

COPD

Quick Reference Guide

For the Diagnosis and Treatment of COPD

Screen for Risk of COPD¹

- Smoking history
- Occupational or environmental exposure to pollutants (eg, dust, gas, vapors; fumes from home cooking or heating fuels; secondhand smoke)
- Family history
- History of airway disease, including asthma, chronic bronchitis, and emphysema
- Age is 40 years or older

Assess Symptoms and Contributing Factors

COPD should be considered in patients with^{1,2}

- Chronic or persistent cough
- Sputum production
- Dyspnea
- History of COPD risk factors

If COPD is suspected, assess the following¹:

- Frequency and severity of symptoms
- Past medical history (smoking history, occupational exposures; history of other respiratory illnesses; family history of COPD; history of previous hospitalizations for respiratory disorders; other comorbidities)
- Physical signs of airflow limitation (usually not present until significant impairment of lung function has occurred)
- Evidence of airflow limitation via spirometry

Diagnose and Stage²

Diagnosis of COPD requires spirometry. Spirometry should be obtained in all persons with

- Presence of cough, sputum, or dyspnea
- Exposure to tobacco smoke and/or environmental or occupational pollutants
- Family history of chronic respiratory disease

SPIROMETRIC CLASSIFICATION OF COPD¹

Severity	Postbronchodilator FEV ₁ /FVC	FEV ₁ % predicted
Stage I: Mild COPD	<0.7	≥80
Stage II: Moderate COPD	<0.7	≥50 and <80
Stage III: Severe COPD	<0.7	≥30 and <50
Stage IV: Very Severe COPD	<0.7	<30 or FEV ₁ <50% predicted plus chronic respiratory failure

FEV₁=forced expiratory volume in 1 second; FVC=forced vital capacity

Other Useful Measures³

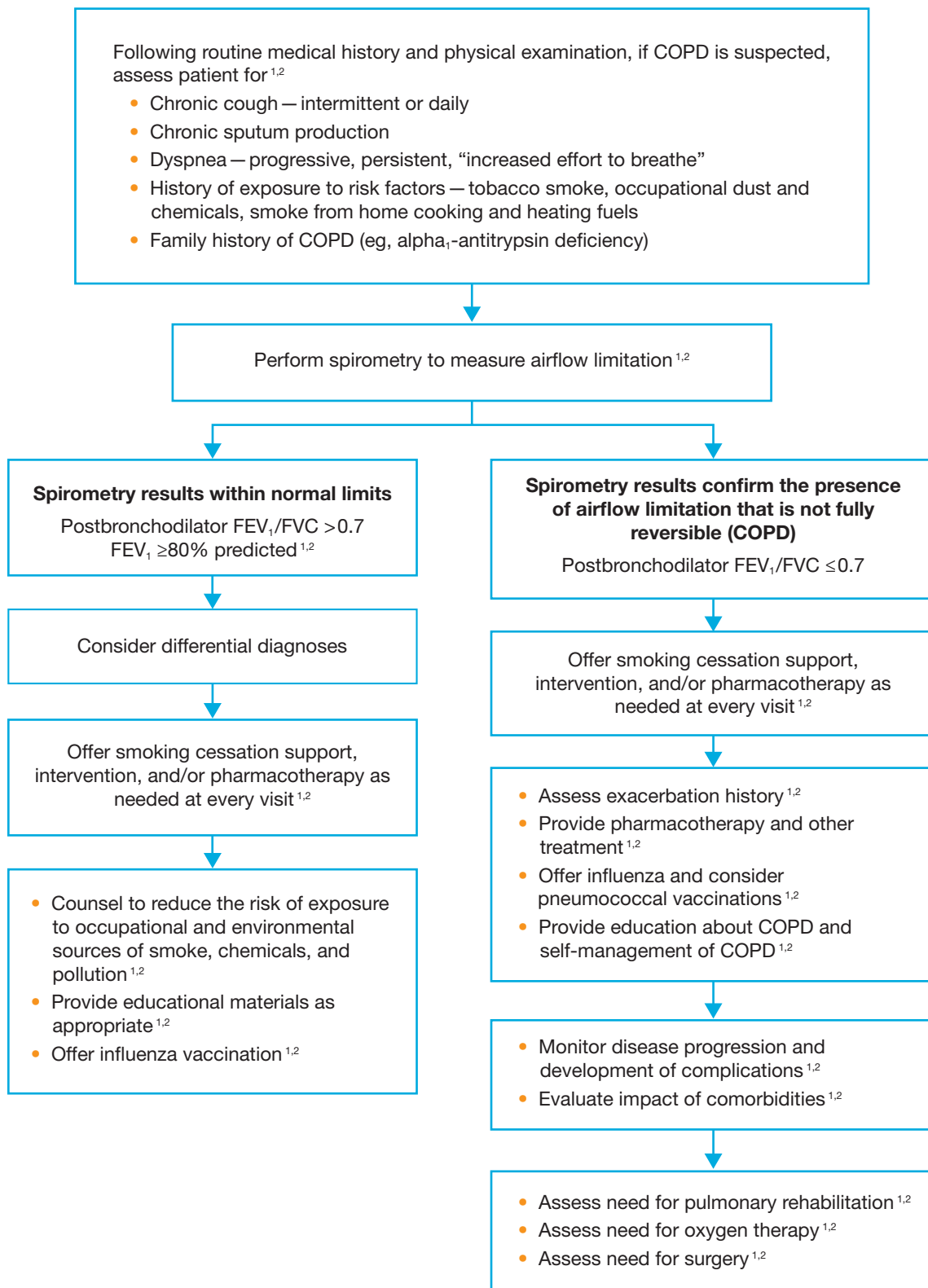
In addition to FEV₁, body mass index (BMI) and dyspnea have proved useful in predicting outcomes such as survival. They should be evaluated in all patients.

