

SHRADDHA SAWHNEY

It is generally felt that in metro cities of India, fast paced life, rising levels of pollution and work related stress are leading to increasing incidence of asthma in both children and adults. As Dr. Avinash Bansal, Head of Paediatrics, Bharat Vikas Parishad Hospital, Kota and an Asthma Specialist, has aptly explained, "Though one can't deny that reported cases are mounting, one reason we feel asthma is rising in India is also because of growing awareness and acceptance of the problem, and the trend is only at a nascent level. Education at all levels is needed, from admitting asthma, treating it properly and living an asthma-friendly lifestyle to have an almost absolutely normal living."

Thankfully, the problem can be treated with proper medication available and a little change in lifestyle. Most people with asthma who take the suitable treatment can live normal lives. But left untreated, asthma can cause permanent damage to the airways. Very rarely, a severe asthma attack can be fatal.

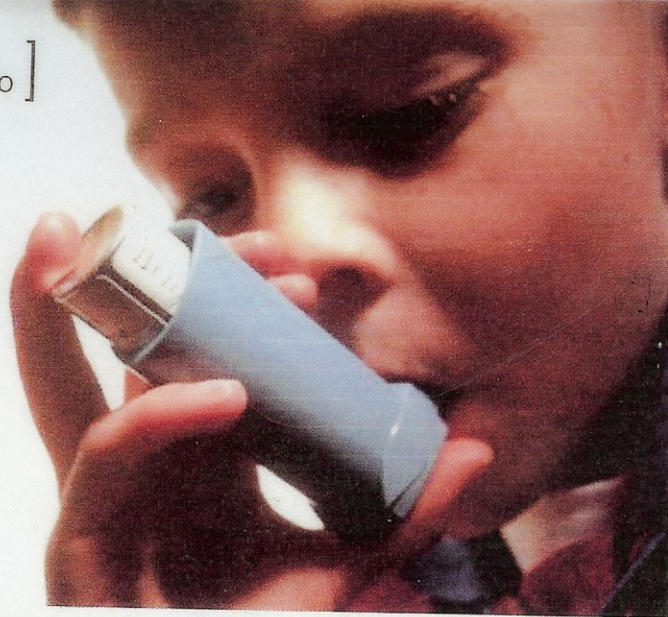
### What is asthma?

Asthma is a disease of the lungs that affects the bronchial tubes or airways. The term "asthma" comes from the Greek meaning, "to breathe hard." Medical terminology defines the condition as reversible obstructive airway disease (ROAD). Unlike other conditions that obstruct the airways, such as cystic fibrosis, chronic bronchitis and emphysema, asthma does not affect sufferers all of the time.

The lungs are a network of airways or bronchial tubes. The bronchial tubes are made of muscles and a mucous membrane. In a healthy lung, air moves freely through the bronchial tubes.

When an asthmatic person has an asthma attack the membranes inside the bronchial tubes release mucus and become inflamed. The inflammation causes the muscles to contract and create spasms. These muscle spasms are responsible for wheezing. Wheezing is the sound that can be heard as the bronchial tubes constrict and air tries to escape.

Attacks can vary considerably



# WAR ON ASTHMA

IF GOD HAS GIVEN YOU ASTHMA, HE ALSO HAS PROVIDED MANKIND WITH NEW MEDICINES TO TREAT THE AILMENT. USE THEM

in their severity and are sometimes relatively mild, but the condition is nevertheless a dangerous one. An asthma attack can easily spiral out of control at any time. This is particularly true for children.

Mild asthma (slight breathlessness and cough) can usually be helped using breathing techniques and medications on the spot while for severe asthma attacks, emergency medical attention has to be called for immediately if symptoms persist longer than 10 minutes.

### Symptoms and causes

Asthma symptoms may be

mild, moderate or severe. They may include coughing, wheezing, shortness of breath and tightness in your chest. These symptoms tend to be variable and may stop and start. They are usually worse at night.

The exact cause of asthma isn't fully understood at present. Sometimes, the symptoms flare up for no obvious reason, but you may notice certain triggers that set off an asthma attack or make your symptoms worse. These triggers irritate the airways in your lungs and can include infections such as colds and flu, irritants such as dust, cigarette smoke, fumes, chemicals found in the workplace

- this is called occupational asthma, allergies to pollen, medicines, animals, house dust mite or certain foods, exercise - especially in cold, dry air or emotions - laughing or crying very hard can trigger symptoms, as can stress.

### Types of Asthma

Although clear patterns do exist, the specific causes of asthma are far from straightforward. Until recently, the condition was divided into two clearly defined types of asthma: extrinsic (allergic) asthma and (non-allergic) intrinsic asthma. Today, asthma is divided into a number of different types: allergic, non-allergic/intrinsic, exercise-induced, nocturnal, occupational and steroid-resistant asthma.

