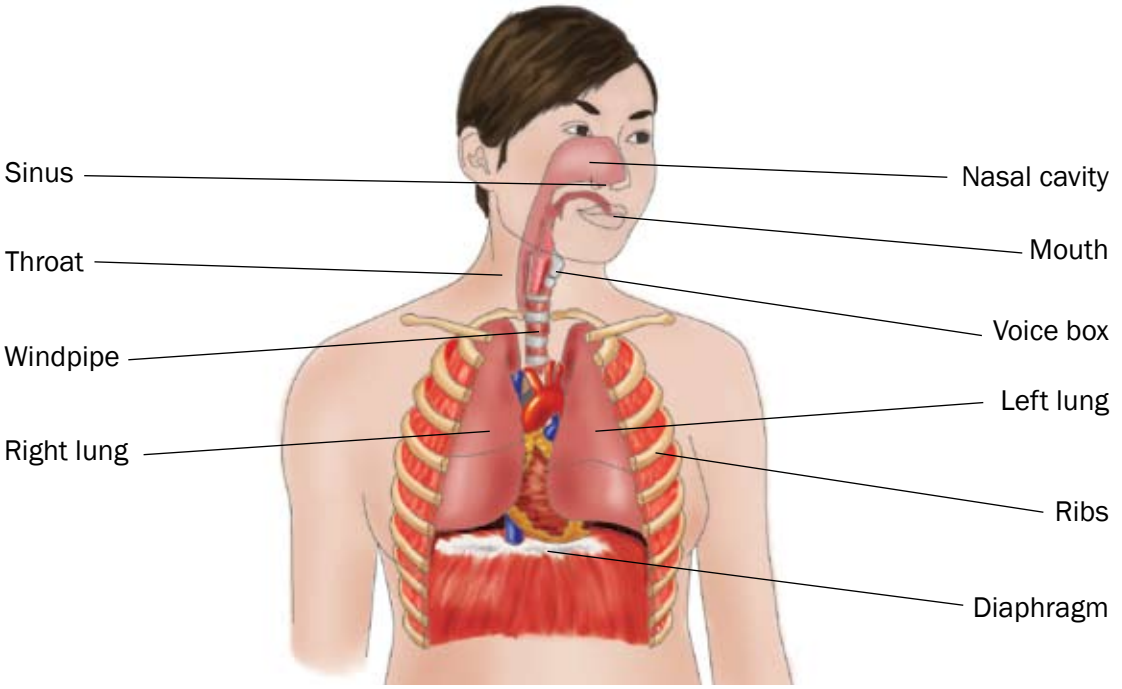
Respiratory Health

If you have had a cold or suffered from allergies, you know what it feels like to have trouble breathing. For women with respiratory diseases such as asthma, breathing troubles can become a permanent, rather than temporary, problem. If you have a respiratory disease, the right medical treatment—and learning how to manage your condition—can help you breathe easier.



How the respiratory system works

Your respiratory system is made up of your nose, sinuses, mouth, throat, voice box, windpipe, lungs, diaphragm, and blood vessels. Breathing is the process of inhaling and exhaling. When you inhale, you bring oxygen-rich air into your body. When you exhale, you release carbon dioxide into the air from your body.

You breathe about 25,000 times during a normal day. If you are healthy, this process is easy. But for the millions of women with chronic, or long-term, respiratory diseases, breathing is not that simple.

Symptoms of respiratory disease

Because respiratory diseases affect your lungs, symptoms are related to how well you can breathe. In the early stages of respiratory disease, you might just feel tired. Other symptoms include:

- feeling short of breath, especially during physical activity or activities such as climbing stairs or carrying groceries
- feeling as though you cannot get enough air
- a cough that won't go away
- coughing up blood or mucus (MYOO-kuhss), a thick, sticky substance, making it hard for air to get in and out of the lungs
- uncomfortable or painful breathing
- a feeling of tightness in the chest
- wheezing, or a squeaky sound when you breathe

Your symptoms depend on your illness—how advanced it is—and your overall health. For instance, having another chronic illness or being overweight could make your symptoms worse.

