



## Appendix B: Initiating Inhalers – A Stepwise Approach to Treatment

Refer to Table 1. Initiating inhalers – stepwise approach to treatment.

### Initial Treatment:

- Choose step based on assessment of asthma control (symptom control and risk of future asthma attacks) and patient's preference (e.g., cost, willingness to use the prescribed device, and ability to adhere to treatment plan).
- Aim to have the patient at the lowest step needed for asthma control.

### Step up:

- Consider if symptoms not routinely controlled or if patient continues to have recurrent asthma attacks at current step.
- Before stepping up, confirm the diagnosis, review patient's self-management education and lifestyle/environmental modifications and ensure medication adherence and correct inhaler technique.

### Step down:

- Consider stepping down if symptoms are controlled for  $\geq 3$  months and risk of asthma attack is low.

**Table 1. Initiating inhalers – stepwise approach to treatment**

PREFERRED CONTROLLER	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
	May not need controller	Low-dose ICS	Med-dose ICS	Med-dose ICS/LABA	Refer patients with persistent symptoms, exacerbations despite adherence, good inhaler technique and step 4 treatments
Alternate options	Low-dose inhaled corticosteroids (ICS)		Low-dose ICS/long-acting beta-2 agonist (LABA)	Low-dose Symbicort (MART)*	
			Low-dose Symbicort Maintenance and Reliever Therapy (MART)*	High-dose ICS (more side-effects, limited benefit, dose-response curve flattens. Trial for 3-6months)	
RELIEVER	As needed short-acting beta-2 agonists (SABA)		As needed SABA or Symbicort (MART)*		

\* **Symbicort Maintenance And Reliever Therapy (MART)** is the use of Symbicort as both regular maintenance treatment (usually BID) and as a reliever when asthma symptoms are present (1 inhalation, repeat as needed every 5 minutes to a max of 6 inhalations). Daily maximum is 8 inhalations. Do not use if patient symptoms are controlled on low/med-dose ICS. See [product monograph](#) for more information on treatment considerations.

### Further considerations for choosing steps:

**Step 1.** SABA as needed (PRN) alone: If forced expiratory volume in 1 second (FEV<sub>1</sub>) is normal, symptoms are controlled and no risk factors for future asthma attacks (see *Assessment of Asthma Control*).

**NOTE:** chronic airway inflammation can be found in these patients and the safety of SABA-alone asthma treatment is not well known.<sup>1</sup>

**Step 2.** Regular low-dose ICS (plus SABA PRN) is recommended in patients with:

- Asthma symptoms more than twice a month
- Waking due to asthma more than once a month
- Asthma symptoms plus any risk factor(s) for exacerbations (see *Assessment of Asthma Control*)
- Seasonal allergic asthma – initiate when symptoms begin and discontinue 4 weeks after last seasonal exposure.<sup>2</sup>

Treatment with a regular daily low-dose ICS is highly effective in reducing asthma symptoms, the risk of asthma-related exacerbations, hospitalization and death. Leukotriene receptor antagonist (LTRA) is a less effective alternate; ICS/LABA is a more expensive alternate.

**Step 3.** Med-dose ICS (plus SABA PRN) or low-dose ICS/LABA (plus SABA PRN) or low-dose Symbicort MART. Add-on with LABA may reduce exacerbations requiring oral steroids by 1% (ARR)<sup>3</sup> compared with med/high-dose ICS (NNT=73-100).<sup>3</sup> Consider cost and inhaler burden compliance concerns. Step 3 is recommended in patients with troublesome asthma symptoms on most days, greater than one awakening from asthma symptoms per week, and especially if risk factors for exacerbations exist.

**Step 4.** Med-dose ICS/LABA or low/med-dose Symbicort MART. The considerations to move to step 4 are similar to moving from step 2 to step 3. Consider low-dose Symbicort MART only when low/med dose ICS is ineffective and there are adherence concerns (e.g., inhaler burden). High-dose ICS has more side-effects and little added benefit as the dose-response curve to ICS is flat after initiation of low dose ICS.

**Step 5.** Obtain specialist guidance.

**Considerations for stepping down:**<sup>5</sup>

**Step 5 → Step 4.** Obtain specialist guidance.

**Step 4 → Step 3.**

- If on med/high-dose ICS/LABA → Reduce ICS component by 50%; do not D/C LABA; continue SABA PRN.
- If on med-dose Symbicort MART → Reduce to low-dose Symbicort MART.<sup>4</sup>
- If on high-dose ICS → Reduce ICS dose by 50%; continue SABA PRN.<sup>5</sup>

**Step 3 → Step 2.**

- If on low-dose ICS/LABA → Reduce to once daily; D/C LABA likely to lead to deterioration; continue SABA PRN.
- If on low-dose Symbicort MART → Reduce maintenance component to once a day and continue low-dose reliever PRN.<sup>4</sup>
- If on med-dose ICS → Reduce ICS dose by 50%; continue SABA PRN.

**Step 2 → Step 1.**

- If on low-dose ICS → Once daily dosing (budesonide, ciclesonide, mometasone, fluticasone).
- Consider stopping treatment if no symptoms for 6-12 months and no risk factors – monitor closely as asthma attack risk increases when ICS is stopped.

**References:**

- 1 Global Initiative for Asthma (GINA). Global Strategy for Asthma Management and Prevention. 2014:1-132. Available from: [www.ginasthma.org](http://www.ginasthma.org). Accessed November 14, 2014. Page 30.
- 2 Global Initiative for Asthma (GINA). Global Strategy for Asthma Management and Prevention. 2014:1-132. Available from: [www.ginasthma.org](http://www.ginasthma.org). Accessed November 14, 2014. Page 33.
- 3 Ducharme FM, Ni Chroinin M, Greenstone I, Lasserson TJ. Addition of long-acting beta<sub>2</sub>-agonists to inhaled steroids versus higher dose inhaled steroids in adults and children with persistent asthma. The Cochrane database of systematic reviews. 2010;(4):CD005533. doi:10.1002/14651858.CD005533.pub2.
- 4 Global Initiative for Asthma (GINA). Global Strategy for Asthma Management and Prevention. 2014: 1-132. Available from: [www.ginasthma.org](http://www.ginasthma.org). Accessed November 14, 2014.
- 5 British Thoracic Society (BTS) & Scottish Intercollegiate Guidelines Network (SIGN). British guideline on the management of asthma: A national clinical guideline. 2014 (revised). Accessed online December 3, 2014 at: [www.brit-thoracic.org.uk](http://www.brit-thoracic.org.uk). (192 pages).
- 6 Rogers L & Reibman J. Stepping Down Asthma Treatment: How and When. *Curr Opin Pulm Med*. 2012. January; 18(1): 70-5.

<sup>5</sup> There are very few studies on optimal timing of treatment options for stepping down asthma treatment. Any step down should be considered a therapeutic trial and the patient should be monitored closely and instructed with an action plan on what to do if asthma symptoms worsen. The considerations listed for stepping down treatment are based on what little evidence is available but more research is needed.<sup>4,6</sup>