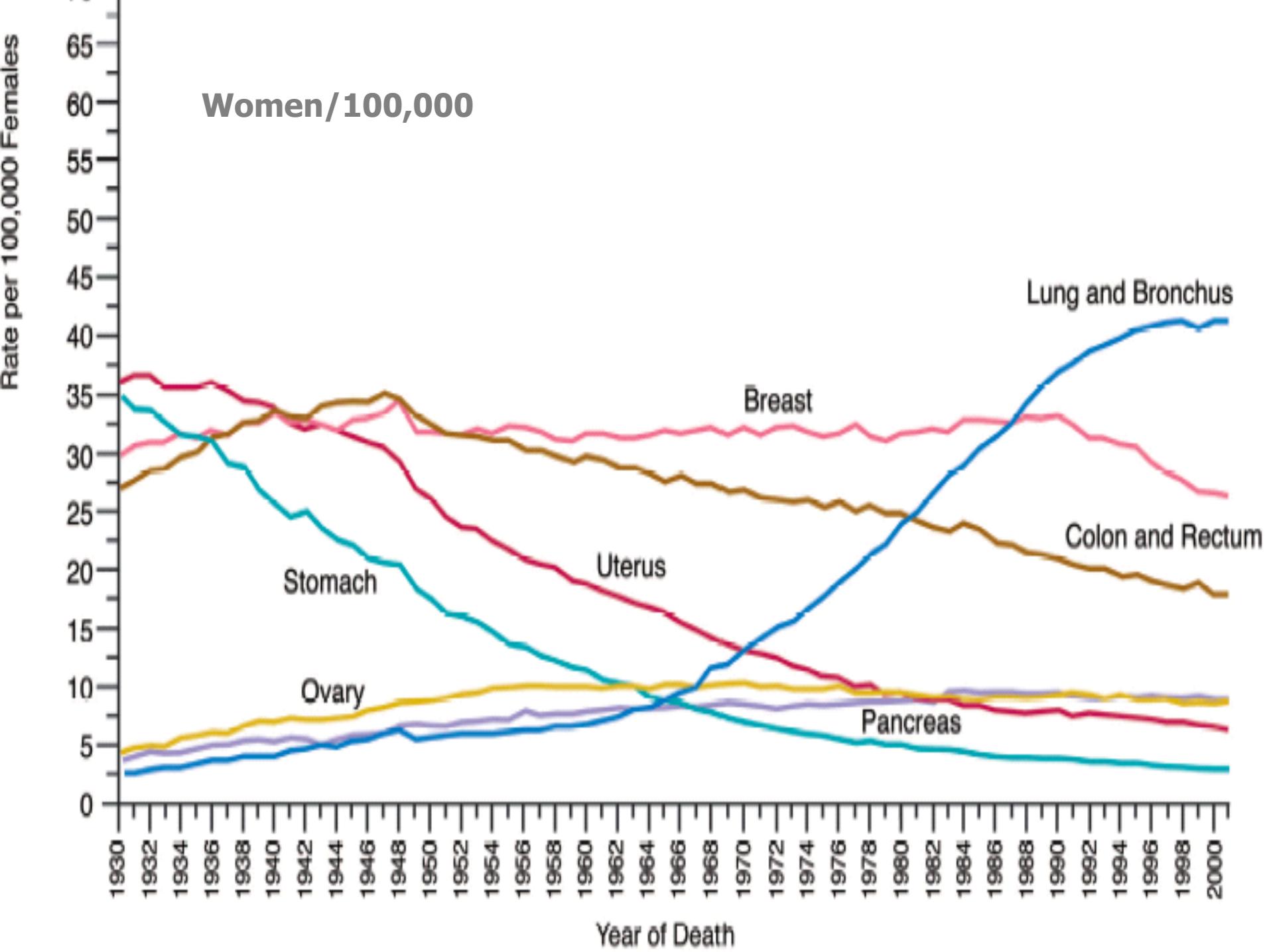
ADAM



Place fist above navel while grasping fist with other hand. Leaning over a chair or counter-top, drive your fist towards yourself with an upward thrust