How respiratory disease is diagnosed

A doctor will identify the cause of your breathing problems based on your symptoms, medical history—including your family history—and a checkup. Several tests can also help diagnose respiratory illness. You might get one or more of the following tests, depending on your condition and the test results:

- **Pulmonary function tests.** These are a series of tests that measure how well your lungs take in and release air and how well they transfer oxygen into the blood.
- **Blood gases test.** This test measures how much oxygen and carbon dioxide are in your blood. If the results of this test are not normal, it may mean your body is not getting enough oxygen or is not getting rid of enough carbon dioxide.
- **Bronchoscopy** (brong-KOSS-kuh-pee). This test allows your doctor to see your airways using a tube passed through your mouth or nose into your lungs.
- **Chest x-ray.** A chest x-ray lets your doctor see your lungs. It takes pictures of your heart, lungs, airways, blood vessels, and bones in your spine and chest. A chest x-ray is the most commonly performed diagnostic x-ray exam.
- **Computed tomography** (tuh-MOG-ruh-fee) **(CT) scan of the chest.** Your doctor might perform a CT scan of your chest if a mass or tumor is suspected or to look for bleeding or fluid in your lungs or other areas.

- **Electrocardiography** (ih-lek-troh-kar-dee-OG-ruh-fee) **(ECG or EKG).** This test checks to see if heart disease is causing your symptoms. An ECG measures how fast and steadily your heart beats, whether there is heart damage, and the effects of drugs or devices that regulate the heart, such as a pacemaker.

Common respiratory diseases in women

The most common respiratory diseases in women are asthma; chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis (brong-KEYE-tuhss) and emphysema (em-fuh-ZEE-muh); and lung cancer.

Asthma

Asthma is a chronic disease that makes the airways leading to the lungs very sensitive and swollen, making it hard to breathe. Viruses, mold, pollen, dust, air pollution, animal dander, smoke, cold weather, stress, and some medicines can cause the airways to swell. Things that cause airways to swell and asthma to flare up are called triggers.

An asthma attack can happen quickly. It can be mild or very serious. In a severe asthma attack, the airways can close so much that your body's main organs do not get enough oxygen. People can die of severe asthma attacks.

Physical activity can trigger a problem called exercise-induced asthma. Asthma

Rare Lung Diseases

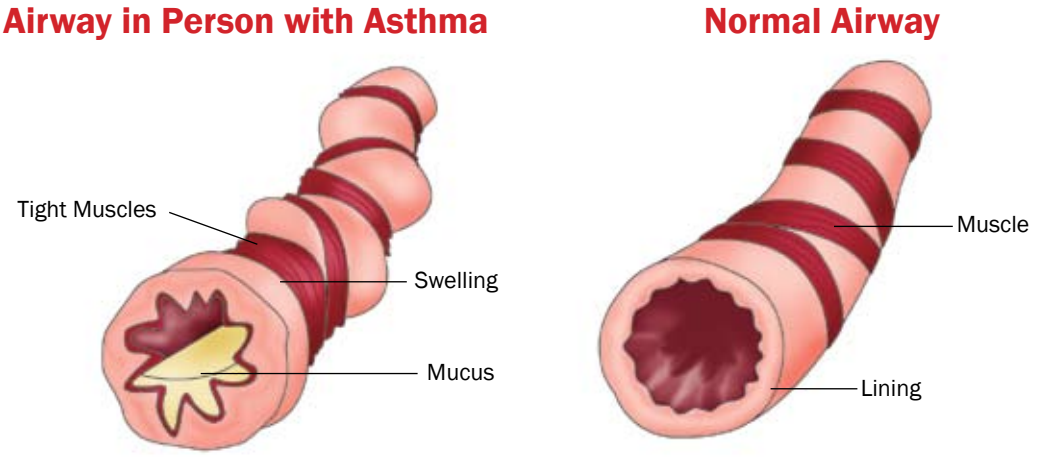
Several rare lung diseases that also affect women include:

Lymphangeiomyomatosis (lim-fan-jee-oh-meye-oh-muh-TOH-suhss): In this disease, known as LAM, an unusual type of cell grows out of control in the lungs and other parts of the body. This slowly blocks airways and destroys normal lung tissue. LAM primarily affects women in their mid-40s.