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m}^2\text{)}} \quad \text{BMI} < 21 \text{ is associated with increased mortality.}$$

Functional dyspnea can be assessed using the Medical Research Council dyspnea scale²:

- 0:** not troubled with breathlessness except with strenuous exertion
- 1:** troubled by shortness of breath when hurrying or walking up a slight hill
- 2:** walks slower than people of the same age due to breathlessness or has to stop for breath when walking at own pace on the level
- 3:** stops for breath after walking about 100 m or after a few minutes on the level
- 4:** too breathless to leave the house or breathless when dressing or undressing

COPD Assessment and Management^{1,2}



Pharmacologic Treatment

Effective medications for COPD are available. All patients who are symptomatic merit a trial of drug treatment.²

Medications for treatment of COPD include¹

- Bronchodilators (Regular treatment with long-acting bronchodilators is more effective and convenient than short-acting bronchodilators)
 - β_2 -Agonists
 - Anticholinergics
 - Methylxanthines
- Combination long-acting bronchodilator and inhaled corticosteroids
 - Inhaled corticosteroids alone are not indicated for COPD

Medications for treatment of COPD exacerbations include¹

- Antibiotics
- Oral Corticosteroids

Medications for reduction and prevention of COPD exacerbations²

- Combination long-acting bronchodilator and inhaled corticosteroids
 - Not all combination long-acting bronchodilator and inhaled corticosteroids are approved to reduce exacerbations

Pulmonary Rehabilitation

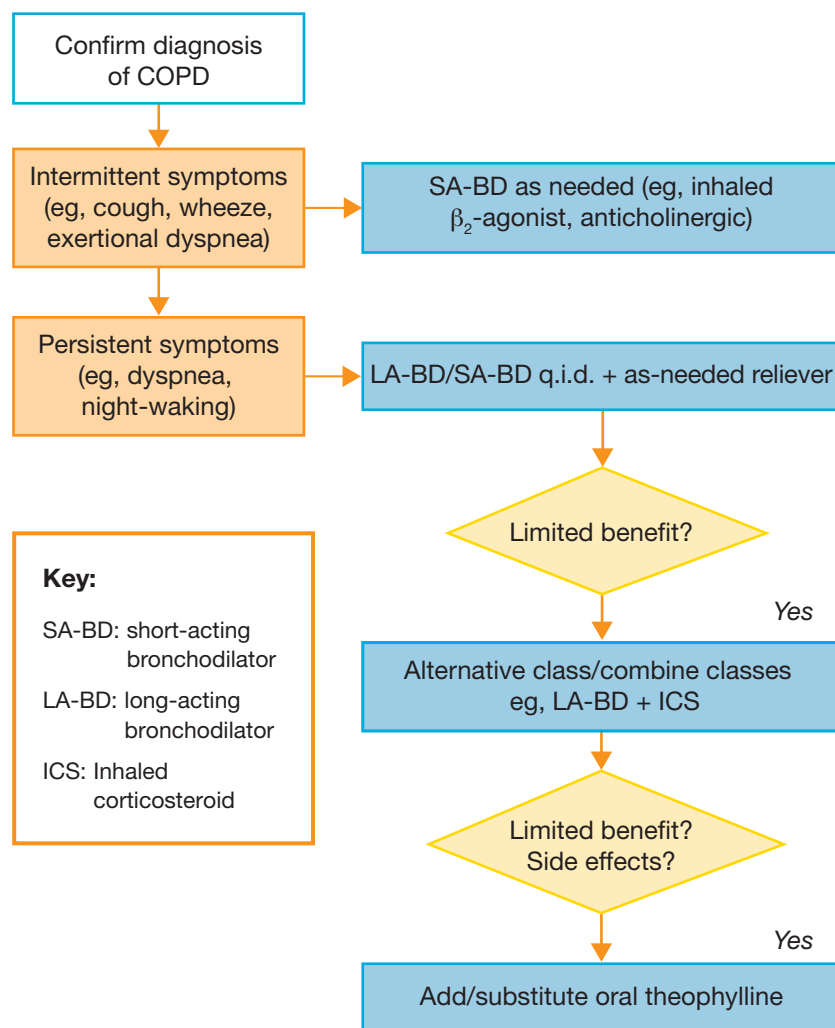
The goals of pulmonary rehabilitation are to⁴

