# Guideline for Chronic Obstructive Pulmonary Disease 2015

**Eligible Population** Adults ≥18 years of age with diagnosis of COPD

<table>
<thead>
<tr>
<th>Key Components</th>
<th>Recommendation and Level of Evidence</th>
<th>Frequency</th>
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<tr>
<td><strong>Risk Assessment and Diagnosis</strong></td>
<td>Diagnosis is based on exposure to risk factors and presence of airflow limitation that is not fully reversible, with or without symptoms&lt;br&gt;- Key indicators for considering a diagnosis of COPD:&lt;br&gt;  ● Chronic cough- May be intermittent and unproductive.&lt;br&gt;  ● Dyspnea that is progressive, persistent, and worse with exercise&lt;br&gt;  ● Chronic sputum production&lt;br&gt;  ● Wheezing, prolonged expiratory phase of respiration, rhonchi, cough&lt;br&gt;  ● Hyperinflation of the chest with increased anterior-posterior (A-P) diameter&lt;br&gt;  ● Use of accessory muscles of respiration&lt;br&gt;  ● Pursed lip breathing&lt;br&gt;  ● History of exposure to risk factors: tobacco smoke*, occupational dusts and chemicals, smoke from home cooking, heating fuels, and air pollution, or Family history of COPD, or Alpha-1 Antitrypsin deficiency&lt;br&gt;- Rule out asthma, heart failure, cystic fibrosis, bronchiectasis, and other lung diseases</td>
<td>Assess adults for risk factors at routine preventive visits&lt;br&gt;Advise smokers to quit at every visit&lt;br&gt;Refer patients to MI Tobacco Quitline 1-800-480-7848</td>
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<td><strong>Diagnostic Testing</strong>&lt;br&gt;FVC = forced vital capacity; FEV1 = forced expiratory volume in one second</td>
<td>Spirometry is necessary to confirm the diagnosis of COPD and determine degree of airflow limitation&lt;br&gt;Bronchodilator Reversibility Testing (to rule out asthma)&lt;br&gt;CXR (to rule out other diagnosis e.g. TB, Lung Cancer, and CHF)&lt;br&gt;Consider Alpha-1 Antitrypsin Deficiency Screening when early onset of COPD, little or no history of smoking, family history of COPD, predominance of basilar emphysema.</td>
<td>To establish diagnosis; then as needed if an increase in symptoms or complications</td>
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## Classification of COPD by severity

In patients with FEV1/FVC < 0.70 based on post bronchodilator FEV1

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<th>Stage I: Mild</th>
<th>Stage II: Moderate</th>
<th>Stage III: Severe</th>
<th>Stage IV: Very Severe</th>
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<td>FEV1 &gt;80% predicted&lt;br&gt;No abnormal signs&lt;br&gt;Cough (sputum)&lt;br&gt;± Little or no dyspnea</td>
<td>50% ≤ FEV1 &lt;80% predicted&lt;br&gt;Breathlessness (± wheeze on moderate exertion)&lt;br&gt;Cough (± sputum)&lt;br&gt;Variable abnormal signs (general reduction in breath sounds, presence of wheezes)&lt;br&gt;Hypoxemia may be present</td>
<td>30% ≤ FEV1 &lt;50% predicted&lt;br&gt;Dyspnea with an exertion or at rest&lt;br&gt;Wheeze and cough often prominent&lt;br&gt;Lung hyperinfiltration usual&lt;br&gt;Cyanosis, peripheral edema and polycythemia in advanced disease&lt;br&gt;Hypoxemia and hypercapnia are common</td>
<td>FEV1/FVC &lt;30% predicted or FEV1 &lt;50% with chronic respiratory failure (O2 &lt;80 or CO2 &gt;50)&lt;br&gt;Dyspnea with an exertion or at rest&lt;br&gt;Wheeze and cough often prominent&lt;br&gt;Lung hyperinfiltration usual; cyanosis, peripheral edema and polycythemia in advanced disease&lt;br&gt;Hypoxemia and hypercapnia are common</td>
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Therapy at Each Stage of COPD

- Smoking cessation support
- Oxygen supplementation - when indicated
- Trigger avoidance
- Inhaler technique training
- COPD education
- Caretaker support
- Assess current vaccine schedule influenza, Tdap and pneumococcal vaccination
- Assessment and treatment of co morbidities
- Patient education to address disease, treatment, compliance, advance directives, etc.
- Pulmonary rehabilitation/regular exercise to improve exercise tolerance, reduce symptoms, improve quality of life, and increase participation in everyday activities
- Use a stepwise increase in therapy, depending on the severity of the disease; pharmacotherapy decreases symptoms and/or complications

Bronchodilators are central to symptomatic management of COPD. Inhaled corticosteroids are appropriate for COPD patients with FEV1 <60% predicted. Long term monotherapy with inhaled corticosteroids is not recommended.

Regular treatment with long-acting bronchodilators is more effective and convenient than with short-acting bronchodilators, but more costly. Obtaining the opinion of a pulmonary specialist may be beneficial at any stage of the disease.

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<td>Short acting bronchodilators as needed. Yearly follow up visit schedule (I, II, III, IV)</td>
<td>Add daily long-acting bronchodilator, inhaled corticosteroids are indicated if hospitalized for frequent COPD exacerbations, consider adding a PDE4 inhibitor. Follow up every three to six months</td>
<td>Add inhaled corticosteroids to reduce exacerbations oral steroid bursts for exacerbations. Follow up every two to four months or more frequently as needed.</td>
<td>Add long term oxygen supplementation in those with chronic respiratory failure; consider surgical treatment. Oral steroids as needed</td>
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Exacerbation Management/Treatment Options

- Supplemental oxygen
- Short-acting bronchodilator
- Systemic corticosteroids - 40mg of prednisone per day for 5 days.
- Antibiotics should be given
  - With 3 cardinal symptoms: increased dyspnea, sputum volume, increased sputum purulence
  - Sputum purulence + increased dyspnea or sputum volume
  - Patients who require mechanical ventilation. Hospitalization if severe

Follow-up visit after an acute inpatient discharge, ED visit, or home exacerbation

Worldwide cigarette smoking is the most common risk factor, but up to 10% have never smoked