Sarcoidosis (sar-coi-DOH-suhss): This disease disproportionately affects African American women between the ages of 20 and 40, as well as people in this age group of Asian, German, Irish, Puerto Rican, and Scandinavian descent. It causes tiny lumps of cells to grow in the lungs. These lumps affect how the lungs work.

Cystic fibrosis (SISS-tik feye-BROH-suhss): In cystic fibrosis, a mutated gene causes mucus in the body to become thick and sticky. The mucus builds up in the lungs, blocking airways. Repeated lung infections from a buildup of bacteria can seriously damage the lungs.

Pulmonary arterial hypertension: This disease causes continuous high blood pressure in the pulmonary arteries, or the blood vessels that carry oxygen-poor blood from the heart to the small blood vessels in the lungs. It can be inherited or occur for no known reason. The disease also may result from another condition, such as heart disease or chronic lung disease. Twice as many cases of the inherited form of the disease occur in women, most often in their 30s.



symptoms are usually triggered by cold, dry air during physical activity. For some women, symptoms such as coughing, wheezing, and shortness of breath can occur within minutes of beginning physical activity and get worse afterward. Other women have symptoms only once they finish exercising.

Although the exact cause of asthma is unknown, you are more likely to have the disease if it runs in your family. Asthma is also closely linked to allergies. Although asthma affects women of all ages, the disease is more likely to start in childhood.

Women are more likely than men to have asthma. More than 12.6 million women in the United States had the disease in 2005, compared with 8.7 million men. The number of women—especially young women—in the United States with asthma is growing.

Asthma: Differences between men and women

Studies have shown that asthma can affect men and women differently, and medical researchers want to know more about why this is the case.

Scientists are studying how changing hormone levels in women might cause or affect asthma. One study found that men with asthma were less likely than women to report severe and frequent symptoms and limits on their activity. Another study found that female hormones may contribute to adult women getting asthma.

Asthma treatments

Asthma can't be cured, but you can work with your doctor or nurse to treat, manage, and control your illness. Most asthma medicines open the airways to your lungs and reduce swelling. These include:

- **Corticosteroids** (KORT-ih-koh-STAIR-oidz). These medicines can prevent and decrease swelling in the airways and reduce the amount of mucus you have. They are available in pill or inhaled form and are often taken over a long period of time.
- **Bronchodilators** (brong-koh-DEYE-lay-turs). These fast-acting medicines prevent or stop an asthma attack once it has started. Two common, inhaled, fast-acting medicines are albuterol (al-

BYOO-tur-ol) and pirbuterol (pur-BYOO-tur-ol). They can relieve symptoms in minutes by quickly relaxing tightened muscles around the airways. Long-acting bronchodilators, which are often combined with antiswelling medicines, help relieve asthma symptoms over time.

Other ways of controlling asthma require that you change or manage your behavior, such as avoiding secondhand smoke, stopping your own tobacco use, limiting your contact with triggers, and managing other health problems that could affect your asthma, such as stress and sleep apnea (AP-nee-uh), a disorder caused by repeated interrupted breathing during sleep. (See page 287 for more information on managing respiratory disease triggers.)

