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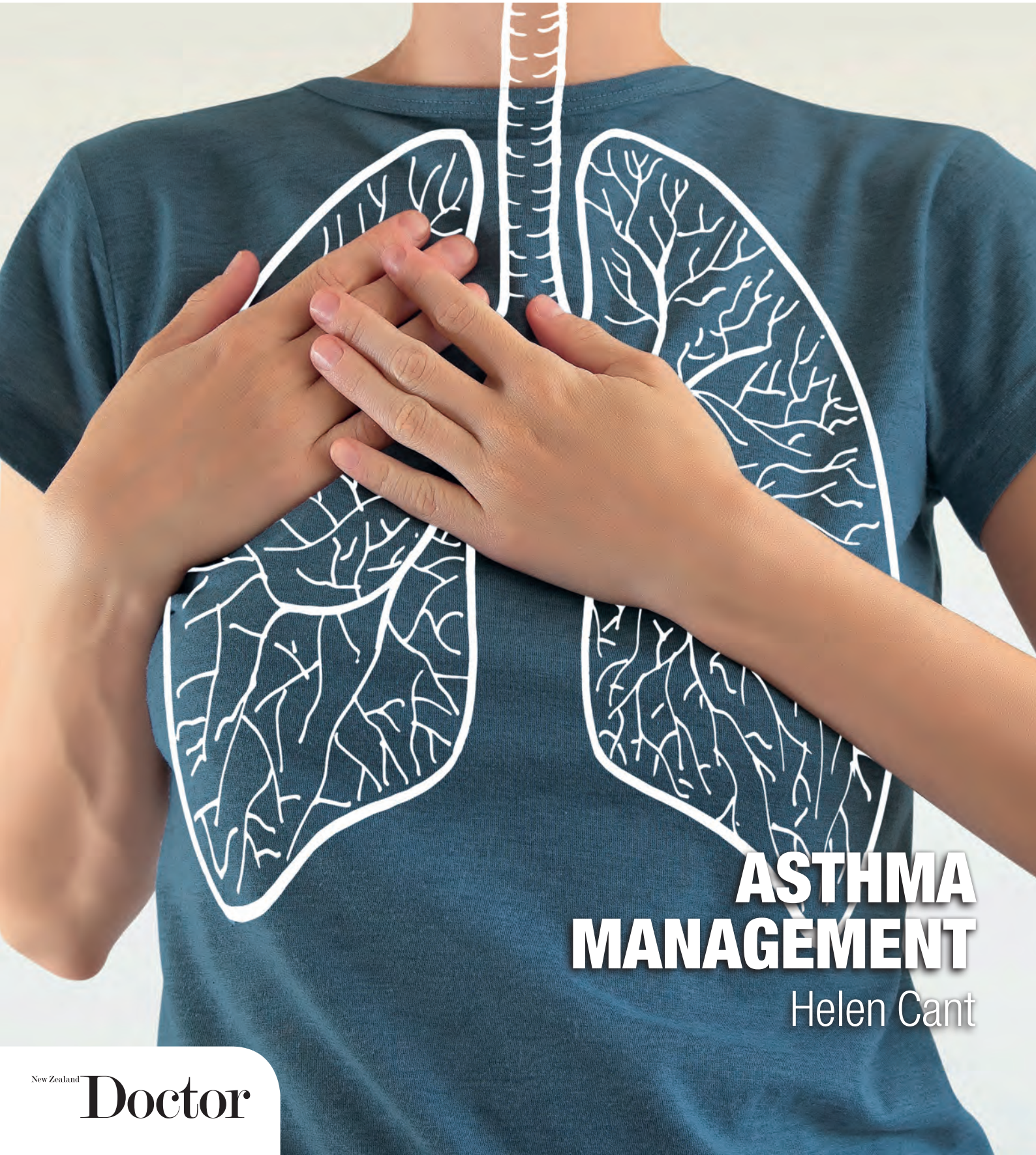

ASTHMA MANAGEMENT

Helen Cant

New Zealand Doctor

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LEARNING OBJECTIVES

- Describe recent changes to the New Zealand asthma guidelines
- Discuss why changes were made to the recommendations
- Identify inhaler combinations that are appropriate for different age groups

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This activity assists with the development of the following domains of competence in the general practice curriculum: Domain 1, Communication; Domain 2, Clinical expertise; Domain 4, Scholarship.

