

Adolescent and Adult Asthma Guidelines 2020: A Quick Reference Guide

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<https://www.nzrespiratoryguidelines.co.nz/adultguidelines.html>

Main changes 2020

- Combining adolescents and adults
- Avoid SABA-only treatment
- Budesonide/formoterol rather than a SABA as the preferred reliever inhaler across the spectrum of asthma severity
- Introduction of the terminology 'anti-inflammatory reliever (AIR)' therapy

Main changes 2020

- Two stepwise management algorithms
- LAMA add-on therapy in severe asthma
- Omalizumab in severe allergic asthma
- Mepolizumab in severe eosinophilic asthma

Reliever therapy

- SABA monotherapy is no longer recommended.
- ICS/fast-onset beta₂-agonist reliever therapy is superior to SABA reliever therapy, across the range of asthma severity.
- In NZ the only ICS/fast-onset beta₂-agonist combination product registered and approved for use as a reliever is budesonide/ formoterol (Symbicort turbuhaler).
- Symbicort is the preferred reliever for asthma in NZ.
- One actuation of budesonide/formoterol 200/6µg or 100/6µg via turbuhaler as needed vs 2 puffs of SABA.

Budesonide-formoterol vs SABA

Severe exacerbation risk	
Novel START	0.40 (0.18 to 0.86)
SYGMA 1	0.36 (0.27 to 0.49)

Budesonide/formoterol reliever reduces the risk of a severe exacerbation by at least 60% compared with SABA reliever therapy.

Budesonide-formoterol vs ICS & SABA

	Relative risk
Time to first severe exacerbation	0.85 (0.73 to 1.00)
Rate of severe exacerbations	0.85 (0.72 to 1.00)
ED visits	0.65 (0.43 to 0.98)

Budesonide/formoterol reliever reduces the risk of a severe exacerbation by 15%, and an ED visit by 35%, compared with regular ICS plus SABA reliever therapy.

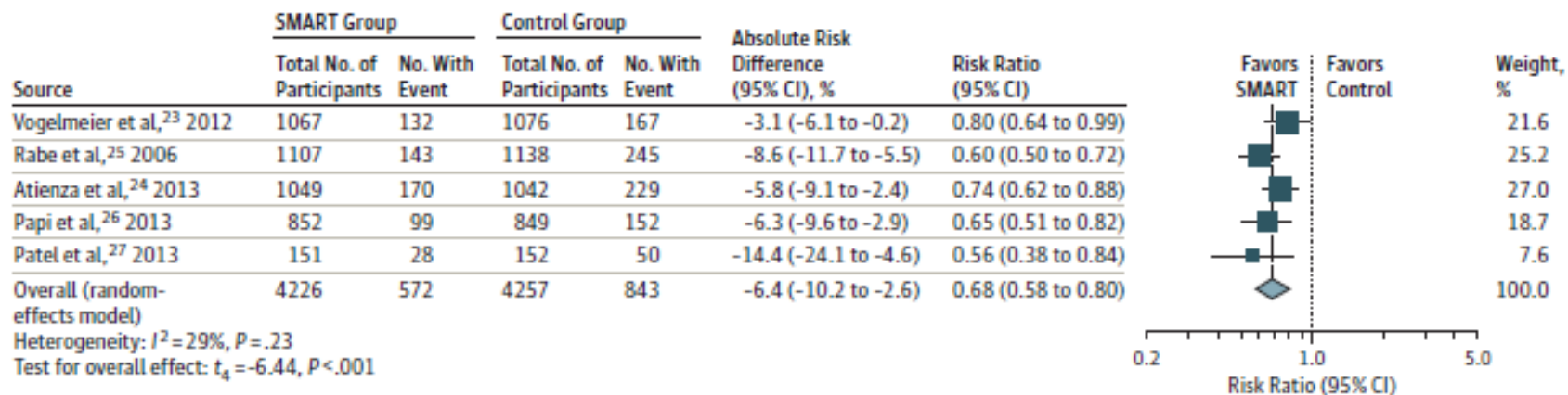
JAMA | Original Investigation

Association of Inhaled Corticosteroids and Long-Acting β -Agonists as Controller and Quick Relief Therapy With Exacerbations and Symptom Control in Persistent Asthma

A Systematic Review and Meta-analysis

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Figure 2. Association of SMART With Exacerbations Requiring Systemic Corticosteroids, Hospitalization, or ED Visits Among Patients Aged 12 Years or Older vs the Same Dose of Inhaled Corticosteroids and LABA Controller Therapy



In asthma patients on maintenance ICS/LABA, ICS/formoterol reliever reduces the risk of an exacerbation by 32% compared with SABA reliever therapy.

