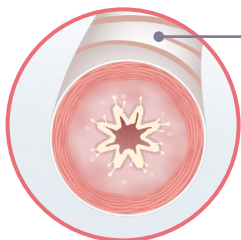
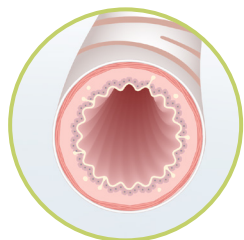


COPD AND PHARMACOLOGICAL TREATMENT



Chronic obstructive pulmonary disease (COPD) is an umbrella term for two distinct respiratory conditions, both characterized by chronic inflammation, airflow limitation, and tissue destruction. COPD results from prolonged exposure to harmful particles or gases. Cigarette smoking is the most common cause. While the condition is chronic and frequent exacerbations can occur, it is treatable through lifestyle measures and pharmacologic treatment.

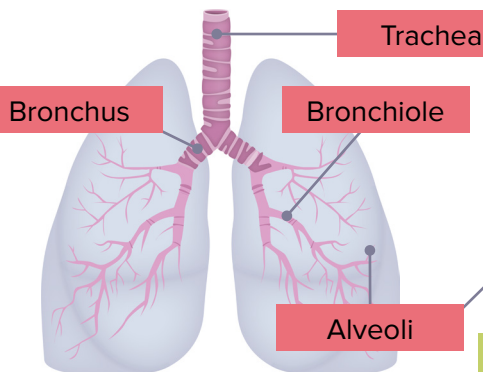
Chronic bronchitis



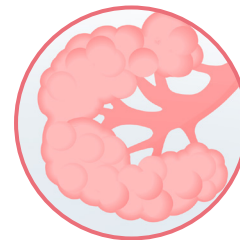
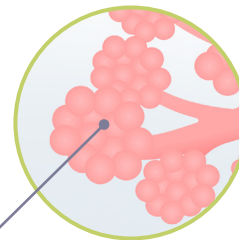
Healthy bronchi

Narrowed bronchi with phlegm

- Chronic bacterial colonization
- Inflammation of bronchial tubes
- Thick mucus limits air exchange.



Emphysema



Healthy alveoli

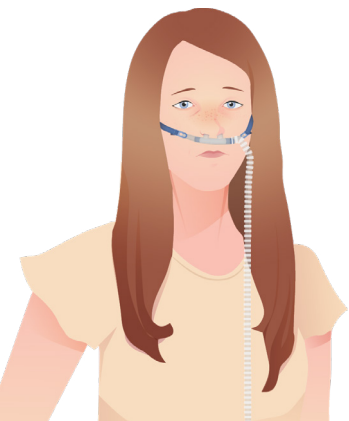
Alveoli with damaged membranes

- COPD signs & symptoms:**
- Shortness of breath
 - Air hunger
 - Pursed-lip breathing
 - Chronic cough
 - Barrel chest
 - Low oxygen level
 - High carbon dioxide

- Alveoli damaged and enlarged
- Membrane between alveolar sacs destroyed
- Air trapping limits air exchange.

Lifestyle measures

- Smoking cessation, if applicable
- Pulmonary rehabilitation



Pharmacologic treatment of COPD

Long-term			Acute
Bronchodilators	Inhaled corticosteroids	Phosphodiesterase-4 inhibitors	
<ul style="list-style-type: none"> • Promote smooth muscle relaxation, prevent bronchoconstriction • Long-acting beta-2 agonists (LABAs) • Long-acting antimuscarinics (LAMAs) • Methylxanthines 	<ul style="list-style-type: none"> • Decrease inflammation • Used in combination with LABA or LAMA • Beclomethasone • Budesonide • Fluticasone • Methylxanthines 	<ul style="list-style-type: none"> • Used in cases of severe COPD • Reduce inflammation by preventing breakdown of intracellular cyclic AMP • Roflumilast 	<ul style="list-style-type: none"> • Short-acting bronchodilators (SABAs) • Oral corticosteroids • Antibiotics if concern for bacterial infection • Oxygen therapy, ranging from nasal cannula to mechanical ventilation based on severity

NOTES