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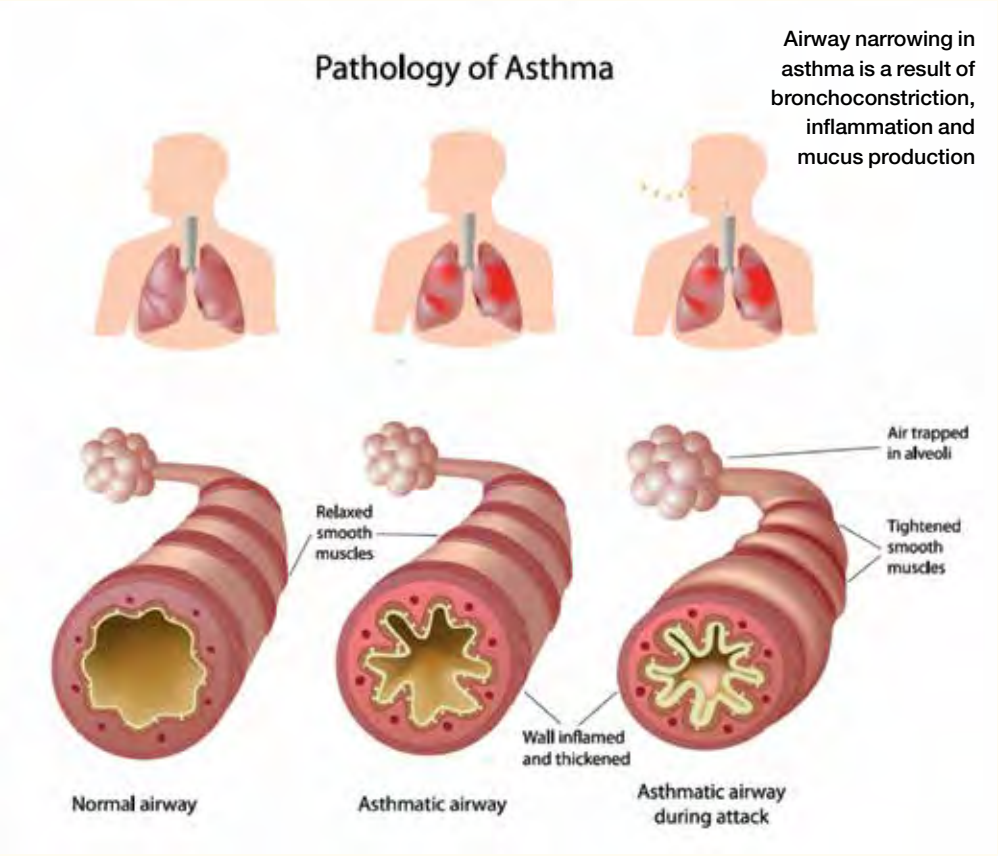
Fundamental changes in asthma management guidelines aim to reduce severe attacks

CLINICAL UPDATE

Pharmacist prescriber Helen Cant outlines the new recommendations for asthma management and the reasons behind these changes



Airway narrowing in asthma is a result of bronchoconstriction, inflammation and mucus production

New asthma guidelines were recently released by the Asthma and Respiratory Foundation NZ. Treatment for adults and adolescents (ie, people aged 12 and over) is the same and the recommendations are now together in one guideline.[1] The child guidelines have also been reviewed and updated.[2] These guidelines are based on the new recommendations by the Global Initiative for Asthma (GINA).

The GINA Assembly includes members from 45 countries. Every year, they publish a report[3] and a pocket guide,[4] with the intent to provide a comprehensive international approach to management of asthma and to provide clear guidelines and feasible tools for clinical practice, using a strong evidence base.

In 2019/2020, there were major changes to GINA's recommendations for asthma treatment. The large, double-blind study used to support the GINA recommendations investigated the combined inhaled corticosteroid (ICS)/long-acting beta2 agonist (LABA) budesonide/formoterol, used either as needed or regularly plus as needed.

It is important to note that these recommendations apply only to people with asthma, not to people with chronic obstructive pulmonary disease (COPD). The inhaler regimens for COPD are different from asthma, but people can have both asthma and COPD at the same time. New Zealand's first-ever COPD guidelines will be published later this year.

