THE 2002 OFFICIAL PATIENT'S SOURCEBOOK *on*

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Dedication

To the healthcare professionals dedicating their time and efforts to the study of chronic obstructive pulmonary disease.

Acknowledgements

The collective knowledge generated from academic and applied research summarized in various references has been critical in the creation of this sourcebook which is best viewed as a comprehensive compilation and collection of information prepared by various official agencies which directly or indirectly are dedicated to chronic obstructive pulmonary disease. All of the *Official Patient's Sourcebooks* draw from various agencies and institutions associated with the United States Department of Health and Human Services, and in particular, the Office of the Secretary of Health and Human Services (OS), the Administration for Children and Families (ACF), the Administration on Aging (AOA), the Agency for Healthcare Research and Quality (AHRQ), the Agency for Toxic Substances and Disease Registry (ATSDR), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), the Healthcare Financing Administration (HCFA), the Health Resources and Services Administration (HRSA), the Indian Health Service (IHS), the institutions of the National Institutes of Health (NIH), the Program Support Center (PSC), and the Substance Abuse and Mental Health Services Administration (SAMHSA). In addition to these sources, information gathered from the National Library of Medicine, the United States Patent Office, the European Union, and their related organizations has been invaluable in the creation of this sourcebook. Some of the work represented was financially supported by the Research and Development Committee at INSEAD. This support is gratefully acknowledged. Finally, special thanks are owed to Tiffany LaRochelle for her excellent editorial support.

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INTRODUCTION

Overview

Dr. C. Everett Koop, former U.S. Surgeon General, once said, "The best prescription is knowledge."[1] The Agency for Healthcare Research and Quality (AHRQ) of the National Institutes of Health (NIH) echoes this view and recommends that every patient incorporate education into the treatment process. According to the AHRQ:

> Finding out more about your condition is a good place to start. By contacting groups that support your condition, visiting your local library, and searching on the Internet, you can find good information to help guide your treatment decisions. Some information may be hard to find—especially if you don't know where to look.[2]

As the AHRQ mentions, finding the right information is not an obvious task. Though many physicians and public officials had thought that the emergence of the Internet would do much to assist patients in obtaining reliable information, in March 2001 the National Institutes of Health issued the following warning:

> The number of Web sites offering health-related resources grows every day. Many sites provide valuable information, while others may have information that is unreliable or misleading.[3]

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[1] Quotation from **http://www.drkoop.com**.
[2] The Agency for Healthcare Research and Quality (AHRQ): **http://www.ahcpr.gov/consumer/diaginfo.htm**.
[3] From the NIH, National Cancer Institute (NCI): **http://cancertrials.nci.nih.gov/beyond/evaluating.html**.

Since the late 1990s, physicians have seen a general increase in patient Internet usage rates. Patients frequently enter their doctor's offices with printed Web pages of home remedies in the guise of latest medical research. This scenario is so common that doctors often spend more time dispelling misleading information than guiding patients through sound therapies. The Official Patient's Sourcebook on Chronic Obstructive Pulmonary Disease has been created for patients who have decided to make education and research an integral part of the treatment process. The pages that follow will tell you where and how to look for information covering virtually all topics related to chronic obstructive pulmonary disease, from the essentials to the most advanced areas of research.

The title of this book includes the word "official." This reflects the fact that the sourcebook draws from public, academic, government, and peer-reviewed research. Selected readings from various agencies are reproduced to give you some of the latest official information available to date on chronic obstructive pulmonary disease.

Given patients' increasing sophistication in using the Internet, abundant references to reliable Internet-based resources are provided throughout this sourcebook. Where possible, guidance is provided on how to obtain free-of-charge, primary research results as well as more detailed information via the Internet. E-book and electronic versions of this sourcebook are fully interactive with each of the Internet sites mentioned (clicking on a hyperlink automatically opens your browser to the site indicated). Hard copy users of this sourcebook can type cited Web addresses directly into their browsers to obtain access to the corresponding sites. Since we are working with ICON Health Publications, hard copy Sourcebooks are frequently updated and printed on demand to ensure that the information provided is current.

In addition to extensive references accessible via the Internet, every chapter presents a "Vocabulary Builder." Many health guides offer glossaries of technical or uncommon terms in an appendix. In editing this sourcebook, we have decided to place a smaller glossary within each chapter that covers terms used in that chapter. Given the technical nature of some chapters, you may need to revisit many sections. Building one's vocabulary of medical terms in such a gradual manner has been shown to improve the learning process.

We must emphasize that no sourcebook on chronic obstructive pulmonary disease should affirm that a specific diagnostic procedure or treatment discussed in a research study, patent, or doctoral dissertation is "correct" or your best option. This sourcebook is no exception. Each patient is unique.

Deciding on appropriate options is always up to the patient in consultation with their physician and healthcare providers.

Organization

This sourcebook is organized into three parts. Part I explores basic techniques to researching chronic obstructive pulmonary disease (e.g. finding guidelines on diagnosis, treatments, and prognosis), followed by a number of topics, including information on how to get in touch with organizations, associations, or other patient networks dedicated to chronic obstructive pulmonary disease. It also gives you sources of information that can help you find a doctor in your local area specializing in treating chronic obstructive pulmonary disease. Collectively, the material presented in Part I is a complete primer on basic research topics for patients with chronic obstructive pulmonary disease.

Part II moves on to advanced research dedicated to chronic obstructive pulmonary disease. Part II is intended for those willing to invest many hours of hard work and study. It is here that we direct you to the latest scientific and applied research on chronic obstructive pulmonary disease. When possible, contact names, links via the Internet, and summaries are provided. It is in Part II where the vocabulary process becomes important as authors publishing advanced research frequently use highly specialized language. In general, every attempt is made to recommend "free-to-use" options.

Part III provides appendices of useful background reading for all patients with chronic obstructive pulmonary disease or related disorders. The appendices are dedicated to more pragmatic issues faced by many patients with chronic obstructive pulmonary disease. Accessing materials via medical libraries may be the only option for some readers, so a guide is provided for finding local medical libraries which are open to the public. Part III, therefore, focuses on advice that goes beyond the biological and scientific issues facing patients with chronic obstructive pulmonary disease.

Scope

While this sourcebook covers chronic obstructive pulmonary disease, your doctor, research publications, and specialists may refer to your condition using a variety of terms. Therefore, you should understand that chronic obstructive pulmonary disease is often considered a synonym or a condition closely related to the following:

- Bronchitis
- Chronic Bronchitis
- Chronic Obstructive Airway Disease
- Chronic Obstructive Lung Disease
- Chronic Respiratory Insufficiency
- Emphysema
- Inflammation of the Bronchi
- Obstructive Airways Disease
- Tracheobronshitis

In addition to synonyms and related conditions, physicians may refer to chronic obstructive pulmonary disease using certain coding systems. The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) is the most commonly used system of classification for the world's illnesses. Your physician may use this coding system as an administrative or tracking tool. The following classification is commonly used for chronic obstructive pulmonary disease:[4]

- 490 bronchitis, not specified as acute or chronic
- 491 chronic bronchitis
- 491.0 simple chronic bronchitis
- 491.1 mucopurulent chronic bronchitis
- 491.2 obstructive chronic bronchitis
- 491.20 without mention of acute exacerbation
- 491.21 with acute exacerbation
- 491.8 other chronic bronchitis
- 491.9 unspecified chronic bronchitis
- 492 emphysema
- 492.0 emphysematous bleb
- 492.8 other emphysema

[4] This list is based on the official version of the World Health Organization's 9th Revision, International Classification of Diseases (ICD-9). According to the National Technical Information Service, "ICD-9CM extensions, interpretations, modifications, addenda, or errata other than those approved by the U.S. Public Health Service and the Health Care Financing Administration are not to be considered official and should not be utilized. Continuous maintenance of the ICD-9-CM is the responsibility of the federal government."

For the purposes of this sourcebook, we have attempted to be as inclusive as possible, looking for official information for all of the synonyms relevant to chronic obstructive pulmonary disease. You may find it useful to refer to synonyms when accessing databases or interacting with healthcare professionals and medical librarians.

Moving Forward

Since the 1980s, the world has seen a proliferation of healthcare guides covering most illnesses. Some are written by patients or their family members. These generally take a layperson's approach to understanding and coping with an illness or disorder. They can be uplifting, encouraging, and highly supportive. Other guides are authored by physicians or other healthcare providers who have a more clinical outlook. Each of these two styles of guide has its purpose and can be quite useful.

As editors, we have chosen a third route. We have chosen to expose you to as many sources of official and peer-reviewed information as practical, for the purpose of educating you about basic and advanced knowledge as recognized by medical science today. You can think of this sourcebook as your personal Internet age reference librarian.

Why "Internet age"? All too often, patients diagnosed with chronic obstructive pulmonary disease will log on to the Internet, type words into a search engine, and receive several Web site listings which are mostly irrelevant or redundant. These patients are left to wonder where the relevant information is, and how to obtain it. Since only the smallest fraction of information dealing with chronic obstructive pulmonary disease is even indexed in search engines, a non-systematic approach often leads to frustration and disappointment. With this sourcebook, we hope to direct you to the information you need that you would not likely find using popular Web directories. Beyond Web listings, in many cases we will reproduce brief summaries or abstracts of available reference materials. These abstracts often contain distilled information on topics of discussion.

