



## Asthma and how to live with it



If your doctor has given you this paper to read, you are either one of the nine million Americans with asthma or a parent of one of the nine million. Either way, this information will help you become more informed about asthma, its causes and its treatments, and, therefore, be better able to understand and cope with this condition.

And cope you must. There is no cure for asthma. Fortunately, however, there are as many ways to control and prevent asthmatic attacks, letting asthmatics lead comfortable lives with minimal interference in their daily activities. Furthermore, many children will outgrow their asthma, with virtually no physical or psychological after effects if proper care is taken.

The answers to the following questions should give you the most of the facts you need to understand asthma and to understand the basic reasons for your physician's plan of treatment. In turn, this knowledge should make you better able to follow your doctor's instructions to help you live comfortably with asthma.

### What is asthma?

Asthma is a disease of the respiratory system—the system of passageways that carries air from the nose to the lungs. The chief feature of asthma is difficult breathing, often accompanied by a wheezing or whistling sound during exhalation.

Asthmatic “attacks” occur at varying intervals. Between attacks, asthmatics are usually completely free of respiratory symptoms.

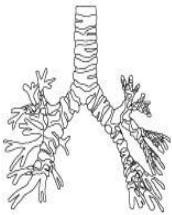
### What happens during an asthmatic attack?

In order to understand what happens during an asthmatic attack, it is necessary to know a little about the normal structure and function of the respiratory system.

The passageways of the respiratory system resemble an upside-down tree. The trunk is the windpipe. The larger branches are called bronchi (each one is a bronchus), and the smallest branches, called bronchioles, bring air into tiny air sacs (the alveoli) where the oxygen/carbon dioxide exchange occurs.

The walls of these passageways contain muscles, which regulate the size of the passageways. The insides of the air passageways are lined with a thin membrane that normally secretes just enough mucus to keep the passageways moist and lubricated. During an asthmatic attack, the muscles of the smaller bronchi and bronchioles go into spasm (bronchospasm), narrowing the airways and making it more difficult for air to get in and, more important, get air out of lungs.

Furthermore, during an asthmatic attack, the lining of the airways becomes congested and swollen and secretes excess mucus, which adds to the obstruction of airflow.



### What causes an asthmatic attack?

Asthma is an overreaction of the respiratory system to any one or a combination of things, mainly:

1. Allergy-producing substances (allergens)
2. Respiratory infections
3. Emotional stress

Allergic asthma is seen most often in children. When it occurs mostly in the spring and summer, the cause of the allergy, and thus the asthmatic attacks, is usually pollen or mold. When allergic asthma does not follow a seasonal pattern, dust, animal dander, food, or drugs usually cause it.

Respiratory infections are responsible for the development of an asthmatic attack in about 40 % of asthmatics, usually people middle-aged or older, although this is true for some youngsters as well. This type of asthma may be seasonal too...but this time the season is winter when the greatest number of respiratory infections occur.

Emotional stress, with no other detectable reason, appears to be the trigger for about one-third of all asthmatic attacks. In children, the start of a new school term, the birth of a brother or sister, a separation from a parent may be the emotional trigger. In adults, a wide variety of family or job related problems may provide an attack.

### What can be done to relieve asthmatic attacks?

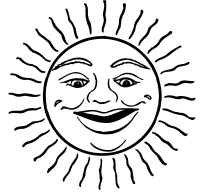
The distress of asthmatic attacks can be reduced with medication. However, in the overall management of asthma, prevention of attacks is more important than their transparent treatment. So let's pay special attention to some ways of preventing asthmatic attacks

Some preventive measures are directed toward the specific cause of the asthmatic attacks, for example, eliminating the offending allergen from the environment of the asthmatic.

1. If the cause of asthma is animal dander, don't use feather or hair stuffed pillows, mattresses, quilts, etc. Occasionally, a family pet may be the cause. If this is so, it may be necessary to find a new home for the pet.

2. If dust is the offender, there are many steps to make your home as dust-free as possible. The center of attention in such cases is the asthmatic's bedroom. After all, children spend about one-half of their lives in their bedrooms, while adults normally pass about one-third of their time there. Here's what to do.