[Sobieraj DM et al. *JAMA* 2018;319:1485–1496]

ED, emergency department; LABA, long-acting β_2 -agonist; SMART, single maintenance and reliever therapy

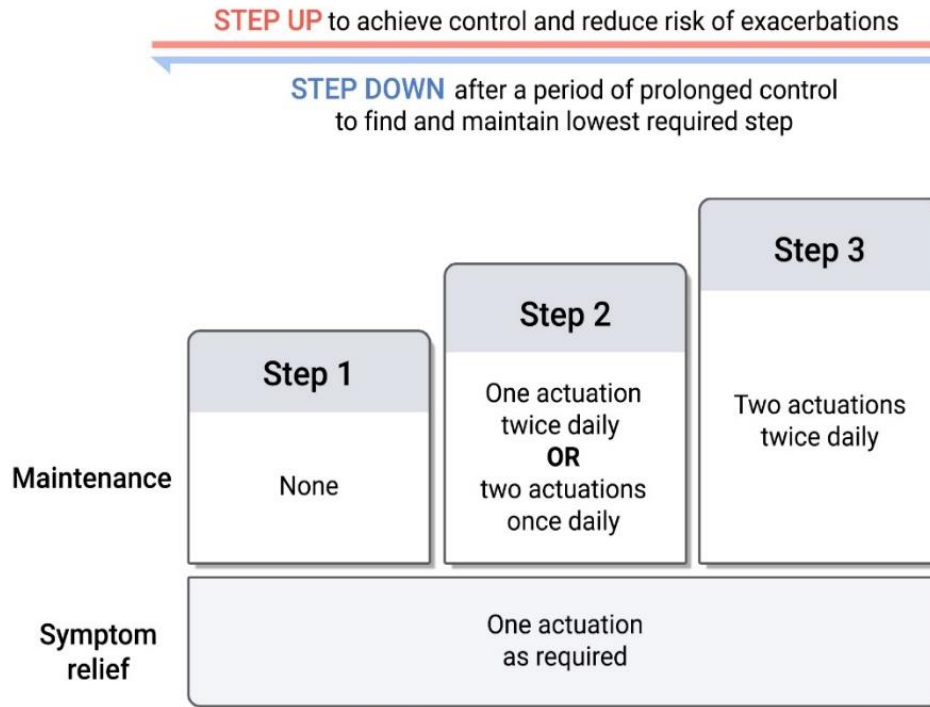
Terminology

- ‘Anti-Inflammatory Reliever’ (AIR) therapy describes the use of budesonide/formoterol as a reliever medication, with or without maintenance budesonide/ formoterol therapy.
- This approach encompasses and extends the ‘Single inhaler Maintenance and Reliever Therapy’ (SMART) approach recommended in previous guidelines.

ICS/LABA therapy

- The budesonide/formoterol maintenance and reliever therapy regimen is the preferred ICS/LABA regimen for treating patients at risk of severe exacerbations.
- Maintenance ICS/LABA with SABA reliever therapy may be used for individual patients if their asthma is already well controlled on this regimen, or if they have poor technique with the turbuhaler device.

Anti-Inflammatory Reliever therapy based algorithm using Budesonide/ Formoterol 200µg/6µg



Before stepping up

Review inhaler technique, use, and treatable traits.

If a severe exacerbation of asthma occurs:

Review and consider stepping up.

If asthma remains uncontrolled at Step 3

Health professional to consider add-on treatment.

May require referral for specialist review.