While we focus on the more scientific aspects of chronic obstructive pulmonary disease, there is, of course, the emotional side to consider. Later in the sourcebook, we provide a chapter dedicated to helping you find peer groups and associations that can provide additional support beyond research produced by medical science. We hope that the choices we have made give you the most options available in moving forward. In this way,

we wish you the best in your efforts to incorporate this educational approach into your treatment plan.

The Editors

PART I: THE ESSENTIALS

ABOUT PART I

Part I has been edited to give you access to what we feel are "the essentials" on chronic obstructive pulmonary disease. The essentials of a disease typically include the definition or description of the disease, a discussion of who it affects, the signs or symptoms associated with the disease, tests or diagnostic procedures that might be specific to the disease, and treatments for the disease. Your doctor or healthcare provider may have already explained the essentials of chronic obstructive pulmonary disease to you or even given you a pamphlet or brochure describing chronic obstructive pulmonary disease. Now you are searching for more in-depth information. As editors, we have decided, nevertheless, to include a discussion on where to find essential information that can complement what your doctor has already told you. In this section we recommend a process, not a particular Web site or reference book. The process ensures that, as you search the Web, you gain background information in such a way as to maximize your understanding.

CHAPTER 1. THE ESSENTIALS ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE: GUIDELINES

Overview

Official agencies, as well as federally-funded institutions supported by national grants, frequently publish a variety of guidelines on chronic obstructive pulmonary disease. These are typically called "Fact Sheets" or "Guidelines." They can take the form of a brochure, information kit, pamphlet, or flyer. Often they are only a few pages in length. The great advantage of guidelines over other sources is that they are often written with the patient in mind. Since new guidelines on chronic obstructive pulmonary disease can appear at any moment and be published by a number of sources, the best approach to finding guidelines is to systematically scan the Internet-based services that post them.

The National Institutes of Health (NIH)[5]

The National Institutes of Health (NIH) is the first place to search for relatively current patient guidelines and fact sheets on chronic obstructive pulmonary disease. Originally founded in 1887, the NIH is one of the world's foremost medical research centers and the federal focal point for medical research in the United States. At any given time, the NIH supports some 35,000 research grants at universities, medical schools, and other research and training institutions, both nationally and internationally. The rosters of those who have conducted research or who have received NIH support over the years include the world's most illustrious scientists and

[5] Adapted from the NIH: **http://www.nih.gov/about/NIHoverview.html**.

physicians. Among them are 97 scientists who have won the Nobel Prize for achievement in medicine.

There is no guarantee that any one Institute will have a guideline on a specific disease, though the National Institutes of Health collectively publish over 600 guidelines for both common and rare diseases. The best way to access NIH guidelines is via the Internet. Although the NIH is organized into many different Institutes and Offices, the following is a list of key Web sites where you are most likely to find NIH clinical guidelines and publications dealing with chronic obstructive pulmonary disease and associated conditions:

- Office of the Director (OD); guidelines consolidated across agencies available at **http://www.nih.gov/health/consumer/conkey.htm**
- National Library of Medicine (NLM); extensive encyclopedia (A.D.A.M., Inc.) with guidelines available at **http://www.nlm.nih.gov/medlineplus/healthtopics.html**
- National Heart, Lung, and Blood Institute (NHLBI); guidelines at **http://www.nhlbi.nih.gov/guidelines/index.htm**

Among these, the National Heart, Lung, and Blood Institute (NHLBI) is particularly noteworthy. The NHLBI provides leadership for a national program in diseases of the heart, blood vessels, lung, and blood; blood resources; and sleep disorders.[6] Since October 1997, the NHLBI has also had administrative responsibility for the NIH Woman's Health Initiative. The Institute plans, conducts, fosters, and supports an integrated and coordinated program of basic research, clinical investigations and trials, observational studies, and demonstration and education projects. Research is related to the causes, prevention, diagnosis, and treatment of heart, blood vessel, lung, and blood diseases; and sleep disorders. The NHLBI plans and directs research in development and evaluation of interventions and devices related to prevention, treatment, and rehabilitation of patients suffering from such diseases and disorders. It also supports research on clinical use of blood and all aspects of the management of blood resources. Research is conducted in the Institute's own laboratories and by scientific institutions and individuals supported by research grants and contracts. For health professionals and the public, the NHLBI conducts educational activities, including development and dissemination of materials in the above areas, with an emphasis on prevention.

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[6] This paragraph has been adapted from the NHLBI: **http://www.nhlbi.nih.gov/about/org/mission.htm**. "Adapted" signifies that a passage is reproduced exactly or slightly edited for this book.

Within the NHLBI, the Division of Lung Diseases (DLD) maintains surveillance over developments in pulmonary research and assesses the Nation's need for research on the causes, prevention, diagnosis, and treatment of pulmonary diseases.[7] Also within the purview of the Division are: technology development, application of research findings, and research training and career development in pulmonary diseases. The DLD plans and directs the research and training programs which encompass basic research, applied research and development, clinical investigations, clinical trials, and demonstration and education research. Two programs comprise the Division of Lung Diseases, Airway Biology and Disease Program, and the Lung Biology and Disease Program. The following patient guideline was recently published by the NHLBI and the DLD on chronic obstructive pulmonary disease.

What Is Chronic Obstructive Pulmonary Disease?[8]

Chronic obstructive pulmonary disease (COPD), also called chronic obstructive lung disease, is a term that is used for two closely related diseases of the respiratory system: chronic bronchitis and emphysema. In many patients these diseases occur together, although there may be more symptoms of one than the other. Most patients with these diseases have a long history of heavy cigarette smoking. Cigarette smoking is the most important risk factor for COPD.

COPD gets gradually worse over time. At first there may be only a mild shortness of breath and occasional coughing. Then a chronic cough develops with clear, colorless sputum. As the disease progresses, the cough becomes more frequent and more and more effort is needed to get air into and out of the lungs. In later stages of the disease, the heart may be affected. Eventually death occurs when the function of the lungs and heart is no longer adequate to deliver oxygen to the body's organs and tissues.

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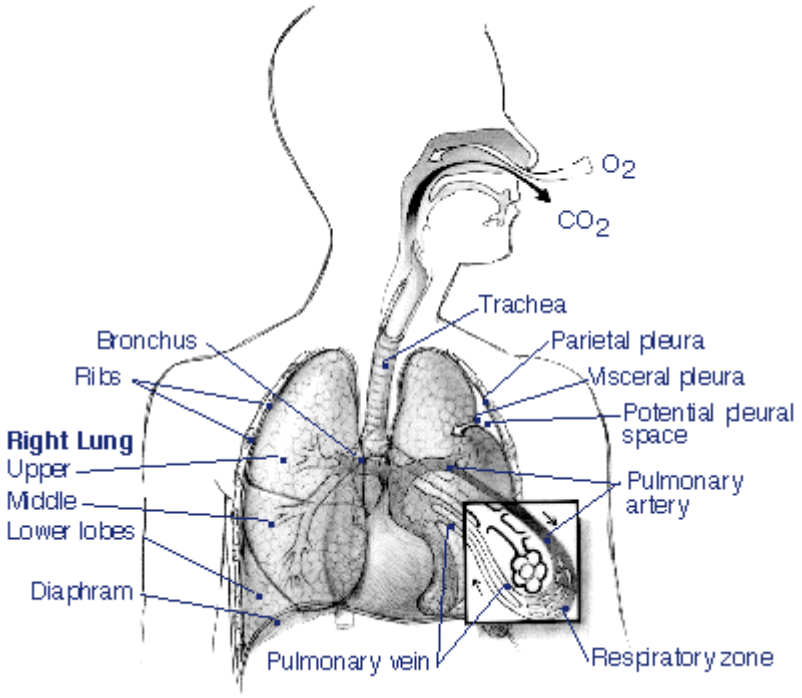
[7] Adapted from the DLD:**http://www.nhlbi.nih.gov/about/dld/index.htm**. For more information, contact: Division of Lung Diseases; National Heart, Lung and Blood Institute; ATTN: Web Site Inquiries; Two Rockledge Center, Suite 10122, 6701 Rockledge Dr., MSC 7952; Bethesda, Maryland 20892-7952.

[8] Adapted from the National Heart, Lung, and Blood Institute: **http://www.nhlbi.nih.gov/health/public/lung/other/copd/copd_toc.htm**.



Cigarette smoking is the most important risk factor for COPD; it would probably be a minor health problem if people did not smoke. Other risk factors include age, heredity, exposure to air pollution at work and in the environment, and a history of childhood respiratory infections. Living in low socioeconomic conditions also seems to be a contributing factor.

More than 13.5 million Americans are thought to have COPD. It is the fifth leading cause of death in the United States. Between 1980 and 1990, the total death rate from COPD increased by 22 percent. In 1990, it was estimated that there were 84,000 deaths due to COPD, approximately 34 per 100,000 people. Although COPD is still much more common in men than women, the greatest increase in the COPD death rate between 1979 and 1989 occurred in females, particularly in black females (117.6 percent for black females vs. 93 percent for white females). These increases reflect the increased number of women who smoke cigarettes.
Between 1979 and 1989, COPD death rate increased more in females than in males, particularly in black females.

COPD attacks people at the height of their productive years, disabling them with constant shortness of breath. It destroys their ability to earn a living, causes frequent use of the health care system, and disrupts the lives of the victims' family members for as long as 20 years before death occurs.

In 1990, COPD was the cause of approximately 16.2 million office visits to doctors and 1.9 million hospital days. The economic costs of this disease are enormous. In 1989, an estimated $7 billion was spent for care of persons with COPD and another $8 billion was lost to the economy by lost productivity due to morbidity and mortality from COPD.

