Children and Asthma
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Children and asthma

One in four New Zealand children has signs of asthma at some time. This booklet talks about asthma symptoms, medicines, exercise and asthma at school. It offers some tips to help you control your child’s asthma, so that they continue to lead a full and active life.

What is asthma?

When you breathe, air travels into your lungs through your airways.

People with asthma have over-sensitive airways which react to triggers that don’t affect other people. These triggers cause the airways to tighten, partially close up, swell inside and make more mucus. This makes it hard to breathe in and even harder to breathe out.

Healthy airway

Outer muscle relaxed

Lining normal

Tube wide open

Airway affected by asthma

Outer muscle tightened

Lining swollen

Mucus builds up

Tube narrowed

Asthma can run in families, but not everyone in the family will be affected.
What are the signs of asthma?

Many children under one year of age will wheeze or cough because their airways are very small. This does not necessarily mean they have asthma. Most of these children grow out of their wheezy episodes by age three. They are sometimes referred to as “happy wheezers.” Their condition requires little or no treatment.

However one quarter of all New Zealand children will develop asthma. Some signs of asthma in children are:

- coughing, particularly at night and after exercise
- breathlessness
- wheezing (noisy breathing)
- a tight feeling in the chest

Talk to your doctor if your child has any signs of asthma.

Most children with asthma live healthy lives if their asthma is under control. However, some children may find physical activity difficult or have trouble sleeping due to coughing or asthma attacks.

It is important to know as much as you can about your child’s asthma so that it has the least possible impact on their life.
Is it asthma?

It is difficult to pick out the children with asthma from the “happy wheezers” as there is no clear “asthma test” for small children. Here are some methods that can help doctors diagnose asthma in children.

Child Asthma Symptom Diary

Your doctor, nurse or asthma educator can show you how to fill in a Child Asthma Symptom Diary to record your child’s symptoms over several weeks. This diary will help clarify whether or not your child has asthma and will help you to understand and gain control of your child’s asthma.
A Peak Flow Meter and Peak Flow Diary

Children over six years may be able to use a peak flow meter to measure how well the lungs are working. Peak flow meters are available free of charge from your doctor. Peak flow measurements should be used in conjunction with a symptom diary.

A Spirometry Test

Children over seven years may be able to take a spirometry test. This is a simple test that can be used to diagnose lung conditions like asthma. The test involves taking a full breath in and blowing into a tube attached to a spirometer machine. The test may be repeated after taking a dose of reliever medication.

Other lung conditions

If your child has a wet phlegmy cough for over six to eight weeks, talk to your doctor about other possible lung conditions.
How can you help your child’s asthma?

Work as a team

You, your child, your doctor, practice nurse, pharmacist and asthma educator make up a team looking after your child’s asthma. See your child’s own doctor whenever possible as other doctors will not know their history as well.

Visits when the child is well will help doctors, nurses and asthma educators check inhaler techniques, update management plans and monitor the difference between good and bad asthma health.

If you feel that your child’s asthma is still not under control, you can discuss your concerns with your doctor who may suggest a referral to a paediatrician.

Child Asthma Plan

Ask your doctor for a written management plan to show you what to do when your child’s asthma improves or gets worse.
Understand and try to avoid common asthma triggers

Common asthma triggers are:
- colds and flu
- cigarette smoke
- certain plants
- cats and other furry pets
- weather changes
- house dust mites (found in all homes, especially in carpets and bedding)
- emotions
- physical activity

Physical activity benefits people with asthma, but if the child’s asthma is not well-controlled it can also trigger symptoms. See page 15 for more information on asthma and physical activity.