Asthma and pregnancy

Asthma can be one of the most serious medical conditions to interfere with pregnancy, so it is very important to manage your symptoms if you become pregnant. Uncontrolled asthma during pregnancy can increase the risk of preeclampsia (pree-ee-CLAMP-see-uh), a condition that could lead to seizures in the mother or baby; preterm birth; low birth weight; and even infant death. The most likely time for a pregnant woman to have asthma-related problems is in the late second or early third trimester. Asthma is hardly ever a problem at delivery. Continuing your asthma medicines and controlling triggers will help prevent an attack and help ensure your baby gets enough oxygen.

Inhaled medicines are less likely to be passed on to the baby than medicines you take by mouth, but you should speak with your doctor or nurse about the best way to control your asthma while you are pregnant. You also should ask about getting a flu shot, because the flu can be serious for pregnant women with asthma.

Pregnant women with other conditions that can make asthma worse, such as allergic rhinitis (reye-NEYE-tuhss), sinusitis (SEYE-nyoo-SEYE-tuhss), and gastroesophageal (GASS-troh-uh-SOF-uh-JEE-uhl) reflux (GER), should bring those to the attention of a doctor or nurse. These illnesses often get worse during pregnancy.

For more information about GER, see the *Digestive Health* chapter on page 265.

Pregnancy and Asthma

Some women may see their symptoms improve during pregnancy, whereas others' symptoms may worsen. A National Institutes of Health study found that asthma got worse in about 30 percent of women who had mild asthma at the beginning of their pregnancy and improved in 23 percent of pregnant women who already had moderate or severe asthma.

Chronic obstructive pulmonary disease (COPD)

COPD is a lung disease that has two forms: emphysema and chronic bronchitis. Many people with COPD have both forms.

COPD is the fourth leading cause of death in the United States and throughout the world. More than 12 million people in the United States have COPD and another 12 million may have the disease and not know it.

Emphysema

Emphysema is a chronic disease that weakens lung tissue and destroys the walls between the air sacs, or alveoli (al-VEE-uh-leye). Because oxygen passes into the blood through these sacs, emphysema reduces the amount of oxygen in the blood. In 2005, 1.5 million women and 2.1 million men had emphysema. The most common cause of emphysema is smoking.

Chronic bronchitis

Smoking is also the most common cause of chronic bronchitis, which is a swelling of the bronchial tubes. The swollen tubes produce a buildup of mucus. About 5.3 million women and 2.8 million men had chronic bronchitis in 2005.

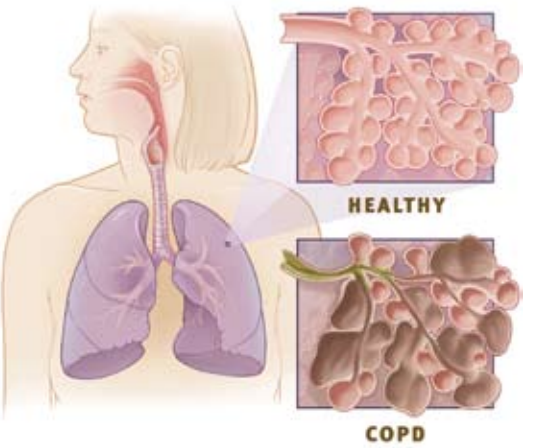
Emphysema: Differences between men and women

A 2007 study found notable differences between men and women who had severe emphysema. Even though the women in the study hadn't smoked as long as the men, they had more trouble with breathing and physical activity. They also reported feeling more depressed and scored lower on a test measuring overall mental health.

COPD treatments

Like asthma, COPD cannot be cured. But you can slow the disease down by not smoking and avoiding secondhand smoke. If you smoke, quitting will reduce future damage to your lungs.

Medicines to help you feel better if you have COPD are similar to those for asthma: inhaled corticosteroids and bronchodilators. Your doctor also might prescribe medicines called antibiotics if



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your lungs are infected. Other treatments include:

- **Supplemental oxygen.** Getting extra oxygen some or all of the time, depending on how bad your illness is, can help you breathe better. Extra oxygen, which you inhale through a mask or tube connected to an oxygen tank, can help you sleep better, stay more alert during the day, and live longer.
- **Pulmonary rehabilitation.** A pulmonary rehabilitation program teaches you how to control your disease by being physically active, eating right, setting goals, managing your symptoms, and getting proper medical care. A team of health care providers will work together to create a program just for you.