What Are Chronic Bronchitis and Emphysema?

Chronic bronchitis, one of the two major diseases of the lung grouped under COPD, is diagnosed when a patient has excessive airway mucus secretion leading to a persistent, productive cough. An individual is considered to have chronic bronchitis if cough and sputum are present on most days for a minimum of 3 months for at least 2 successive years or for 6 months during 1 year. In chronic bronchitis, there also may be narrowing of the large and small airways making it more difficult to move air in and out of the lungs. An estimated 12.1 million Americans have chronic bronchitis.

People with familial emphysema have a hereditary deficiency of a blood component called alpha-1-antitrypsin resulting in the loss of a lung structural protein, elastin.

In emphysema there is permanent destruction of the alveoli, the tiny elastic air sacs of the lung, because of irreversible destruction of a protein in the lung called elastin that is important for maintaining the strength of the alveolar walls. The loss of elastin also causes collapse or narrowing of the smallest air passages, called bronchioles, which in turn limits airflow out of the lung. The number of individuals with emphysema in the United States is estimated to be 2 million.

In the general population, emphysema usually develops in older individuals with a long smoking history. However, there is also a form of emphysema that runs in families. People with familial emphysema have a hereditary deficiency of a blood component, alpha-l-protease inhibitor, also called alpha-l-antitrypsin (AAT). The number of Americans with this genetic deficiency is quite small, probably no more than 70,000. It is estimated that 1 in 3,000 newborns have a genetic deficiency of AAT, and 1 to 3 percent of all cases of emphysema are due to AAT deficiency.

The destruction of elastin that occurs in emphysema is believed to result from an imbalance between two proteins in the lung--an enzyme called elastase which breaks down elastin, and AAT which inhibits elastase. In the normal individual, there is enough AAT to protect elastin so that abnormal

elastin destruction does not occur. However, when there is a genetic deficiency of AAT, the activity of the elastase is not inhibited and elastin degradation occurs unchecked. If individuals with a severe genetic deficiency of alpha-l-protease inhibitor smoke, they usually have symptoms of COPD by the time they reach early middle age. Deficiency of alpha-l-protease inhibitor can be detected by blood tests available through hospital laboratories. People from families in which relatives have developed emphysema in their thirties and forties should be tested for AAT deficiency. If a deficiency is found, it is critical for these people not to smoke.

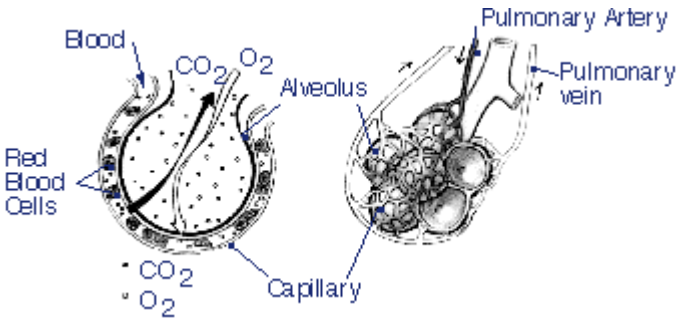
Some scientists believe that "smoker's emphysema," also results from an imbalance between elastin-degrading enzymes and their inhibitors. Some scientists believe that nonfamilial emphysema, usually called "smoker's emphysema," also results from an imbalance between elastin-degrading enzymes and their inhibitors. The elastase-AAT imbalance is thought to be a result of the effects of smoking, rather than inherited as in familial emphysema. Some evidence for this theory comes from studies on the effect of tobacco smoke on lung cells. These studies showed that tobacco smoke stimulates excess release of elastase from cells normally found in the lung. The inhaled smoke also stimulates more elastase-producing cells to migrate to the lung which in turn causes the release of even more elastase. To make matters worse, oxidants found in cigarette smoke inactivate a significant portion of the elastase inhibitors that are present, thereby decreasing the amount of active antielastase available for protecting the lung and further upsetting the elastase-antielastase balance.

Scientists believe that, in addition to smoking-related processes, there must be other factors that cause emphysema in the general population since only 15 to 20 percent of smokers develop emphysema. The nature and role of these other factors in smokers' emphysema are not yet clear.

What Goes Wrong With the Lungs and Other Organs?

The most important job that the lungs perform is to provide the body with oxygen and to remove carbon dioxide. This process is called gas exchange, and the normal anatomy of the lungs serves this purpose well. The lungs contain 300 million alveoli whose ultrathin walls form the gas exchange surface. Enmeshed in the wall of each of these air sacs is a network of tiny blood vessels, the capillaries, which bring blood to the gas exchange surface. When a person inhales, air flows from the nose and mouth through large and small airways into the alveoli. Oxygen from this air then passes through the thin walls of the inflated alveoli and is taken up by the red blood cells for delivery to the rest of the body. At the same time, carbon dioxide leaves the

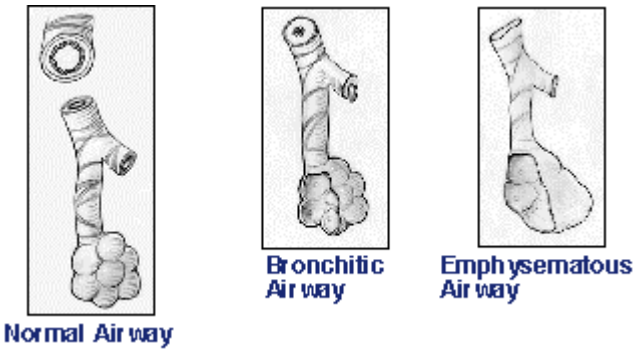
blood and passes through the alveolar walls into the alveoli. During exhalation, the lung pushes the used air out of the alveoli and through the air passages until it escapes from the nose or mouth.



Gas Exchange

Inhaled air travels through the airways to the alveoli. Blood is pumped out of the heart through the pulmonary arteries to a network of capillaries that surround the alveoli. The oxygen of the inhaled air diffuses out of the alveoli into the blood while carbon dioxide in the blood moves into the alveoli to be exhaled. The oxygen-rich blood is returned to the heart through the pulmonary veins.

When COPD develops, the walls of the small airways and alveoli lose their elasticity. The airway walls thicken, closing off some of the smaller air passages and narrowing larger ones. The passageways also become plugged with mucus. Air continues to get into alveoli when the lung expands during inhalation, but it is often unable to escape during exhalation because the air passages tend to collapse during exhalation, trapping the "stale" air in the lungs. These abnormalities create two serious problems which affect gas exchange:



Blood flow and air flow to the walls of the alveoli where gas exchange takes place are uneven or mismatched. In some alveoli there is adequate blood flow but little air, while in others there is a good supply of fresh air but not enough blood flow. When this occurs, fresh air cannot reach areas where there is good blood flow and oxygen cannot enter the bloodstream in normal quantities.

Pushing the air through narrowed obstructed airways becomes harder and harder. This tires the respiratory muscles so that they are unable to get enough air to the alveoli. The critical step for removing carbon dioxide from the blood is adequate alveolar airflow. If airflow to the alveoli is insufficient, carbon dioxide builds up in the blood and blood oxygen diminishes. Inadequate supply of fresh air to the alveoli is called hypoventilation. Breathing oxygen can often correct the blood oxygen levels, but this does not help remove carbon dioxide. When carbon dioxide accumulation becomes a severe problem, mechanical breathing machines called respirators, or ventilators, must be used.

Age-related change in the lung function and effect of smoking and smoking cessation:

Adapted from 1984 Surgeon General's Report

Pulmonary function studies of large groups of people show that lung function--the ability to move air into and out of the lungs--declines slowly with age even in healthy nonsmokers. Because healthy nonsmokers have excess lung capacity, this gradual loss of function does not lead to any symptoms. In smokers, however, lung function tends to worsen much more rapidly. If a smoker stops smoking before serious COPD develops, the rate at which lung function declines returns to almost normal. Unfortunately, because some lung damage cannot be reversed, pulmonary function is unlikely to return completely to normal.

In smokers, lung function tends to worsen much more rapidly than in nonsmokers. COPD also makes the heart work much harder, especially the main chamber on the right side (right ventricle) which is responsible for pumping blood into the lungs. As COPD progresses, the amount of oxygen in the blood decreases which causes blood vessels in the lung to constrict. At the same time many of the small blood vessels in the lung have been damaged or destroyed as a result of the disease process. More and more work is required from the right ventricle to force blood through the remaining narrowed vessels. To perform this task, the right ventricle enlarges and thickens. When this occurs the normal rhythm of the heart may be disturbed by abnormal beats. This condition, in which the heart is enlarged because of lung problems, is called cor pulmonale. Patients with cor pulmonale tire easily and have chest pains and palpitations. If an additional strain is placed on the lungs and heart by a normally minor illness such as a cold, the heart may be unable to pump enough blood to meet the needs of other organs. This results in the inability of the liver and kidneys to carry out their normal functions which leads to swelling of the abdomen, legs, and ankles.

Another adjustment the body makes to inadequate blood oxygen is called secondary polycythemia, an increased production of oxygen-carrying red blood cells. The larger than normal number of red blood cells is helpful up to a point; however, a large overpopulation of red cells thickens the blood so much that it clogs small blood vessels causing a new set of problems. People who have poor supply of oxygen usually have a bluish tinge to their skin, lips, and nailbeds, a condition called cyanosis.

