

Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation



COPD Treatment Guidelines

The COPD Foundation Pocket Consultant Guide

Byron Thomashow, MD,¹ James Crapo, MD,² Barbara Yawn, MD,³ Andrew McIvor, MD, FRCPC,⁴ Scott Cerreta,⁵ John Walsh,⁵ David Mannino, MD,⁶ Stephen Rennard, MD⁷

Abstract

The COPD Foundation Guide to COPD Diagnosis and Treatment is designed to provide practical advice for the health care provider. Available as a hard copy, online and as a mobile device application (app), the Guide serves as an accessible tool for clinicians. To date, over 400,000 cards have been distributed to health care providers nationwide at no charge. The Guide is updated as necessary and suggestions from the COPD physician and health care provider community are integrated into updates.

Abbreviations: mobile device application, **app**; American Thoracic Society, **ATS**; European Respiratory Society, **ERS**; National Clinical Guideline Centre, **NICE**; Global Initiative for chronic Obstructive Lung Disease, **GOLD**; American College of Physicians, **ACP**; American College of Chest Physicians, **ACCP**; forced volume capacity, **FVC**; forced expiratory volume in 1 second, **FEV1**; spirometry grade, **SG**; computed tomography, **CT**

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1. Department of Medicine, Columbia University College of Physicians and Surgeons, New York, NY
2. Division of Pulmonary, Critical Care and Sleep Medicine National Jewish Health, Denver, CO
3. Olmsted Medical Center, Department of Research, Rochester, MN
4. Firestone Institute for Respiratory Health, McMaster University, Hamilton, Ontario, Canada
5. COPD Foundation, Washington, DC
6. Departments of Preventive Medicine and Environmental Health, University of Kentucky, College of Public Health, Lexington
7. Pulmonary, Critical Care, Sleep and Allergy Division, Department of Internal Medicine, University of Nebraska Medical Center, Omaha

Address correspondence to:

Byron M. Thomashow, MD
161 Ft. Washington Avenue, Suite 3-311,
New York, NY 10032
Phone: (212) 305-5261
Email: bmt1@cumc.columbia.edu

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Introduction

Guidelines have evolved into large, evidence-based, textbook-like documents and are hence becoming less practical for the pragmatic physician. Little effort during guideline development is spent considering dissemination or implementation.

The COPD Foundation Guide to COPD Diagnosis and Treatment (the Guide) is designed to provide best practice advice for the clinician. Originally developed in partnership with the New York-Presbyterian Healthcare System and launched in 2006 as the Pocket Consultant Card, the Guide has been updated frequently as new treatments have been introduced and as the information base regarding COPD has increased.¹

The Guide is meant to be practical, easy-to-use and designed to address the key questions faced by a clinician. It is not a formal guideline. The Guide recommendations differ in several respects from other documents such as the American Thoracic Society/European Respiratory Society (ATS/ERS) COPD statement, the National Clinical Guideline Centre (NICE) recommendations and the Global Initiative for chronic Obstructive Lung Disease (GOLD)

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strategy document, which are excellent, but lengthy and often not very specific.²⁻⁶

Spirometry Recommendations

The Guide makes specific recommendations on who should have spirometry.¹ All agree that spirometry is warranted in individuals with symptoms of dyspnea on exertion, cough, sputum, decreased physical activity levels and fatigue. However, in contrast to the consensus statement from ATS/ERS/American College of Physicians (ACP)/American College of Chest Physicians (ACCP) in 2011 that recommended against performing spirometry in individuals at risk for COPD but without symptoms, the Guide recommends spirometry for individuals at-risk who have comorbidities associated with COPD.^{1,7}

This is recommended because many patients underappreciate symptoms or ascribe limitations based on their age, weight, deconditioning or allergies. Patients often do not report symptoms due to short health care provider visits. Comorbidities are extremely common in COPD and COPD appears to be an independent risk factor for a number of conditions including cardiovascular disease.^{8,9} Misdiagnosis is a problem of potential major importance for individual patients. The Guide suggests that spirometry be considered in individuals at-risk who have one or more significant comorbid diseases.¹ The Guide recommends testing all COPD patients for alpha-1 antitrypsin deficiency.¹⁰

The Guide's staging of spirometry was designed to be comprehensive. Five *spirometry grades* are described to ensure that all individuals fit into a group. The fact that many individuals are unclassified by other systems, but may have problems, has been an impediment for many clinicians (Figure 1).

