

# Stopping Inhaled Corticosteroids (ICS) for Chronic Obstructive Pulmonary Disease (COPD)

Veterans need to be individually evaluated to determine if an ICS is indicated for treatment of COPD. Use shared-decision making to discuss why a change may be needed and review the risks and benefits.

**Note**

**Adverse effects from ICS:**

- Oral candidiasis
- Hoarse voice
- Skin bruising
- Pneumonia

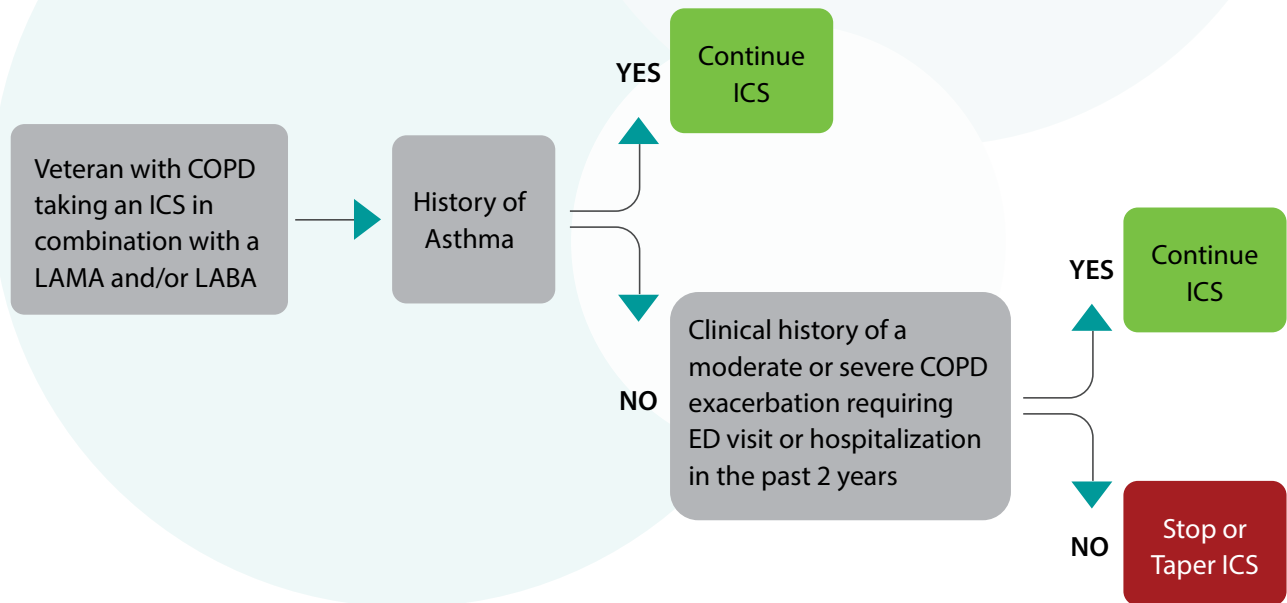
**Patient at highest risk for pneumonia related to ICS:**

- Smokers
- Age over 55 years
- History of pneumonia
- Body mass index < 25 kg/m<sup>2</sup>
- Have severe airway limitation

**Review of the following before stopping an ICS:**

- ✓ If a patient has asthma or asthma and COPD, then ICS is indicated
- ✓ Medication adherence and proper inhaler technique
- ✓ Clinical effectiveness, side effects, and risk factors for ICS

## Determining if ICS therapy should be continued or stopped<sup>1,2</sup>



Blood eosinophil count (EOS) is not required to discontinue ICS. If EOS are > 300 cells/μL in past year, ICS may be beneficial and consider continuing. EOS increase with chronic inflammation of the airway and may increase from exposure to cigarette smoke, environmental irritants, respiratory infections, allergies or asthma.



## KEY MESSAGE

Consider discontinuing inhaled corticosteroids in patients with COPD who do not have asthma and have not had a moderate or severe COPD exacerbation in the past 2 years.