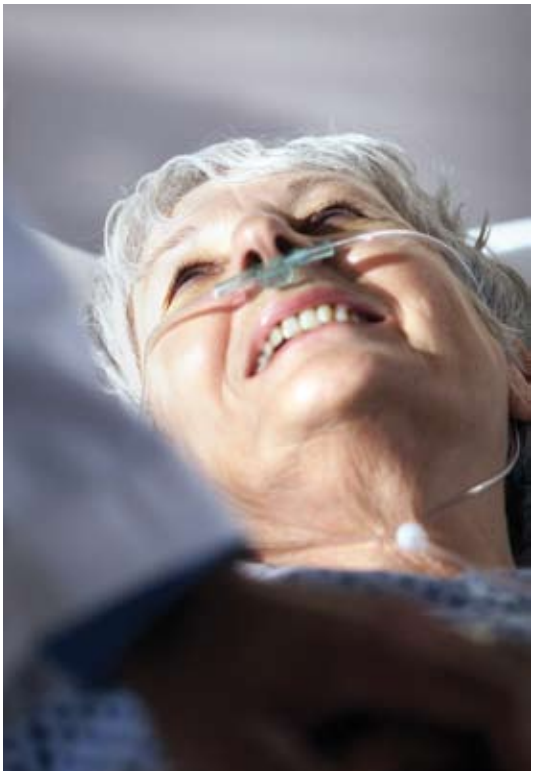
Lung cancer

Lung cancer kills more women in the United States than any other kind of cancer. Lung cancer causes unhealthy cells in the lungs to divide and spread. These cells invade nearby tissue and spread to other parts of the body.

In 2003, lung cancer accounted for more deaths than breast cancer, prostate cancer, and colon cancer combined. During that year, 105,508 men and 84,789 women got lung cancer, and 89,906 men and 68,084 women died of it.

Although nonsmokers do get lung cancer, smoking leads to 87 percent of all lung cancer cases.

For more information on lung cancer, see the *Cancer* chapter on page 51.



Lung cancer: Differences between men and women

Researchers are studying the effects of hormones, such as estrogen, on the development of lung cancer in nonsmoking women and on drug treatments for cancer. A 2006 study reported that women who were recently diagnosed with lung cancer had lungs that functioned normally. These patients also had better results on lung tests than men who were recently diagnosed. The study also found that many more men than women with lung cancer also developed COPD.

Studies have shown that women with lung cancer respond better than men to some types of therapy and that women with lung cancer live longer than men with the disease.

Lung cancer treatments

Treatment for lung cancer includes surgery, radiation treatment, and chemotherapy (drug treatment) or a combination of these.

Respiratory Diseases, Symptoms, Tests, and Treatment	
Asthma	
Symptoms	• Coughing • Wheezing • Chest tightness • Trouble breathing
Tests	• Spirometry (spuh-ROM-uh-tree)—measures how much air you can blow out of your lungs and how quickly • Allergy and sinus • Chest x-ray • Electrocardiography
Treatment	• Corticosteroids • Fast-acting and long-term control bronchodilators • Managing your disease, such as controlling triggers and using a peak flow meter to check how your lungs are working. A peak flow meter measures how fast you blow air into it.
COPD	
Symptoms	• Coughing • Producing mucus • Shortness of breath, especially with physical activity • Wheezing • Chest tightness
Tests	• Spirometry • Bronchodilator reversibility—repeats a spirometry test, adding a bronchodilator medicine to measure how the medicine affects your breathing; the bronchodilators relax muscles around the airways to make it easier to breathe. • Diffusion capacity testing—measures how well your lungs transfer oxygen from the air into your blood • Chest x-ray • Blood gases test
Treatment	• Corticosteroids • Bronchodilators • Antibiotics • Pulmonary rehabilitation • Supplemental oxygen

