



## Managing adults with asthma in primary care: the four-stage consultation


### KEY PRACTICE POINTS:

- A four-stage consultation is recommended as a framework for managing patients with asthma in primary care – assess control of symptoms, consider other clinically relevant issues, adjust pharmacological treatment, complete an asthma action plan
- At each consultation the patient's level of asthma control should be assessed, along with their future risk of severe exacerbations
- The term “treatable traits” is new to asthma management literature and refers to the recognition and management of overlapping respiratory disorders, co-morbidities, environmental and behavioural factors
- A stepwise approach to asthma management is recommended whereby patients step treatment up or down to achieve and maintain symptom control and reduce their risk of exacerbations
- Personalised action plans should be offered to all patients with asthma
- Māori and Pacific peoples are more severely affected by asthma. To improve outcomes for these patients health professionals can focus on asthma education, provide personalised asthma action plans and use clinical audits to identify patients with the greatest unmet need

### New Zealand adult asthma guidelines have been released

The New Zealand adult asthma guidelines were released by the Asthma and Respiratory Foundation of New Zealand in November, 2016. In the first of a series on adult asthma, this resource outlines the four-stage consultation, which is a framework for managing patients with asthma in primary care (an appendix in the Guidelines). Subsequent articles in this series provide guidance around key decisions for prescribers:

- Initiating inhaled corticosteroids – “Inhaled corticosteroids for adults with asthma”
- Stepping up treatment for patients with more severe asthma – “Adding a LABA to asthma treatment for adults”

 The New Zealand adult asthma guidelines are applicable to patients aged over 16 years. The guidelines were developed independently of the pharmaceutical industry and are available from: [www.nzasthmaguidelines.co.nz/adultguidelines.html](http://www.nzasthmaguidelines.co.nz/adultguidelines.html)


## Stage one: assess asthma control

Patients who have been diagnosed with asthma (see: "A specified increase in lung function following bronchodilation is no longer required for a diagnosis of asthma") should have their level of symptom control and exacerbation risk assessed at Stage one of each consultation.<sup>1</sup>

As patients often under-report their symptoms, the five-question Asthma Control Test (ACT) is recommended.<sup>1</sup> The ACT asks patients to rate:<sup>1</sup>

- Any limitations at work, school or home
- The frequency of any dyspnoea
- The frequency of any night waking
- Their frequency of reliever medicine use
- Their own assessment of symptom control

Each question is scored from 1–5, with higher scores indicating good control and lower scores indicating poor control. A total score of 20–25 indicates the patient's asthma is well-controlled and their treatment is appropriate; a score of 16–19 indicates partial control and prompts consideration of whether treatment is sufficient; a score of 5–15 indicates poor control and the need for intensification of treatment.<sup>1</sup>


 The asthma control test is available from: [www.asthmacontrol.co.nz](http://www.asthmacontrol.co.nz)

### Review any lung function tests

If the patient is performing peak flow monitoring or if spirometry is available in the practice, these measurements can be helpful in assessing asthma control and determining if a change in treatment is indicated.

### Assess asthma severity

Asthma severity is determined by the level of treatment required for the patient to maintain good control. For example, mild asthma is well controlled with infrequent use of a short-acting beta<sub>2</sub>-agonist (SABA) or with a standard daily inhaled corticosteroid (ICS) dose.<sup>7</sup> Moderate asthma requires a "step up" in treatment to achieve good control, e.g. replacing an ICS with a combination ICS/long-acting beta<sub>2</sub>-agonist (LABA) inhaler.<sup>7</sup> Severe asthma is when symptoms are uncontrolled despite the patient being adherent to optimal treatment, taken correctly.<sup>1</sup>

 Information on ICS treatment is available in: "Inhaled corticosteroids for adults with asthma" and information on stepping up to a LABA is available in "Adding a LABA to asthma treatment for adults", [www.bpac.org.nz/2017/labba.aspx](http://www.bpac.org.nz/2017/labba.aspx)

## A specified increase in lung function following bronchodilation is no longer required for a diagnosis of asthma


A diagnosis of asthma begins with the recognition of a characteristic pattern of respiratory symptoms and signs. In many patients this pattern will have emerged during childhood. However, a diagnosis later in life is not uncommon as onset may occur at any age and asthma may remit and recur during adulthood.