### ALLERGIC ASTHMA

Ninety per cent of all asthma sufferers have allergic asthma. Allergic asthma is triggered by allergens - substances capable of causing an allergic reaction.

**Causes of Allergic Asthma:** The causes of allergic asthma are wide ranging. At the top of the list are specific allergens, such as pet dander, pollen and dust mites. People suffering specific allergen-induced asthma are usually very aware of the offending allergen and try to avoid it.

Pollutants, wood dust, smoke, irritants, chemicals, viral infections, bacteria, stress, emotion and exercise are other frequently diagnosed causes.

**Childhood Allergic Asthma:** Most childhood asthma is considered an allergic type of asthma. Childhood asthma occurs more often in young boys than girls and out of all childhood illnesses accounts for the most missed days of school.

Research has concluded that maternal smoking can contribute to asthma or other impairment of infant lung function, even before the child is born. Continued exposure to cigarette smoking can irritate the respiratory tract and make infants and children particularly vulnerable to allergic asthma.

### INTRINSIC ASTHMA

Asthma is called "intrinsic" when allergies do not play a part. Intrinsic asthma is not likely to develop in children; its typical onset occurs after age 40.

Possible causes of intrinsic asthma include respiratory irritants such as perfumes, cleaning agents, fumes, smoke and cold air, upper respiratory infections and gastroesophageal reflux. Intrinsic asthma tends to be less responsive to treatment than allergic asthma.

#### EXERCISE-INDUCED ASTHMA

At least eleven per cent of the non-asthmatic population experiences exercise-induced asthma. Many of these people have allergies or a family history of allergies.

Exercise-induced asthma can affect anyone at any age and may be attributed to the loss of heat and moisture in the lungs that occurs with strenuous exercise. Frequent coughing during exercise may be the only symptom of exercise-induced asthma. But in cold, dry conditions exercise-induced asthma symptoms can be more severe. Some common sense coupled with prophylactic medications for exercise-induced asthma can prevent the onset of asthmatic symptoms for sensitive individuals.

#### NOCTURNAL ASTHMA

Nocturnal, or sleep-related, asthma affects people when they are sleeping and, although termed "nocturnal" (belonging to the night), asthma symptoms can occur regardless of the time of day a person is sleeping. Symptoms of nocturnal asthma tend to be their worst between midnight and 4 a.m. Nocturnal asthma can be triggered by allergens in bedding or the bedroom, a decrease in room temperature, and gastroesophageal reflux (GERD), among other triggers. An estimated 75 per cent of asthmatics are affected by nocturnal asthma.

#### OCCUPATIONAL ASTHMA

Occupational asthma occurs directly as a result of breathing chemical fumes, wood dust, or other irritants over long periods of time. An estimated 15 percent of asthmatics have occupational asthma.

#### STEROID-RESISTANT ASTHMA

In the case of asthma medications, especially steroids, more is not better. Overuse of asthma medications can lead to status

asthmaticus, a severe asthma attack that doesn't respond to medication and may require mechanical ventilation to reverse. To prevent status asthmaticus, follow your doctor's directions and take medication only as prescribed.

#### Diagnosis

If you think you have asthma, consult your doctor. He or she will ask you about your symp-

toms and if you have noticed any factors that trigger the symptoms. Your doctor will also do a physical examination.

Your doctor may do one or more of the tests listed below.

- A device called a peak flow meter can help your doctor to diagnose asthma. A peak flow meter measures how much, and how fast, air can be expelled from your lungs. This device can also be used to mon-

itor whether a treatment works for you.

- A spirometry test can also measure how well your lungs are functioning but provides more detailed information than a peak flow meter
- Less commonly, other tests such as chest X-rays are done to make sure you do not have any other breathing problems. For example, a disease called chronic obstructive pulmonary disease has similar symptoms to asthma.
- Chronic obstructive pulmonary disease (COPD)
- An allergy skin test may be done to find out whether you are allergic to certain substances.

#### Are inhalers bad?

"Inhalers are the best thing that has happened to asthmatics", says Dr. Bansal. However there are certain misconceptions that prevent regular use of these by asthmatics.

These devices (sometimes called 'puffers') contain a gas that will propel the correct dose of medication when the top is pressed down. This is inhaled into your airways. You will need to use your inhaler correctly in order for it to work properly, so ask your doctor for advice.

"It is the same medicine that is given in a tablet form to a patient, which is given through an inhaler. It goes into the affected area - the lungs, directly, in a much lesser dose, and impacts immediately", explains Dr. Bansal.