Respiratory Diseases, Symptoms, Tests, and Treatment	
Lung cancer	
Symptoms	• Coughing that gets worse or does not go away • Trouble breathing • Constant chest pain • Coughing up blood • Hoarse voice • Feeling very tired all the time • Lung infections, such as pneumonia (noo-MOH-nyuh) • Losing weight
Tests	• Blood tests • Chest x-ray • CT scan
Treatment	• Surgery • Radiation • Chemotherapy

Sleep Apnea

Sleep apnea, or sleep-disordered breathing, is a common breathing disorder that can be very serious. Sleep apnea causes breathing to stop or become very shallow for 10 to 20 seconds or longer many times throughout the night. One of 50 middle-aged women has sleep apnea. It is more common in African Americans, Hispanics, and Pacific Islanders than in Caucasians. A doctor can recommend changes in daily activities or treatments for sleep apnea.

How to decrease respiratory disease triggers

Reducing your contact with triggers that can make your breathing problems worse is a must for managing your illness. Here are some things you can do:

- **Quit smoking.** The best thing you can do for your overall health is quit. Also avoid secondhand smoke—only smoke-free environments will ensure your safety from tobacco chemicals that irritate your lungs.
- **Avoid breathing chemicals.** Stay away from strong cleaning or chemical agents whenever possible or wear a mask and use them in well-aired

spaces. Avoid dust, dry-cleaning and cosmetic chemicals, asbestos, coal dust, soot, paint and chemicals used in construction, and wood and furniture refinishing products.

- **Plan outdoor time carefully.** Avoid being outdoors as much as possible during allergy season—spring and fall. Keep your house and car windows closed, and wash your clothes and vacuum once you come inside.
- **Watch when and where you get physical activity.** Try to walk or be physically active early in the morning or later in the evening (before and after rush hour traffic). Fewer cars on the roads will help you avoid car fumes. Consider finding an area to be physically active that is less crowded but not so empty as to be unsafe.

  Another option is to be physically active indoors. Fitness equipment and

indoor tracks, tennis, basketball, volleyball, and racquetball courts allow you to exercise without going outside. Being indoors also helps you control the air temperature so you can avoid cold, dry air.

If you have exercise-induced asthma, you might start to have trouble breathing within 5 to 20 minutes after physical activity. Warming up with short bursts of activity might help relieve your asthma symptoms. Physical activity that involves only short bursts of activity or activity that you stop and start again, such as walking, volleyball, basketball, gymnastics, or baseball, tend to be better for people with exercise-induced asthma. Swimming is also good because you are breathing warm, moist air instead of cold, dry air. You can get medicine to take several minutes to an hour before you begin physical activity to prevent an asthma attack.

- **Manage stress and prevent panic attacks.** Panic attacks brought on by stress can cause trouble breathing. Prevent panic attacks by managing stress: lighten your load, learn to say no, share tasks with coworkers or family members, make time for yourself, get enough sleep, and manage your time better. (See pages 208–210 of the *Mental Health* chapter for more information about stress.)
- **Prevent the flu and pneumonia by getting vaccinated.** Influenza, or the flu, and pneumonia are respiratory infections that can cause serious problems in people with respiratory diseases. Getting flu and pneumonia shots can greatly reduce your risk of these problems.

Asthma, COPD, and lung cancer are the most common respiratory diseases in women. If you have any of these diseases and smoke, quit now. With the help of your doctor, you can learn to manage the symptoms of asthma and COPD and improve your quality of life. If you have lung cancer, appropriate treatment, especially when started early, can prolong life. ■

One Woman's Story

It was a typical August day in Michigan, hot and humid. I sat in our basement family room watching my three kids play and wondering if I could somehow pull it together to walk upstairs and make dinner. My chest felt tightly wrapped up, and I was so tired. Somehow the cooler air in the basement seemed to relieve some of the pressure in my chest. When my husband came home, I would go sit in his air-conditioned car, and slowly the pressure would ease.

