Asthma: What you need to know

Asthma is an inflammatory condition that can cause permanent changes in the airways and currently affects one in four children, one in seven adolescents and one in ten adults. People with asthma have reactive airways when exposed to certain triggers that can cause low-grade inflammation or an acute asthma attack. During an asthma attack the airways narrow, becoming red and inflamed, the muscles constrict and excess mucus is produced, however this is reversible.

Asthma is the leading cause of disease burden in children and is increasing in prevalence and severity. It is the most common reason for childhood doctor visits and hospital admissions and is one of the most common reasons for visits to the emergency department (AIHW, 2002). In 2001, approximately half (49.7%) of all emergency department admissions for asthma occurred in children aged zero to nine years (AIHW, 2002).

Asthma and allergies are closely linked. In Western countries, allergic conditions such as eczema and hay fever are associated with approximately half of all asthma cases (Balfour, 1999, Mellis, 1996).

House dust mite and pollens are common allergens and asthma triggers. House dust mite is most commonly found in bedding, carpet, soft toys and most other soft furnishings. Animal dander (skin, hair and saliva) is another common trigger for both children and adults, however it is difficult to avoid. Even if families give up their pets, it often takes months for the animal dander to be eliminated from the house. Pollens associated with asthma generally come from wind-pollinated grasses and trees and are most common in spring. As a result, there is often an increase in asthma symptoms at this time. It is often advised that children with allergic asthma are kept indoors on high pollen days.

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Smoking

Almost half of all Australian children have a parent who smokes (Moller, O'Leary, & Russell, 1999) and evidence indicates that such children are exposed to considerable levels of inhaled tobacco smoke. There is evidence to suggest that passive smoking contributes to new cases of asthma, increased severity and additional episodes of asthma, and the more cigarettes that are smoked, the greater the severity of the asthma (Moller, O'Leary, & Russell, 1999).

Asthma severity

Asthma severity is generally divided into three categories, infrequent episodic, frequent episodic, and persistent, with infrequent episodic being the most common (70-75% of all children with asthma).

There is wide variability in the pattern and severity of asthma in children. The majority of children with episodic asthma improve or become symptom-free with age.

It is important to maintain a balance between asthma severity and treatment. Over medication can be as much of a problem as under medication, especially in young children. The aim of successful asthma management in children is to enable them to enjoy a normal, active life with the least amount of medication possible.

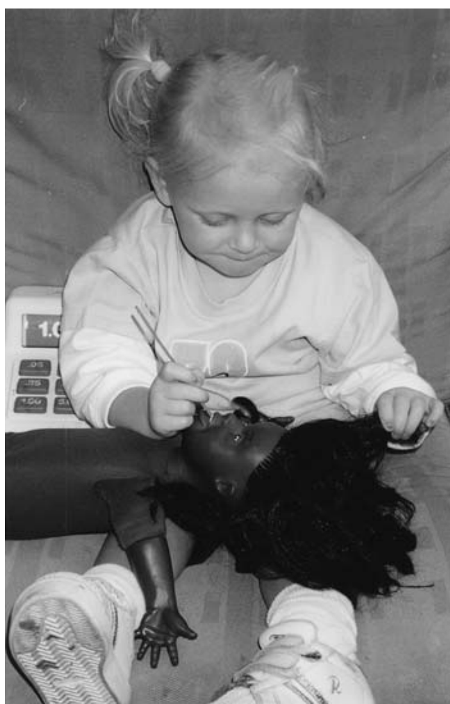
The most reliable method of medication delivery for children is a puffer and small volume spacer with a mask. Good puffer and spacer techniques are important to ensure that the maximum amount of medication reaches the lungs. Health professionals should ensure that the child's technique is adequate.

Nebulisers used to be a common delivery device for those with severe asthma. However, multiple studies have shown that a puffer and spacer are just as effective as a nebuliser when using equivalent doses (National Asthma Council, 2002). As a result, many major hospitals are making the shift from nebuliser to puffer and spacer.