Some ways to help your child avoid asthma triggers are:
- make your home and vehicle smokefree
- try to minimise exposure to house dust mites in bedding, soft toys and carpets by:
  - freezing soft toys for 72 hours every three weeks
  - regularly airing the house by opening windows
  - regularly airing bedding and rugs in the sun
  - dusting with a damp cloth
  - vacuuming weekly (including the child’s mattress) with a hepa-filter vacuum cleaner
  - purchasing special mattress and pillow covers
    (contact your local asthma society for more information)
- if bunk beds are used, children with asthma should sleep on the top bunk
- children with asthma should not sleep in the same room as pets
- if your child has a cold or the flu, watch carefully for signs of asthma and modify their medication according to the doctor’s advice or your Child Asthma Plan.
In a small percentage of children, certain kinds of food or drink may make their asthma worse. The foods most commonly associated with food allergy are cow’s milk, wheat, seafood, eggs, soy and peanuts. The main symptoms of food allergy are hives, eczema, itching, vomiting, diarrhoea, abdominal pain, nasal congestion and wheeze.

Mild food allergy affecting asthma occurs in around one out of 50 children under the age of two. Most childhood allergies are outgrown by the age of three. If foods that commonly cause allergies are not introduced to a child’s diet until they are two years old, they are less likely to develop life long allergies.

Contact your doctor before removing a food from your child’s diet, as it may be important and necessary for healthy growth.¹

What is an inhaler?

An inhaler is a plastic case that holds and delivers asthma medicine directly to the lungs. There are two main types of inhaler:

1. **Metered Dose Inhalers (MDIs)**

   Metered dose inhalers (MDIs) are sometimes called aerosol inhalers. When the inhaler is pressed, a measured dose of asthma medicine is released through the mouthpiece. Children (and adults) should always use a spacer with an MDI.

   A spacer is a clear plastic tube with a mouthpiece or mask at one end and a hole for the MDI inhaler at the other end. A valve in the spacer mouthpiece opens as you breathe in and closes as you breathe out. This helps the full dose of the medicine get into the lungs from the inhaler.

   Spacers are free of charge from your doctor or asthma educator.

2. **Dry Powder Inhalers**

   Dry powder inhalers are breath-activated inhalers.

¹ For more information on triggers, ask your doctor, nurse or asthma educator for the booklet called Asthma Triggers or visit the Asthma and Respiratory Foundation’s website www.asthmanz.co.nz.
The type of inhaler used to deliver medicine should suit the child’s age and ability. Here is a general guide on children and inhalers – you should discuss the best choices for your child with your doctor, nurse, pharmacist or asthma educator.

Age 0-5

Children under the age of five can use MDIs with a mask attached to the spacer. The medicine is squirted from the MDI into the spacer where it remains suspended for 15 to 30 seconds. This allows the child time to take six normal breaths through the mask. Often children object to the mask, but most will get used to it in time.

Talk to your doctor, practice nurse or asthma educator if you are having problems giving your child their asthma medicine. When your child is about two-and-a-half years old the mask may be removed from the spacer, as most children are able to use the spacer mouthpiece by this stage. Liquid medicines are sometimes prescribed, but they are slower acting with more side effects than inhaled medicines.

Age 5-adult

Children in this age group can continue to use their MDIs with a spacer (without a mask) or a dry powder inhaler.

Age 12 and over

There is no need to change medicine or inhaler device unless there is a problem.
Now that we know about inhalers, let’s learn about the medicines inside them.

There are four main groups of asthma medicines:

1. preventer inhalers
2. reliever inhalers
3. symptom controllers
4. combination inhalers

For more information on inhalers, ask your doctor, nurse or asthma educator for the booklet called Understanding Your Inhaler or visit the Asthma and Respiratory Foundation’s website www.asthmanz.co.nz.
How do preventer medicines work?

A preventer is your child’s most important medicine, because it prevents swelling and narrowing inside the airways and reduces the likelihood of an asthma attack.

Preventers work slowly, so your child won’t notice any immediate change in how they feel. It is important to never underestimate the effect of preventer medicine. It will help control the health of your child for the months ahead. However it needs to be taken every day or as prescribed to be effective – even when your child is well.

