

Overcoming Australia's over-reliance on 'blue puffers' for asthma



National
Asthma
Council

Australian
Asthma
Handbook

Too many Australians with asthma are at risk of severe asthma exacerbations due to over-reliance on short-acting beta₂ agonists (SABAs).

Relying on SABA, without treating airway inflammation, increases risk of severe exacerbations that require systemic corticosteroid treatment or hospitalisation.

SABA use more than 2 days per week on average indicates failure to maintain good asthma control and increased risk of severe asthma exacerbations.

The National Asthma Council's [Australian Asthma Handbook](#) recommendations for asthma treatment have changed:

- No-one aged 12+ years should manage their asthma solely with a SABA. Switch to as-needed budesonide-formoterol.
- For patients aged 12+ years, maintenance-and-reliever therapy with beclometasone-formoterol (≥18 years) or budesonide-formoterol (≥12 years) is now recommended, instead of maintenance inhaled corticosteroids (ICS) plus as-needed SABA.
- As-needed SABA alone is inadequate asthma treatment for most patients aged 6–11 years, and for many patients aged 1–5 years. Maintenance ICS treatment is recommended for most children.

What is the problem with SABA over-reliance?

Adults and adolescents who manage their asthma with SABA alone, even those with few symptoms, are at higher risk of severe exacerbations that require systemic corticosteroid treatment, compared with those using low-dose daily maintenance ICS¹ or as-needed budesonide-formoterol.^{2–5} In children with asthma, addition of daily ICS to as-needed SABA reduces symptoms and exacerbations.^{6,7} Managing newly diagnosed asthma with SABA alone is associated with poorer lung function in adults⁸ and school-aged children,⁹ compared with early ICS treatment.

What is the problem with SABA over-use?

Over-use of SABA is a red flag: it is a strong marker of poor asthma control and markedly increased risk of severe or life-threatening asthma exacerbations,^{10–13} and may itself contribute to risk through pro-inflammatory effect or receptor down-regulation.¹³ High use has been associated with excess mortality.¹⁰ Some people overuse SABA due to psychological dependence¹⁴ or anxiety about their asthma and the possibility of having symptoms.¹⁵ Any increased SABA use predicts severe exacerbations¹⁶ and is a signal that a patient needs a careful review of their asthma.

Why is anti-inflammatory reliever recommended in preference to SABA for patients aged 12+ years?

Dose-escalation with anti-inflammatory reliever in response to worsening asthma symptoms is much more effective than SABA in preventing progression to severe asthma exacerbations.¹⁷

Why do Australians with asthma over-rely on or overuse SABA?

Factors include easy availability of nonprescription salbutamol, the experience of rapid symptom relief, use in emergency departments and traditional first aid protocols, lack of awareness of asthma as an inflammatory disease, and unfamiliarity with anti-inflammatory relievers.

Do SABAs still have a role in asthma management?

In children 1–11 years, as-needed SABA is recommended for relief of asthma symptoms. For many children, it should not be their sole asthma treatment – they also need maintenance treatment with low-dose ICS. In those aged 12+ years, SABA is not the recommended reliever, but can be used by patients using daily maintenance ICS-containing treatment as one of the ‘alternative’ treatment options. Salbutamol is still the standard treatment for acute asthma in acute care.

Short-acting beta₂ agonist use and asthma control in Australia

An estimated 15 million SABA inhalers are sold each year, of which approximately 55% are non-prescription.¹⁹

Over-reliance on SABA is common, with a high rate of self-reported poor adherence to prescribed ICS.¹⁸

An estimated 70% of patients overuse SABA.¹⁸

SABA over-use is associated with oral corticosteroid use for asthma exacerbations.¹⁸

One real-world study reported that asthma was uncontrolled in almost half of patients and well controlled in less than 20%.¹⁸

Definitions

SABA over-reliance: When patients use as-needed salbutamol or terbutaline as their only asthma treatment, or with inadequate ICS treatment – either due to poor adherence to maintenance ICS treatment, or when the dose is too low to control airway inflammation.