Too little oxygen and too much carbon dioxide in the blood also affect the nervous system, especially the brain, and can cause a variety of problems including headache, inability to sleep, impaired mental ability, and irritability.

What Is the Course of Chronic Obstructive Pulmonary Disease?

Daily morning cough with clear sputum is the earliest symptom of COPD. During a cold or other acute respiratory tract infection, the coughing may be much more noticeable and the sputum often turns yellow or greenish. Periods of wheezing are likely to occur especially during or after colds or other respiratory tract infections. Shortness of breath on exertion develops later and progressively becomes more pronounced with severe episodes of breathlessness (dyspnea) occurring after even modest activity.

A typical course of COPD might proceed as follows. For a period of about 10 years after cigarette smoking begins, symptoms are usually not very noticeable. After this, the patient generally starts developing a chronic cough with the production of a small amount of sputum. It is unusual to develop shortness of breath during exertion below the age of 40, after which it becomes more common and may be well developed by the age of 50. However, although all COPD patients have these symptoms, not all cigarette smokers develop a notable cough and sputum production, or shortness of breath. Daily morning cough with clear sputum is the earliest symptom of COPD.

Most patients with COPD have some degree of reversible airways obstruction. It is therefore likely that, at first, treatment will lead to some improvement or stability in lung function. But as COPD progresses, almost all signs and symptoms except cough and sputum production tend to show a gradual worsening. This trend can show fluctuations, but over the course of 4 or 5 years, a slow deterioration becomes evident.

Repeated bouts of increased cough and sputum production disable most patients and recovery from coughing attacks may take a long time. Patients with severe lung damage sleep in a semi-sitting position because they are unable to breathe when they lie down. They often complain that they awaken during the night feeling "choked-up," and they need to sit up to cough.

Survival of patients with COPD is closely related to the level of their lung function when they are diagnosed and the rate at which they lose this function. Overall, the median survival is about 10 years for patients with COPD who have lost approximately two-thirds of their normally expected lung function at diagnosis.

How Is Chronic Obstructive Pulmonary Disease Detected?

Researchers are still looking for accurate methods to predict a person's chances of developing airway obstruction. None of the current ways used to diagnose COPD detects the disease before irreversible lung damage occurs. While many measures of lung function have been developed, those most commonly used determine: 1) air-containing volume of the lung (lung volume), 2) the ability to move air into and out of the lung, 3) the rate at which gases diffuse between the lung and blood, and 4) blood levels of oxygen and carbon dioxide.

Lung volumes are measured by breathing into and out of a device called a spirometer. Some types of spirometers are very simple mechanical devices which record volume changes as air is added to or removed from them. Other kinds are more sophisticated and use various types of electronic equipment to determine and record the volume of air moved into and out of the lungs. The three volume measures most relevant to COPD are forced vital capacity (FVC), residual volume (RV), and total lung capacity (TLC). The forced vital capacity is the maximum volume of air which can be forcibly expelled after inhaling as deeply as possible. Not all of the air in the lungs is removed when measuring the vital capacity. The amount remaining is called the residual volume. The total lung capacity is the combination of the forced vital capacity and residual volume. While most of the measured lung volumes or capacities change to some degree with COPD, residual volume usually increases quite markedly. This increase is the result of the weakened airways collapsing before all the normally expired air can leave the lungs. The increased residual volume makes breathing even more difficult and labored.

A Correct Diagnosis of COPD Requires Several Tests

It is necessary to compare the results of several different tests to make a correct diagnosis of COPD.

Because COPD results in narrowed air passages, a measure of the rate at which air can be expelled from the lungs can also be used to determine how severe the narrowing has become. In this test, the forced vital capacity maneuver, the patient is asked to inhale as deeply as possible, and on signal, exhale as completely and as rapidly as possible. The volume of air exhaled within 1 second is then measured. This value is referred to as the forced expiratory volume in 1 second (FEV_1). When FEV_1 is used as an indicator of lung function, the average rate of decline in patients with chronic obstructive lung disease is observed to be two to three times the normal rate of 20-30 milliliters per year. This volume may also be expressed in terms of the percent of the vital capacity which can be expelled in 1 second. As COPD progresses, less air can be expelled in 1 second. A greater than expected annual fall in FEV_1 is the most sensitive test for COPD and a fairly good predictor of disability and early death.

Another measure of lung function is called diffusing capacity. For this, a more complicated test determines the amount of gas which can move in a given period of time from the alveolar side of the lung into the blood. A number of conditions can cause the diffusing capacity to decrease. However,

in COPD the decrease is the result of the destruction of alveolar walls which leads to a significant decrease in surface area for diffusion of oxygen into the blood.

Because the primary function of the lung is to remove carbon dioxide from the blood and add oxygen, another indicator of pulmonary function is the blood levels of oxygen and carbon dioxide. As chronic obstructive pulmonary disease progresses, the amount of oxygen in the blood decreases and carbon dioxide increases.

In most cases, it is necessary to compare the results of several different tests in order to make the correct diagnosis, and to repeat some tests at intervals to determine the rate of disease progression or improvement. Measurement of FEV_1 and FEV_1/FVC ratio should be a routine part of the physical examination of every COPD patient. It is hoped that current research will result in more accurate and earlier measures for detecting lung destruction and diminished function.

How Is Chronic Obstructive Pulmonary Disease Treated?

Although there is no cure for COPD, the disease can be prevented in many cases. And, in almost all cases the disabling symptoms can be reduced. Because cigarette smoking is the most important cause of COPD, not smoking almost always prevents COPD from developing, and quitting smoking slows the disease process. There is no cure for COPD at present, but the disease is usually preventable.

If the patient and medical team develop and adhere to a program of complete respiratory care, disability can be minimized, acute episodes prevented, hospitalizations reduced, and some early deaths avoided. On the other hand, none of the therapies has been shown to slow the progression of the disease, and only oxygen therapy has been shown to increase the survival rate.

Home oxygen therapy can improve survival of COPD patients. Home oxygen therapy can improve survival in patients with advanced COPD who have hypoxemia, low blood oxygen levels. This treatment can improve a patient's exercise tolerance and ability to perform on psychological tests which reflect different aspects of brain function and muscle coordination. Increasing the concentration of oxygen in blood also improves the function of the heart and prevents the development of cor pulmonale. Oxygen can also lessen sleeplessness, irritability, headaches, and the overproduction of

red blood cells. Continuous oxygen therapy is recommended for patients with low oxygen levels at rest, during exercise, or while sleeping. Many oxygen sources are available for home use; these include tanks of compressed gaseous oxygen or liquid oxygen and devices that concentrate oxygen from room air. However, oxygen is expensive with the cost per patient running into several hundred dollars per month, depending on the type of system and on the locale.

Medications frequently prescribed for COPD patients include:

- Bronchodilators help open narrowed airways. There are three main categories: sympathomimetics (isoproterenol, metaproterenol, terbutaline, albuterol) which can be inhaled, injected, or taken by mouth; parasympathomimetics (atropine, ipratropium bromide); and methylxanthines (theophylline and its derivatives) which can be given intravenously, orally, or rectally.
- Corticosteroids or steroids (beclomethasone, dexamethasone, triamcinolone, flunisolide) lessen inflammation of the airway walls. They are sometimes used if airway obstruction cannot be kept under control with bronchodilators, and lung function is shown to improve on this therapy. Inhaled steroids given regularly may be of benefit in some patients and have few side effects.
- Antibiotics (tetracycline, ampicillin, erythromycin, and trimethoprim-sulfamethoxazole combinations) fight infection. They are frequently given at the first sign of a respiratory infection such as increased sputum production with a change in color of sputum from clear to yellow or green.
- Expectorants help loosen and expel mucus secretions from the airways.
- Diuretics help the body excrete excess fluid. They are given as therapy to avoid excess water retention associated with right-heart failure. Patients taking diuretics are monitored carefully because dehydration must be avoided. These drugs also may cause potassium imbalances which can lead to abnormal heart rhythms.
- Digitalis (usually in the form of digoxin) strengthens the force of the heartbeat. It is used very cautiously in patients who have COPD, especially if their blood oxygen tensions are low, because they are vulnerable to abnormal heart rhythms when taking this drug.
- Other drugs sometimes taken by patients with COPD are tranquilizers, pain killers (meperidine, morphine, propoxyphene, etc.), cough suppressants (codeine, etc.), and sleeping pills (barbiturates, etc.). All

these drugs depress breathing to some extent; they are avoided whenever possible and used only with great caution.

A number of combination drugs containing various assortments of sympathomimetics, methylxanthines, expectorants, and sedatives are marketed and widely advertised. These drugs are undesirable for COPD patients for several reasons. It is difficult to adjust the dose of methylxanthines without getting interfering side effects from the other ingredients. The sympathomimetic drug used in these preparations is ephedrine, a drug with many side effects and less bronchodilating effect than other drugs now available. The combination drugs often contain sedatives to combat the unpleasant side effects of ephedrine. They also contain expectorants which have not been proven to be effective for all patients and may have some side effects.

Bullectomy, or surgical removal of large air spaces called bullae that are filled with stagnant air, may be beneficial in selected patients. Recently, use of lasers to remove bullae has been suggested.

Lung transplantation has been successfully employed in some patients with end-stage COPD. In the hands of an experienced team, the 1-year survival in patients with transplanted lungs is over 70 percent.