*Anti-Inflammatory Reliever Therapy

Know your asthma symptoms

Name: _____

Doctor: _____

Date of plan: _____

Doctor phone: _____

Know when and how to take your medicine

Feeling good

Your asthma is under control when

- You don't have asthma symptoms most days (wheeze, tight chest, a cough or feeling breathless)
- You have no cough or wheeze at night
- You can do all your usual activities and exercise freely
- Most days you do not need extra Symbicort actuations

Your peak flow reading is above: _____

Regularly scheduled Symbicort:	actuation(s)	every morning
	actuation(s)	every night
As needed Symbicort to relieve symptoms:	1 actuation when you need it to relieve your asthma symptoms	

Symbicort is a 2-in-1 treatment used for both prevention and relief of symptoms. Carry this at all times. You do not need an extra inhaler as a reliever.

Other Medication

Severe

Your asthma is getting severe when

- Your asthma symptoms are getting severe (wheeze, tight chest, a cough or feeling breathless)
- **OR** your Symbicort is only helping for 2-3 hours
- **OR** you are using more than 8 actuations a day in total (regular + reliever use)
- **OR** you feel you need to see your doctor

Your peak flow reading is below: _____

Let's take action...

- **You need to see your doctor today**
- Continue any regular Symbicort PLUS 1 actuation of your Symbicort when needed to relieve symptoms
- Start prednisone if you have it:

Prednisone	mg	for	days
and then	mg	for	days

Other instructions:

Emergency

It is an emergency when

- Your symptoms are getting more severe quickly
- **OR** you are finding it hard to speak or breathe
- **OR** your Symbicort is not helping much
- **OR** you are using your Symbicort every 1-2 hours

Your peak flow reading is below: _____

Let's keep calm...

- **Dial 111 for ambulance**
- Keep using your Symbicort as often as needed
- Even if you seem to get better seek medical help right away
- If you haven't started taking your prednisone, start now

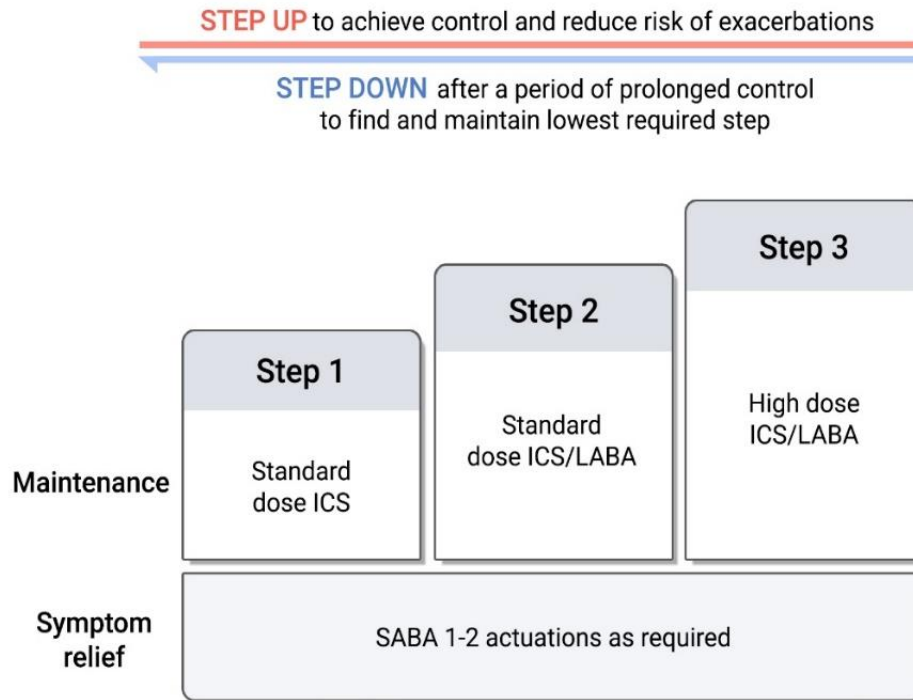
Best peak flow: _____

Plan prepared by: _____

Next review date: _____

Signature: _____

Traditional SABA reliever therapy based algorithm for asthma management



Before stepping up

Review inhaler technique, use, and treatable traits.

If a severe exacerbation of asthma occurs:

Review and consider stepping up, or switching to the Anti-Inflammatory Reliever (AIR) therapy based algorithm.

If asthma remains uncontrolled at Step 3

Health professional to consider add-on treatment.
May require referral for specialist review.