- Reduce symptoms
- Increase ability to do daily activities
- Increase participation in physical and social activities
- Improve overall quality of life
- Benefits in functional status have been seen in patients with a wide range of disability

Advanced Treatments²

- Single or double lung transplant
- Lung volume reduction surgery (LVRS)

Algorithm for Pharmacological Treatment of COPD²



Assess effectiveness by treatment response

- ATS guidelines recommend adding an inhaled corticosteroid (ICS) to a long-acting bronchodilator (LA-BD) if exacerbations require a course of antibiotics or oral corticosteroids in the past year, and FEV₁ <50% predicted.
- Always ensure the patient can use inhalers properly and understands their purpose
- If multiple medications are used, consider prescribing a combination medication

Oxygen Therapy

Long-term oxygen therapy reverses hypoxemia and has been shown to improve life expectancy in patients with chronic lung disease^{1,2}

- Long-term administration of oxygen (>15 hours per day) to patients with chronic respiratory failure has been shown to increase survival¹
- Prescribe based on arterial blood gas evidence of hypoxemia¹
- Therapeutic goal is to assure PaO₂ >60 mm Hg (arterial oxygen saturation: SaO₂ >90%)¹

Follow Up for Optimal Management

For all patients with COPD

- Strongly encourage the patient to quit smoking. Recommending a nicotine replacement program may help¹
- Educate the patient. The goal is to help the patient develop living patterns that incorporate self-management¹
- Prevent and manage exacerbations. The prevention of exacerbations is recognized as a key goal in COPD disease state management¹
- Vaccinate for flu and pneumonia¹

For patients with more severe COPD who are limited in activities of daily living

- Enroll the patient in a pulmonary rehabilitation program.⁴ The focus is on breathing retraining, exercise, and diet as part of a comprehensive self-management program, within the context of team support
- Encourage patient and caregiver participation in support groups, if interested⁴

Patient Assessment Checklist

Ask the following questions at every visit^{5,6}:

Since your last visit

- Was your breathing worse than usual?
- Did you cough up more mucus than usual?
- Was your mucus thicker than usual?
- Was your mucus more green or brown than usual?
- Did you cough more than usual?
- Did you wheeze?
- Did your COPD symptoms wake you up at night?
- Did you take your regular medicine today?
- How often did you use your quick-relief inhaler?
- Have you smoked? How often?
- Is your health better, the same, or worse?

At every visit, discuss

- Patient's symptoms
- Medication usage—prescription medications, OTC products, vitamins, herbal supplements
- Drug interaction potential
- Side effect management
- Adherence to medications
- Comorbid medical issues
- Smoking cessation (as appropriate)

References

1. Global Initiative for Chronic Obstructive Lung Disease. *Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease. Updated 2009*. <http://www.goldcopd.org>. Accessed December 10, 2009.
2. American Thoracic Society / European Respiratory Society Task Force. Standards for the Diagnosis and Management of Patients with COPD [Internet]. Version 1.2. New York: American Thoracic Society; 2004 [updated 2005 September 8]. <http://www.thoracic.org/go/copd>. Accessed October 2, 2008.
3. Celli BR, MacNee W, ATS/ERS Task Force. Standards for the diagnosis and treatment of patients with COPD: a summary of the ATS/ERS position paper. *Eur Respir J*. 2004;23:932-946.
4. American Thoracic Society/European Respiratory Society Statement on Pulmonary Rehabilitation. *Am J Respir Crit Care Med*. 2006;173:1390-1413.
5. Burge S, Wedzicha JA. COPD exacerbations: definitions and classifications. *Eur Respir J*. 2003; 21 (suppl 41):46s-53s.
6. Woolhouse IS, Hill SL, Stockley RA. Symptom resolution assessed using a patient directed diary card during treatment of acute exacerbations of chronic bronchitis. *Thorax*. 2001;56:947-953.