Pulmonary rehabilitation programs, along with medical treatment, are useful in certain patients with COPD. The goals are to improve overall physical endurance and generally help to overcome the conditions which cause dyspnea and limit capacity for physical exercise and activities of daily living. General exercise training increases performance, maximum oxygen consumption, and overall sense of well-being. Administration of oxygen and nutritional supplements when necessary can improve respiratory muscle strength. Intermittent mechanical ventilatory support relieves dyspnea and rests respiratory muscles in selected patients. Continuous positive airway pressure (CPAP) is used as an adjunct to weaning from mechanical ventilation to minimize dyspnea during exercise. Relaxation techniques may also reduce the perception of ventilatory effort and dyspnea. Breathing exercises and breathing techniques, such as pursed lips breathing and relaxation, improve functional status.

Keeping air passages reasonably clear of secretions is difficult for patients with advanced COPD. Some commonly used methods for mobilizing and removing secretions are the following:

Postural bronchial drainage helps to remove secretions from the airways. The patient lies in prescribed positions that allow gravity to drain different parts of the lung. This is usually done after inhaling an aerosol. In the basic position, the patient lies on a bed with his chest and head over the side and his forearms resting on the floor.

Chest percussion or lightly clapping the chest and back, may help dislodge tenacious or copious secretions.

Bland aerosols, often made from solutions of salt or bicarbonate of soda, are inhaled. These aerosols thin and loosen secretions. Treatments usually last 10 to 15 minutes and are taken three or four times a day. Bronchodilators are sometimes added to the aerosols.

How Can Patients Cope?

In most instances of COPD, some irreversible damage has already occurred by the time the doctor diagnoses the disease. At this point, the patient and the family should learn as much as possible about the disease and how to live with it. The goals, limitations, and techniques of treatment must be understood by the patient so that symptoms can be kept under control, and daily living can proceed as normally as possible. The doctor and other health care providers are good sources of information about COPD education programs. Patients and family members can usually take part in educational programs offered at a hospital or by a local branch of the American Lung Association.

Patients with COPD can help themselves in many ways. They can:

- Stop smoking. Many programs are available to help smokers quit smoking and to stay off tobacco. Some programs are based on behavior modification techniques; others combine these methods with nicotine gum or nicotine patches as aids to help smokers gradually overcome their dependence on nicotine.
- Avoid work-related exposures to dusts and fumes.
- Avoid air pollution, including cigarette smoke, and curtail physical activities during air pollution alerts.
- Refrain from intimate contact with people who have respiratory infections such as colds or the flu and get a one-time pneumonia vaccination (polyvalent pneumococcal vaccination) and yearly influenza shots.

- Avoid excessive heat, cold, and very high altitudes. (Note: Commercial aircraft cruise at high altitudes and maintain a cabin pressure equal to that of an elevation of 5,000 to 10,000 feet. This can result in hypoxemia for some COPD patients. However, with supplemental oxygen, most COPD patients can travel on commercial airlines.)
- Drink a lot of fluids. This is a good way to keep sputum loose so that it can be brought up by coughing.
- Maintain good nutrition. Usually a high protein diet, taken as many small feedings, is recommended.
- Consider "allergy shots." COPD patients often also have allergies or asthma which complicate COPD.

Of all the avoidable risk factors for COPD, smoking is by far the most significant. Cessation of smoking is the best way to decrease one's risk of developing COPD.

What Types of Research Is the NHLBI Supporting?

The National Heart, Lung, and Blood Institute (NHLBI) is supporting a number of research programs on COPD with the following objectives: 1) to understand its underlying causes, 2) to develop methods of early detection, 3) to improve treatment, and 4) to help patient's and their families better manage the disease.

A study completed several years ago examined the use of oxygen therapy for people who, because of COPD, cannot get enough oxygen into their blood by breathing air. This study has determined that continuous oxygen therapy is more beneficial in extending life than giving oxygen only for 12 hours at night.

Another clinical study compared inhalation therapy using a machine which administers medication to the lungs by intermittent positive pressure breathing (IPPB) with one that delivers the medicine by relying on the patient's own breathing. Although home use of IPPB machines is widespread, previous studies had not been able to show conclusively whether they were effective. In this study, 985 ambulatory patients with COPD were randomly assigned to a treatment group which received a bronchodilator aerosol solution by IPPB, or to a control group which received the medication via a compressor nebulizer. The only difference between the two groups was the positive pressure applied by the IPPB. There was no statistically significant difference between the two treatment groups in numbers of deaths, frequency and length of hospitalization,

change in lung function tests, or in measurements of quality of life. This study suggests that the use of IPPB devices may be unnecessary.

An intervention trial called the Lung Health Study, which began in 1983, has enrolled approximately 6,000 smokers in a study to determine whether an intervention program incorporating smoking cessation and use of inhaled bronchodilators (to keep air passages open) in men and women at high risk of developing COPD can slow the decline in pulmonary function compared to a group receiving usual care. When this study is completed, it should help to determine the extent to which identification and treatment of asymptomatic subjects with early signs of obstructive lung disease would be useful as a preventive health measure. In addition, the study will test some of the current theories about behavior and smoking cessation. Early results indicate that cigarette smoking may be more harmful to women than to men. Furthermore, smoking cessation results in greater weight gain in women than in men, and to avoid weight gain women are less likely to quit smoking and more likely to revert to their smoking habit.

Because familial emphysema results from a deficiency of AAT in affected individuals, efforts to minimize the risk of emphysema have been directed at increasing the circulating AAT levels either by promoting or increasing the production of AAT within the individual, or augmenting it from the outside. One strategy for improving the production of AAT is by pharmacological means (e.g., by administration of drugs such as danazol or estrogen/ progesterone combinations), but this has not been found to be effective. Genetic engineering to correct the defective gene or introduce the functional gene in the deficient individuals is being attempted by several NHLBI-supported investigators. The normal gene for AAT as well as the mutant genes causing AAT deficiency have been characterized and cloned, and animal models carrying the mutant gene have been developed. The resulting animals displayed many of the physical and histologic changes seen in human neonatal AAT deficiency. These studies should provide the groundwork for future development of gene replacement therapy for AAT deficiency.

In the meantime, attention is being focused on AAT augmentation therapy for familial emphysema. Studies have shown that intravenous infusion of AAT fractionated from blood is safe and biochemically effective, that is, the needed blood levels of AAT can be maintained by the continued administration of AAT at appropriate intervals.

Because of the practical and fiscal limitations to mounting a clinical trial for establishing the clinical efficacy of AAT augmentation therapy for

emphysema, the NHLBI sponsored a national registry of patients with AAT deficiency to assess the natural history of severe AAT deficiency and to examine whether the disease course is altered by the augmentation therapy. This program is enrolling, at various medical centers both in the U.S. and Europe, at least 1,000 adult patients with AAT deficiency satisfying certain other eligibility criteria. The patients will be followed for 3 to 5 years (chest x rays, lung function, blood and urine analysis, etc.) at one of 37 participating clinical centers. The evaluation of the data and the release of the conclusions are expected by early 1995.

Methods to treat emphysema before it becomes disabling remain an important research objective of programs supported by NHLBI. Since it is believed that either excess protease (elastase), or too little useful antiprotease, can lead to development of the disease, scientists have also been attempting to use other approaches to develop animal models which will mimic the human condition of inherited alpha-l-protease inhibitor deficiency and using such models to test if natural or synthetic antiproteases can be used safely to prevent development of emphysema-like lesions in these animals. If found safe and effective in animals, these agents can be tried in humans.

For More Information

Additional information on COPD can be obtained from:

National Heart, Lung, and Blood Institute
Division of Lung Diseases
Two Rockledge Center
6701 Rockledge Drive
MSC 7952
Suite 10018
Bethesda, MD 20892-7952

More Guideline Sources

The guideline above on chronic obstructive pulmonary disease is only one example of the kind of material that you can find online and free of charge. The remainder of this chapter will direct you to other sources which either publish or can help you find additional guidelines on topics related to chronic obstructive pulmonary disease. Many of the guidelines listed below address topics that may be of particular relevance to your specific situation

or of special interest to only some patients with chronic obstructive pulmonary disease. Due to space limitations these sources are listed in a concise manner. Do not hesitate to consult the following sources by either using the Internet hyperlink provided, or, in cases where the contact information is provided, contacting the publisher or author directly.

Topic Pages: MEDLINEplus

For patients wishing to go beyond guidelines published by specific Institutes of the NIH, the National Library of Medicine has created a vast and patient-oriented healthcare information portal called MEDLINEplus. Within this Internet-based system are "health topic pages." You can think of a health topic page as a guide to patient guides. To access this system, log on to **http://www.nlm.nih.gov/medlineplus/healthtopics.html**.

If you do not find topics of interest when browsing health topic pages, then you can choose to use the advanced search utility of MEDLINEplus at **http://www.nlm.nih.gov/medlineplus/advancedsearch.html**. This utility is similar to the NIH Search Utility, with the exception that it only includes material linked within the MEDLINEplus system (mostly patient-oriented information). It also has the disadvantage of generating unstructured results. We recommend, therefore, that you use this method only if you have a very targeted search.

The Combined Health Information Database (CHID)

CHID Online is a reference tool that maintains a database directory of thousands of journal articles and patient education guidelines on chronic obstructive pulmonary disease and related conditions. One of the advantages of CHID over other sources is that it offers summaries that describe the guidelines available, including contact information and pricing. CHID's general Web site is **http://chid.nih.gov/**. To search this database, go to **http://chid.nih.gov/detail/detail.html**. In particular, you can use the advanced search options to look up pamphlets, reports, brochures, and information kits. The following was recently posted in this archive:

- **Year 2000 dietary guidelines: the case for fruits and vegetables first**

  Source: Produce for Better Health Foundation.

