

What You Should Know About Asthma

Asthma is in the news every day. And no wonder—it affects up to 20 million Americans. Asthma has been on the rise since the early 1980s, and today it causes 4,500 deaths and 450,000 hospitalizations annually. But while it's widely believed that asthma is mostly a disease of childhood, people over age 65 years actually have the highest rates, and many sufferers have their first attack after age 50 years. What's more, women are at greater risk of dying from asthma than men, so prompt diagnosis and effective treatment are essential.

What is asthma?

Asthma is a chronic, long-term lung condition in which baseline level symptoms occur in the airways and tend to become swollen and inflamed. People with asthma are more sensitive to things they inhale from the environment, called *triggers*. These triggers aggravate swelling and inflammation, make the lung muscles tighten, and cause excess mucus production in the lungs, narrow-

ing the air passages and making it difficult to breathe. This results in an *asthma attack*, with wheezing, coughing, and shortness of breath.

What causes asthma?

Sufferers may be allergic to their particular asthma triggers, but not all people with asthma have definite allergies. Common asthma triggers include:

- Pollen, mold, and dust mites (tiny organisms found in common household dirt)
- Food additives
- Dogs, cats, or other animals
- Cockroach infestation
- Cigarette smoke
- Perfumes or other strong smells
- Exercise
- Pollution
- Colds and flu
- Stress
- Changes in weather or temperature
- Nonsteroidal anti-inflammatory medications and aspirin.

What are the symptoms of asthma?

Common symptoms of asthma are:

- Difficulty breathing
- Dry cough (especially at night or in response to triggers)
- Wheezing
- Tightness or pressure in the chest
- Shortness of breath (especially after exercise)
- Colds that cause severe respiratory problems or persist for longer than 10 days.

Asthma symptoms can vary greatly. For some people, chronic coughing may be the only symptom, whereas others only have difficulty breathing

during or after exercise. Some have no symptoms between attacks.

How is asthma diagnosed?

There is no one test to diagnose asthma. But while asthma can be mistaken for a respiratory infection, a thorough medical evaluation with a physical exam, a history, and both laboratory and respiratory tests will produce the correct diagnosis. Several tests can help to diagnose asthma and measure its severity.

Spirometry.—For spirometry, you exhale into a device that analyzes your airflow. This may be performed after using drugs to relax the airways (bronchodilators) or constrict them (methacholine).

Peak flow meter.—This test measures the speed of air expelled when you exhale forcibly through a small tube; patients can use these meters at home to monitor their condition.

Pulse oximetry.—This uses a small device placed on your finger to evaluate oxygen levels in your blood. This method is used to determine the severity of an asthma attack.

Asthma patients are at higher risk for some other diseases, and you may be assessed for these. These associated conditions include *chronic obstructive pulmonary disease (COPD)*, *gastroesophageal reflux disease (GERD)*, and *sinusitis*. COPD involves blockage of the air passages due to emphysema or chronic bronchitis. GERD, which is a form of chronic, severe heartburn, affects up to 89% of patients with asthma. Sinusitis, an inflammation of the nasal cavities that causes a runny or blocked nose and headache, affects 35% to 65% of asthma sufferers.

This Patient Handout was prepared by Patricia L. Van Horn using material from IntelliHealth (<http://www.intelihealth.com/>) and the National Women's Health Resources Center (<http://www.healthywomen.org/>).

WHO IS AT RISK FOR ASTHMA?

Factors that increase the risk of developing asthma include:

Heredity: Having one parent with asthma gives you a 25% chance of developing the disorder, and your risk rises to 50% if both your parents are affected.

Allergies such as hay fever, food allergies, and eczema

Urban environment: Pollution, poor air quality, poverty, and lack of education all contribute to higher asthma rates among city dwellers.

Race: Nationally, 4.4% of blacks have asthma compared with 4% of whites, but blacks in the inner cities are twice as likely as whites to die from the disease.

Smoking and/or living with a smoker

Obesity

Premature birth

Gender: Asthma may be affected by hormonal changes during the menstrual cycle, and is often triggered just before or during the menstrual period. Such hormonal fluctuations cause some women to develop asthma during or right after pregnancy.

How is asthma treated?

Asthma can't be cured, but it can be controlled. Treatment usually combines short-term relief of symptoms with a long-term plan to prevent attacks. Asthma medications are typically divided into two types: *controllers* and *relievers*.

Controllers help to prevent inflammation of the airways. They must be taken daily as directed. There are several types:

Corticosteroids are the strongest anti-inflammatory drugs available. Inhaled corticosteroids are used for long-term control, while oral corticosteroids can tame an attack or help treat severe asthma.

Cromolyn sodium and nedocromil are inhaled and generally used preventively before exercise or exposure to a trigger.

Leukotriene modifiers can be used in place of inhaled corticosteroids or cromolyn sodium and nedocromil for mild asthma.

Long-acting beta-agonists are bronchodilators that can be used long term with anti-inflammatory drugs.

Methylxanthines aren't used often in adults because they can affect the heart. However, the methylxanthine theophylline can be used with an inhaled corticosteroid, and may reduce inflammation.

Relievers are used during attacks and symptom flare-ups to relax the muscles around constricted airways and open them up. Again, there are several types:

Anticholinergics can be used with, or as an alternative to, beta-agonist inhalers to relieve severe symptoms.

Short-acting beta-agonists can be used to treat attacks and prevent asthma during exercise.

Several factors are necessary for successful asthma treatment. First, you must understand your medications. Many people with asthma use both controller and reliever drugs, and it's essential to know which drug does what. Also, make sure that you're using your inhaler properly; although inhalers are prescribed for 80% of asthma sufferers, 30% to 40% of patients aren't using them effectively.

What about asthma during pregnancy?

Some women with asthma notice that their symptoms improve during pregnancy, while others get worse.

Regardless, you can have a healthy baby if you keep your symptoms under control. Uncontrolled asthma can reduce the amount of oxygen you receive and, therefore, the amount your baby receives, hindering fetal growth

and weight gain, and even leading to fetal death. Failure to control symptoms can also cause hypertension in pregnant women. Many asthma drugs, especially the inhaled ones, are safe during pregnancy. But even if you must use oral medications, remember that it's better for your baby than going without them.

Is there anything else I can do?

Yes. In addition to drug therapy, you can make changes in your environment and life-style to improve your symptoms. These mainly involve reducing exposure to triggers, and include:

- Knowing the specific triggers that affect you.
- Quitting smoking, and not allowing smoking in your home.
- Keeping your home dust-free, and not allowing pets in your bedroom.
- Putting a dehumidifier in damp areas.
- Using air conditioning and filters during the summer.
- Avoiding people with colds, and getting a flu shot every year.
- Monitoring your respiratory function with a peak flow meter.
- Being prepared to manage attacks.

When should I seek medical care?

If you're having a severe attack, go to the hospital emergency room immediately. Symptoms of a severe asthma attack include:

- Rapid pulse
- Sweating
- Extreme shortness of breath
- Flared nostrils
- Using the chest and neck muscles during breathing
- A bluish color in the lips and fingernails (cyanosis).

Asthma is a chronic condition that requires long-term treatment. However, if you work with your physician and use your medications correctly, you can continue enjoying all of your favorite activities worry-free.