He elaborates, "There are two types of medicines for asthma: Relievers and Preventers. The former are used to give immediate relief to the patient in an emergency, or when the problem suddenly exaggerates. They are mostly required on an SOS basis. The latter set of inhalers, as the name says, prevent the occurrence of the disease and control it in a major way by building immunity in the patients."

"A preventer may or may not be a steroid and, in all probabilities, will have less side effects than you might think. You will find your unique best solution by regular interaction with the doctor, so do not shy away from it," says Dr. Vikram Jaggi.

Dr. Jaggi is the Medical Director at Asthma Chest and

### SOME EXAMPLES OF THINGS THAT CAN BRING ON ASTHMA SYMPTOMS

**ALLERGENS**

- Animal dander (from the skin, hair, or feathers of animals)
- Dust mites (contained in house dust)
- Cockroaches
- Pollen from trees and grass
- Mold (indoor and outdoor)

**IRRITANTS**


- Cigarette smoke
- Air pollution
- Air or changes in weather
- Strong odours from painting or cooking
- Scented products

- Strong emotional expression (including crying or laughing hard) and stress

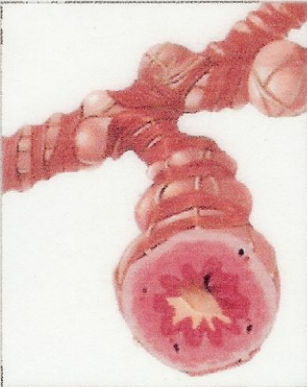
**OTHERS**


- Medicines such as aspirin and beta-blockers
- Sulfites in food (dried fruit) or beverages (wine)
- A condition called gastroesophageal (GAS-tro-e-sof-o-JEE-al) reflux disease that causes heartburn and can worsen asthma symptoms, especially at night
- Irritants or allergens that you may be exposed to at your work, such as special chemicals or dusts
- Infections

**Normal bronchiole**



**Asthmatic bronchiole**





restricted airway

**RISK FACTORS**

- Asthma often runs in families and you can inherit the tendency to get inflamed bronchial tubes
- If you are a woman, you are more likely to have asthma, whereas boys are more likely than girls to get asthma as a child,
- There is a theory (called the hygiene hypothesis) that people in developed countries are no longer exposed to the kinds of infections they would have had to deal with in the past so the immune system over-reacts to harmless substances

Source: National Heart, Lung and Blood Institute, USA. British United Provident Association Website

Allergy Center (ACAC), Delhi. A double gold medallist from Maulana Azad Medical College, New Delhi, he has a keen interest and specialisation in Lung function testing and Allergy testing. He is also the Director of Asthma Self Care Foundation and member of several Institutional ethics committees. ACAC specialises in giving a complete health care management and treatment to asthma and allergy patients.

Simply put, relievers treat your symptoms while preventers can prevent your symptoms.

Relievers are to be used when your asthma symptoms occur. They can be short-acting or long-acting. Short-acting relievers (known as bronchodilators) contain medicines such as salbutamol (e.g. Ventolin) and terbutaline (Bricanyl) that work to widen your airways and quickly ease your symptoms.

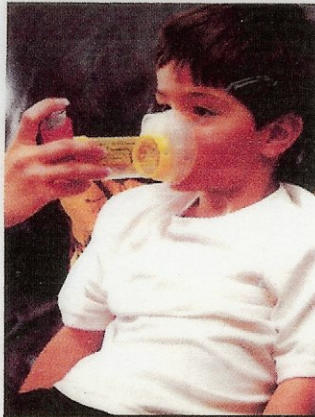
If your asthma is not well-controlled using a regular steroid and occasional use of a short-acting reliever, a long-acting reliever can be added to your treatment. Long-acting relievers contain medicines such as salmeterol (Serevent) or formoterol (e.g. Oxis). Reliever inhalers are usually a blue or green colour.

Preventers are used every day - even if you do not have symptoms. They are used to help you prevent symptoms. Preventers usually contain a steroid medicine, such as beclometasone (eg Becotide) or fluticasone (Flixotide) that work to reduce the inflammation of your airways. Side-effects are unusual at normal doses (although they can sometimes cause a sore mouth or throat). It can take up to six weeks for the full effect of preventer medicines to build up, but once they do, you may not need to use your reliever inhaler at all. Preventer inhalers are usually a brown, orange or red colour.

### Spacers

A device called a 'spacer' can help you use your inhaler correctly. A spacer is a long tube which clips onto the inhaler. At the other end of the tube is a mouthpiece to breathe in and out of.