Name: _____ Doctor: _____

Date of plan: _____ Doctor phone: _____

Know your asthma symptoms

Know when and how to take your medicine

Feeling good

Your asthma is under control when

- you don't have asthma symptoms most days (wheeze, tight chest, a cough or feeling breathless)
- you have no cough or wheeze at night
- you can do all your usual activities and exercise freely
- most days you don't need a reliever

Your peak flow reading is above

Preventer [name]	actuation(s)	every morning
	actuation(s)	every night
Reliever [name]	actuation(s)	when you need it to relieve your asthma symptoms

Carry your reliever at all times

Other Medication

Severe

Caution- your asthma is getting severe when

- Your asthma symptoms are getting severe (wheeze, tight chest, a cough or feeling breathless)
- **OR** your reliever is only helping for 2-3 hours
- **OR** you are using more than 12 actuations in a day
- **OR** you feel you need to see your doctor

Your peak flow reading is below

Let's take action...

- **You need to see your doctor today**
- Continue your regular preventer **AND** use your reliever as often as needed to relieve symptoms
- Start prednisone if you have it:

Prednisone	mg	for	days
and then	mg	for	days

Other instructions:

Emergency

Emergency

- Your symptoms are getting more severe quickly
- **OR** you are finding it hard to speak or breathe
- **OR** your reliever is not helping much
- **OR** you are using your reliever every 1-2 hours

Your peak flow reading is below

Let's keep calm...

- **Dial 111 for ambulance**
- Keep using your reliever as often as needed – through a spacer, if one can be used with your reliever inhaler
- Even if you seem to get better seek medical help right away
- If you haven't started taking your prednisone, start now

Best peak flow: _____

Plan prepared by: _____

Next review date: _____

Signature: _____

Name: _____ Doctor: _____

Date of plan: _____ Doctor phone: _____

Know your asthma symptoms

Know when and how to take your medicine

Feeling good

Your asthma is under control when

- you don't have asthma symptoms most days (wheeze, tight chest, a cough or feeling breathless)
- you have no cough or wheeze at night
- you can do all your usual activities and exercise freely
- most days you don't need a reliever

Your peak flow reading is above _____

Preventer [name]	actuation(s)	every morning
Reliever [name]	actuation(s)	when you need it to relieve your asthma symptoms

Carry your reliever at all times

Other Medication

Getting worse

Caution- your asthma is getting worse when

- you have symptoms most days (wheeze, tight chest, a cough or feeling breathless)
- you are waking at night with symptoms
- you are getting a cold

Your peak flow reading is below _____

Let's get prepared...

- Step up your preventer medicine:

Take _____ actuations four times each day

- Use your reliever as often as needed – through a spacer, if one can be used with your reliever inhaler

Other instructions:

Severe

Caution- your asthma is getting severe when

- Your symptoms are getting severe (wheeze, tight chest, a cough or feeling breathless)
- **OR** your reliever is only helping for 2-3 hours
- **OR** you are using more than 12 actuations a day
- **OR** you feel you need to see your doctor

Your peak flow reading is below _____

Let's take action...

- **You need to see your doctor today**
- Continue your medicine for "getting worse"
- Start prednisone if you have it:

Prednisone	mg	for	days
and then	mg	for	days

Other instructions:

Emergency

Emergency

- Your symptoms are getting more severe quickly
- **OR** you are finding it hard to speak or breathe
- **OR** your reliever is not helping much
- **OR** you are using your reliever every 1-2 hours

Your peak flow reading is below _____

Let's keep calm...

- **Dial 111 for ambulance**
- Keep using your reliever as often as needed – through a spacer, if one can be used with your reliever inhaler
- Even if you seem to get better seek medical help right away
- If you haven't started taking your prednisone, start now

Best peak flow: _____

Plan prepared by: _____

Next review date: _____

Signature: _____

Practice points

- At each step check inhaler technique, adherence to treatment, understanding of self-management plan, and barriers to self-care.
- Consider referral for specialist review and consideration of addition of other treatments if repeated exacerbations or poor control despite step 3 treatment.
- Consider stepping down if symptoms are controlled for 3 months and low risk for exacerbations.