### COPD dashboard

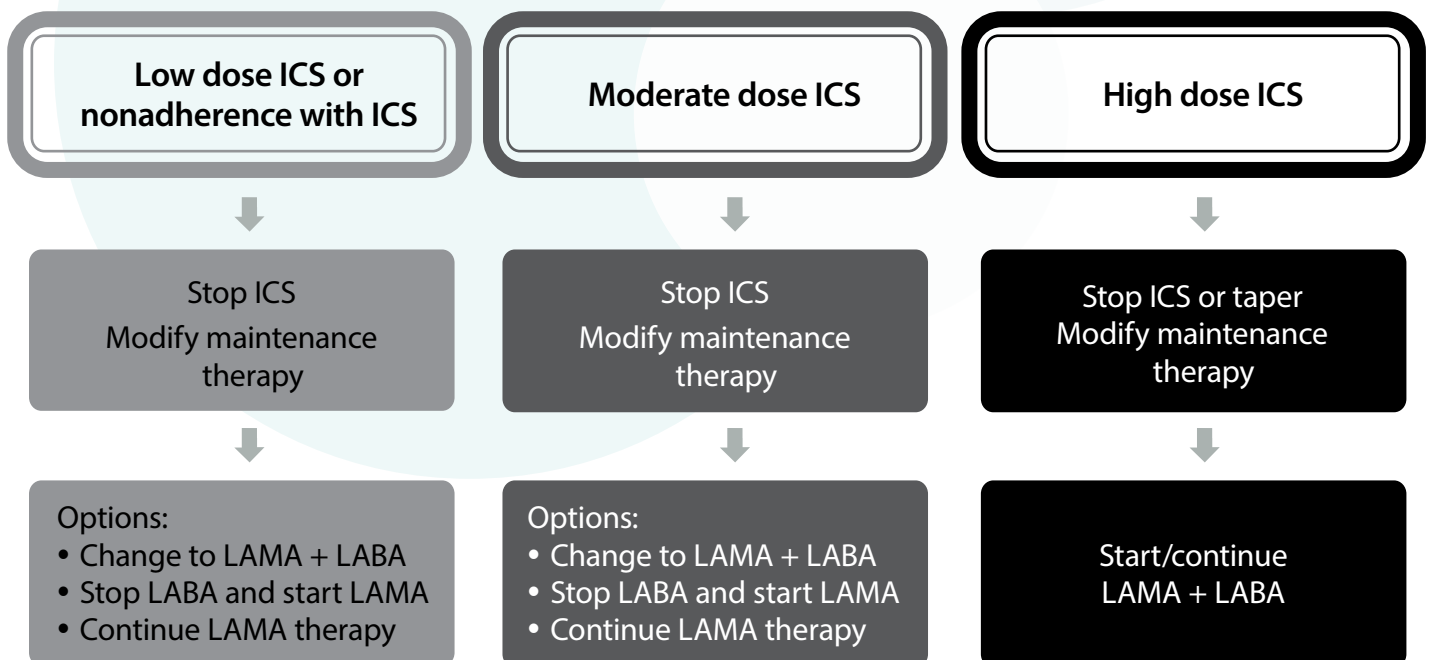
Patients potentially eligible for ICS de-escalation can be found on the [COPD Dashboard](#).

Keep in mind, patients identified as potential candidates on the dashboard should have a complete review of the medical record. They may have had COPD exacerbations treated outside of the VA or other reasons in the record which necessitate continued ICS therapy.

### Considerations when stopping an ICS inhaler<sup>1,2</sup>

1. Most patients can discontinue ICS inhaler without tapering while using LAMA +/- LABA therapy<sup>3</sup>
2. Consider tapering the ICS inhaler when:
  - a. The patient is using a high potency ICS inhaler (see table "ICS Inhalers")
  - b. The patient has a history of severe exacerbations
3. Tapering is not necessary if the Veteran is not taking the ICS inhaler or not taking it regularly (e.g., < 50% adherence)
4. When an ICS is stopped, the medication order needs to be discontinued in the medical record, so the Veteran does not accidentally refill the order

### Pathway for discontinuing ICS inhalers in patients taking ICS in combination with LAMA and/or LABA<sup>4,5</sup>



## Corticosteroid comparison charts<sup>6,7</sup>

### ICS Inhalers<sup>6,7</sup>

ICS Drug	Low	Medium	High
Beclomethasone (Qvar Redihaler <sup>®</sup> MDI)	100–200 mcg	>200–400 mcg	>400 mcg
Budesonide (Pulmicort Flexhaler <sup>®</sup> DPI)	200–400 mcg	>400–800 mcg	>800 mcg
Ciclesonide (Alvesco <sup>®</sup> MDI)	80–160 mcg	>160–320 mcg	>320 mcg
Fluticasone furoate (Arnuity Ellipta <sup>®</sup> DPI)	100 mcg	N/A	200mcg
Fluticasone propionate (Flovent <sup>®</sup> DPI and MDI)	100–250 mcg	>250–500 mcg	>500 mcg
Mometasone (Asmanex <sup>®</sup> DPI and MDI)	110–220 mcg	440 mcg	>440 mcg

### ICS + LABA combination inhalers

Product	Delivery	Strength	Dosing	Potency of Steroid
Budesonide/ formoterol (Symbicort <sup>®</sup> )	MDI	80/4.5 mcg	2 inhalations twice daily	Low
		160/4.5 mcg	2 inhalations twice daily (max: 320/9 mcg twice daily)	Medium
Fluticasone furoate/ vilanterol (Breo Ellipta <sup>®</sup> )	DPI	100/25 mcg	1 inhalation once daily	Low
		200/25 mcg	1 inhalation once daily (max: 200/25 mcg/daily)	High
Fluticasone propionate/ salmeterol (Wixela Inhub and Advair Diskus <sup>®</sup> )	DPI	100/50 mcg	1 inhalation twice daily	Low
		250/50 mcg	1 inhalation twice daily (max: 250/200 mcg twice daily for COPD)	Medium
		500/50 mcg	1 inhalation twice daily (max: 500/50 mcg twice daily for asthma)	High
Fluticasone propionate/ salmeterol (Advair HFA <sup>®</sup> )	MDI	45/21 mcg	2 inhalations twice daily	Low
		115/21 mcg	2 inhalations twice daily	Medium
		230/21 mcg	2 inhalations twice daily (max: 460/42 mcg twice daily)	High
Mometasone/ formoterol (Dulera <sup>®</sup> )	MDI	100/5 mcg	2 inhalations twice daily	Medium
		200/5 mcg	2 inhalations twice daily (max: 400/10 mcg twice daily)	High

