



Tips to Remember: Asthma triggers and management

Asthma is a chronic lung disease that affects more than 17 million Americans. Asthma is characterized by inflammation of the airways with intermittent bronchospasm. Bronchospasm is caused by the inflammation of the muscles surrounding the air passageways. The inflammation makes the airways smaller and therefore making it more difficult for air to move in and out of the lung. This creates the symptoms of asthma: cough, chest tightness, shortness of breath, and wheezing.

Triggers of asthma

Asthma symptoms can be triggered by several factors, including:

- Allergens
- Irritants such as tobacco smoke, strong odors
- Weather changes
- Viral or sinus infections
- Exercise
- Reflux disease (Stomach acid flowing back up the esophagus, or food pipe)
- Medications
- Foods
- Emotional anxiety

Every person has his or her own triggers. If you have asthma you can minimize your symptoms by avoiding the factors that trigger your symptoms, and by working with your physician to develop an effective management and treatment plan.

Allergens

Allergic rhinitis, or "hay fever," is a risk factor in developing asthma. Symptoms of both allergic rhinitis and asthma can be triggered by *allergens* - any substance that triggers allergies. These include:

- Pollens
- Molds
- Animal dander
- House dust mite
- Cockroach droppings
- Foods

If your asthma is triggered by allergens, it is important to avoid exposure to them. See your allergist/immunologist for recommendations on control measures to help avoid allergens.

Irritants

Inflamed asthmatic airways are hyper-sensitive to environmental irritants. Irritants that can trigger and aggravate asthma include:

- Air pollutants such as tobacco smoke, wood smoke, chemicals in the air and ozone
- Occupational exposure to vapors, dust, gases or fumes
- Strong odors or sprays such as perfumes, household cleaners, hairspray, cooking fumes (especially from frying), paints or varnishes
- Other airborne particles such as coal dust, chalk dust or talcum powder
- Changing weather conditions, such as changes in temperature and humidity, barometric pressure or strong winds

All of these irritants can aggravate asthma, particularly tobacco smoke. Several studies have reported an increased incidence of asthma in children whose mothers smoke. No one should smoke in the home of an asthmatic.

Infections

Viral infections such as colds or viral pneumonia can trigger or aggravate asthma, especially in young children. These infections can irritate the airways (nose, throat, lungs, and sinuses), and this added irritation often triggers asthma flare-ups. Additionally, *sinusitis* - an inflammation of the hollow cavities found around the eyes and behind the nose - can trigger asthma.

Exercise

Strenuous physical exercise can also trigger attacks. Mouth breathing, exercising in cold, dry air, or prolonged, strenuous activities such as medium- to long-distance running can increase the likelihood of exercise-induced asthma (EIA). For more information, please see the *Tips* brochure in this series or speak to your allergist/immunologist.

Reflux disease

Gastroesophageal reflux disease (GERD), a condition in which stomach acid flows back up the esophagus, can affect patients with asthma. Symptoms include severe or repeated heartburn, belching, night asthma, increased asthma symptoms after meals or exercise, or frequent coughing and hoarseness. GERD reflux treatment is often beneficial for asthma symptoms as well.

Medications

Some adults with asthma may experience an asthma attack as a result of taking certain medications. These can include aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen; and beta-blockers (used to treat heart disease, high blood pressure, migraine headaches, or glaucoma). Before taking any over-the-counter medications, those with asthma should consult their physicians.

Food

For some, eating certain foods or various food additives can trigger asthma symptoms. Culprits include milk, eggs, peanuts, tree nuts, soy, wheat, fish and shellfish. If any of these foods triggers asthma attacks, the best remedy is to avoid eating them.

Emotional Anxiety

Emotional factors alone cannot provoke asthma. However, anxiety and nervous stress can cause fatigue, which may also increase asthma symptoms and aggravate an attack. As with any other chronic health condition, proper rest, nutrition and exercise are important to overall well-being and can help in managing asthma.