Another important reminder is that people with asthma should continue taking all prescribed asthma medications during the COVID-19 pandemic.

Why have the recommendations changed?

Previous recommendations date back many years and were based on the belief that mild asthma was primarily bronchoconstriction. We now know that inflammation of the airways is found in most people with asthma, even if they only have symptoms intermittently.

Clinical studies have shown that treatment with an ICS significantly reduces the frequency and severity of asthma symptoms, and markedly reduces the risk of experiencing, or even dying from, an asthma attack.

There is strong evidence that, although short-term relief of asthma is achieved with short-acting beta2 agonist (SABA)-only treatment, this does not protect from severe exacerbations. In fact, regular or frequent use of SABA treatment actually increases the risk of exacerbations, worsening airway inflammation and lung function, and increasing allergic reaction.

The GINA report states that overuse of SABA treatment (eg, three or more canisters per year) is associated with an increased risk of severe exacerbations, and 12 or more canisters per year is associated with increased risk of asthma-related death.[3]

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Key points

- SABA-only treatment is no longer recommended for adults and adolescents with asthma as it increases the risk of exacerbations.
- AIR therapy with a combined ICS/fast-onset beta2 agonist is the preferred treatment for adults and adolescents with asthma and should be initiated from first diagnosis.
- Budesonide/formoterol is the only ICS/fast-onset beta2 agonist combination currently available in New Zealand.
- For children under age 12, a SABA reliever alone is recommended at Step 1 of asthma management, followed by addition of maintenance low-dose ICS; children aged one to four are then managed differently from children aged five to 11.

All children should use an inhaler device that is appropriate for their development

The new recommendations aim to:
- reduce the risk of serious exacerbations
- reduce the pattern of people depending on SABA-only treatment to manage their asthma
- provide consistent treatment plans across the whole range of asthma severity.

Have you heard of 'AIR' therapy?

Anti-inflammatory reliever (AIR) therapy is the use of a combination budesonide/formoterol inhaler as a reliever medication. It can be used either only as needed or regularly plus as needed. This approach includes and extends the "single combination ICS/LABA inhaler maintenance and reliever therapy" (SMART) approach previously recommended.
- AIR therapy requires an ICS in combination with a fast-onset beta2 agonist – the only such combination currently available in New Zealand is budesonide/formoterol.
- Remember, formoterol and eformoterol are alternative names for the same medication.
- Other combinations of ICS/LABA should not be used in this way.
- When using budesonide/formoterol as maintenance and reliever therapy, a SABA reliever should not be prescribed.
- For people using a combination ICS/LABA maintenance inhaler that is not budesonide/formoterol, a SABA reliever should still be used.
- The budesonide/formoterol reliever combination should not be prescribed in addition to other ICS/LABA preparations.
- A LABA should not be prescribed without an ICS for people with asthma.
- Note that the budesonide/formoterol 400µg/12µg formulation should *not* be used as a reliever.

AIR therapy in New Zealand – the only ICS/fast-onset beta2 agonist combination currently available in New Zealand is budesonide/formoterol, and only the dry powder inhalers are approved for reliever use. A budesonide/formoterol pressurised metered dose inhaler is available, but this would represent an off-label prescription.

Inhaler technique remains critical to optimal therapy, no matter which inhaler device is being used

What has changed for treatment of adults and adolescents?

Starting asthma treatment with a SABA (ie, salbutamol or terbutaline) *alone* is no longer recommended. Instead, it is recommended that an ICS should be initiated from first diagnosis.

This can be done either by introducing AIR treatment or by using traditional ICS/SABA therapy (see below). One of the risks of traditional ICS/SABA therapy is that people do not use the ICS and rely solely on the SABA. AIR therapy removes this risk as the ICS is included in the reliever treatment as well as maintenance treatment.

Stepwise AIR-based algorithm using budesonide/formoterol 200µg/6µg:[1]

Step 1 – one inhalation as required to relieve symptoms. This results in a similar short-term bronchodilator response as a 200µg dose of salbutamol and, in adults and adolescents with mild asthma, reduces the risk of a severe asthma exacerbation by at least 60 per cent compared with SABA reliever alone.

Step 2 – regular maintenance treatment is implemented as either one inhalation twice daily or two inhalations once daily, depending on patient preference.