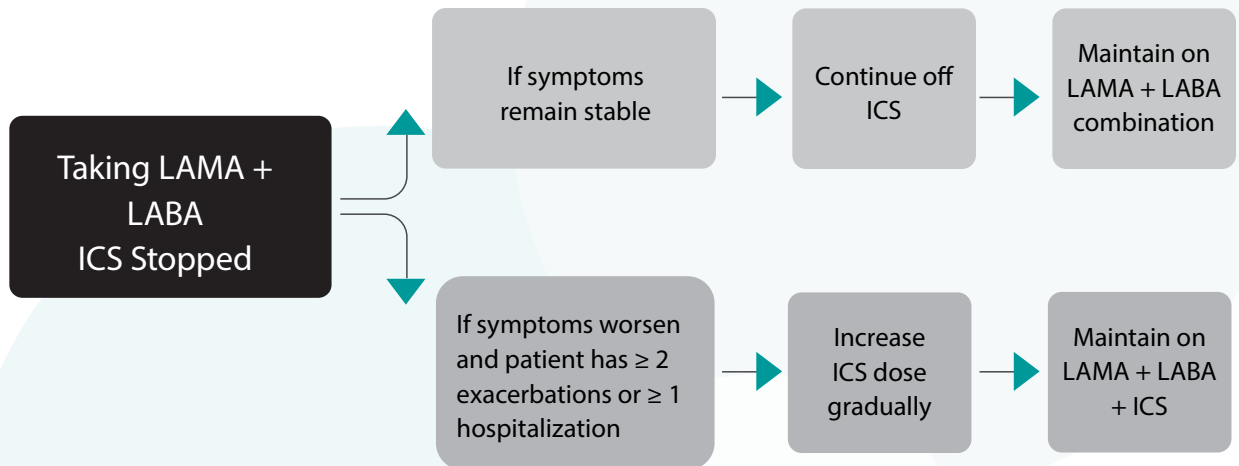
## Example ICS taper when patient is taking an ICS/LABA<sup>4,5</sup>

This is an example taper that can be used in patients taking budesonide/formoterol (Symbicort®) HFA or fluticasone propionate/salmeterol DPI (Wixela Inhub®) inhaler

### Steps for tapering ICS and switching to LAMA + LABA maintenance therapy:

1. Start maintenance therapy with LAMA + LABA: Olodaterol/tiotropium two inh daily
2. Stop budesonide/formoterol inhaler or fluticasone/salmeterol inhaler and start ICS mometasone inhaler and taper as follows (options below):
  - a. Mometasone 100 mcg HFA ONE inh twice daily for 6 weeks then ONE inh daily for six weeks then stop.
  - b. Mometasone 110 mcg DPI TWO inh daily for six weeks, then ONE inh daily for six weeks then stop.

### Follow up after ICS de-escalation<sup>1</sup>



### References:

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3. Rossi A, van der Molen T, del Olmo R, et al. INSTEAD: a randomised switch trial of indacaterol versus salmeterol/fluticasone in moderate COPD. Eur Respir J. 2014 Dec;44(6):1548-56. doi: 10.1183/09031936.00126814. Epub 2014 Oct 30. PMID: 25359348.
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6. Expert Panel Working Group of the National Heart, Lung, and Blood Institute (NHLBI) administered and coordinated National Asthma Education and Prevention Program Coordinating Committee (NAEPPCC), Cloutier MM, Baptist AP, et al. 2020 Focused Updates to the Asthma Management Guidelines: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group. J Allergy Clin Immunol 2020; 146:1217.
7. National Heart, Blood, and Lung Institute Expert Panel Report 3 (EPR 3): Guidelines for the Diagnosis and Management of Asthma; 2007. NIH Publication 08-4051 available at [https://www.nhlbi.nih.gov/sites/default/files/media/docs/EPR-3\\_Asthma\\_Full\\_Report\\_2007.pdf](https://www.nhlbi.nih.gov/sites/default/files/media/docs/EPR-3_Asthma_Full_Report_2007.pdf); updated with additional data from Global Initiative for Asthma (GINA); Global Strategy for Asthma Management and Prevention; 2017.

### Abbreviations

DPI: dry powder inhaler

ED: Emergency Department

EOS: eosinophils

HFA: hydrofluoroalkane

ICS: inhaled corticosteroid

INH: inhalation

LABA: long-acting beta-2 agonist

LAMA: long-acting muscarinic antagonist

MCG: microgram

MDI: metered dose inhaler.