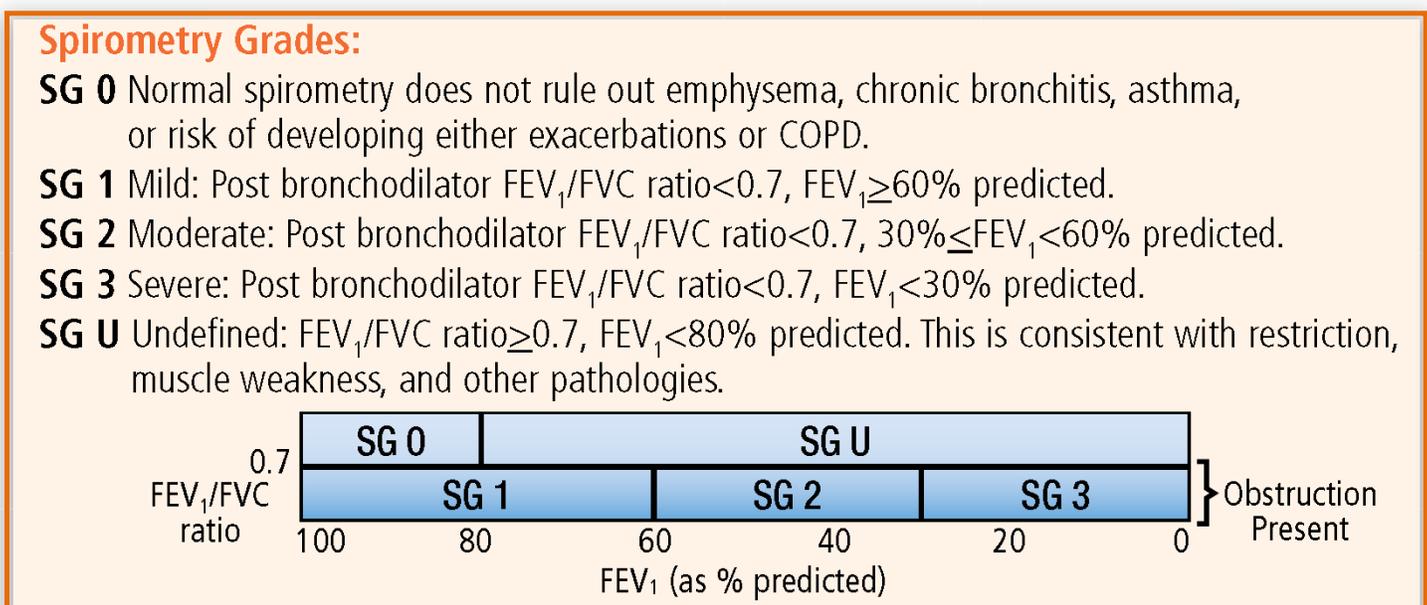
Spirometry grade 0 (SG-0) includes normal individuals as well as individuals who may have disease but whose measured values remain within the normal population boundary. SG-0 does not exclude the presence of emphysema, chronic bronchitis or the risk of developing exacerbations. Further, individuals within SG-0 may have symptoms requiring treatment.

Spirometry grade U (SG-U) includes those with a normal forced expiratory volume in 1 second to forced volume capacity (FEV₁/FVC) ratio but reduced FVC and FEV₁. This group has classically been described as having *restrictive* lung disease. Recent evidence shows that many of these individuals have emphysema and/or airway inflammation on computed tomography (CT) scanning.¹¹

The Guide describes three obstructive grades all with an FEV₁/FVC ratio <0.7 and follows the recommendations of the ATS/ERS/ACP/ACCP Consensus Statement⁷:

- Spirometry grade-1 (SG-1), mild, with FEV₁ ≥60% predicted
- Spirometry grade-2 (SG-2), moderate, with FEV₁ <60% predicted and ≥30% predicted
- Spirometry grade-3 (SG-3), severe, with FEV₁ <30% predicted

Figure 1. COPD Foundation Guide to COPD Diagnosis and Treatment Spirometry Grades¹



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The previously mentioned consensus statement stressed the importance of an FEV₁ of 60% in determining those who might benefit from regular maintenance therapy.⁷ The Guide has adjusted the spirometry grades to reflect this cut-off for those with *significant COPD* where management should be based on patient performance as well as symptoms.¹ Spirometric severity <30% is a reasonable guide to initiate management plans for those with severe disease, although spirometry is but one measure of COPD severity.

COPD Severity Domains

To address the heterogeneous clinical problems that beset COPD patients, the 2013 revision of the Guide suggested an approach based upon 7 severity domains: spirometry, symptoms, exacerbations, oxygenation, the presence of emphysema, the presence of chronic bronchitis, and comorbidities.¹ A Therapy Chart (Figure 2) listing the 7 severity domains in rows and recommended therapy options in columns is a new feature. This approach can guide clinicians to make decisions appropriate for the heterogeneous problems faced by COPD patients in a systematic and easily implemented fashion.

