

## COPD Assessment Test (CAT)

		SCORE
I never cough	0 1 2 3 4 5 I cough all the time	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5 My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0 1 2 3 4 5 My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5 When I walk up a hill or one flight of stairs I am very breathless	
I am not limited doing any activities at home	0 1 2 3 4 5 I am very limited doing activities at home	
I am confident leaving my home despite my condition	0 1 2 3 4 5 I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0 1 2 3 4 5 I don't sleep soundly because of my lung condition	
I have lots of energy	0 1 2 3 4 5 I have no energy at all	
<b>TOTAL SCORE</b>		

 COPD Assessment Test and CAT logo is a trademark of the GlaxoSmithKline group of companies.  
© 2009 GlaxoSmithKline. All rights reserved.  
www.catestonline.org

- A CAT score over 10 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 therapy 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 on level ground
4	I am too breathless to leave the house or I am breathless when dressing

Chris Stenton. The MRC breathlessness scale. *Occup Med (Lond)*(2008)58(3): 226-227. doi:10.1093/occmed/kqm162, Table 1. By permission of Oxford University Press on behalf of the Society of Occupational Medicine.

### Smoking Cessation

Counseling at every visit

Nicotine Replacement:

Nicotine gum-OTC, Nicotine patch-Rx and OTC, Nicotine lozenge-OTC, Nicotine nasal spray-Rx, Nicotine inhaler-Rx

Antidepressant: Bupropion SR

Varenicline

National Quit Line: 1-800-Quit NOW (784-8669)

The COPD Foundation Information Line, 1-866-316-COPD (2673), staffed by patients and caregivers, can assist patients and family members with questions about living with COPD, and provide educational information.

Endorsed by: COPD Foundation, Jo-Ann LeBuhn Center for Chest Disease, NewYork-Presbyterian Hospital.

The COPD Pocket Consultant is provided by the COPD Foundation and the member institutions of the NewYork-Presbyterian Healthcare System as an educational resource only and should not be considered as offering medical advice. This information should not be used as a substitute for the exercise or receipt of a physician's independent professional judgement in providing advice, diagnosis or treatment for any medical or health condition.

Updated March 2013

 **NewYork-Presbyterian  
Healthcare System**

 **COPD FOUNDATION**

www.nypsystem.org  
www.copdfoundation.org

# THE COPD POCKET CONSULTANT

## COPD Foundation Guide to COPD Diagnosis

**COPD** is defined by post bronchodilator FEV<sub>1</sub>/FVC ratio < 0.7 on spirometry. This helps to differentiate from asthma. A significant bronchodilator response (increase in FEV<sub>1</sub> > 12% and > 200cc) can be seen in both COPD and asthma.

**Spirometry** is indicated if symptoms present (dyspnea, chronic cough/sputum).

Spirometry should be considered if risk factors are present (smoking, other exposures, asthma history, childhood infections, prematurity, family history) **and** if one or more comorbidities present (including but not limited to heart disease, metabolic syndrome, osteoporosis, sleep apnea, depression, lung cancer, premature skin wrinkling).

### SEVERITY DOMAINS

Each domain may have therapeutic implications

#### Spirometry Grades:

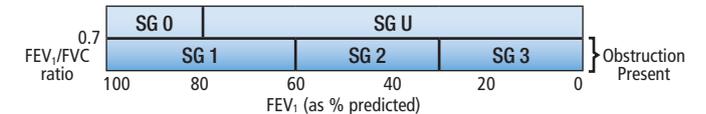
**SG 0** Normal spirometry does not rule out emphysema, chronic bronchitis, asthma, or risk of developing either exacerbations or COPD.

**SG 1** Mild: Post bronchodilator FEV<sub>1</sub>/FVC ratio < 0.7, FEV<sub>1</sub> ≥ 60% predicted.

**SG 2** Moderate: Post bronchodilator FEV<sub>1</sub>/FVC ratio < 0.7, 30% ≤ FEV<sub>1</sub> < 60% predicted.

**SG 3** Severe: Post bronchodilator FEV<sub>1</sub>/FVC ratio < 0.7, FEV<sub>1</sub> < 30% predicted.

**SG U** Undefined: FEV<sub>1</sub>/FVC ratio > 0.7, FEV<sub>1</sub> < 80% predicted. This is consistent with restriction, muscle weakness, and other pathologies.



**Regular Symptoms:** dyspnea at rest or exertion, cough, sputum. Use COPD Assessment Test (CAT) or mMRC Breathlessness Scale to follow course of disease.

**Exacerbations:** two or more in the past year, especially if FEV<sub>1</sub> < 50% predicted suggests high risk.

**Oxygenation:** severe hypoxemia: resting O<sub>2</sub> sat < 88% or arterial pO<sub>2</sub> < 55 mmHg  
episodic hypoxemia: exercise or nocturnal desaturation.

**Emphysema:** reduced density on CT scan, can be localized, abnormal high lung volumes, abnormal low diffusion capacity.