SABA over-use: Consumption at levels associated with increased risk of severe and life-threatening asthma exacerbations,^{10–13} typically defined as obtaining more than 2 canisters (200 actuations) of salbutamol (or equivalent) per year due to poor asthma symptom control or perceived need for frequent use, or using SABA more than twice a week on average over a month.^{10,18}

Anti-inflammatory reliever (AIR): Single-inhaler ICS-formoterol for symptom relief, within one of two possible regimens:

- ‘AIR-only’ (budesonide-formoterol taken as needed)
- maintenance-and-reliever therapy (MART) – beclometasone-formoterol or budesonide-formoterol taken as planned daily maintenance treatment, with extra doses taken as needed for symptom relief (see National Asthma Council Australia’s [information sheets](#))

Table 1. How to prevent SABA over-reliance and overuse among patients with asthma**In primary care**

For adults and adolescents, prescribe asthma treatment regimens with anti-inflammatory reliever instead of SABA.

For all patients, prescribe ICS as indicated:

- **ICS-containing treatment is indicated for all adults and adolescents** (choice of regimens according to level of asthma control, risk factors and patient preference).
- Maintenance ICS treatment is indicated for children aged 1–5 years with asthma symptoms more than once per month or with a history of acute exacerbations requiring systemic corticosteroid treatment.
- Maintenance ICS treatment is indicated for children aged 6–11 years with persistent symptoms (daytime symptoms more than once per week, night-time symptoms more than twice per month, or any symptoms restricting activity or sleep) or with a treatment of acute exacerbations requiring systemic corticosteroid treatment.

For patients using SABA:

- monitor usage and adjust ICS-containing treatment to maintain control and prevent exacerbations.
- educate patients and parents/carers to use SABA reliever only when symptoms occur (or before exercise, if needed).
- give every patient a personalised written asthma action plan.

If overuse occurs, review asthma control and adequacy of treatment. Offer specialist referral for heavy overuse or suspected psychological dependence.

In pharmacies

Assess frequency of use when dispensing or providing non-prescription salbutamol.

When usage suggests overuse or failure to maintain good symptom control, strongly advise an asthma review by a GP or other primary care clinician.

Advise patients and parents to make sure they have an up-to-date asthma action plan.

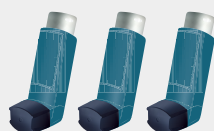
In emergency departments

Include adequate ICS treatment in discharge medicines, including anti-inflammatory relievers instead of salbutamol, where appropriate.

Advise patients to use reliever only when they have symptoms – no salbutamol weaning plans.

Figure 1. Simple check for SABA over-reliance

Ask patients: How many canisters are you using per year?



3 or more reliever canisters per year increases risk of asthma-related exacerbations¹¹



12 or more reliever canisters per year is associated with increased risk of death¹⁰

Key messages for patients

A 'blue puffer' doesn't treat the cause of asthma, or prevent symptoms or attacks – it just relieves symptoms and helps stop asthma attacks that have already started.

Relying only on a puffer, or needing it often, means you are at risk of severe asthma attacks, emergency department visits and hospital stays.

Australian national guidelines recommend that all adults and adolescents with asthma, and most children with asthma, should use inhalers that help treat the cause of asthma, not just the symptoms.

The guidelines now recommend anti-inflammatory relievers (a different type of quick-relief medicine) instead of blue puffers for adults and adolescents.

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For more information, refer to the National Asthma Council's Australian Asthma Handbook: astmahandbook.org.au

Reducing the environmental impact of asthma treatment information sheet:

nationalasthma.org.au/living-with-asthma/resources/health-professionals/information-paper/reducing-the-environmental-impact-of-asthma-treatment

Asthma action plans:

nationalasthma.org.au/living-with-asthma/resources/health-professionals/asthma-action-plans

First aid for asthma charts:

nationalasthma.org.au/living-with-asthma/resources/health-professionals/charts

Asthma and COPD medications chart:

nationalasthma.org.au/living-with-asthma/resources/health-professionals/charts/asthma-copd-medications-chart

Developed by the National Asthma Council Australia in collaboration with

Clinical Associate Professor Debbie Rigby
Advanced practice pharmacist

Professor Amanda Barnard
General practitioner

Professor Bandana Saini
Pharmacist and lead researcher

Professor Tom Skinner
Respiratory physician

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