Examples of preventer medicines are:

- **MDI inhalers:**
  Beclazone, Flixotide, Tilade and Vicrom
- **Dry powder inhalers:**
  Intal, Flixotide Accuhaler and Pulmicort Turbuhaler

Some side effects of preventer medicines include a sore throat, hoarse voice or a fungal infection of the mouth. These side effects can be avoided by teeth cleaning or having a drink of water immediately after taking preventer medicines or using a spacer with an MDI.
Steroid tablets
Sometimes children need to take short courses of steroid tablets (prednisone) or steroid liquids (prednisolone – Redipred) as well as their preventer medication. Oral steroids are very useful in bringing asthma under control quickly. They do this by reducing the swelling of the lining in your child's airways and reducing the amount of mucus produced.

A short course of prednisone is safe with no lasting side effects. You can discuss the possible short-term side effects and any other concerns with your doctor or pharmacist. Some people notice a change in mood, energy level or appetite. The side effects of short courses of prednisone are usually mild.

How do reliever medicines work?

A reliever medicine brings short term relief from asthma. It relaxes the tight bands of muscle around your child’s airways. This helps air flow in and out more freely.

Reliever medication can be taken to relieve wheezing, coughing or tightness in the chest area. See your doctor or asthma educator if your child is using their reliever more than 3–4 times a week, as this means their asthma is not under control. They may need to start or increase preventer medication, which treats the underlying cause of asthma – swollen and inflamed airways. Many people rely on their blue inhalers to ‘feel better’ immediately, but they do not treat the underlying cause of asthma symptoms. Uncontrolled asthma is serious and can even be life threatening.
How do symptom controllers work?

A symptom controller is a long acting reliever that can help children who continue to have asthma symptoms despite regular use of preventer medicine. It is taken twice a day to keep your child’s airway muscle relaxed. The effect of each puff lasts twelve hours.

Examples of reliever medicines are:

- **MDI Inhalers:**
  Atrovent, Salamol and Ventolin

- **Dry Powder inhalers:**
  Bricanyl Turbuhaler

Some side effects of reliever medicines include mild shaking, headaches, racing heart beat and restlessness. Talk to your doctor if your child experiences these symptoms.
Symptom controllers are used in addition to the preventer inhaler. They DO NOT replace preventer inhalers, which MUST be taken at the same time.

A symptom controller should not be used for immediate or emergency use. Your child’s blue reliever inhaler needs to be used at this time.

**Examples of symptom controller medicines are:**

- MDI inhalers:
  - Serevent

- Dry Powder Inhalers:
  - Oxis Turbuhaler and Serevent Accuhaler

Some of the unwanted effects from using this inhaler include mild shaking, headaches, a racing heart beat or restlessness. Talk to your doctor if your child experiences these symptoms.

4. **What is a combination inhaler?**

**Combination inhalers contain both preventer and symptom controller medicine in one device.**

Combination inhalers must be used every day, even when your child is well. Ask your doctor if your child may benefit from a combination inhaler.
Examples of combination medicines are:

- **MDI inhalers:**
  Seretide

- **Dry Powder Inhalers:**
  Symbicort Turbuhaler

Some of the unwanted side effects of these inhalers are mild shaking, headaches, a racing heart beat, a sore throat or an oral fungal infection. The sore throat and fungal infection can be prevented by teeth cleaning or having a drink of water after using preventer medicines.

What about other treatments?

There are many complementary treatments available, however many have not been tested thoroughly.

Complementary medicines and therapies usually refer to treatments that do not use drugs prescribed by doctors.

It could be extremely dangerous to stop your child's usual prescribed treatment from the doctor suddenly. Any change in treatment should always be discussed with your child's doctor.

For more information relating to asthma medicines ask your doctor, nurse or asthma educator for the booklet called Controlling your Asthma or see www.asthmanz.co.nz.
Physical activity benefits children with asthma, provided their asthma is well-managed. Physical activity is good for the heart, circulation, bones and muscles. Everyone feels better when they are fit plus physical activity is fun.

