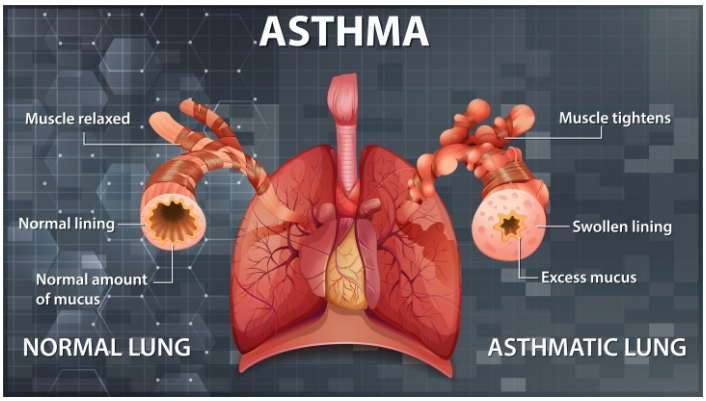
Asthma in children under 5 years old

WHAT IS ASTHMA?

Asthma is chronic inflammation of the airways in the lungs. In asthma, the airways in the lung narrow due to swelling of the mucosa, increased mucus production, and spasm of the airways.

The symptoms include a cough, wheezing or tightness of the chest. or shortness of breath after exercise.



WHAT IS DIFFERENT ABOUT ASTHMA IN CHILDREN UNDER 5 YEARS OF AGE?

- All children with asthma do not wheeze, though may present with a cough;
- The main symptoms of cough and wheeze may be due to other diseases;
- Little children cannot perform lung function testing, which is used to diagnose asthma in older children;
- Certain treatments that are available for older children and adults are not recommended for younger children; and
- Asthma-like symptoms remit in a large number of children under 5 years of age, so the need for regular controller use should be periodically reassessed.

HOW DO YOU KNOW IF YOUR CHILD HAS ASTHMA?

- Does your child have recurrent episodes of cough or wheeze?
- Does your child complain of shortness of breath?
- Does your child wake up at night because of wheezing or coughing?
- Does your child have to stop when playing or exercising because of a cough or wheeze or shortness of breath?
- Does your child have eczema or a food allergy?
- Is there a family history of asthma or hay fever or food allergies?

WHAT IF IT IS NOT ASTHMA?

If your child has the following signs then your child needs to be assessed by a paediatrician or paediatric pulmonologist.

- Your child is not growing
- Your child presents with breathing difficulties in the first 6 months of life
- Your child has vomiting with breathing difficulties
- Your child's wheezing is continuous
- The maintenance asthma pumps or medication are not helping
- Your child sometimes goes blue

Asthma in children under 5 years old

ASTHMA SYMPTOMS MAY BE TRIGGERED BY

- Respiratory tract infections;
- Allergens e.g. dust, pollen, or pet dander;
- Exercise or activity;
- Changes in weather;
- Exposure to cigarette smoke or environmental pollutants;
- Gastrointestinal reflux;
- Laughing or crying; and/or
- In infants, feeding.

ASTHMA EMERGENCIES

Severe asthma attacks can be life-threatening, and may require an emergency assessment.

SIGNS AND SYMPTOMS

- Gasping for air;
- Difficulty breathing with the abdomen being sucked inwards; and/or
- Difficulty speaking.

TESTS FOR DIAGNOSIS

Therapeutic trial

The doctor may prescribe a short acting beta$_2$-agonist, together with a steroid controller inhaler, for a 2 - 3 month period. The number of day and night symptoms - and exacerbations - will be evaluated to support a diagnosis of asthma. After the trial, medication must be stopped and a review done for recurring symptoms.

Tests for allergic sensitisation

Allergies to aeroallergens (e.g. house dust mites and pollen) are present in the majority of asthmatics after 3 years of age. Sensitisation to allergens can be tested with a skin-prick test or an allergen specific blood test.

Chest X-ray

Chest x-rays are usually not necessary, except if there is poor response to treatment or another diagnosis is suspected.

Lung function testing

Most children under 5 years are unable to successfully perform a lung function test. However, with coaching and practise, the child will learn how.

ASTHMA TREATMENT

LONG TERM MEDICATION:

Inhaled corticosteroids

Inhaled corticosteroids are the preferred treatment for control of asthma symptoms in children under 5 years (e.g. Budesonide, fluticasone, and beclomethasone).

Leukotriene modifiers

These are add-on treatments for children when corticosteroid treatment alone does not control the asthma symptoms. They are available as granular sprinkles or in a chewable form (e.g. montelukast, zafirlukast).

Asthma in children under 5 years old

SHORT TERM MEDICATION:

Short-acting beta2-agonists (SABAs)

Inhaled SABAs relieve narrowed airways and provide immediate relief for asthma symptoms, lasting for 4 - 6 hours. It is used for quick-relief or rescue for attacks (e.g. salbutamol, fomoterol).

Oral bronchodilator therapy is not recommended.
For children with mild, intermittent asthma symptoms, the inhaled short-acting treatment may be all that is needed.

Oral corticosteroids

Oral corticosteroids are only used when an asthma exacerbation cannot be controlled with other medication, and when said exacerbation requires admission to hospital (such as when hypoxia is present).

MEDICATION DELIVERY DEVICES:

Valve holding chamber with a mask (spacer with a mask)

Most asthma medications are given with a device called a metered dose inhaler. This device should be attached to a spacer with a mask.

The spacer allows the child to take six normal breaths into the chamber, without difficult coordination.

Nebulisers

Nebulisers should be reserved for acute exacerbations - managed in a health-care facility - or for patients who cannot or for whom it is impossible to use a spacer.

HOW TO ASSESS ASTHMA CONTROL

Asthma is considered controlled in a child if the following are

ALL ABSENT:

- Day symptoms for more than a few minutes more than once a week;
- Runs or plays less than other children or tires easily;
- Reliever medication used less than once a week; and
- Any night awakening or cough due to asthma.

WRITTEN ACTION PLAN

Your doctor will help you create a written action plan for you to use at home and share with family members, friends, and teachers.

The plan should include:

- Name and age;
- Doctor and emergency contact information;
- Name, dose, and timing of long- term medication;
- Name, dose, and timing of reliever medication;
- Avoidance measures for triggers; and
- An asthma diary to record symptoms and treatment.

(See Asthma Action Plan pamphlet in this series)

Written by Dr Medeshni Annamali (2022)