- a. Use smooth, not fuzzy, washable blankets, bedspreads.
- b. Do not use upholstered furniture.
- c. Use light, washable cotton or synthetic-fiber curtains, NOT drapes.
- d. Use washable cotton throw rugs, not wall to wall carpeting.
- e. Eliminate stuffed animal toys.
- f. Clean the room daily by damp dusting and damp mopping.
- g. Keep the door closed.



Of course, these measures can be followed in the rest of the home too, where deemed practical and necessary.

Two general cleaning hints: Vacuuming blows a great deal of dust in the air; so don't vacuum clean in the presence of an asthmatic person. If you are asthmatic, try to get someone else to do this chore. Remember that chemical irritants in many cleaning products used at home are generally taboo for asthmatics.

3. If pollen is the offender, an air-conditioner with a filter can be helpful for the asthmatic room, and



sometimes the entire home. Obviously, long walks in the country should not be taken during high pollen periods.

Sometimes it's impossible to get away from an airborne allergen such as pollen. In these cases, a doctor may try a technique called desensitization,

where tiny amounts of the offending substance are injected under the skin. The idea is to give only as much of that substance as the asthmatic can tolerate without producing symptoms. Over several years, doses are increased little by little until the body "learns" not to react to the substance with bronchospasm.

4. If a specific food is the cause, obviously it should not be eaten.



5. Certain drugs are known to trigger asthmatic attacks in susceptible individuals. Among the most common offenders are aspirin and aspirin containing compounds, certain anti-arthritis agents, and some drugs taken for heart conditions.



When respiratory infections are the triggers, antibiotics may be given continuously over the winter, or whenever respiratory infections occur. This practice must be individualized to meet the specific circumstances, however, as many respiratory infections are viral in nature and viral infections do not respond to antibiotic therapy. Flu vaccine is also of value in some patients whose attacks are triggered by respiratory ailments.



### When are antiasthmatic medications used?

Sometimes, despite the above efforts to prevent asthmatic attacks, the attacks continue. In these cases, certain medications are needed to prevent attacks from occurring, to prevent early minor symptoms from developing into a full-blown attack, or to treat attacks should they occur. These medications are available in injection, liquid, tablet, and/or inhaler form.

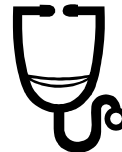
Because asthma can vary strikingly in severity from time to time, so can the need for antiasthmatic medication. An asthmatic who, in ordinary circumstances, needs little or no medication may find a greatly increased need for such therapy at special times such as during pollen season, during periods of increased air pollution, or during times of emotional stress.

### When should a doctor be called?



Most asthmatics can learn to handle the day-to-day aspects of their disease without the immediate aid of a doctor. However, a doctor should be notified if:

1. The need for medication increases.
2. A respiratory infection is present.
3. The temperature by mouth is over 100 degrees Fahrenheit during an asthmatic attack.
4. There is chest pain.
5. There is shortness of breath without coughing or exercising.
6. Intractable coughing occurs.
7. A severe attack develops.



### What should be done if a severe attack develops?

Get medical help immediately. Don't wait for such an attack to fade away, because it probably won't without the expert medical assistance only a doctor can render. If you can't contact your own doctor, go to the emergency room of the nearest hospital.

### Are there any special hints for making it easier to live with asthma?

Yes, there are. The following list of "do's" and "don'ts" should prove very helpful.

1. Do stay away if your home is being painted. Paint fumes are notorious for provoking asthmatic attacks.



2. Do avoid sudden changes of temperature. On a hot summer's day, don't wander in and out of air-conditioned stores.

3. Do avoid people with respiratory infections whenever possible.

4. Do try to avoid emotionally upsetting situations.

5. Do get enough fluid in your diet – six to eight glasses of liquids a day.

6. Do take all medications prescribed by your doctor exactly as directed.

7. Don't smoke....and don't stay in a room with people who do, whether it's home, at business, or in a public place.



8. Don't go outside in extremely cold weather, but if you must, a cold weather mask may be helpful.

9. Don't overexert yourself. But don't stay away from all exercise either. You will be your own best guide as to how much activity you can tolerate. And along similar lines, schedule frequent rest periods if you know you're going to have a busy day.

10. Don't take any medicine without telling your doctor. This includes simple remedies you can buy without a prescription. Remember, even aspirin can cause asthma.