Add on treatments: LAMA's

- LAMAs have efficacy in severe asthma, when added to ICS/LABA treatment.
- Tiotropium as add-on treatment to maintenance ICS/LABA is MEDSAFE approved, but not funded in NZ.
- LAMA therapy is funded for those patients with co-existent COPD.
- LAMA is a therapeutic option in asthma patients with features of COPD, not controlled at Step 3.

Add on treatments: Biological

- Monoclonal antibody treatments target specific inflammatory pathways in severe asthma.
- Omalizumab (anti-IgE) and mepolizumab (anti-IL-5/eosinophils) are currently licensed in NZ but only for patients meeting specific criteria.
- They are specialist-only, expensive, add-on treatments in patients with severe disease.

PERSPECTIVE
PRECISION MEDICINE FOR AIRWAY DISEASES

Treatable traits: toward precision medicine of chronic airway diseases

Alvar Agusti¹, Elisabeth Bel², Mike Thomas³, Claus Vogelmeier⁴,
Guy Brusselle^{5,6}, Stephen Holgate⁷, Marc Humbert⁸, Paul Jones⁹,
Peter G. Gibson¹⁰, Jørgen Vestbo¹¹, Richard Beasley¹² and Ian D. Pavord¹³



CrossMark

[ERJ 2016]

Treatable Traits

Overlapping disorders:

- COPD
- Bronchiectasis
- Allergic bronchopulmonary aspergillosis
- Dysfunctional breathing, e.g. vocal cord dysfunction

Comorbidities:

- Obesity
- Gastro-oesophageal reflux disease
- Rhinitis
- Sinusitis
- Depression/anxiety

[Agusti et al. ERJ 2016]

Treatable Traits

Environmental:

- Smoking
- Occupational exposures
- Provoking factors e.g. aspirin, other NSAIDs

Behavioural:

- Adherence
- Inhaler technique

[Agusti et al. ERJ 2016]

Case

45 year old woman with atopic asthma, on maintenance ICS/LABA and SABA treatment and repeat courses of oral steroids for exacerbations, anxiety/depression.

Stepwise treatment options:

- Transfer across to budesonide/formoterol SMART regimen
- Step up to moderate or high dose ICS/LABA treatment

Systematic review

- Eosinophilic asthma
- Dysfunctional breathing
- Allergic bronchopulmonary aspergillosis
- Chronic rhinosinusitis
- Occupational asthma
- Adherence, inhaler technique

APPENDIX: FOUR STEPS TO WRITING AN ADULT ASTHMA SELF-MANAGEMENT PLAN

1. Assess asthma control

- Complete the Asthma Control Test (ACT) score
 - 20-25: well controlled
 - 16-19: partly controlled
 - 5-15: poorly controlled
- Review lung function tests
 - Peak flow monitoring and/or Spirometry
- Review severe asthma attacks in last 12 months (requiring urgent medical review, oral steroids or bronchodilator nebuliser use).

2. Consider other relevant clinical issues

- Ask about compliance with maintenance treatment
- Check inhaler technique
- Enquire about clinical features associated with an increased risk
- Consider treatable traits
- Decide whether peak flow monitoring is indicated

3. Decide if increase or decrease in maintenance therapy required

- Is a step up in the level of treatment required if asthma is not adequately controlled, poor lung function or recent severe exacerbation?
- Is a step down in the level of treatment possible if there has been a sustained period of good control?
- Is a change to the SMART regimen required in patients prescribed ICS/LABA treatment who have had a recent severe exacerbation?

4. Complete the self-management plan

- Enter ID and medications
- For those with peak flow instructions, enter personal best recent peak flow and peak flow at each level in the plan. The recommended cut points of <70% for getting worse and <50% for emergency are a reference guide only and can be adjusted according to clinical judgement depending on the patient.
- Enter the prednisone regimen. The standard regimen in the situation of severe asthma is 40mg daily for 5 days. An alternative regimen is 40mg daily until there is definite improvement and then 20mg daily for the same number of days.
- Enter additional instructions in the box provided. This may include avoidance of provoking factors such as aspirin, or the option of increasing the dose of inhaled corticosteroids through increasing the frequency of their use to four times daily, when they recognise worsening asthma symptoms.

Asthma in Māori

- Greater burden of disease
- Worse health outcomes
- Barriers to good management
- Multiple contributing factors
- Multifaceted interventions required

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