Step 3 – maintenance treatment is stepped up to two inhalations twice daily.

In adults and adolescents taking maintenance ICS/LABA therapy, budesonide/formoterol used as a reliever reduces the risk of a severe asthma exacerbation by about one-third compared with using a SABA reliever. Thus, budesonide/formoterol used both as a reliever plus regularly as maintenance therapy is the preferred treatment for patients with moderate to severe asthma.

Stepwise ICS/SABA-based algorithm for asthma management:[1]

Step 1 – introduce standard-dose ICS as maintenance treatment plus a SABA as needed.

Step 2 – use standard-dose ICS/LABA as maintenance treatment plus a SABA as needed.

Step 3 – use high-dose ICS/LABA as maintenance treatment plus a SABA as needed.

Note the recommendation that if a severe exacerbation of asthma occurs, consider switching to AIR therapy.

ICS doses

For most people, most of the clinical benefit is obtained with low-dose ICS. Some people will need standard-dose ICS if their asthma is not well controlled with low-dose ICS, but adherence and inhaler technique should be checked first. A few will need high-dose ICS.

When an ICS is initiated as maintenance therapy together with a SABA reliever, a standard dose of ICS should be used. The recommended standard daily dose of different ICS preparations for adults is as follows: beclomethasone dipropionate 400–500µg/day, beclomethasone dipropionate extrafine 200µg/day, budesonide 400µg/day, fluticasone propionate 200–250µg/day, or fluticasone furoate 100µg/day.[1]

What if optimal inhaled therapy doesn't work?

Long-acting muscarinic antagonists – are not subsidised in New Zealand for treatment of asthma, although tiotropium is a Medsafe approved indication. Note that LAMAs are funded for patients with COPD, and there will be a significant cohort who have coexisting asthma and COPD.

Montelukast – is a leukotriene receptor antagonist. In New Zealand, it is indicated for adults and children over the age of two for prophylaxis of asthma or relief of allergic rhinitis (seasonal or perennial). Montelukast should be considered as add-on therapy when control is not achieved with optimal standard treatment; for everyone with respiratory conditions exacerbated by asthma; and may be useful in exercise-induced asthma or people with coexisting rhinitis.[5]

Note the precaution around neuropsychiatric side effects with montelukast:[6] "Contact your doctor if you experience sleeping problems, strange dreams, changes in behaviour, hallucinations, anxiousness or agitation, confusion or suicidal thoughts."[7]

Mast cell stabilisers – sodium cromoglycate and nedocromil inhalers are approved for use in mild asthma, but there have been recent notifications of discontinuation of supply in New Zealand. As of 1 July 2020, sodium cromoglycate and nedocromil inhalers are no longer funded for new patients – these patients should be managed on alternative treatments, in line with current asthma guidelines.[8]

Other treatments – include high-dose ICS, oral corticosteroids, theophylline, azithromycin and monoclonal antibodies, many of which will only be used following specialist review.

Children aged under 12

The *New Zealand Child Asthma Guidelines* were updated in June. These guidelines include important ways that all health professionals can help children with asthma, apart from prescribing medicines (see panel).

The guidelines also summarise the medication approaches for children of different ages (see below). The goal is for all children to use an inhaler device that is appropriate for their development, including consideration of whether a spacer or mask is appropriate.

It is important that children's treatment includes regular review to allow step-up or step-down through treatment options as appropriate for symptom control.

Children aged one to four years – who wheeze are considered in a different way from children aged five to 11, as many preschool children with post-viral wheeze do not have asthma or go on to develop asthma.

The current recommendations are:[2]

Step 1 – SABA reliever alone (one to two puffs when needed).
Step 2 – add maintenance low-dose ICS.
Step 3 – add montelukast.
Step4 – refer to a paediatrician.

Note that if SABA, ICS and montelukast are insufficient, Step 4 is referral to a paediatrician. This means that LABAs are not part of the routine management of wheeze or asthma in this age group.

Children aged five to 11 years – assessment of inhaler technique and adherence to treatment remains key in this age group.

Continued on page 6

Top 10 ways health professionals can help childhood asthma (apart from prescribing medicines)

Ambulance

- Ensure the family and whānau know when and how to call an ambulance.
- In some regions, this service may incur a charge, so ensure families have ambulance membership.