To diagnose asthma, the patient's clinical history is combined with an examination and documented evidence of variable airflow limitation.<sup>1</sup> A therapeutic response to an inhaled bronchodilator and/or an ICS can be helpful, however, an increase in forced expiratory volume in one second (FEV<sub>1</sub>) ≥ 12% and ≥ 200 mL from baseline following bronchodilation is no longer required for a diagnosis of asthma.<sup>1</sup> This is because most people with asthma will not exhibit this degree of reversibility at one assessment and reversibility is also seen in those with normal airway function as well as patients with chronic obstructive pulmonary disease (COPD).<sup>1</sup> A pragmatic approach is to

correlate the degree of bronchodilator reversibility or peak flow variability with the likelihood of asthma.

Adult-onset asthma is more likely than childhood asthma to be non-atopic, severe and persistent.<sup>2</sup> A known exposure to a respiratory irritant in the workplace and an improvement in symptoms when the patient is not at work make an occupational cause of asthma more likely, and this should be considered in all cases of adult-onset asthma.<sup>1, 3</sup> Investigation of occupational asthma may require referral to a respiratory physician.<sup>1</sup>


In adults with a history of smoking it can be difficult to distinguish asthma and COPD as these patients may have clinical features of both conditions, referred to as Asthma-COPD overlap.

 Further information on diagnosing COPD is available from: [www.bpac.org.nz/BPJ/2015/February/copd-part1.aspx](http://www.bpac.org.nz/BPJ/2015/February/copd-part1.aspx)

## Assess the future risk of exacerbations

Assessing the risk of future adverse outcomes is a new and important feature of the Asthma Guidelines. Patients with an increased exacerbation risk may require a step up in treatment, e.g. those with:<sup>1</sup>

- SABA use greater than one canister per month
- The need for long-term or repeat courses of oral corticosteroids
- Under use or poor adherence to ICS treatment
- A history of sudden asthma exacerbations
- A history of unplanned consultations, emergency department visits or hospital admissions

 Further information on assessing asthma exacerbation risk is available in: "Adding a LABA to asthma treatment for adults", [www.bpac.org.nz/2017/labpa.aspx](http://www.bpac.org.nz/2017/labpa.aspx)

## Stage two: consider other clinically relevant issues

After establishing the patient's level of symptom control and risk of exacerbation, Stage two of the consultation involves considering any other issues which can influence these factors. Checking inhaler technique and assessing adherence to prescribed medicines at each consultation is very important. Key non-pharmacological interventions for asthma management include smoking cessation and weight loss.<sup>1</sup> Breathing exercise programmes are reported to improve the symptoms and the quality of life of patients with asthma as well as reducing the need for bronchodilators.<sup>1,3</sup>

Some form of physical exercise should be encouraged in all patients with asthma; if this triggers symptoms, treatment should be reviewed.<sup>1</sup> However, before prescribing additional medicines, consider if dyspnoea or wheezing during exercise may be caused by a lack of fitness or other respiratory conditions such as vocal cord dysfunction.<sup>7</sup> A SABA taken immediately before exercise is the preferred treatment for exercise-induced asthma.<sup>3</sup>

## Consider if the patient has any treatable traits

The concept of "treatable traits" is new to the New Zealand Asthma Guidelines. This refers to the recognition and management of overlapping disorders, co-morbidities, environmental and behavioural factors to improve asthma care. This approach is most likely to benefit patients with asthma who have poor respiratory health despite optimal asthma treatment.