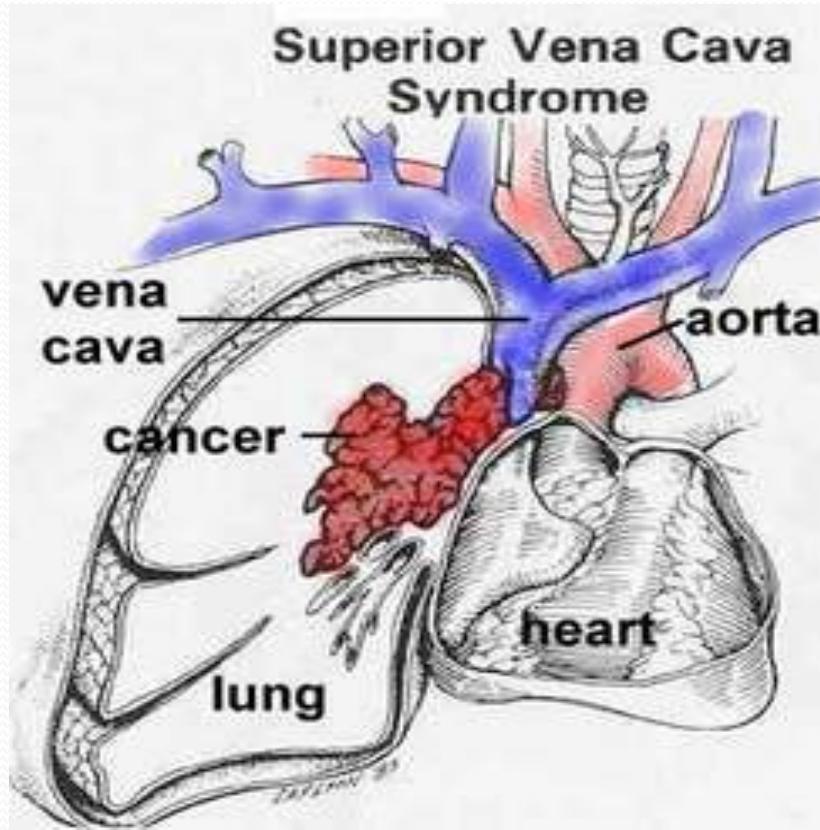
# Lung cancer

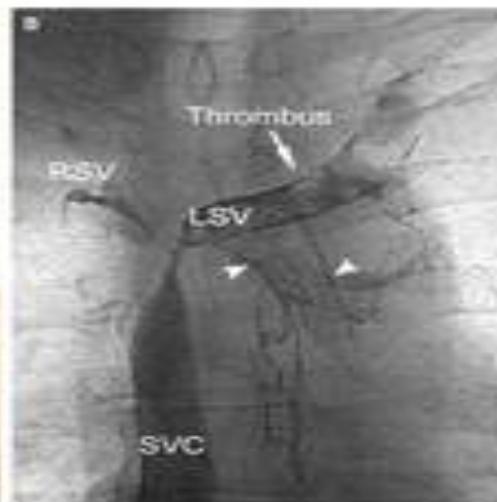




# Lung Cancer

- Bone metastases including the facial bones
- Superior Vena Cava Syndrome





# Sarcoidosis

- Multi-system disorder
- Unknown aetiology
- Affects the lungs of young adults mostly

# Sarcoidosis

- Oral manifestations:
  - Gingivitis
  - Localized swelling or nodules
  - Non tender ulcerations
  - Rarely enlargement and ulcerations in tongue + salivary glands
  - Parotid gland impairment

# Relevance of drugs in respiratory disorders

- Corticosteroids
- Beta adrenergic agonist bronchodilators
- Antimuscarinic bronchodilators
- Cromoglycate
- Antihistamines
- Cough suppressants and decongestants

# Relevance of drugs in respiratory disorders

- Oral manifestations:

- Xerostomia
- Dental cavities
- Halitosis
- Ulcerations
- Candidiasis
- Mucosal changes
- Gingivitis
- Periodontitis

# Respiratory disorders in local anaesthesia, sedation, general anaesthesia and management in dental practice

- General anaesthesia can participate respiratory failure
- In active TB GA is contra-indicated
- Respiratory disorders may evoked by IV sedation, GA, drugs side effects

## ● Conclusion:

1. Respiratory problems affect many aspects of dental treatment
2. Proper history is important to prevent serious problems
3. The dentist should know some of respiratory diseases
4. The dentist should know how to manage asthma attack and foreign body aspiration
5. Significant respiratory problems best treated in the hospital.



Thank you