

- Inhaled bronchodilators in COPD are central to symptom management and commonly given on a regular basis to prevent or reduce symptoms **(Evidence A)**
- Inhaled bronchodilators are recommended over oral bronchodilators **(Evidence A)**
- Regular and as-needed use of SABA or SAMA improves FEV1 and symptoms **(Evidence A)**
- Combinations of SABA and SAMA are superior compared to either medication alone in improving FEV1 and symptoms **(Evidence A)**
- LABAs and LAMAs are preferred over short-acting agents except for patients with only occasional dyspnea **(Evidence A)**, and for immediate relief of symptoms in patients already on long-acting bronchodilators for maintenance therapy
- LABAs and LAMAs significantly improve lung function, dyspnea, health status, and reduce exacerbation rates **(Evidence A)**
- LAMAs have a greater effect on exacerbation reduction compared with LABAs **(Evidence A)** and decrease hospitalizations **(Evidence B)**
- When initiating treatment with long acting bronchodilators the preferred choice is a combination of a LABA and a LAMA. In patients with persistent dyspnea on a single long-acting bronchodilator treatment should be escalated to two **(Evidence A)**.
- Combination treatment with a LABA and a LAMA increases FEV1 and reduces symptoms compared to monotherapy **(Evidence A)**
- Combination treatment with a LABA+LAMA reduces exacerbations compared to monotherapy **(Evidence B)**
- Combinations can be given as single inhaler or multiple inhaler treatment. Single inhaler therapy may be more convenient and effective than multiple inhalers
- Ensifentrine significantly improves lung function **(Evidence A)**, dyspnea **(Evidence A)** and health status **(Evidence B)**
- Theophylline exerts a small bronchodilator effect in stable COPD **(Evidence A)** and that is associated with modest symptomatic benefits **(Evidence B)**

Beta₂-agonists

The principal action of beta₂-agonists is to relax airway smooth muscle by stimulating beta₂-adrenergic receptors, which increases cyclic AMP and produces functional antagonism to bronchoconstriction. There are short-acting (SABA) and long-acting (LABA) beta₂-agonists. The effect of SABAs usually wears off within 4 to 6 hours.^(897,898) Regular and as-needed use of SABAs improve FEV1 and symptoms.⁽⁹⁰⁴⁾ LABAs show duration of action of 12 or more hours and do not preclude additional benefit from as-needed SABA therapy.⁽⁹⁰⁵⁾

Formoterol and salmeterol are twice-daily LABAs that significantly improve FEV1 and lung volumes, dyspnea, health status, exacerbation rate and number of hospitalizations,⁽⁹⁰⁶⁾ but have no effect on mortality or rate of decline of lung function. Indacaterol is a once daily LABA that improves breathlessness,^(907,908) health status⁽⁹⁰⁸⁾ and exacerbation rate.⁽⁹⁰⁸⁾ Some patients experience cough following the inhalation of indacaterol. Olodaterol and vilanterol are additional once daily LABAs that improve lung function and symptoms.^(909,910)