### Disorders that may overlap with asthma


Overlapping respiratory disorders that may exacerbate

## Improving asthma care for Māori and Pacific peoples

Māori and Pacific peoples are more severely affected by asthma than New Zealand Europeans. Māori are almost three times, and Pacific peoples over 3.5 times more likely to be hospitalised due to asthma than people of other ethnicities.<sup>4</sup> The most recent data (2006 – 2011), shows that mortality rates due to asthma per 100,000 people in New Zealand were 5.4 for Māori and 6.5 for Pacific peoples, compared to 1.3 for people of Asian ethnicity and 1.1 for people of other ethnicities, including New Zealand Europeans.<sup>4</sup> Despite this, Māori children are less likely to be prescribed an ICS;<sup>5</sup> this may also apply to Māori adults.

Primary care clinicians can improve outcomes for Māori and Pacific peoples with asthma. Methods to achieve this include:<sup>6</sup>

- Focusing on expanding one aspect of the patient's understanding of asthma at every consultation – asthma education is an ongoing process
- Information about asthma being matched to the patient's stage of health literacy – always check that the key points have been delivered in a way that the patient understands
- Performing clinical audits to identify patients who are likely to benefit from intensification of asthma management – identify those most at risk
- Using single inhaler treatment (also known as SMART) – preferred for patients at risk of severe exacerbations
- Using asthma action plans – this improves outcomes in those more severely affected

 Information on improving asthma education for Māori and Pacific peoples is available from: [www.bpac.org.nz/BPJ/2015/September/asthma.aspx](http://www.bpac.org.nz/BPJ/2015/September/asthma.aspx)

 The Health Quality and Safety Commission (HQSC) has ethnicity data on childhood hospital admissions in New Zealand due to asthma by DHB, available from: [www.hqsc.govt.nz/assets/Health-Quality-Evaluation/Atlas/asthmaDF5Jul/atlas.html](http://www.hqsc.govt.nz/assets/Health-Quality-Evaluation/Atlas/asthmaDF5Jul/atlas.html)



symptoms in patients with asthma include, chronic obstructive pulmonary disease (COPD), allergic bronchopulmonary aspergillosis (ABPA), bronchiectasis and dysfunctional breathing, i.e. breathing too deeply and/or too rapidly.<sup>1</sup> Patients with features of COPD may benefit from treatment with a long-acting muscarinic antagonist (LAMA).<sup>1</sup> ABPA can progress to bronchiectasis and is suggested by worsening asthma and a productive cough with mucus plugs and fever.<sup>8</sup> Diagnosis of ABPA involves chest X-ray or CT scan, allergy skin testing and/or blood tests.<sup>8</sup> Chest physiotherapy and the prompt use of antibiotics for exacerbations are the mainstays of bronchiectasis management. Dysfunctional breathing is generally managed by a physiotherapist with breathing retraining techniques.


 Further information on bronchiectasis is available from: [www.bpac.org.nz/BPJ/2012/september/bronchiectasis.aspx](http://www.bpac.org.nz/BPJ/2012/september/bronchiectasis.aspx)

### Manage co-morbidities to improve quality of life

Chronic rhinosinusitis is associated with an increased frequency of asthma exacerbations.<sup>9</sup> Intranasal corticosteroids may reduce the symptoms of asthma in patients with chronic rhinosinusitis,<sup>7</sup> e.g. intranasal fluticasone 100 micrograms (two sprays of 50 micrograms) into each nostril every morning, increasing to twice daily if required.<sup>10</sup> A saline sinus rinse may remove sticky secretions from the upper airways in patients with upper airway disease.

Patients with asthma who are obese may have respiratory symptoms that are harder to control.<sup>7</sup> They are also less likely to respond to ICS treatment, compared with lean individuals with asthma.<sup>11</sup> A reduction in weight of 10% or more is likely to result in improved respiratory symptoms.<sup>11</sup>

Gastro-oesophageal reflux disease (GORD) is often present in patients with asthma and is associated with an increased frequency of exacerbations.<sup>9</sup> This may be due to microaspiration of gastrointestinal secretions during sleep.<sup>9</sup> Prescribing a proton pump inhibitor (PPI) will improve symptoms of GORD, and therefore in theory reduce asthma exacerbations. However, a PPI has no effect on lung function.<sup>12</sup>

 Further information on the treatment of GORD is available from: [www.bpac.org.nz/BPJ/2014/June/gord.aspx](http://www.bpac.org.nz/BPJ/2014/June/gord.aspx)

