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- **Access Everywhere:** *DynaMed Plus* can be accessed anywhere – On-site, EHR, remote and mobile app.
- **Ease of Navigation:** Updates can be easily filtered to view by specialty area and practice-changing updates.
- **Designed for Point-of-Care Use:** Content is organized by disease state – all information in one topic.
- **Highest Quality Drug & Lab Content:** From Micromedex[®] DRUGDEX and Lab Recommendations



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Updated
24x7x365



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Evidence-Based
Recommendations



Alerts When
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Graphics and
Images



Easy Access
From EHRs



One-Click Access
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Articles



Mobile App



Remote
Access

Content, Features & Functionality at a Glance...

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DynaMed Plus COPD Search

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COPD Updates **2** Follow Print E-mail CME

1 Updated 2016 Jan 15 06:47:00 PM
 bronchoscopic lung volume reduction with endobronchial valves may improve lung function and exercise capacity, but may increase incidence of serious adverse events and pneumothorax in patients with severe emphysema without collateral ventilation (N Engl J Med 2015 Dec 10)
 • provision of wood stove with chimney may not affect reduction in lung function in patients with wood stove smoke exposure (Chest 2015 Nov 1)
 • GOLD guideline on diagnosis of diseases of chronic airflow limitation: asthma, COPD, and Asthma-COPD overlap syndrome (GOLD 2015) [view update](#)

3 **ACP** Produced in collaboration with the American College of Physicians

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|---------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------|

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Overview and Recommendations

Background

- Chronic obstructive pulmonary disease (COPD) is characterized by significant airflow limitation associated with a chronic inflammatory response in the airways and lungs resulting in the destruction of lung tissue.
- COPD is usually progressive with a long-term decline in lung function and is the fourth leading cause of mortality worldwide.
- COPD commonly affects men > 40 years old who smoke, with an estimated worldwide prevalence of 4%-10%.
- Smoking is the most common risk factor for COPD worldwide; other **risk factors** include occupational exposures (for example, organic and inorganic dusts, chemical agents, and fumes), alpha-1 antitrypsin deficiency, and indoor air pollution (particularly from biomass smoke caused from burning biomass fuels in confined spaces).
- COPD has several complications, including acute exacerbation, respiratory failure, and pulmonary hypertension.
- 3-year mortality rates range from 11% for moderate COPD to 24% for very severe COPD.

Evaluation

- Suspect a diagnosis of chronic obstructive pulmonary disease (COPD) in patients with chronic and progressive dyspnea, cough, and/or sputum production who have a smoking history or have been exposed to other risk factors.
- Recognize that the **physical exam** has a limited utility for diagnosing COPD but findings consistent with COPD include use of accessory respiratory muscles (scalene or sternocleidomastoid), pursed-lip breathing, reduced chest expansion, and reduced breath sounds.
- Physical exam may also help detect the signs of acute exacerbation of COPD, such as central cyanosis, hemodynamic instability, and reduced alertness.
- Perform **spirometry** to assess the forced expiratory volume in 1 second (FEV₁) and the forced vital capacity (FVC) (**Strong recommendation**).
- A postbronchodilator FEV₁/FVC ratio < 0.7 is consistent with a diagnosis of COPD; the FEV₁ (as a percent of the predicted FEV₁) is used to assess the **severity** of the disease.

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COPD **6** Follow Print E-mail CME

Diagnosis / Imaging studies

Imaging studies

- chest x-ray may be normal or may show typical COPD findings, including
 - with chronic bronchitis in the absence of accompanying emphysema and hyperinflation x-ray usually normal but may show
 - bronchial wall thickening (indicated by ring shadows and parallel line shadows)
 - increased lung markings with chronic bronchitis (small ill-defined opacities in parenchyma)
 - prominent vessels (large central pulmonary arteries if pulmonary hypertension)
 - signs of hyperinflation
 - obtuse costophrenic angle
 - low diaphragm (considered low if border of right hemi-diaphragm in the midclavicular line lies at or below anterior end of seventh rib)
 - diaphragmatic flattening
 - seen best on lateral films
 - perpendicular height < 1.5 cm indicates flattening
 - Saber-sheath trachea (trachea normal to level of thoracic inlet, then narrows in coronal plane)
 - increased retrosternal airspace (> 2.5 cm between sternum and ascending aorta)
 - increased length of lung (> 30 cm)
 - bullae
 - signs of arterial deficiency in outer lung fields
 - reduced number and size of pulmonary vessels and branches
 - vessels distorted and may have increased branching angles
 - Reference COPD 2007 Jun;4(2):143 **6** [View Full Text](#) [Full-text](#)

7 **COPD Chest CT:** This chest CT scan shows multiple sharply defined areas of low attenuation, characteristic of centrilobular emphysema. Paraseptal emphysema and bullae are seen in the subpleural lung regions. Such findings, with an appropriate clinical history and pulmonary function abnormalities, are consistent with a diagnosis of COPD.

Bullae on Chest CT: Bullae appear as hyperlucent areas on CT, sharply demarcated from surrounding lung by a thin wall. Here the bullae have caused compressive atelectasis of the right lower lobe and a leftward shift of the mediastinum.

1 Currency
 The date of the most-recent update and the source of evidence is always displayed at the top of the topic.

Follow Feature

2 Users can quickly and easily set up alerts to be notified when topics are updated.

3 ACP Collaboration
 Internal medicine topics are developed and maintained jointly by *DynaMed Plus* and the American College of Physicians (ACP) clinical leadership.

4 Recommendations
 Concise evidence-based recommendations with easily accessible supporting references and GRADE classifications.

5 Easy Navigation
 Search within a topic or navigate using the linked table of contents.

6 PubMed Links
 Easily access the PubMed citation for the original article and full text when available.

7 Visual Content
 Images, algorithms and other visual content are included in topics where relevant.