It is easier to use because it enables you to activate the inhaler, and then inhale in two separate steps. Using a spacer also reduces the risk of getting a sore



### ASTHMA ATTACKS WHAT TO DO

In the event of an asthma attack you should:

- take your reliever treatment immediately, preferably with a spacer
- sit down (don't lie down) and try to relax
- wait 5-10 minutes - if your symptoms disappear you do not need to do anything
- if your symptoms do not go away, then you should call a doctor or an ambulance,
- continue taking your reliever, preferably with a spacer, every few minutes until help arrives
- If you go to hospital, take details of your asthma treatments with you.
- Visit your general physician after you are discharged from hospital so you can review your treatment.

Source: British United Provident Association Website

throat from using a steroid inhaler.

### Other medicines

If you have a severe asthma attack you may be treated with a course of steroid tablets, such as prednisolone. In this case, steroids are used as a 'reliever' therapy. If you take steroid tablets for about a week there are few side-effects. Side-effects of steroids are usually associated with taking tablets for several months or at high doses.

Several other medicines are available as tablets and inhalers if the standard treatments are not suitable for you, either because of side-effects or if your asthma is still not adequately controlled. These include tablets of montelukast (Singulair), zafirlukast (Accolate) or theophylline (e.g. Slo-Phyllin).

### Nebulisers

Nebulisers make a mist of water and asthma medicine that you breathe in. They can deliver more of the drug to exactly where it's needed than conventional inhalers can. This is particularly critical if you have a moderate or severe asthma attack.

Nebulisers are often used in hospital, but occasionally people buy them to use at home. But as Dr. Jaggi puts it by saying, "I feel Nebulisers are slightly overused. They are only needed in emergencies. Also, they are prone to infection if not properly cleaned each time after use. So do check with your doctor before deciding on buying one."

### Children and asthma

"Earlier, about 5-10 per cent of the children would show its symptoms in Delhi. Now the number has risen to around 15-20 per cent. In fact, one-fourth of the children in the pre-school age are recurrent wheezers," said Dr. Sanjiv Bagai, senior consultant paediatrician at the city's Batra Hospital.

Post-Diwali and up to February, it can be a particularly bad time for these children. "In the past month, about 40-50 per cent of cases in the OPD have been related to respiratory disorders," added Dr. Bagai.

Asthma could either begin in childhood, or later at any age. Some children do outgrow asthma as they grow up due to a change in the anatomy of their lungs and bronchial tubes.

A child whose parents have an allergy or are asthmatic stands a 60-70 per cent of inheriting asthma. An adult who has never gotten asthma may get it after pneumonia or severe bronchitis. It is believed that children who are less exposed to infections and dirt have a weaker immune system which makes them prone to develop allergies.

Dr. Bansal sums it up when he says, "Best way to treat asthma in children is to educate the parents."

Dr. Jaggi seconds this and adds, "Parents should talk positively in front of their child, and even otherwise, about the capability of their child. They are absolutely comparable to any other normal child. In fact I feel

saddened when a worried mother tells me in front of the child something like - how will my child do this activity, he is asthmatic. This kind of comment puts a negative attitude in the child and he also uses it to play with his family emotions even when he is normal, and wants to avoid some activity."

"Children can learn flute or mouth organ, and swimming - all good for lungs-exercise," says Dr. Bansal.

"Rather than not giving ice cream to asthmatic children, you can melt it and bring it to room temperature and give it to the child. Children should not soak their feet for long in water. Regularly doing yoga can make the children absolutely fit and their asthma might disappear or go 90 per cent when they become adults," he advises.

The important thing, point out doctors, is to recognise the trigger that sets off an asthma attack in your child. "If a child is having repeated attacks of wheezing, one needs to find out what it is in the environment at home that is triggering it off. It could be heavy curtains or pets or maybe some plants," said Dr. Anupam Sibal, director, medical services at Indraprastha Apollo Hospital.

While pollution levels may have fallen over the past few years thanks to the switchover to CNG, doctors say that has had no bearing on asthma among children. "It is still much above the critical level. Also, pollution has only now gone down while some of these children may have had their first attack about three to four years back when the levels were still high," said Dr. Anoop Misra of the All India Institute of Medical Sciences. "Smoking certainly hasn't decreased and that is something that affects passive smokers as well," added Dr. Sibal.

While some children do grow out of the problem, in others, it is important to let them lead as normal a life as possible. "Quality of life should not be compromised. Having asthma shouldn't mean that the child is not able to participate in sports. If he has to be put on inhalers for that, the step must be taken," said Dr. Sibal. In fact, the number of children dependent on inhalers has also gone up significantly in the past few years. ■