### Environmental factors that may exacerbate asthma


Consider factors in the patient's environment such as occupational exposure to irritants, smoking and the use of medicines such as aspirin, other non-steroidal anti-inflammatory medicines and beta-blockers, which may be contributing to ongoing asthma symptoms despite optimal pharmacological treatment.<sup>1</sup>

### Assess behavioural factors

The New Zealand Asthma Guidelines emphasise the importance of checking and demonstrating inhaler technique and assessing treatment adherence at Stage two of every consultation.<sup>1</sup> A collaborative approach between practice nurses, pharmacists and general practitioners ensures that key asthma education messages are repeated in different ways from multiple sources.

The use of a spacer with a metered dose inhaler (MDI) is strongly recommended for the routine administration of ICS, ICS/LABA and SABA during acute exacerbations.<sup>1</sup> Patients can be instructed to:<sup>1,3</sup>

- Remove the cap of the inhaler, shake and insert it into the spacer
- Administer one dose of the medicine at a time into the spacer, followed quickly by an inhalation
- Medicine can be inhaled by either taking one deep, slow breath and holding it for ten seconds or by taking five or six tidal breaths

 Spacers which fit all subsidised pressured MDIs in New Zealand are subsidised under Practitioners Supply Order (PSO). These e-chamber spacers are made from anti-static material and do not have to be primed before use.

### Peak flow monitoring is not routinely required

Peak flow monitoring may be incorporated into the self-management plan of any patient with asthma who wishes to record their lung function. However, this approach is now generally only recommended for patients with severe asthma or for those with an impaired ability to perceive worsening airflow limitation.<sup>3,7</sup>


### Stage three: decide if an increase or decrease in maintenance treatment is required

As a patient's symptom control and exacerbation risk can vary, it may be necessary at times to adjust treatment; this is Stage three of the asthma consultation.

Asthma treatment may be stepped up for patients with uncontrolled symptoms or a recent exacerbation, e.g. adding an ICS or escalating to an ICS/LABA combination.<sup>1</sup> Before doing this (as per Stage two of the consultation):

- Confirm adherence to treatment and correct inhaler technique
- Consider modifiable factors, e.g. smoking cessation
- Consider if the patient's symptoms could be caused by an overlapping respiratory condition or co-morbidity; one study of over 700 adults with physician-diagnosed asthma found that a diagnosis of asthma could not be subsequently established in one-third of participants.<sup>13</sup>

It may be appropriate to step down treatment, e.g. withdraw a LABA or reduce the ICS dose, in patients with symptoms that have been well-controlled for three months who also have a low exacerbation risk.<sup>1</sup> A step down in asthma treatment is regarded as a therapeutic trial and patients should be provided with an action plan (Stage four of the consultation) and instructions on how to step up treatment if their condition deteriorates.<sup>7</sup>


 Information on ICS and LABA treatment is available in: “Inhaled corticosteroids for adults with asthma”, [www.bpac.org.nz/2017/ics.aspx](http://www.bpac.org.nz/2017/ics.aspx) and “Adding a LABA to asthma treatment for adults”, [www.bpac.org.nz/2017/labap.aspx](http://www.bpac.org.nz/2017/labap.aspx)

### Stage four: complete the asthma action plan

Asthma action plans form the basis for patient self-management and are known to improve health outcomes.<sup>1</sup> The New Zealand Guidelines recommend that every patient with asthma should be offered a written and personalised action plan at Stage four of the consultation.<sup>1,3</sup>

Asthma action plans help identify deteriorating asthma and provide patients with instructions on how this can be managed. The plan may be based on symptoms, with or without peak flow measurements.<sup>1</sup> Action plans should evolve over time and can be modified according to patient and prescriber experience.<sup>1</sup>

The Asthma and Respiratory Foundation provides three templates; a three and a four stage plan and a plan for patients using single inhaler treatment (referred to as SMART in this plan). The four stage asthma plan provides the option of increasing the frequency of ICS use in response to worsening symptoms.