Many children with asthma avoid physical activity in case it brings on an asthma attack. Talk with your doctor about the best methods to ensure that your child leads an active life. Here are some things you can discuss:

- use reliever medication before exercise if activity has been identified as an asthma trigger
- avoid exercise on days when the child has asthma symptoms
- long distance running and endurance activities are most likely to cause exercise-induced asthma. Sports with lots of stopping and starting are less likely to cause problems e.g swimming, tennis, martial arts and most team sports.
- warming up before exercise can help. Stretching, running on the spot and increasing fitness can reduce the likelihood of exercise-induced asthma.
- exercising in cold dry air conditions may trigger asthma.
- flowering grasses or freshly mown grass on sports fields may cause symptoms for some children with asthma.
- if the child starts showing signs of asthma STOP THE ACTIVITY IMMEDIATELY and prepare to follow the instructions on page 18.
It is important to discuss your child’s asthma with the teacher and school health representative. Explain how they can prevent or recognise symptoms and provide them with a copy of your child’s asthma plan to follow in an attack. Here are some other things you can discuss:

- Ensure that the school has your written permission to give reliever medicine in an emergency and that your contact phone numbers are kept up to date in school records.
- Check to see if your child’s school has an asthma policy in place to meet their obligations for the one in four children with asthma. The Asthma and Respiratory Foundation can supply schools with a suggested asthma policy as part of its Asthma Friendly Schools’ program.
For more information, schools can contact the Foundation on 04-499-4592 or email arf@asthmanz.co.nz.

It is important for parents and schools to have a plan for school trips, camps, sports clubs and all activities where children with asthma are participating.

**At what age can my child manage their own asthma?**

*There is no right answer to this question. It depends on the child and the family.*

Most children can take their own inhalers by age ten, but routine checking by the caregiver/parent will show whether they are doing this well by themselves. During an asthma attack, all children need supervision and support.
It is important to recognise and treat asthma as soon as possible, so that it can be brought back under control.

Remember the A.S.T.H.M.A. steps:

**ASSESS**

Assess whether the attack is mild, moderate or severe

**MILD**

Mild symptoms might include:
- slight wheeze
- mild cough
- symptoms when excited or running

**MODERATE**

Moderate symptoms might include:
- obvious breathing difficulties
- persistent cough
- difficulty speaking a complete sentence

**SEVERE**

Severe symptoms might include:
- distress
- gasping for breath
- difficulty speaking more than one or two words
- looking pale and sounding quiet
- complaints that the reliever medicine is not working
- unresponsiveness

If you or someone you know has severe asthma or is frightened, call an ambulance immediately on 111.
**Sit**

Sit down and lean the child forward slightly. Ensure the child’s arms are supported by their knees, a table or the arms of a chair.

**Treat**

Treat an asthma attack with up to 6 puffs of a reliever inhaler.

If reliever medicine comes in a metered dose inhaler (MDI), use a spacer if possible to gain the maximum benefit of the medicine. Puff the inhaler once into the spacer and breathe 6 times (as normally as possible) in and out through the spacer. Repeat the process up to 6 times (with a total of 36 breaths)

**Help**

If the person with asthma is not improving after 6 minutes call the ambulance (if you haven’t already.) Remember, puff the inhaler once into the spacer and take 6 normal breaths. Continue to use the reliever inhaler 6 puffs every 6 minutes until help arrives.

In this situation you will not overdose the person by giving them the reliever every 6 minutes.

**Monitor**

If improving after 6 minutes keep checking. If necessary repeat doses of the reliever inhaler.

**All Okay**

The person with asthma can return to normal activities when they are free of wheeze, cough and breathlessness. If symptoms recur, repeat treatment, rest, and see your child’s doctor.
Growing out of asthma

Many children will stop having any asthma symptoms by early adulthood, but may develop other allergic problems such as hay-fever.

Children with severe asthma are less likely to grow out of it. About one third of adults with asthma did not have asthma as children but develop symptoms in later life.

The key is controlling it well so that it doesn’t stop your child being fit, strong, healthy and happy.