

## What is Asthma?

Asthma is a chronic condition that results from ongoing inflammation in the bronchial airways. It can appear as a chronic cough, exercise intolerance, and recurrent chest tightness and congestion. At times, it may produce a noisy whistling breathing pattern called "wheezing".

Since the last half of the twentieth century, there has been a gradually increasing frequency of asthma in all parts of the world. This trend seems to have stabilized in the last decade. Asthma now affects at least 15 million Americans. It is found in from 5 to 10% of school-age children, where it occurs more often in boys than in girls. It also affects 5 to 9% of American adults, where it is more common in women than in men. Asthma remains common in the elderly. Certain families and racial groups seem more likely to develop asthma, making at least some aspects of this condition inherited. We also see an increased frequency within the poorest sections of the population. Studies are now being conducted to clarify the complex genetic and environmental factors that are increasing the frequency of this disease.

## How important is Asthma?

Asthma creates a tremendous burden for individual patients, their families, employers, and health insurance companies. Every year, almost one out of every three asthmatic children needs some kind of emergency care for their asthma. In the U.S., it causes 1.9 million yearly emergency room visits, 470,000 hospitalizations, 11.8 million lost days from school, and 100 million restricted activity days. It is now the most common chronic disease that causes excessive school absenteeism. Half of the more than 7 billion U.S. dollars spent on this disorder go towards providing hospital care for the most severe patients. Severe asthma can be fatal. There are about 5000 deaths per year in the United States from asthma. This number has increased in recent decades. The risk of fatal asthma is particularly higher in women, in the elderly, and in the urban poor.

## What can trigger Asthma?

Each patient appears to have their own set of factors that will initiate and sustain the chronic inflammation along their airways. In young infants, it is most commonly seen with certain viral illnesses and indoor air pollutants. In older children and young adults, allergies to insect debris, mold spores, animal danders, or pollens will be their most significant trigger. In some older adults, asthma can occur with industrial exposure to dusts, gases and fumes. Some can even develop flares of asthma with aspirin-like pain relievers (aspirin, ibuprofen, etc.) or with foods containing bisulfites (dehydrated fruits and red wines). In women, an increase in asthma is commonly seen just before or during their menses. Any asthmatic at any age can have worse symptoms if they develop a sinus infection or ongoing gastroesophageal reflux. In time, all asthmatic patients will develop some degree of "twitchy" airways, causing them to react with a spasm of chest tightness, wheezing, cough and excessive amounts of mucus when exposed to irritating smells and odors, weather changes, cold air, laughter, crying, or running.

## What kinds of Asthma exist?

Each patient seems to develop a particular pattern of asthma symptoms. The most common form of asthma is only *mild and intermittent*. These patients will have only transient coughing or chest tightness during viral illnesses or after exercise. These patients account for most of the increasing frequency of asthma seen in recent years. Those patients who have *mild persistent, moderate persistent, or severe persistent asthma* will develop progressively greater degrees of airway

inflammation and "twitchiness". They will have progressively more obstruction of their lung function. They will also have more cough, chest tightness, wheeze, and nighttime awakening with breathlessness. Severe patients are especially prone to develop daytime exacerbations or "attacks" of difficult, wheezy breathing.

### How do you "test for" Asthma?

The triggers of your asthma, and the degree of your airway inflammation and obstruction can be assessed using your history and a simple pulmonary function test. Most allergies can be confirmed by selected allergy skin tests. You can then measure your peak flow rates at home to guide your long term asthma management.

### How do you treat Asthma?

First you must understand the basic goals of an effective asthma treatment plan. Your daily symptoms should be minimal if you closely follow your plan. Then you can enjoy full participation at work, at school, and with your desired recreational activities. To accomplish this goal, you must identify any allergic provoking factors and systematically remove them from the home and the work or school. Next, if you have persistent daily symptoms, you will need a treatment plan that incorporates certain "inflammation reducing" asthma medications and, possibly, allergy injection therapy. These will control the airway inflammation that causes most of the underlying "twitchiness" and obstruction. Finally, you need to reduce the frequency and severity of your future flares of symptoms. When asthma exacerbations do occur, they should be very mild and rapidly respond to some additional treatments.

### How long will I have Asthma?

Although some younger asthma patients will outgrow their need for daily medications, they may still have increased bronchial "twitchiness" and still require bronchodilator medications during viral colds or before exercise. For these individuals, asthma should be considered a life-long condition. It is very unlikely that they will ever completely "outgrow it". As they age there may be further declines in their measured lung function due to the "airway remodeling" that results from the continuing airway inflammation. The best way to prevent this is to avoid smoking and to continue your daily asthma treatments that are designed to decrease the inflammation in the airways. By continuing an effective asthma management program, you can prevent these long term consequences in this lifelong condition. A comprehensive program of asthma management will require periodic reevaluations (usually every six to twelve months), to measure lung function, to see how you have grown, and to adjust your medications or allergy shot prescriptions. You and your doctor can then make any changes that might be necessary.