Asthma management

Since asthma is a chronic disease, it requires continuous management and appropriate treatment. According to the national *Guidelines for the Diagnosis and Management of Asthma* (National Asthma Education and Prevention Program, National Institutes of Health, 1997), asthma treatment has four main components:

- The use of objective measure of lung function (such as peak flow meters and spirometers) to assess the severity of asthma and to monitor the course of treatment

- Environmental control measures to avoid or eliminate factors that trigger asthma symptoms or flare-ups
- Medication therapy for long-term management to reverse and prevent airway inflammation as well as therapy to manage asthma flare-ups
- Patient education to foster a partnership between the patients, his or her family, and the physician and other health care providers

According to the *Guidelines*, there are six general goals for the effective management of asthma:

- Prevent chronic and troublesome symptoms
- Maintain (near) "normal" breathing
- Maintain normal activity levels, including exercise
- Prevent recurrent asthma flare-ups, and minimize the need for emergency room visits or hospitalizations
- Provide optimal medication therapy with no or minimal adverse effects
- Meet patients' and families' expectations of satisfactory asthma care

Each person with asthma has her/his *specific goals*. Share these so your physician can focus on helping you attain them. Chances are once your specific goals are met, the general goals listed above will also be met.

You and your physician can work together on these goals to ensure that your asthma is well-managed. Having asthma should not stop you from participating in normal activities.

Medication treatment

Asthma management includes using proper medications to prevent and control asthma symptoms and to reduce airway inflammation. Asthma medications are thus categorized into two general classes, quick-relief and long-term control medications. Quick-relief medications that are used to provide temporary relief of symptoms include:

- **Bronchodilators**, generally used as "rescue medications," open up the bronchial tubes so that more air can flow through. Bronchodilators include beta-agonists and anticholinergics, and come in inhaled, tablet, liquid or injectable forms.
- **Corticosteroids** are administered for short-term use orally or by injection to speed up the resolution of airway inflammation.

Long-term control medications are taken daily to control the airway inflammation in persistent asthma. This class includes:

- **Inhaled corticosteroids** are the most effective long-term therapy available for persistent asthma. They are generally well tolerated and safe at recommended dosages.
- **Cromolyn or Nedocromil** stop the development of inflammation in the lungs, as well as help to prevent it. Response to these two are less predictable than the response to inhaled corticosteroids. These medications are very safe.
- **Leukotriene modifiers** fight potent chemicals called *leukotrienes* (lu-ko-try-eens), which contribute to the airway inflammation. They are generally safe, but lack the ability to control inflammation to the same degree as inhaled corticosteroids.
- **Inhaled long-acting beta 2-agonists** exert effects for 8-12 hours and are long-acting and beneficial when added to inhaled corticosteroids.
- **Methylxanthines** provide mild to moderate dilation of the airways and may have a mild anti-inflammatory effect. Theophylline is the most frequently used methylxanthine.

- **Omalizumab** was approved in 2003 as a new class of therapy, known as anti-IgE, for patients with moderate to severe persistent allergic asthma. IgE is an antibody that we all have and it is responsible for causing allergic problems in some people. It may reduce allergic reactions by causing free IgE to disappear from the body so that the IgE cannot attach to allergens such as dust mites, mold, animal dander and pollen.

Combination therapy, with the addition of a long-acting beta2-agonist to low-to-medium doses of inhaled corticosteroids, results in improvement in asthma control. Adding a leukotriene modifier or theophylline to inhaled corticosteroids may also improve asthma control but the evidence is not as substantial. Make sure you follow your physician's instruction on the appropriate use and dosage of your prescribed medications.

The better informed you are about your asthma triggers and management, the less asthma symptoms will interfere with your activities. It is important to avoid your triggers, work with your physician on a management plan and take appropriate medications as prescribed. Together, you and your allergist/immunologist can work to ensure that asthma does not interfere with your optimal quality of life.

When to see an allergy/asthma specialist

The AAAAI's *How the Allergist/Immunologist Can Help: Consultation and Referral Guidelines Citing the Evidence* provide information to assist patients and health care professionals in determining when a patient may need consultation or ongoing specialty care by the allergist/immunologist. Patients should see an allergist/immunologist if they:

- Need to confirm the diagnosis of asthma
- Have asthma and see their symptoms get worse after a new pet has been introduced into the home
- Have a history of seasonal or persistent asthma, to evaluate their sensitivity to inhaled allergens and provide instructions regarding avoidance measures
- Need education on asthma and guidance in techniques for self-management
- Need for daily asthma reliever medications
- Are not using medications as prescribed, and this is limiting their ability to control their asthma

For more information on any of the topics mentioned in this brochure, please see the appropriate *Tips* brochures in this series or speak with an allergist/immunologist.

Your allergist/immunologist can provide you with more information on asthma triggers and management.

***Tips to Remember* are created by the Public Education Committee of the American Academy of Allergy, Asthma and Immunology.**

The content of this brochure is for informational purposes only. It is not intended to replace evaluation by a physician. If you have questions or medical concerns, please contact your allergist/immunologist.

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