I decided it was time to see our family doctor. We had lived in Michigan for only 4 years, but I found I was extremely tired in the late summers and felt like I was breathing underwater. I always blamed it on the humidity from living near Lake Michigan, but the tests my doctor sent me for proved otherwise.

"You have asthma," he told me. "You're kidding! How could I get asthma at my age?" I responded. He smiled and shook his head. "You have two children with asthma. Why would you be shocked that you have it? It runs in families."

...my personal Asthma Action Plan to help me keep asthma under control

I was surprised at the diagnosis. Although my older daughter had been diagnosed with asthma after being hospitalized and my son diagnosed the following year, it never occurred to me that the symptoms I was experiencing were the same ones my children lived with on a regular basis. My heart went out to them as I thought about how terrifying it is when they struggle to take each breath.

I started educating myself about allergies and asthma with an eye toward myself as the patient. I learned to avoid irritants that triggered my asthma. I tested positive for allergies to mold, dust mites, and grasses and took action to control my environment. I also see my doctor annually, monitor my lung function with a peak flow meter, and step up my medications per my personal Asthma Action Plan to help me keep asthma under control.

Ongoing education about asthma and allergies and working with my doctor provide the tools I need to stay in control of asthma rather than letting asthma control me. It's been 18 years since my diagnosis, and I can count the number of times when asthma has gotten in my way.

Sandra

Butler, New Jersey

For More Information...

Office on Women's Health, HHS
200 Independence Ave SW, Room 712E
Washington, DC 20201
Web site: www.womenshealth.gov/quitsmoking
www.womenshealth.gov/faq/lung_disease.htm
Phone number: (800) 994-9662, (888) 220-5446 TDD

Centers for Disease Control and Prevention
1600 Clifton Rd
Atlanta, GA 30333
Web site: www.cdc.gov
Phone number: (800) 232-4636, (888) 232-6348

National Cancer Institute, NIH
6116 Executive Blvd, Room 3036A
Bethesda, MD 20892-8322
Web site: www.cancer.gov
Phone number: (800) 422-6237, (800) 332-8615 TTY

National Heart, Lung, and Blood Institute Information Center, NIH
PO Box 30105
Bethesda, MD 20824-0105
Web site: www.nhlbi.nih.gov
www.hearttruth.gov
Phone number: (301) 592-8573, (240) 629-3255 TTY

National Institute of Allergy and Infectious Diseases, NIH
6610 Rockledge Dr, MSC 6612
Bethesda, MD 20892–6612
Web site: www.niaid.nih.gov
Phone number: (866) 284-4107, (800) 877-8339 TDD

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5600 Fishers Ln
Rockville, MD 20857
Web site: www.fda.gov/womens
Phone number: (888) 463-6332

Allergy and Asthma Network Mothers of Asthmatics
2751 Prosperity Ave, Suite 150
Fairfax, VA 22031
Web site: www.aanma.org
Phone number: (800) 878-4403

American Academy of Allergy, Asthma, and Immunology
555 E Wells St, Suite 1100
Milwaukee, WI 53202-3823
Web site: www.aaaai.org

American Association for Respiratory Care
9425 N MacArthur Blvd, Suite 100
Irving, TX 75063-4706
Web site: www.aarc.org
www.yourlunghealth.org

American College of Chest Physicians
3300 Dundee Rd
Northbrook, IL 60062–2348
Web site: www.chestnet.org/patients/guides

American Lung Association
61 Broadway, 6th Floor
New York, NY 10006
Web site: www.lungusa.org
Phone number: (800) 548-8252

COPD Foundation
2937 SW 27th St, Suite 302
Miami, FL 33133
Web site: www.copdfoundation.org
Phone number: (866) 316-2673