



Clinical Care Guidelines for:  
**Chronic Obstructive Pulmonary Disease**

**OBJECTIVE**

Guide the appropriate diagnosis and management of Chronic Obstructive Pulmonary Disease (COPD)

**GUIDELINE**

Consistent with the National Institutes of Health's (NIH) National Heart, Lung, and Blood Institute (NHLBI) and the World Health Organization (WHO), MDwise references the Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines when administering its COPD programs.

[GOLD - the Global Initiative for Chronic Obstructive Lung Disease](#)

**ASSESSMENT & DIAGNOSIS**

**PATIENT FACTORS FOR CONSIDERATION OF A COPD DIAGNOSIS**

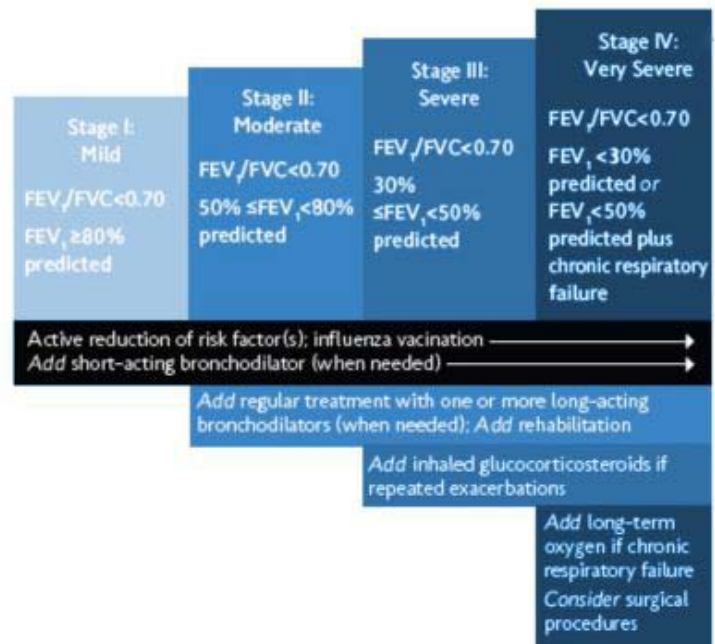
- Diagnosis of COPD should be considered if any of the following patient-specific factors are present in an individual > 40 years of age:
  - Dyspnea that is: progressive, persistent, worsens with exercise, and described by the patient as an “increased effort to breathe,” “heaviness,” “air hunger,” or “gasping.”
  - Chronic cough: possibly intermittent or unproductive
  - Chronic sputum production
  - History of exposure to risk factors: Tobacco smoke, occupational dusts & chemicals, and smoke from home cooking and heating fuel.

\*\* Definitive diagnosis confirmed via spirometry.

**DIFFERENTIAL DIAGNOSIS OF COPD**

- COPD
  - Mid-life onset
  - Slow, progressive symptom development
  - Long history of smoking
  - Exercise-induced dyspnea
  - Airflow limitation largely irreversible
- Asthma
  - Early onset (typically childhood)
  - Daily symptom variation
  - Nighttime/early morning symptoms prevalent
  - Allergy, rhinitis, and/or eczema also present
  - Family history of asthma
  - Airflow limitation largely reversible

\*\* Utilize bronchodilator reversibility testing to rule out asthma diagnosis



## STAGES OF COPD

- *Stage I: Mild COPD* – characterized by mild airflow limitation ( $FEV_1/FVC < 0.70$ ;  $FEV_1 \geq 80\%$  predicted). Symptoms of chronic cough and sputum production may be present, but not always.
- *Stage II: Moderate COPD* – characterized by worsening airflow limitation ( $FEV_1/FVC < 0.70$ ;  $50\% \leq FEV_1 < 80\%$  predicted), with shortness of breath typically developing on exertion and cough/sputum production sometimes also present. Many patients typically seek medical care at this stage due to chronic respiratory symptoms or an exacerbation of their disease.
- *Stage III: Severe COPD* – characterized by further worsening of airflow limitation ( $FEV_1/FVC < 0.70$ ;  $30\% \leq FEV_1 < 50\%$  predicted), greater shortness of breath, reduced exercise capacity, fatigue, and repeated exacerbations that almost always have an impact on patients' quality of life.
- *Stage IV: Very Severe COPD* – characterized by severe airflow limitation ( $FEV_1/FVC < 0.70$ ;  $30\% < FEV_1$  predicted or  $FEV_1 < 50\%$  predicted plus the presence of chronic respiratory failure). Patients may have *Stage IV: Very Severe COPD* even if  $FEV_1$  is  $> 30\%$  predicted, whenever these complications are present.

<sup>1</sup>Values are post bronchodilator

## TREATMENT

### PHARMACOLOGIC THERAPY

- Bronchodilators
  - Represent the cornerstone of COPD symptom management therapy for patients with stable COPD.
  - The selection of which therapeutic agent to use ( $\beta_2$ -agonist, anticholinergic, theophylline, or combination) depends largely upon the individual patient response regarding symptom relief and tolerability of side effects.
  - Short-acting bronchodilators (i.e. albuterol, levalbuterol, ipratropium bromide) are prescribed on an “as needed” basis to provide acute symptomatic relief.
  - Long-acting bronchodilators (i.e. formoterol, salmeterol, tiotropium) are prescribed for maintenance use in order to prevent or reduce persistent symptoms.
  - Combining bronchodilators (one short & one long-acting) of different pharmacological classes may improve efficacy and decrease the risk of side effects compared to increasing the dose of a single bronchodilator.
    - Exception: Short and long-acting inhaled anticholinergic agents should not be combined.
- Glucocorticosteroids
  - Prolonged continuous use of inhaled glucocorticosteroids is only appropriate for symptomatic patients with an  $FEV_1 < 50\%$  predicted and repeated exacerbations.
  - Regular treatment with inhaled glucocorticosteroids has been shown to decrease exacerbation frequency, but does not modify the long-term decline in  $FEV_1$ .
  - The combination of an inhaled glucocorticosteroid and a long-acting  $\beta_2$ -agonist has been shown to be more effective than the individual components in reducing exacerbation frequency and improving lung function.
  - Only the 250/50mcg strength of Salmeterol/Fluticasone (Advair®) is FDA-approved for the treatment of COPD.
  - Prolonged treatment with oral glucocorticosteroids for COPD is not recommended.

### VACCINES

- It is recommended that all COPD patients receive an annual influenza vaccine; reduces risk of serious illness/death by 50%.
- COPD patients  $> 65$  years of age, or  $< 65$  years of age with an  $FEV_1 < 40\%$  predicted should receive the pneumococcal polysaccharide vaccine.

### REHABILITATION / OXYGEN THERAPY

- All COPD patients, regardless of their disease stage, achieve improvements in exercise tolerance and symptoms of dyspnea and fatigue following completion of at least a six week exercise rehabilitation program.
- Long-term oxygen therapy should be considered in *Stage IV* COPD patients who meet certain laboratory criteria.
- Goal is to produce an  $SaO_2$  of  $> 90\%$  so as to preserve vital organ function and adequate delivery of oxygen.

## REFERENCES

[GOLD - the Global Initiative for Chronic Obstructive Lung Disease](#)

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