Relationships

- Encourage continuity of care with doctors, nurses, asthma nurse educators and pharmacists in primary and secondary care.
- Easy access to a trusted nurse and telephone follow-up is recommended.

Smoke exposure

- Ask about smoke exposure, including vaping.
- Encourage reducing tobacco smoke exposure in the child's environment (home and car) and recommend smoking cessation.
- If appropriate, give advice and refer to a local smoking cessation service or Quitline (0800 778 778).
- Provide the Health Promotion Agency pamphlet *A guide to making your home and car smokefree* (healthed.govt.nz).

Housing

- Ask about housing and unhealthy features (eg, crowding, cold, damp, mouldy, unflued gas heater).
- Provide the family and whānau with information about having a healthy home (https://bit.ly/32mhQVA).
- Refer for healthy housing assessment if available in your region.

Income

- Assume that most families struggle with income, and ask about it.
- Enquire about the ability to access the doctor, a pharmacy, and pay prescription costs.
- Does the child have partly or uncontrolled persistent asthma and meet criteria for a Child Disability Allowance (workandincome.govt.nz)?
- Encourage all family and whānau to use the same pharmacy to reduce prescription copayments (https://bit.ly/2WgQInr).

Health literacy

- Assume little health literacy, and use steps described in *He Māramatanga Huangā: Asthma Health Literacy for Māori Children in New Zealand* (https://bit.ly/2BZ62y8).
- Specifically, ask the child and whānau what they understand, what they want to know, and use simple language to explain about asthma (eg, use the term "asthma flare-up" rather than "asthma exacerbation", and use "puffer" instead of "inhaler").
- Work with families to attain and maintain wellness, and not accept sickness as the norm.

Adherence

- First, assume inhaler device technique is poor, and check it.
- Second, assume adherence is imperfect, and don't judge.
- Ask questions in an open way, such as: "Many people take less preventer than the doctor prescribes – about how many times a week do you forget to take your asthma preventer?"

Asthma action plan

- Develop an appropriate asthma action plan with the child, family and whānau, and check the plan on each visit.
- Plans should be made available to schools and childcare facilities where appropriate (https://bit.ly/2CvmPsj).