**Chronic bronchitis:** cough, sputum most days for at least 3 months in at least 2 years.

**Comorbidities:** defining and treating comorbid conditions, particularly cardiovascular, are critical components of COPD care.

## COPD Foundation Guide for COPD Treatment

All patients should receive: Smoking cessation; vaccination for influenza, pneumococcus, pertussis

	short acting bronchodilator	LAMA or LABA or LAMA plus LABA	ICS/LABA	roflumilast	oxygen	exercise/pulmonary rehabilitation	lung volume reduction surgery	azithromycin <sup>†</sup>
<b>Spirometry Grade</b>								
SG1 Mild	first line as needed	possibly first line	yes	yes*				
SG 2/3 Moderate/Severe	first line as needed	first line	yes	yes*		first line		
Regular symptoms	first line as needed	first line <sup>†</sup>	first line <sup>†</sup>	yes*				yes
Exacerbation risk high								
Oxygenation severe hypoxemia episodic hypoxemia					yes possibly			
Emphysema							In selected cases	
Chronic bronchitis				yes*				

**Evaluate and treat identified comorbid conditions**

LAMA: Long-Acting Anticholinergic; LABA: Long-Acting Beta 2 Agonist; ICS/LABA: Inhaled Glucocorticosteroid plus Long-Acting Beta2 Agonist.  
 † LAMA, ICS/LABA, LAMA plus LABA or LAMA plus ICS/LABA all potential options depending upon frequency of exacerbations and severity of COPD.  
 \* Indicated if chronic bronchitis, high exacerbation risk, and spirometry grades 2/3 all present.  
 † Off label use

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

- Each Domain requires separate treatment consideration. For example, if regular symptoms are present an exercise program needs to be considered regardless of what other domains are present. First line therapy is **red**. Second line choices are **green**. The various treatments can generally be combined as needed, but fixed combinations should not be combined with equivalent individual components.
- Short acting bronchodilators: are rescue medications for acute dyspnea. Frequent use suggests the need for addition of a long acting bronchodilator or other adjustments in therapy.
- Theophylline may be an additional option for some patients potentially improving lung function and symptoms.

Drug	Inhaler (mcg)	Solution for Nebulizer (mg)	Oral	Duration of Action (hours)
<b>Beta 2 Agonists - Short Acting (SABA)</b>				
Albuterol	90 (HFA-MDI)	0.63/3 ml 1.25/3 ml 2.5/3 ml		4-6
Levalbuterol	45 (HFA-MDI)	0.63/3 ml 1.25/3 ml		6-8
<b>Beta 2 Agonists - Long Acting (LABA)</b>				
Formoterol	12 (DPI)			12+
Salmeterol	50 (DPI)			12+
Arformoterol		15 mcg/2ml		12+
Formoterol Fumarate		20 mcg/2ml		12+
Indacaterol Maleate	75 (DPI)			24
<b>Anticholinergics - Short-Acting (IB)</b>				
Ipratropium Bromide	17 (HFA-MDI)	0.5/2 ml		4-6
<b>Anticholinergics - Long-Acting (LAMA)</b>				
Tiotropium	18 (DPI)			24+
Acclidinium Bromide	400 mcg (DPI)			12
<b>Short Acting Anticholinergic plus B2-Agonist (IB/SABA)</b>				
Ipratropium Bromide/Albuterol	20/100 (INH spray)	0.5/2.5/3 ml		4-6
<b>Methylxanthines</b>				
Theophylline (SR)			100-600 mg (Pill)	Variable, up to 24

Drug	Inhaler (mcg)	Solution for Nebulizer (mg)	Oral	Duration of Action (hours)
<b>Inhaled Glucocorticosteroids (ICS)</b>				
Beclomethasone*	40, 80 (HFA-MDI)			12
Budesonide*	90, 180 (DPI)	0.25/2 ml 0.5/2 ml		12
Fluticasone*	44-220 (HFA) 100, 250 (DPI)			12
Mometasone*	220 (DPI)			24
Ciclesonide*	80, 160 (HFA)			12
<b>Inhaled Glucocorticosteroid plus Long Acting B2-Agonists (ICS/LABA)</b>				
Budesonide / Formoterol	80/4.5* 160/4.5 (HFA)			12
Fluticasone / Salmeterol	100/50* 250/50 500/50* (DPI)			12 12 12
Fluticasone / Salmeterol*	45/21 115/21 230/21 (HFA)			12 12 12
Mometasone Furoate/ Formoterol Fumarate Dihydrate*	100/5 200/5 (HFA)			12
<b>Approved for Reducing COPD Exacerbations</b>				
Fluticasone / Salmeterol	250/50 (DPI)			12
Tiotropium	18 (DPI)			24+
Roflumilast (PDE4 Inhibitor)			500 mcg	24

\* Off-label Use  
 HFA - Hydrofluoroalkane MDI - Metered Dose Inhaler DPI - Dry Powder Inhaler

COPD patients should be tested for alpha1-antitrypsin deficiency, the genetic form of COPD. [www.alpha-1foundation.org](http://www.alpha-1foundation.org)