11. Don't take sleeping pills or sedatives if you can't sleep because of a mild asthma attack. These medications have a tendency to slow down your breathing and make breathing more difficult. Instead, trying propping yourself up on extra pillows while waiting for your antiasthma medication to work.

12. Avoid inhalation of insecticides, deodorants, cleaning aids, etc.

## TRIGGERS OF ASTHMA

## Allergens

Allergens are important triggers of asthma. Some examples of outdoor and indoor allergens are:

- Pollen
- Mold
- House dust/dust mites
- Animal dander
- Certain foods

## Viral Infections

Viral infections of the respiratory tract often act as a major aggravating trigger. This is especially true in asthma in young children. Viral infections produce an added irritation in the airways, nose, throat, lungs, and sinuses. This irritation often precedes attacks of asthma. The exact biological mechanism for this is not known.

## Sinusitis

An inflammation of the nasal sinuses, known as sinusitis, often begins as an upper respiratory infection. Childhood symptoms include wheezing, postnasal drip, nighttime cough, and enlarged lymph nodes. Adolescents and adults may have headaches and sinus pressure or pain. Asthma may be aggravated by drainage of mucus into the nose, throat and bronchial tubes.

## Irritants

Irritants can play a large role in triggering asthma. Some examples are:

1. Strong odors and sprays, such as perfumes, household cleaners, cooking fumes (especially from frying), paints, and varnishes;
2. Other chemicals such as coal, chalk dust or talcum powder;
3. Air pollutants;
4. Tobacco smoke;
5. Changing weather conditions (including changes in temperature, barometric pressure, humidity, and strong winds) are all likely to affect and irritate airways.

## Tobacco Smoke and Wood Smoke

Tobacco smoke, whether directly or passively inhaled, has harmful effects on the airways and is especially irritating for patients with asthma. An increased incidence of asthma has been reported in children whose mothers smoke. No one should smoke in the home of an asthmatic patient. Smoke from wood burning heating stoves and fireplaces can be extremely irritating to asthmatics because of the release of chemicals such as sulfur dioxide. Proper ventilation must be maintained if these devices are used, but are best avoided if possible

## Exercise

Exercise also can trigger an asthma attack. It is estimated that **85%** of allergic asthmatics have symptoms of wheezing following exercise. Inhaled cool and dry air seems to be a strong asthma trigger. Long distance running, a prolonged strenuous activity is most likely to induce asthma, and swimming, the least likely.

## Gastro esophageal Reflux

Gastro esophageal reflux, a condition characterized by persistent reflux of stomach acids, is common in individuals with asthma. Symptoms may include heartburn, belching or spitting up (especially in infants). Nighttime asthma is common.

## Industrial or Occupational Exposure to Chemical Irritants While on the Job

Studies indicate that many cases of asthma in the U.S. are worsened or caused by exposure to occupational vapors, dust, gases, or fumes.

Typically, occupational asthma improves when the individual is away from the workplace for several days, e.g., weekends and vacation.

## Sensitivity to Medications

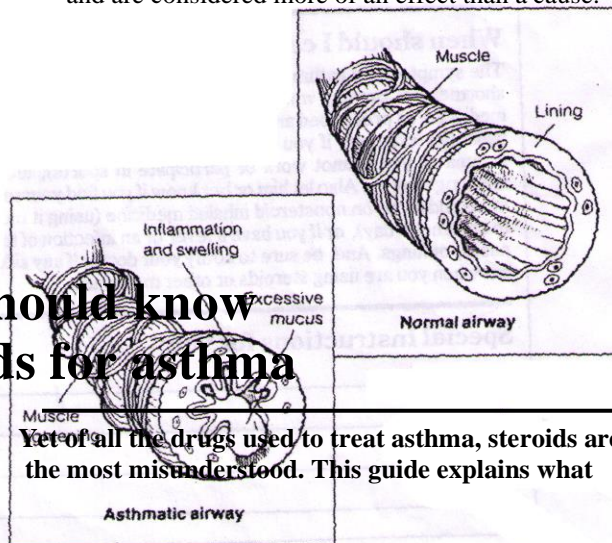
Five to 20% of adult asthmatic patients may experience an asthma attack as a result to sensitivities or allergies to medications. Medications that are known to induce asthma attacks in some patients include:

1. Aspirin;
2. Other non-steroidal anti-inflammatory medications in patients with aspirin sensitivity, such as ibuprofen, indomethacin, naproxen, etc.;
3. Sulfites used as food and beverage preservatives;
4. Beta-blockers (medications commonly used to treat heart disease, hypertension and migraine headaches).

