Types of Emphysema				
	Centriacinar	**Panacinar**	**Paraseptal (distal acinar)**	**Irregular**
Cause	Occur in heavy smokers	Occur in α_1-anti-trypsin deficiency	Occur adjacent to areas of fibrosis, scarring or atelectasis	A complication of inflammation -> TB Associated with scarring
More common in	Upper lobes (apical segments)	The lower lung zones	The upper half of the lungs	Found in autopsy
Which part of acini	The central or proximal parts of the acini are affected	From: the level of the respiratory bronchiole To: the terminal blind alveoli	The distal part of acinar unit	The acinus is irregularly involved
Features	• Associated with chronic bronchitis. • Black pigment. • Inflammation around bronchi & bronchioles.	Uniform injury: • Acini are uniformly enlarged.	Sometimes forming multiple cyst-like (sub-pleural bullae) structures with spontaneous pneumothorax.	• Asymptomatic

	Asthma	Chronic Bronchitis	Emphysema	Bronchiectasis
Definition	A chronic inflammatory disorder of the airways that causes recurrent episodes of reversible bronchoconstriction caused by increased responsiveness of the tracheobronchial tree to various stimuli.	COPD which initially involves the large airways. The clinical definition of chronic bronchitis is a productive cough (with sputum) that occurs during at least 3 consecutive months over at least 2 consecutive years. "Blue Bloaters"	Abnormal permanent dilation of air spaces distal to the terminal bronchioles with destruction of alveolar walls without significant fibrosis . "Pink Puffers"	permanent and abnormal dilation of bronchi and bronchioles caused by destruction of the muscle and the supporting elastic tissue. Resulting from or associated with chronic infection with inflammation and necrosis of the bronchial wall.
Etiology	- Genetic predisposition to type I hypersensitivity - Acute and chronic airway inflammation - Bronchial hyperresponsiveness to a variety of stimuli. - Intermittent airflow obstruction that can be caused by a variety of changes.	• Cigarette smoking. • Air pollutants. • Genetic factors e.g. cystic fibrosis. • Infection.	- Cigarette smoking - Hereditary alpha 1 antitrypsin deficiency	- Bronchial obstruction. - Congenital or hereditary conditions: - Cystic fibrosis. - Immunodeficiency states - Congenital bronchiectasis. - Intralobar sequestration of the lung. - Kartagener syndrome
Damage is	Reversible	Irreversible	Irreversible	Irreversible
Complications	-Superimposed infection -COPD disease -Pneumothorax -Airway remodeling. -Cor pulmonale -Status Asthmaticus	→ Might lead to cor pulmonale. → Cyanosis in severe cases. → Coexistent emphysema	- coexistent chronic bronchitis. - Interstitial emphysema - pneumothorax. - Death due to Pulmonary failure, with respiratory acidosis, hypoxia, and coma or cor pulmonale	- Persistent Hemoptysis. - Obstruction of pulmonary function. - Rarely, pulmonary hypertension, abscess formation, amyloidosis.
Symptoms	→ Wheezing → *Dyspnea* → chest tightness. → Chronic dry cough Particularly at night and/or early in the morning.	→ In early stages of the disease, the productive cough raises mucoid sputum, but airflow is not obstructed. → hyperresponsive airways with bronchospasm and wheezing. → Increased sleepiness → Hypercapnia and hypoxemia. → chronic hypoxemia. → Dyspnea	- Dyspnea (first symptom). - Cough and wheezing. - Reduced FEV1 - "holes" in the lung tissue. - decreased Tco. - Loss of elastic recoil - Weight loss is common - (Barrell-chest) - increased total vital capacity. - Advanced: hypoxia, cyanosis, acidosis.	- Dyspnea - Chronic cough - Fever - Hemoptysis - Clubbing of the fingers - Hypoxemia - Hypercapnia.