Contact: Produce for Better Health Foundation, 5301 Limestone Road, Suite 101, Wilmington, DE 19808-1249. (302) 235-ADAY.

Summary: This booklet reviews the ever-growing evidence of the unique health benefits derived from eating fruits and vegetables. Researchers continue to find a strong link between increased fruit and vegetable consumption and the decreased risk of chronic diseases such as cancer, heart disease, and stroke. Evidence is also emerging about the positive role of fruit and vegetable consumption and a reduced incidence of cataracts, diverticulosis, hypertension, and chronic obstructive pulmonary disease. This booklet also discusses the important role of fruits and vegetables in weight management and the control of diabetes.

The National Guideline Clearinghouse™

The National Guideline Clearinghouse™ offers hundreds of evidence-based clinical practice guidelines published in the United States and other countries. You can search their site located at **http://www.guideline.gov** by using the keyword "chronic obstructive pulmonary disease" or synonyms. The following was recently posted:

- **Evidence base for management of acute exacerbations of chronic obstructive pulmonary disease.**

  Source: American College of Chest Physicians/American College of Physicians-American Society of Internal Medicine.; 2001 April 3; 5 pages

  http://www.guideline.gov/FRAMESETS/guideline_fs.asp?guideline=001988&sSearch_string=chronic+obstructive+pulmonary+disease

- **Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease.**

  Source: National Heart, Lung, and Blood Institute (U.S.)/World Health Organization.; 2001; Various pagings

  http://www.guideline.gov/FRAMESETS/guideline_fs.asp?guideline=002005&sSearch_string=chronic+obstructive+pulmonary+disease

- **VHA/DOD clinical practice guideline for the management of chronic obstructive pulmonary disease.**

  Source: Department of Defense/Veterans Health Administration.; 1999 August; Various pagings

  http://www.guideline.gov/FRAMESETS/guideline_fs.asp?guideline=001810&sSearch_string=chronic+obstructive+pulmonary+disease

Healthfinder™

Healthfinder™ is an additional source sponsored by the U.S. Department of Health and Human Services which offers links to hundreds of other sites that contain healthcare information. This Web site is located at **http;//www.healthfinder.gov**. Again, keyword searches can be used to find guidelines. The following was recently found in this database:

- **Lung Diseases in Minorities: Chronic Obstructive Pulmonary Disease: Emphysema and Chronic Bronchitis**

  Summary: This article discusses how this chronic lung disorder affects black Americans and steps for prevention and risk reduction.

  Source: American Lung Association

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=2471

- **Recognizing Signs and Symptoms of Chronic Obstructive Pulmonary Disease (COPD)**

  Summary: Because early treatment is most effective for COPD, it is important to be able to identify symptoms and changes in symptoms. This online patient education guide is designed to assist you.

  Source: National Jewish Medical and Research Center

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=2457

The NIH Search Utility

After browsing the references listed at the beginning of this chapter, you may want to explore the NIH Search Utility. This allows you to search for documents on over 100 selected Web sites that comprise the NIH-WEB-SPACE. Each of these servers is "crawled" and indexed on an ongoing basis. Your search will produce a list of various documents, all of which will relate

in some way to chronic obstructive pulmonary disease. The drawbacks of this approach are that the information is not organized by theme and that the references are often a mix of information for professionals and patients. Nevertheless, a large number of the listed Web sites provide useful background information. We can only recommend this route, therefore, for relatively rare or specific disorders, or when using highly targeted searches. To use the NIH search utility, visit the following Web page: **http://search.nih.gov/index.html**.

Additional Web Sources

A number of Web sites that often link to government sites are available to the public. These can also point you in the direction of essential information. The following is a representative sample:

- AOL: **http://search.aol.com/cat.adp?id=168&layer=&from=subcats**
- drkoop.com®: **http://www.drkoop.com/conditions/ency/index.html**
- Family Village: **http://www.familyvillage.wisc.edu/specific.htm**
- Google: **http://directory.google.com/Top/Health/Conditions_and_Diseases/**
- Med Help International: **http://www.medhelp.org/HealthTopics/A.html**
- Open Directory Project: **http://dmoz.org/Health/Conditions_and_Diseases/**
- Yahoo.com: **http://dir.yahoo.com/Health/Diseases_and_Conditions/**
- WebMD®Health: **http://my.webmd.com/health_topics**

Vocabulary Builder

The material in this chapter may have contained a number of unfamiliar words. The following Vocabulary Builder introduces you to terms used in this chapter that have not been covered in the previous chapter:

Abdomen: That portion of the body that lies between the thorax and the pelvis. [NIH]

Aerosol: A solution of a drug which can be atomized into a fine mist for inhalation therapy. [EU]

Airways: Tubes that carry air into and out of the lungs. [NIH]

Albuterol: A racemic mixture with a 1:1 ratio of the r-isomer, levalbuterol, and s-albuterol. It is a short-acting beta2-adrenergic agonist with its main clinical use in ASTHMA. [NIH]

Alveoli: Tiny sac-like air spaces in the lungs where transfer of carbon dioxide from blood into the lungs and oxygen from air into blood takes place. [NIH]

Ampicillin: Semi-synthetic derivative of penicillin that functions as an orally active broad-spectrum antibiotic. [NIH]

Ankle: That part of the lower limb directly above the foot. [NIH]

Antibiotic: A drug that kills or inhibits the growth of bacteria. [NIH]

Arteries: The vessels carrying blood away from the heart. [NIH]

Asymptomatic: Showing or causing no symptoms. [EU]

Atropine: A toxic alkaloid, originally from Atropa belladonna, but found in other plants, mainly Solanaceae. [NIH]

Beclomethasone: An anti-inflammatory, synthetic glucocorticoid. It is used topically as an anti-inflammatory agent and in aerosol form for the treatment of asthma. [NIH]

Bronchial: Pertaining to one or more bronchi. [EU]

Bronchiole: The smaller airways of the lungs. [NIH]

Bronchitis: Inflammation of one or more bronchi. [EU]

Bronchodilator: A drug that relaxes the smooth muscles in the constricted airway. [NIH]

Cataract: An opacity, partial or complete, of one or both eyes, on or in the lens or capsule, especially an opacity impairing vision or causing blindness. The many kinds of cataract are classified by their morphology (size, shape, location) or etiology (cause and time of occurrence). [EU]

Cell: Basic subunit of every living organism; the simplest unit that can exist as an independent living system. [NIH]

Cerebrovascular: Pertaining to the blood vessels of the cerebrum, or brain. [EU]

Chronic: Of long duration; frequently recurring. [NIH]

Codeine: An opioid analgesic related to morphine but with less potent analgesic properties and mild sedative effects. It also acts centrally to suppress cough. [NIH]

Collapse: 1. a state of extreme prostration and depression, with failure of circulation. 2. abnormal falling in of the walls of any part of organ. [EU]

Constrict: Tighten; narrow. [NIH]

Contraceptive: An agent that diminishes the likelihood of or prevents

conception. [EU]

Coronary: Encircling in the manner of a crown; a term applied to vessels; nerves, ligaments, etc. The term usually denotes the arteries that supply the heart muscle and, by extension, a pathologic involvement of them. [EU]

Corticosteroids: Drugs that mimic the action of a group of hormones produced by adrenal glands; they are anti-inflammatory and act as bronchodilators. [NIH]

Cyanosis: Bluish color of the skin due to insufficient oxygen in the blood. [NIH]

Danazol: A synthetic steroid with antigonadotropic and anti-estrogenic activities that acts as an anterior pituitary suppressant by inhibiting the pituitary output of gonadotropins. It possesses some androgenic properties. Danazol has been used in the treatment of endometriosis and some benign breast disorders. [NIH]

Dehydration: The condition that results from excessive loss of body water. Called also anhydration, deaquation and hypohydration. [EU]

Diffusion: The process of becoming diffused, or widely spread; the spontaneous movement of molecules or other particles in solution, owing to their random thermal motion, to reach a uniform concentration throughout the solvent, a process requiring no addition of energy to the system. [EU]

Digitalis: A drug used to increase the force of the heart's contraction and to regulate specific irregularities of heart rhythm. [NIH]

Dyspnea: Shortness of breath; difficult or labored breathing. [NIH]

Efficacy: The extent to which a specific intervention, procedure, regimen, or service produces a beneficial result under ideal conditions. Ideally, the determination of efficacy is based on the results of a randomized control trial. [NIH]

Elastic: Susceptible of resisting and recovering from stretching, compression or distortion applied by a force. [EU]

Elasticity: Resistance and recovery from distortion of shape. [NIH]

Emphysema: Chronic lung disease in which there is permanent destruction of alveoli. [NIH]

Enzyme: Substance, made by living cells, that causes specific chemical changes. [NIH]

Ephedrine: A sympathomimetic drug that stimulates thermogenesis in laboratory animals and humans. Animal studies show that it may reduce fat content and, therefore, body weight by mechanisms that probably involve increased expenditure and reduced food intake. [NIH]

Erythromycin: A bacteriostatic antibiotic substance produced by

Streptomyces erythreus. Erythromycin A is considered its major active component. In sensitive organisms, it inhibits protein synthesis by binding to 50S ribosomal subunits. This binding process inhibits peptidyl transferase activity and interferes with translocation of amino acids during translation and assembly of proteins. [NIH]