Accessibility of the Guide

The COPD Foundation is committed to making the Guide freely available in multiple formats. Pocket cards and mobile device applications (apps) are inexpensive tools to aid in practice change. The advantage of the online, eHealth format is the possibility it offers to easily alter, update or evolve and improve the information in a dynamic fashion.¹²

The Pocket Consultant Guide card is available in a 2-panel version that provides basic information on diagnosis and therapy and two 6-panel versions that include information on diagnostic tools and commonly used medications – one with generic names (Figure 3) and one with brand names. The Pocket Consultant Guide card is available to health care providers at no cost. Printed cards can be ordered from the COPD Foundation's online catalogue (<http://copd.oiondemand.com>).¹³

Electronic downloads can be obtained from the Pocket Consultant Guide Online Community site (<http://pocketconsultantguide.copdfoundation.org/>).¹⁴

In addition, the Foundation has launched a free i-Phone app that allows the Guide to be used in a more interactive format (Figure 4). The first edition of the app lists available generic medications. Subsequent editions will allow the user

Figure 2. COPD Foundation Guide to COPD Diagnosis and Treatment Therapy Chart¹

COPD Foundation Guide for COPD Treatment								
All patients should receive: Smoking cessation; vaccination for influenza, pneumococcus, pertussis, alpha-1 testing								
	short acting bronchodilator (as needed)	LAMA or LABA or LAMA plus LABA	ICS/LABA	roflumilast	oxygen	exercise/pulmonary rehabilitation	lung volume reduction surgery	azithromycin
Spirometry Grade SG1 Mild								
SG 2/3 Moderate/Severe								
Regular symptoms								
Exacerbation risk high								
Oxygenation severe hypoxemia								
episodic hypoxemia								
Emphysema								
Chronic bronchitis								
Comorbidities	Evaluate and treat identified comorbid conditions							

LAMA: Long-Acting Anticholinergic, LABA: Long-Acting Beta 2 Agonist, ICS/LABA: Inhaled Glucocorticosteroid plus Long-Acting Beta 2 Agonist.
 * Indicated if chronic bronchitis, high exacerbation risk, and spirometry grades 2/3 all present.
 ** Suggest regular exercise program for all with COPD, those with SG2/3 should be considered for pulmonary rehab.
 † If significant shortness of breath and SG1 consider other potential contributing factors including cardiac, deconditioning etc.
 ‡ Recommended in select cases with upper lobe predominant emphysema.
 †† LAMA, ICS/LABA, LAMA plus LABA or LAMA plus ICS/LABA all potential options depending upon frequency of exacerbations and severity of COPD.
 ††† Off label-consider potential cardiac risks and resistance concerns.

Therapy guided by **diagnosis** and **assessment of severity domains**

- Each Domain requires separate treatment consideration. Risks and benefits always need to be evaluated in every case.
- : Recommended-First line therapy. : Second line choices-suggested options in individual cases. The various treatments can generally be combined as needed, but fixed combinations should not be combined with equivalent individual components.
- Theophylline may be an additional option for some patients potentially improving lung function and symptoms.
- N-acetylcysteine (NAC) may be an additional option for reducing exacerbations in some patients.

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Figure 3. Pocket Consultant Guide, 6-Panel Printed Card Version.¹

COPD Assessment Test (CAT)

SCORE

I never cough (1-5) I cough all the time (6-10)

I have no phlegm (1-5) My chest is completely full of phlegm (6-10)

My chest does not feel tight at all (1-5) My chest feels very tight (6-10)

When I walk up a hill or one flight of stairs I am not breathless (1-5) I am very breathless (6-10)

I am not limited doing any activities at home (1-5) I am very limited doing activities at home (6-10)

I am confident leaving my home despite my condition (1-5) I am not at all confident leaving my home because of my lung condition (6-10)

I sleep soundly (1-5) I don't sleep soundly because of my lung condition (6-10)

I have lots of energy (1-5) I have no energy at all (6-10)

TOTAL SCORE

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- A CAT score of 10 or more suggests significant symptoms.
- A change in CAT score of 2 or more suggests a possible change in health status.
- A worsening CAT score could be explained by an exacerbation, poor medication adherence, poor inhaler technique, or progression of COPD or comorbid conditions. An adjustment in the app may be needed.

mMRC Breathlessness Scale

Grade	Description of Breathlessness
0	I only get breathless with strenuous exercise
1	I get short of breath when hurrying on level ground or walking up a slight hill
2	On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace
3	I stop for breath after walking about 100 yards or after a few minutes at level ground
4	I am too breathless to leave the house or I am breathless when dressing

