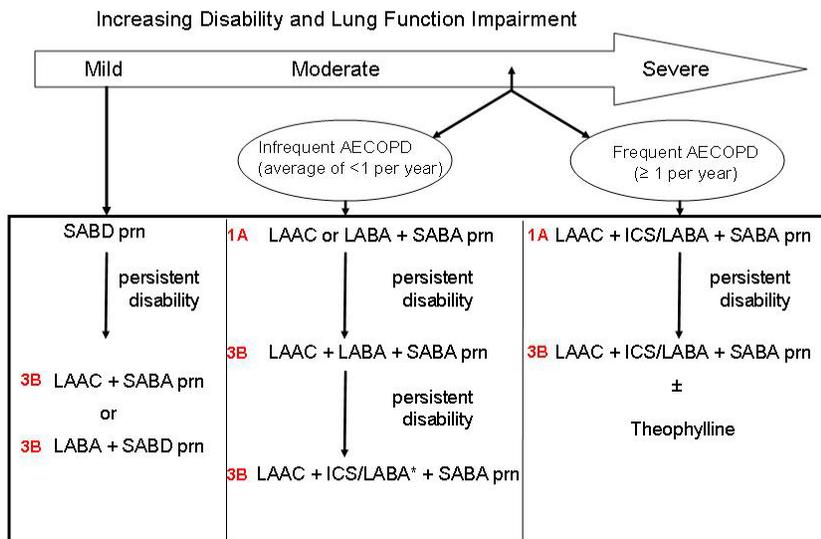


Algorithm from 2008 CTS COPD update: Highlights for primary care



*Refers to the lower dose inhaled corticosteroid/long-acting beta₂-agonist (ICS/LABA). AECOPD Acute exacerbation of COPD; LAAC Long-acting anticholinergic (Tiotropium); prn as needed; SABA Short-acting beta₂-agonist; SABD Short-acting bronchodilator.
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Red = CTS Levels of evidence

CTS Levels of Evidence

Level

1. Evidence from one or more randomized trials
2. Evidence from one or more well-designed cohort or case-control study
3. Consensus from expert groups based on clinical experience

Evidence further subdivided into a number of categories

- A. Good evidence to support a recommendation for use
- B. Moderate evidence to support a recommendation for use
- C. Poor evidence to support a recommendation for or against use
- D. Moderate evidence to support a recommendation against use
- E. Good evidence to support a recommendation against use

Comments from Dalhousie Academic Detailing Service

- **CTS recommendations** comment that evidence-based guidelines for COPD patients with FEV₁ > 65% predicted are impossible because little information exists in this group.
- **Benefits** from treating COPD are primarily related to a **reduction in exacerbations** among exacerbation-prone adults with activity-limiting dyspnea and FEV₁ less than 60% predicted.^{Wilt}
- **Average** improvement in respiratory health status [from inhalation therapies] is **clinically insignificant**, but **some** individuals achieve a noticeable **improvement**.^{Wilt}
- **Two** recommendations in the algorithm are level of evidence 1A, the remaining are consensus (3B). Note: Levels of evidence do not appear in the published figure but have been added by ADS.
- CTS recommends a combination of LAAC + LABA, but the recent OPTIMAL trial found that the combination is **not** superior to TIO alone for any of the outcomes studied.
- CTS does not recommend LABA + ICS alone in the algorithm for patients who have frequent exacerbations, but there is level 1A evidence that LABA + ICS is superior to either agent alone for reducing exacerbations and possibly improving quality of life.^{TORCH} Note: LABA+ICS is recommended in the text of the CTS document about management of acute exacerbations.
- TIO+LABA+ICS did **not** show benefit vs TIO in the **primary** outcome of reducing exacerbations. There was benefit in the **secondary** outcomes of hospitalizations and quality of life.^{OPTIMAL}
- Refer to pulmonary rehabilitation or self-management programs if available.
- When changing or adding therapy, if symptoms are **not** improved and you are **not** concerned about exacerbations, **try** stopping therapies and see if symptoms deteriorate.
- When evaluating response to therapy, check compliance and inhaler technique, encourage physical activity, and monitor for adverse events.

CTS Definition of Exacerbation

A sustained worsening of dyspnea, cough, or sputum production leading to an increase in the use of maintenance medications and/or supplementation with additional medications (**level of evidence: 3**).

The term 'sustained' implies a change from baseline lasting 48 h or more.

When considering the frequency of exacerbations in the algorithm (frequent AECOPD ≥ 1 per year), our content expert suggests:

- Exacerbations be severe enough to require antibiotics and/or oral corticosteroids or emergency room visit.
- The threshold of ≥ 1 exacerbation per year for 2 years is based on consensus.

Oxygen Therapy

Oxygen therapy has evidence of benefit in mortality. Evidence for benefit in symptoms and quality of life is lacking.

Long-term continuous oxygen therapy (≥ 15 hours per day or more to achieve an oxygen saturation of ≥ 90%) **decreases mortality** in patients with stable COPD and severe hypoxemia (partial pressure of arterial oxygen ≤ 55 mm Hg or when the partial pressure of arterial oxygen is < 60 mm Hg in the presence of bilateral ankle edema, cor pulmonale, or hematocrit >56%).

The Wilt meta-analysis states ambulatory oxygen does **not** improve respiratory health status measures, exercise capacity, or hospitalizations over the short term.

The CTS Guidelines state current evidence does **not** justify the widespread provision of **ambulatory** oxygen to patients with COPD (**level of evidence: 1C**).