Expectorant: 1. promoting the ejection, by spitting, of mucus or other fluids from the lungs and trachea. 2. an agent that promotes the ejection of mucus or exudate from the lungs, bronchi, and trachea; sometimes extended to all remedies that quiet cough (antitussives). [EU]

Heartbeat: One complete contraction of the heart. [NIH]

Heredity: 1. the genetic transmission of a particular quality or trait from parent to offspring. 2. the genetic constitution of an individual. [EU]

Hypertension: High blood pressure (i.e., abnormally high blood pressure tension involving systolic and/or diastolic levels). The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure defines hypertension as a systolic blood pressure of 140 mm Hg or greater, a diastolic blood pressure of 90 mm Hg or greater, or taking hypertensive medication. The cause may be adrenal, benign, essential, Goldblatt's, idiopathic, malignant PATE, portal, postpartum, primary, pulmonary, renal or renovascular. [NIH]

Hypoventilation: A state in which there is a reduced amount of air entering the pulmonary alveoli. [EU]

Hypoxemia: Too little oxygen in the blood. [NIH]

Inflammation: Response of the body tissues to injury; typical signs are swelling, redness, and pain. [NIH]

Influenza: An acute viral infection involving the respiratory tract. It is marked by inflammation of the nasal mucosa, the pharynx, and conjunctiva, and by headache and severe, often generalized, myalgia. [NIH]

Infusion: The therapeutic introduction of a fluid other than blood, as saline solution, solution, into a vein. [EU]

Inhalation: The drawing of air or other substances into the lungs. [EU]

Intermittent: Occurring at separated intervals; having periods of cessation of activity. [EU]

Ipratropium: A muscarinic antagonist structurally related to atropine but often considered safer and more effective for inhalation use. It is used for various bronchial disorders, in rhinitis, and as an antiarrhythmic. [NIH]

Isoproterenol: Isopropyl analog of epinephrine; beta-sympathomimetic that acts on the heart, bronchi, skeletal muscle, alimentary tract, etc. It is used mainly as bronchodilator and heart stimulant. [NIH]

Lesion: Any pathological or traumatic discontinuity of tissue or loss of function of a part. [EU]

Lip: Either of the two fleshy, full-blooded margins of the mouth. [NIH]

Mental: Pertaining to the mind; psychic. 2. (L. mentum chin) pertaining to the chin. [EU]

Meperidine: 1-Methyl-4-phenyl-4-piperidinecarboxylic acid ethyl ester. A narcotic analgesic that can be used for the relief of most types of moderate to severe pain, including postoperative pain and the pain of labor. Prolonged use may lead to dependence of the morphine type; withdrawal symptoms appear more rapidly than with morphine and are of shorter duration. [NIH]

Morphine: The principal alkaloid in opium and the prototype opiate analgesic and narcotic. Morphine has widespread effects in the central nervous system and on smooth muscle. [NIH]

Mucus: A thick fluid produced by the lining of some organs of the body. [NIH]

Neonatal: Pertaining to the first four weeks after birth. [EU]

Nicotine: Nicotine is highly toxic alkaloid. It is the prototypical agonist at nicotinic cholinergic receptors where it dramatically stimulates neurons and ultimately blocks synaptic transmission. Nicotine is also important medically because of its presence in tobacco smoke. [NIH]

Palpitation: The sensation of rapid heartbeats. [NIH]

Parasympathomimetic: 1. producing effects resembling those of stimulation of the parasympathetic nerve supply to a part. 2. an agent that produces effects similar to those produced by stimulation of the parasympathetic nerves. Called also cholinergic. [EU]

Peptic: Pertaining to pepsin or to digestion; related to the action of gastric juices. [EU]

Pneumonia: Inflammation of the lungs. [NIH]

Polyvalent: Having more than one valence. [EU]

Postural: Pertaining to posture or position. [EU]

Potassium: An element that is in the alkali group of metals. It has an atomic symbol K, atomic number 19, and atomic weight 39.10. It is the chief cation in the intracellular fluid of muscle and other cells. Potassium ion is a strong electrolyte and it plays a significant role in the regulation of fluid volume and maintenance of the water-electrolyte balance. [NIH]

Progesterone: Pregn-4-ene-3,20-dione. The principal progestational hormone of the body, secreted by the corpus luteum, adrenal cortex, and placenta. Its chief function is to prepare the uterus for the reception and development of the fertilized ovum. It acts as an antiovulatory agent when

administered on days 5-25 of the menstrual cycle. [NIH]

Propoxyphene: A narcotic analgesic structurally related to methadone. Only the dextro-isomer has an analgesic effect; the levo-isomer appears to exert an antitussive effect. [NIH]

Protease: Proteinase (= any enzyme that catalyses the splitting of interior peptide bonds in a protein). [EU]

Proteins: Polymers of amino acids linked by peptide bonds. The specific sequence of amino acids determines the shape and function of the protein. [NIH]

Pulmonary: Relating to the lungs. [NIH]

Respiratory: Pertaining to respiration. [EU]

Secretion: 1. the process of elaborating a specific product as a result of the activity of a gland; this activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. 2. any substance produced by secretion. [EU]

Sedative: 1. allaying activity and excitement. 2. an agent that allays excitement. [EU]

Sputum: Matter ejected from the lungs, bronchi, and trachea, through the mouth. [EU]

Stroke: Sudden loss of function of part of the brain because of loss of blood flow. Stroke may be caused by a clot (thrombosis) or rupture (hemorrhage) of a blood vessel to the brain. [NIH]

Surgical: Of, pertaining to, or correctable by surgery. [EU]

Sympathomimetic: 1. mimicking the effects of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. 2. an agent that produces effects similar to those of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. Called also adrenergic. [EU]

Synergistic: Acting together; enhancing the effect of another force or agent. [EU]

Terbutaline: A selective beta-2 adrenergic agonist used as a bronchodilator and tocolytic. [NIH]

Tetracycline: An antibiotic originally produced by Streptomyces viridifaciens, but used mostly in synthetic form. It is an inhibitor of aminoacyl-tRNA binding during protein synthesis. [NIH]

Tolerance: 1. the ability to endure unusually large doses of a drug or toxin. 2. acquired drug tolerance; a decreasing response to repeated constant doses of a drug or the need for increasing doses to maintain a constant response. [EU]

Transplantation: The grafting of tissues taken from the patient's own body

or from another. [EU]

Ulcer: A local defect, or excavation, of the surface of an organ or tissue; which is produced by the sloughing of inflammatory necrotic tissue. [EU]

Vaccination: The introduction of vaccine into the body for the purpose of inducing immunity. Coined originally to apply to the injection of smallpox vaccine, the term has come to mean any immunizing procedure in which vaccine is injected. [EU]

Vein: Vessel-carrying blood from various parts of the body to the heart. [NIH]

Ventilator: A breathing machine that is used to treat respiratory failure by promoting ventilation; also called a respirator. [NIH]

Ventricle: One of the two pumping chambers of the heart. The right ventricle receives oxygen-poor blood from the right atrium and pumps it to the lungs through the pulmonary artery. The left ventricle receives oxygen-rich blood from the left atrium and pumps it to the body through the aorta. [NIH]

Wheezing: Breathing with a rasp or whistling sound; a sign of airway constriction or obstruction. [NIH]

CHAPTER 2. SEEKING GUIDANCE

Overview

Some patients are comforted by the knowledge that a number of organizations dedicate their resources to helping people with chronic obstructive pulmonary disease. These associations can become invaluable sources of information and advice. Many associations offer aftercare support, financial assistance, and other important services. Furthermore, healthcare research has shown that support groups often help people to better cope with their conditions.[9] In addition to support groups, your physician can be a valuable source of guidance and support. Therefore, finding a physician that can work with your unique situation is a very important aspect of your care.

In this chapter, we direct you to resources that can help you find patient organizations and medical specialists. We begin by describing how to find associations and peer groups that can help you better understand and cope with chronic obstructive pulmonary disease. The chapter ends with a discussion on how to find a doctor that is right for you.

Associations and Chronic Obstructive Pulmonary Disease

As mentioned by the Agency for Healthcare Research and Quality, sometimes the emotional side of an illness can be as taxing as the physical side.[10] You may have fears or feel overwhelmed by your situation. Everyone has different ways of dealing with disease or physical injury. Your attitude, your expectations, and how well you cope with your condition can all

[9] Churches, synagogues, and other houses of worship might also have groups that can offer you the social support you need.
[10] This section has been adapted from http://www.ahcpr.gov/consumer/diaginf5.htm.

influence your well-being. This is true for both minor conditions and serious illnesses. For example, a study on female breast cancer survivors revealed that women who participated in support groups lived longer and experienced better quality of life when compared with women who did not participate. In the support group, women learned coping skills and had the opportunity to share their feelings with other women in the same situation.