Asthma Action Plans

Asthma Action Plans are an important tool to support parents in the management of their child's asthma. A written Asthma Action Plan should be developed in conjunction with the child's doctor and include details of their triggers, symptoms of worsening asthma, current medications, contact details for parents/guardians and doctor

and preferred Asthma First Aid Plan. A written Asthma Action Plan is also a useful tool for people working in children's services to ensure that they have appropriate information about every child's asthma. Regular review by the child's doctor is a highly recommended component of asthma management.



Information to be included in an Asthma Action Plan

- Name and contact details for parents/guardians
- Emergency contact and doctor
- Signs and symptoms of asthma
- Signs of deteriorating asthma
- Triggers
- Details of medications
- Preferred Asthma First Aid Plan

Asthma First Aid

If a child has an asthma attack or is having difficulty breathing and their Asthma Action Plan is not available, the Asthma First Aid Plan (Box 2) should be followed immediately.

Asthma First Aid Plan

Step 1

Sit the person down and remain calm to reassure them. Do not leave them alone.

Step 2

Without delay shake a blue reliever puffer* and give 4 separate puffs through a spacer. Use 1 puff at a time and ask the person to take 4 breaths from the spacer after each puff.

Step 3

Wait 4 minutes. If there is no improvement repeat step 2.

Step 4

If there is still no improvement after 4 minutes, or you are concerned at any time – call an ambulance immediately (dial 000) and state that the person is having an asthma attack. Continuously repeat Steps 2 and 3 whilst waiting for the ambulance.

* Names for reliever puffers include Airomir, Asmol, Epaq or Ventolin.

Adhering to a medication regime can be difficult in young children because they often don't understand the need for medication. Another inadvertent reason for reduced adherence is because of fear of drug delivery devices.

One method that has been suggested for familiarising children with devices is to allow them to play with the equipment (Rutherfurd, 1996). This allows children to become familiar with the puffer and spacer and how they work, which may reduce anxiety and fear.

Rutherfurd (1996) also suggests that it may help to offer children choices such as how they wish to take the medication, i.e. do they want to sit on the carer's knee or would they prefer a chair? Incorporating medication into usual daily routine is thought to be particularly helpful (Rutherfurd 1996).

> offer children choices such as how they wish to take the medication

Asthma Friendly Children's Services

Asthma Victoria has launched an initiative called *Asthma Friendly Children's Services (AFCS).* This program is an accreditation program for children's services (including child care, preschools and family day care) to ensure that they have appropriate practices and procedures in place in relation to asthma. This program aims to provide a safer environment for children with asthma.

The AFCS program was developed based on the success of the Asthma Friendly Schools (AFS) program that has been running throughout

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Australia for over two years and has successfully integrated asthma management into daily school operations in over 600 schools nationwide. There are eight criteria that must be addressed and fulfilled in order for Children's Services to be accredited as 'Asthma Friendly'. The criteria are detailed in Box 3.

Asthma Friendly Children's Services Criteria

1. Development and implementation of appropriate asthma management policies.
2. Up to date Asthma Action Plans are sought for each child with asthma.
3. At least one staff member who has completed accredited asthma training (Emergency Asthma Management) is on duty whenever children are being cared for or educated.
4. Emergency asthma medication (including a spacer) is readily available in a first aid kit.
5. Asthma education is included in the early childhood program.
6. Asthma First Aid posters are on display.
7. Strategies to minimise triggers in the localised environment are in place.
8. Asthma education is offered to parents/carers of children at the service.

Asthma is one of the most common conditions of childhood and needs to be appropriately managed to enable children with asthma to lead full and active lives. A number of studies and initiatives that are currently underway in Australia will assist us to determine the most effective means of improving asthma management in children.

Tracey Setter

Asthma Victoria

For further discussion on this issue by Tracey Setter see the latest edition of AJEC.

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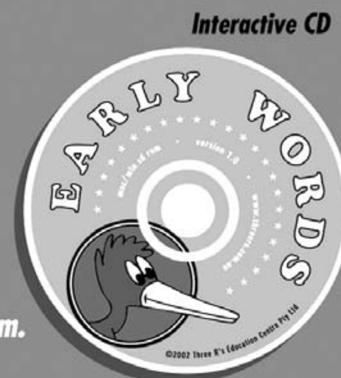

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