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Smoking Cessation

Consulting at every visit

Nicotine Replacement

Nicotine gum/OTC, Nicotine patch/OTC, Nicotine lozenge/OTC, Nicotine nasal spray/OTC, Nicotine inhaler/OTC, Bupropion SR, Varenicline

National Quit Line: 1-800-QUIT-NOW (784-8686)

The COPD Foundation Information Line: 1-800-316-COPD (3673), staffed by patients and caregivers, can assist patients and family members with questions about living with COPD, and provide educational information. <http://www.copdfoundation.org>

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Figure 4. COPD Pocket Consultant app for i-phone¹⁴



COPD Foundation Guide for COPD Treatment

All patients should receive: inhaled corticosteroid, long-acting beta₂-agonist, LABA or LAMA or combination of LABA or LAMA and SABA, and rescue SABA.

Severity/Grade	LABA or LAMA or combination of LABA or LAMA and SABA	ICS	LABA/LAMA combination	LABA/LAMA combination with SABA	LABA/LAMA combination with SABA and ICS	LABA/LAMA combination with SABA and ICS and SABA
1	✓	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓
4	✓	✓	✓	✓	✓	✓

LABA, Long-acting beta₂-agonist; LAMA, Long-acting muscarinic antagonist; ICS, Inhaled corticosteroid; SABA, Short-acting beta₂-agonist; LABA/LAMA combination, LABA/LAMA combination; LABA/LAMA combination with SABA, LABA/LAMA combination with SABA; LABA/LAMA combination with SABA and ICS, LABA/LAMA combination with SABA and ICS; LABA/LAMA combination with SABA and ICS and SABA, LABA/LAMA combination with SABA and ICS and SABA.

They may be given by inhalation or as an oral tablet. They should always be used in a metered dose inhaler (MDI) or a dry powder inhaler (DPI). They should be used with a spacer or a holding chamber. They should be used with a spacer or a holding chamber. They should be used with a spacer or a holding chamber.

Drug	Inhaler	Solution for Inhaler (mg)	Dose	Duration of Action (hour)
Beta 2 Agonists - Short Acting (SABA)				
Albuterol	90 (HFA-MDI)	0.083, 0.125, 0.250, 0.500, 1.250, 2.500	2 puffs	4-6
Levalbuterol	45 (HFA-MDI)	0.083, 0.125, 0.250	2 puffs	6-8
Beta 2 Agonists - Long Acting (LABA)				
Formoterol	12 (DPI)	12	2 puffs	12+
Salmeterol	50 (DPI)	12	2 puffs	12+
Formoterol Formate	15 mg/2ml	12	2 puffs	12+
Indinavir/Maleate	20 mg/2ml	24	2 puffs	24
Anticholinergics - Short Acting (SABA)				
Formoterol	12 (DPI)	12	2 puffs	12+
Anticholinergics - Long Acting (LAMA)				
Tiotropium	18 (DPI)	24	2 puffs	24+
Aclidinium Bromide	400 mg (DPI)	12	2 puffs	12
Long-Acting Anticholinergic plus Long-Acting B2-Agonist (LABA/LABA)				
Umeclidinium/Vilanterol	62.5/25 (DPI)	24	2 puffs	24
Short Acting Anticholinergic plus B2-Agonist (IB/SABA)				
Indinavir/Maleate	12 (DPI)	0.083, 0.125, 0.250	2 puffs	4-6
Methylxanthines				
Theophylline (DPI)	100-600 mg (DPI)	Variable up to 24	2 puffs	Variable up to 24
Mucolytic				
Nacetylcysteine (NAC)		600mg	12	12

COPD patients should be tested for alpha 1 antitrypsin deficiency. The genetic form of COPD. www.alpha1foundation.org

to toggle between brand name and generic name drugs. An edition featuring European medications is also being developed. The app can be found in the Apple App Store by searching *COPD Foundation*. An Android app is under development as well and will be released in Summer 2014.

To facilitate implementation of the Guide, the COPD Foundation has prepared an Institutional Pack. These can be ordered from the online catalogue¹³ and includes a variety of cards, posters and other materials. A Grand Rounds PowerPoint slide deck with *Notes* for the presenter is also available for free download from the Pocket Consultant Guide Online Community website.¹⁴

The Guide is designed to be a practical and useful clinical tool. Future revisions that reflect changes in clinical knowledge and practice will take place at least once per calendar year. The most current revision was released March 2014. To facilitate the broadest possible base for improving the Guide going forward, the COPD Foundation has launched a national collaboration website, the Pocket Consultant Guide Online Community at pocket-consultantguide.copdfoundation.org.¹⁴ In addition to a download library and information about how to use the Guide, there is a community forum for health care professionals to discuss the Guide. Subsequent revisions to the Guide will be based on these conversations.

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