 Asthma action plans are available from: [www.asthmafoundation.org.nz/resources/asthma-action-plans](http://www.asthmafoundation.org.nz/resources/asthma-action-plans)

---

**Acknowledgement:** Thank you to **Professor Richard Beasley**, Respiratory Physician, Director of the Medical Research Institute of New Zealand, Wellington for expert review of this article.

---

### References

1. Beasley R, Hancox RJ, Harwood M, et al. Asthma and Respiratory Foundation NZ adult asthma guidelines: a quick reference guide. *N Z Med J* 2016;129:83–102.
2. Abramson MJ, Perret JL, Dharmage SC, et al. Distinguishing adult-onset asthma from COPD: a review and a new approach. *Int J Chron Obstruct Pulmon Dis* 2014;9:945–62. doi:10.2147/COPD.S46761
3. British Thoracic Society, Scottish Intercollegiate Guidelines Network. British guideline on the management of asthma: A national clinical guideline. 2016. Available from: [www.brit-thoracic.org.uk/document-library/clinical-information/asthma/bttsign-asthma-guideline-2016](http://www.brit-thoracic.org.uk/document-library/clinical-information/asthma/bttsign-asthma-guideline-2016) (Accessed Apr, 2017).
4. Barnard L, Baker M, Pierse N, et al. The impact of respiratory disease in New Zealand: 2014 update. 2015. Available from: [www.asthmafoundation.org.nz/research/the-impact-of-respiratory-disease-in-new-zealand-2014-update](http://www.asthmafoundation.org.nz/research/the-impact-of-respiratory-disease-in-new-zealand-2014-update) (Accessed Apr, 2017).
5. Gillies TD, Tomlin AM, Dovey SM, et al. Ethnic disparities in asthma treatment and outcomes in children aged under 15 years in New Zealand: analysis of national databases. *Prim Care Respir J* 2013;22:312–8. doi:10.4104/pcrj.2013.00068
6. Jones B, Ingham T, Reid S, et al. He Māramatanga Huangō: Asthma Health Literacy for Māori Children in New Zealand. 2015. Available from: <https://www.asthmafoundation.org.nz/research/he-maramatanga-huangō-asthma-health-literacy-for-māori-children-in-new-zealand> (Accessed Apr, 2017).
7. Global Initiative for Asthma. Global strategy for asthma management and prevention. 2017. Available from: <http://ginasthma.org/2017-gina-report-global-strategy-for-asthma-management-and-prevention> (Accessed Apr, 2017).
8. American Academy of Allergy Asthma and Immunology. Allergic bronchopulmonary aspergillosis (ABPA). 2017. Available from: [www.aaaai.org/conditions-and-treatments/related-conditions/allergic-bronchopulmonary-aspergillosis](http://www.aaaai.org/conditions-and-treatments/related-conditions/allergic-bronchopulmonary-aspergillosis) (Accessed Apr, 2017).
9. Denlinger LC, Phillips BR, Ramratnam S, et al. Inflammatory and Comorbid Features of Patients with Severe Asthma and Frequent Exacerbations. *Am J Respir Crit Care Med* 2017;195:302–13. doi:10.1164/rccm.201602-0419OC
10. New Zealand Formulary (NZF). NZF v57. 2017. Available from: [www.nzf.org.nz](http://www.nzf.org.nz) (Accessed Mar, 2017).
11. Baffi CW, Winnica DE, Holguin F. Asthma and obesity: mechanisms and clinical implications. *Asthma Res Pract* 2015;1:1. doi:10.1186/s40733-015-0001-7
12. Chan WW, Chiou E, Obstein KL, et al. The efficacy of proton pump inhibitors for the treatment of asthma in adults: a meta-analysis. *Arch Intern Med* 2011;171:620–9. doi:10.1001/archinternmed.2011.116
13. Aaron SD, Vandemheen KL, FitzGerald JM, et al. Reevaluation of Diagnosis in Adults With Physician-Diagnosed Asthma. *JAMA* 2017;317:269–79. doi:10.1001/jama.2016.19627