

Evidence Discussion (CH 10.1)

COPD

Chest X-ray (CR) is usually the appropriate initial imaging study for suspected COPD to exclude alternative diagnoses and evaluate for comorbidities and complications.(1,3,4) CR, pulmonary function tests (PFT's) and selected blood tests lead to a specific diagnosis in a significant proportion of people with chronic dyspnea.(3) CT has increased sensitivity and specificity for determining the type, severity, and distribution of emphysema and bronchial abnormalities.(3,4) It is an important part of the pre-procedure evaluation process for lung volume reduction surgery, endobronchial valve placement, and lung transplantation.(2) The GOLD 2023 report recommends that CT be considered for COPD patients with persistent exacerbations and concern for another diagnosis, such as bronchiectasis or an atypical infection, or symptoms out of proportion to the disease severity suggested by PFT's.(1) Some authors have proposed broadening the definition of COPD to include CT-detected emphysema, air trapping or airway wall thickening, even in the absence of airflow obstruction on spirometry.(5,6)

CT is helpful if a smoking-related interstitial lung disease, such as pulmonary Langerhans cell histiocytosis or Combined Pulmonary Fibrosis and Emphysema, is suspected.(7,8) It is recommended following a diagnosis of alpha-1 antitrypsin deficiency.(9) CT is also used in the evaluation of central airway abnormalities associated with COPD, such as tracheobronchomalacia and excessive dynamic airways collapse.(2) Annual lung cancer screening CT's should be performed in current or former smokers who meet the USPSTF criteria, but screening CT's are not recommended for those with COPD not due to smoking because there is insufficient evidence to establish benefit over harm.(1)

COPD exacerbations are characterized by dyspnea, cough and/or sputum which worsen over a period of less than two weeks.(1) They are mainly caused by respiratory viral infections. CR is often performed to rule out alternative diagnoses, such as pneumonia, pneumothorax or pulmonary edema.

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