# PULMONARY PATHOLOGY

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I. Pulmonary and airway anatomy and physiology
   A. Upper airway functions
   B. Air exchange
   C. Pulmonary surfactant

II. Respiratory distress syndromes
   A. Of newborn
   B. Of adult

III. Obstructive lung diseases
   A. Pulmonary function tests
      1. Volumes (TLC, RV, FRC, TV, IRV, ERV)
      2. Flow
   B. Reversible obstruction – Asthma
   C. Smokers' lung diseases
      1. Chronic bronchitis
         a. Defined clinically as chronic, productive cough
         b. Reid index
      2. Centrilobular emphysema
         a. Defined pathologically as destruction of lung tissue
         b. Mechanisms of obstruction – radial support vs. wall fibrosis and inflammation
         c. V-Q (ventilation/perfusion) mismatch contributing to desaturation
         d. Proteolytic pathogenesis
   D. Panlobular emphysema and alpha-1-antiprotease deficiency

IV. Infectious lung diseases
   A. Pyogenic pneumonia
      1. Lobar pneumonia
      2. Bronchopneumonia
   B. Non-pyogenic pneumonia – TB and other agents
   C. Opportunistic infections in compromised hosts

V. Occupational lung diseases
   A. Immunologic such as farmers' lung
   B. Inhaled particles
      1. Silicosis
      2. Asbestosis

VI. Neoplastic lung diseases
   A. Etiology
      1. Smoking
      2. Occupational exposures
   B. Properties of malignancy – invasiveness and metastasis
   C. Latency
   D. Stage
   E. Cell types
      1. Squamous cell
      2. Adenocarcinoma
      3. Large cell carcinoma
      4. Small cell carcinoma

VII. Interstitial lung diseases
   A. Clinical presentation with breathlessness
   B. Bronchiolitis obliterans with obstructive pneumonia (BOOP) as an example
   C. Endstage honey-comb lung
   D. Various diseases can cause honey-comb lung
      1. Sarcoidosis
      2. Usual interstitial pneumonia
      3. Desquamative interstitial pneumonia
      4. Eosinophilic granuloma
      5. Hamann-Rich syndrome

VIII. Pulmonary vascular diseases
   A. Pulmonary thrombo-embolism
   B. Hypoxia and pulmonary hypertension
   C. Primary pulmonary vascular diseases