Before taking any medication, including over-the-counter medications, asthmatics should consult their physician.

## Emotional Anxiety

Emotional Anxiety and nervous stress cause fatigue and may increase asthma symptoms and aggravate an attack. These psychological factors alone cannot provoke asthma and are considered more of an effect than a cause.



## What you should know about steroids for asthma

•Steroids are an important part of the treatment plan for many people with asthma—they can even be lifesaving.

Yet of all the drugs used to treat asthma, steroids are the most misunderstood. This guide explains what

**these drugs are and how you can work with your doctor to use them safely and effectively.**

**Figure** – Steroids reduce inflammation and swelling and make your airways less reactive to asthma “triggers” Bronchodilators reduce the muscle tightening

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## What are steroids?

Steroids are medicines that reduce inflammation in the airways of your lungs. Such inflammation is a key factor in asthma (Figure). These drugs also make your airways less reactive to the “triggers”—allergens and irritants—that can cause an asthma attack. If steroids are used early in the course of an attack, they can prevent it from becoming worse; this may save you a trip to the emergency room or a stay in the hospital.

Another key factor in asthma is tightening of the muscles around your airways. For this problem, drugs known as *bronchodilators* are used.

Don't confuse the steroids your doctor prescribes for asthma with *anabolic steroids*, which is a different type of drug some athletes abuse to create increased muscle mass and greater strength.

## When should I call my doctor?

The symptoms of asthma vary from person to person and may include shortness of breath, wheezing, and coughing. If you are taking your medicines as prescribed and notice that your symptoms are worse than usual (for example, if you wake up more than once a night because of asthma or you cannot work or participate in

## Types of steroids for treating asthma

Steroids are available as tablets or liquids that are taken *orally* (by mouth), or as sprays that are inhaled directly

into your lungs. In the hospital, steroids may also be given to you *intravenously* (that is, directly into the bloodstream).

- *Inhaled steroids*: Your doctor may prescribe this type of steroid if you have chronic asthma symptoms. Their purpose is to *prevent* asthma attacks. Inhaled steroids come in a small container called a “metered-dose inhaler.”

*Important tip*: Since inhaled steroids don't make you feel better immediately, you may be tempted to stop using them before they take effect. Don't! Your airways may become inflamed again, and you may set yourself up for another asthma attack~

Inhaled steroids do not remain in your body for very long, so they have few, if any side effects and are considered very safe. Sometimes, inhaled steroids cause oral *thrush*, a yeast infection of the mouth and throat that looks like a whitish film. This side effect is more likely to occur if you are also taking an antibiotic, or if you have diabetes.

Thrush may also develop if you are not using your inhaler correctly and too much medicine stays in your mouth and throat. You can prevent thrush by rinsing your mouth after each use of the inhaler.

- *Oral steroids*: Your doctor may prescribe this form of steroid if you cannot use an inhaler or if you feel an asthma attack coming on that continues to worsen despite the use of bronchodilators or inhaled steroids. If that happens, your doctor may give you a *burst*, or high dose, of oral steroids. Such a burst will not provide immediate relief, but it could be lifesaving. Six to 8 hours may pass before you notice any effect.

After the burst, you may need to continue taking oral steroids. If so, the time of day at which you take oral steroids is important. Your body produces most of its own corticosteroids in the morning. To avoid “confusing” the body, it is best to take an oral steroid in the morning, preferably with food.

Oral steroids can have a number of side effects, such as water retention, weight gain, mood changes, and flushing of the face, especially when they are taken in high doses and for a long period. But keep in mind that these drugs can relieve the symptoms and shorten the course of a serious asthma attack, and these benefits far outweigh the risk of side effects.

Once your asthma is under control, your doctor may recommend that you use oral steroids every other day, or use a smaller amount each day over several days or weeks, since taking the drugs less frequently can reduce side effects or avoid them altogether. *Be sure to follow your doctor's instructions when taking steroids or any other medication.*

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