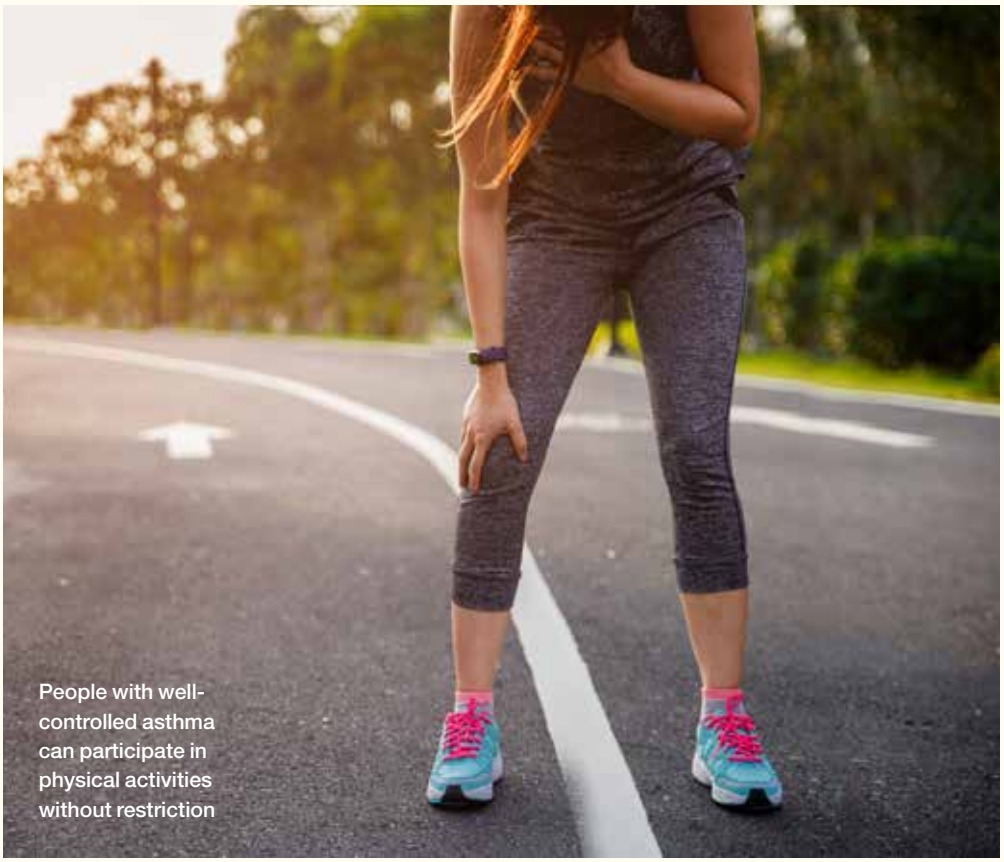
Access

- Help the family and whānau understand how to access care appropriate to asthma severity, and identify any barriers they have.
- Consider referral to an asthma educator, nurse practitioner, public health nurse, Māori provider or paediatrician where these are available and if considered appropriate.

Influenza vaccine

- Ensure children with asthma or recurrent wheeze receive the influenza vaccine every year from six months of age.

Source: New Zealand Child Asthma Guidelines



People with well-controlled asthma can participate in physical activities without restriction

The current recommendations are:[2]
Step 1 – SABA reliever alone (one to two puffs when needed).
Step 2 – add maintenance low-dose ICS.
Step 3 – add LABA.
Step 4 – increase to standard dose of maintenance ICS/LABA; add montelukast; consider referral to a paediatrician.
Step 5 – consider high-dose ICS/LABA; refer to a paediatrician.

At Step 5, the child will likely be having frequent oral steroids and should definitely be referred to a paediatrician.

SMART using budesonide/formoterol 100µg/6µg may be considered on specialist advice in select children who are poorly controlled at Steps 3 to 5. Currently, there is insufficient evidence to recommend SMART as first-line therapy in children aged 11 years and younger.

Review treatments with your patients

In New Zealand at the moment, many people will be using SABA-only treatment for mild asthma. In 2018, over two million salbutamol inhaler devices were dispensed in the community setting in New Zealand, making it the eighth most dispensed Pharmac-funded drug (Pharmac data: https://bit.ly/2SM2dRN, https://bit.ly/2yCl7nq).

Asthma attacks can be very serious, even fatal. They are more common and more severe in people with poorly controlled asthma and in high-risk people, but they can occur in anyone with asthma. It is worth asking people how much SABA they are actually using – inhalers do tend to get lost or given to someone else, and some people will want to have inhalers in different rooms of the house, in the car, etc.

Many people who are prescribed an ICS don't collect their ICS prescriptions. Having one combined ICS/LABA for as-needed use, and for regular use if required, not only ensures that the ICS is taken more regularly but also provides safer treatment right from the start.

Inhaler technique – now is a great opportunity to encourage review and optimisation of treatment, and to provide education. Worldwide, it is estimated that up to 80 per cent of people do not use their inhaler correctly, and at least 50 per cent do not use their maintenance medications as prescribed. Inhaler technique remains critical to optimal therapy, no matter which inhaler device is being used. Ensure patients are getting the best out of their treatment by checking their inhaler technique.

Asthma plans – people with asthma should still be encouraged to have an asthma action plan (https://bit.ly/2CvmPsj). Of course, everyone is different, and the treatment plan should be individualised for each patient. Choice of treatment will depend on many factors, such as severity of asthma, other lung conditions, personal preference, ability to use devices and other health conditions.

What does good control of asthma look like?

People with well-controlled asthma:
- have no or minimal symptoms both during the day and at night
- need little or no as-needed medication
- can participate in physical activities without restriction
- have normal or near-normal lung function
- avoid serious asthma exacerbations, including the need for hospitalisation. ■

The new *Asthma and Respiratory Foundation NZ Adolescent and Adult Asthma Guidelines 2020* and *New Zealand Child Asthma Guidelines* are available on the NZ Respiratory Guidelines website: www.nzrespiratoryguidelines.co.nz

Go to ELearning at nzdoctor.co.nz for the references to this article

This publication has been reprinted with the support of Teva Pharma (New Zealand) Limited to provide an update on the new guidelines for the management of asthma in adults and adolescents. The content is entirely independent and based on published studies and the author's opinion.

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