

Table 3.1. Classification of COPD Severity

Stage	Pulmonary Function Test Findings	Symptoms
I: Mild	Mild airflow limitations FEV ₁ /FVC <70% FEV ₁ ≥80% predicted	+/- Chronic cough and sputum production; patient unaware of abnormal lung function
II: Moderate	Worsening airflow limitations FEV ₁ /FVC <70% FEV ₁ between 50% and 80% predicted	Dyspnea on exertion, cough, and sputum production; patient usually seeks medical care because of symptoms
III: Severe	Further worsening of airflow limitations FEV ₁ /FVC <70% FEV ₁ between 30% and 50% predicted	Increased SOB, reduced exercise capacity, fatigue, repeated exacerbations impact quality of life
IV: Very severe	Severe airflow limitations FEV ₁ /FVC <70% FEV ₁ <30% predicted or FEV ₁ <50% predicted plus chronic respiratory failure	Cor pulmonale (right heart failure), quality of life impaired, life-threatening exacerbations

FEV₁, forced expiratory volume in 1 second; FVC, forced vital capacity; FEV, forced expiratory volume; SOB, shortness of breath. Adapted from Global Strategy for the Diagnosis, Management and Prevention of COPD, Global Initiative for Chronic Obstructive Lung Disease (GOLD).⁸

Table 3.2. Assessment of Asthma Control

Symptom	Controlled (All of Below)	Partially Controlled (Any Present in Any Week)	Uncontrolled
Daytime symptoms	Twice or less per week	More than twice a week	Three or more features of partially controlled asthma present in any week
Limitations of actions	None	Any	
Nocturnal symptoms	None	Any	
Need for rescue medications	Twice or less per week	More than twice a week	
Lung function (PEF or FEV ₁)	Normal	<80% predicted	

PEF, peak expiratory flow.

Table 3.3. Classification of Asthma

	Symptoms	Nocturnal Symptoms	Pulmonary Function	Treatment	
				Acute	Chronic
Mild intermittent	Brief exacerbations ≤ 2 days/week, good exercise tolerance	≤ 2 nights/month	Normal between exacerbations $FEV_1 \geq 80\%$ predicted	Short-acting β_2 agonist as needed (needed < 2 days/week)	None
Mild persistent	> 2 times/week but < 1 time/day, episodes may affect activity level	3–4 nights/month	$FEV_1 \geq 80\%$ predicted	Short-acting β_2 agonist (needed > 2 days/week, but not daily)	Daily inhaled anti-inflammatory like low-dose inhaled steroid or cromolyn, nedocromil, or theophylline
Moderate persistent	> 1 once/day, episodes affect activity	> 1 night/week, but not every night	$FEV_1 60\text{--}80\%$ predicted	Short-acting β_2 agonist (needed daily)	Medium-dose inhaled steroid OR low-dose inhaled steroid AND long-acting β_2 agonist OR leukotriene inhibitor
Severe persistent	Continual symptoms, limited activity	Frequent/nightly	$FEV_1 \leq 60\%$ predicted	Short-acting β_2 agonist (needed multiple times daily)	Medium- or high-dose steroids AND long-acting β_2 agonist AND/OR systemic steroids, theophylline, or leukotriene inhibitor

Adapted from the National Asthma Education and Prevention Program.²

Table 3.4. Pulmonary Function Changes in Obstructive and Restrictive Disease

Measure	Obstructive Disorders	Restrictive Disorders
FEV ₁ /FVC	<Predicted	≥Predicted
FEV ₁	Always reduced	May be normal or reduced
FVC	Usually reduced	Reduced
TLC	Normal or increased	Always reduced
RV	Normal or increased	Reduced

FEV₁, 1-second forced expiratory volume; FVC, forced vital capacity; RV, residual volume; TLC, total lung capacity.

Adapted from <http://www.merckmanuals.com/>.

Table 3.5. Common Medications to Treat Asthma/COPD

Short-acting β_2 agonists	Albuterol (Proventil®, Ventolin®), levalbuterol, metaproterenol, pirbuterol
Long-acting β_2 agonists	Aformoterol, formoterol, salmeterol
Anti-cholinergics	Ipratropium bromide (Atrovent®), tiotropium (Spiriva®)
Methylxanthines	Theophylline
Mast cell stabilizers	Cromolyn, nedocromil
Corticosteroids (inhaled)	Beclomethasone (Qvar®), budesonide (Pulmicort®), fluticasone, mometasone
Corticosteroids (systemic)	Dexamethasone, fludrocortisone, methylprednisolone, prednisone
Leukotriene receptor antagonists	Montelukast (Singulair®), zafirlukast, zileuton
Combination inhalers	Fluticasone/salmeterol (Advair Diskus®), ipratropium/albuterol (Combivent®), budesonide/formoterol (Symbicort®)