In addition to associations or groups that your doctor might recommend, we suggest that you consider the following list (if there is a fee for an association, you may want to check with your insurance provider to find out if the cost will be covered):

- **American College of Chest Physicians**

  Address: American College of Chest Physicians 3300 Dundee Road, Northbrook, IL 60062-2348

  Telephone: (847) 498-1400

  Fax: (847) 498-5460

  Email: foundation@chestnet.org

  Web Site: http://www.chestnet.org

  Background: The American College of Chest Physicians (ACCP) is a medical professional association dedicated to the improvement of cardiopulmonary health and critical care worldwide. The ACCP was founded in 1933 and currently has approximately 16,000 members. The College's mission is to promote the prevention and treatment of diseases of the chest through leadership, education, research, and communication. The ACCP achieves its mission through continuing medical education programs, government relations activities, development of clinical practice guidelines and consensus statements, membership services, professional publications, and philanthropic activities through the ACCP's 'Chest Foundation.' The College's public affairs and government relations activities include initiating, developing, organizing, and implementing policies intended to educate the various branches of the government about the College and its positions on issues including health care reform, antismoking measures, other issues dealing with the prevention of lung and heart disease, and government-sponsored biomedical research. In addition, through its Health and Science Policy Committee, the ACCP is committed to monitoring scientific and clinical developments in the field of cardiopulmonary health and critical care; conducting scientific conferences to discuss the current status of research in the field and make recommendations for future research in the scientific community and appropriate research agencies; and transferring research findings into clinical practice recommendations and identifying

gaps in current clinical knowledge by the development, dissemination, and assessment of clinical practice guidelines and consensus statements. In 1996, the Chest Foundation was established as the philanthropic arm of and adjunct to the ACCP. The Foundation is dedicated to providing resources to advance the prevention and treatment of diseases of the chest. The Chest Foundation's current priorities include smoking prevention and cessation; end-of-life issues; diseases including chronic obstructive pulmonary disease (COPD), tuberculosis, and asthma; research initiatives; and ongoing activities including grants, awards, and honor lectureships. The ACCP's professional publications include 'CHEST-The Cardiopulmonary and Critical Care Journal,' the 'ACCP's Educational Coding Manual,' a quarterly scientific publication entitled 'Pulmonary Perspectives,' a quarterly newsletter entitled 'ChestSoundings,' and the annual 'Membership Directory and Referral Guide.'.

- **American Lung Association of Washington**

  Address: 2625 Third Avenue Seattle, WA, 98121

  Telephone: (206) 441-3277 FAX; (206) 441-5100 Voice(800) 732-9339 Voice

  Background: A non-profit organization, the American Lung Association of Washington leads the fight to prevent lung disease and promote lung health through education, community service, research and advocacy. Our four offices around the state focus on reducing tobacco use, especially among young people; preventing indoor and outdoor air pollution; funding research to find the causes of and cures for lung disease; and providing education,information, and services to help people with asthma or other lung disease and their families.

  Relevant area(s) of interest: adolescents and young adults; air pollution; all ages; asthma; bronchitis; consumer resources; emphysema; funding sources; indoor air quality; infants; lung cancer; lung disease; minority health; pneumonia; respiratory diseases; sarcoidosis; tobacco; toll-free information services; tuberculosis

- **Baylor College of Medicine Department of Microbiology and Immunology Respiratory Pathogens Research Unit**

  Address: Houston, TX 77030 One Baylor Plaza, Room 205 A

  Telephone: (713) 798-4474

  Web Site: http://www.bcm.tmc.edu/medicine/content_08g.html

  Background: Sponsored by the National Institute of Allergy and Infectious Diseases, the Respiratory Pathogens Research Unit conducts

research in acute respiratory illnesses of man. It also evaluates experimental vaccines. Interests of the Unit include influenza, pneumonia, chronic bronchitis, influenza virus, respiratory syncytial virus, other respiratory viruses, S. pneumoniae, non-typeable H. influenza in humans, morbidity, mortality, immunology, epidemiology, prevention, pathogenesis, and surveillance; vaccine evaluations for viral and bacterial infections in humans. The Unit has a collection of research data results.

Relevant area(s) of interest: Epidemiology; Influenza; Vaccines

- **National Institute of Environmental Health Sciences**

  Address: P.O. Box 12233 Research Triangle Park, NC 27709

  Telephone: (919) 541-4395

  Web Site: http://www.niehs.nih.gov

  Background: The National Institute of Environmental Health Sciences (NIEHS) conducts biomedical research on the human health effects of environmental agents and chemicals and in the prevention of and intervention in environmentally related diseases, such as asthma, bronchitis, cancer, and lead poisoning. An information clearinghouse provides information to students and the public on the health effects of lead, radon, chemicals, elecro-magnetic fields, and other environmental factors. Information may be obtained at the consumer information number. Human health and human disease result from three interactive elements: environmental factors, individual susceptibility and age. The mission of NIEHS is to reduce the burden of human illness and dysfunction from environmental causes by understanding each of these elements and how they interrelate. The NIEHS achieves its mission through multidisciplinary biomedical research programs, prevention and intervention efforts, and communication strategies that encompass training, education, technology transfer, and community outreach. niehs publishes the journal Environmental Health Perspectives. Its supplements provide in-depth surveys of scientific areas within the environmental health sciences. In addition to publications, NIEHS provides consumers with referrals and reference information and sponsors conferences and training seminars.

  Relevant area(s) of interest: Chemicals; Community outreach; Environmental health; Technology transfer

- **National Jewish Medical and Research Center**

  Address: 1400 Jackson St. Denver, CO 80206

Telephone: (303) 388-4461; (800) 222-5864 (Toll-free)

Email: lungline@njc.org

Web Site: http://www.nationaljewish.org

Background: The National Jewish Medical and Research Center, formerly the National Jewish Center for Immunology and Respiratory Medicine, was founded around the turn of the century to care for the victims of tuberculosis. The Hospital provided treatment for victims, while the Denver Sheltering Home (the Center's forerunner) provided care for children of victims. The two institutions merged in 1978 and now constitute the largest U.S. medical center devoted to the study and treatment of chronic respiratory diseases and immune system disorders, including asthma, emphysema, tuberculosis, chronic bronchitis, interstitial lung disease, juvenile rheumatoid arthritis, and lupus. Research activities cover an ever-broadening range of both basic and applied science, from examination of basic life processes to in-depth clinical studies of particular diseases. The Center provides an information service called LUNGLINE, (800)222-LUNG, for individuals with questions about lung diseases and allergies. Beyond the areas of study and treatment listed, LUNGLINE offers information on pneumonia, sarcoidosis, smoking, asbestosis, cystic fibrosis, occupational lung diseases, and other topics. Professional staff publish scientific papers and participate in seminars and conferences. In addition, the Center conducts a formal medical and research fellowship program to train young physicians and researchers in the latest methods of investigating and controlling these illnesses.

Relevant area(s) of interest: Asthma; Chronic obstructive lung disease; Cystic fibrosis; Emphysema; Environmental irritants; Immunology; Lung diseases; Pulmonary fibrosis; Rheumatoid diseases; Sarcoidosis; Smoking; Tuberculosis

Finding More Associations

There are a number of directories that list additional medical associations that you may find useful. While not all of these directories will provide different information than what is listed above, by consulting all of them, you will have nearly exhausted all sources for patient associations.

The National Health Information Center (NHIC)

The National Health Information Center (NHIC) offers a free referral service to help people find organizations that provide information about chronic obstructive pulmonary disease. For more information, see the NHIC's Web site at **http://www.health.gov/NHIC/** or contact an information specialist by calling 1-800-336-4797.

DIRLINE

A comprehensive source of information on associations is the DIRLINE database maintained by the National Library of Medicine. The database comprises some 10,000 records of organizations, research centers, and government institutes and associations which primarily focus on health and biomedicine. DIRLINE is available via the Internet at the following Web site: **http://dirline.nlm.nih.gov/**. Simply type in "chronic obstructive pulmonary disease" (or a synonym) or the name of a topic, and the site will list information contained in the database on all relevant organizations.

The Combined Health Information Database

Another comprehensive source of information on healthcare associations is the Combined Health Information Database. Using the "Detailed Search" option, you will need to limit your search to "Organizations" and "chronic obstructive pulmonary disease". Type the following hyperlink into your Web browser: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For publication date, select "All Years." Then, select your preferred language and the format option "Organization Resource Sheet." By making these selections and typing in "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box, you will only receive results on organizations dealing with chronic obstructive pulmonary disease. You should check back periodically with this database since it is updated every 3 months.

The National Organization for Rare Disorders, Inc.

The National Organization for Rare Disorders, Inc. has prepared a Web site that provides, at no charge, lists of associations organized by specific diseases. You can access this database at the following Web site:

http://www.rarediseases.org/cgi-bin/nord/searchpage. Select the option called "Organizational Database (ODB)" and type "chronic obstructive pulmonary disease" (or a synonym) in the search box.

Online Support Groups

In addition to support groups, commercial Internet service providers offer forums and chat rooms for people with different illnesses and conditions. WebMD®, for example, offers such a service at their Web site: **http://boards.webmd.com/roundtable**. These online self-help communities can help you connect with a network of people whose concerns are similar to yours. Online support groups are places where people can talk informally. If you read about a novel approach, consult with your doctor or other healthcare providers, as the treatments or discoveries you hear about may not be scientifically proven to be safe and effective. The following Internet links may be of particular interest:

- **Chronic Lung Disease Forum**
  http://www.Cheshiremed.com/programs/pulrehab/forum/cldforum.html

- **COPD-Support, Inc**
  http://copd-support.com/

- **Olivija's Place**
  http://www.olivija.com/lungs/

Finding Doctors

One of the most important aspects of your treatment will be the relationship between you and your doctor or specialist. All patients with chronic obstructive pulmonary disease must go through the process of selecting a physician. While this process will vary from person to person, the Agency for Healthcare Research and Quality makes a number of suggestions, including the following:[11]

- If you are in a managed care plan, check the plan's list of doctors first.
- Ask doctors or other health professionals who work with doctors, such as hospital nurses, for referrals.

[11] This section is adapted from the AHRQ: www.ahrq.gov/consumer/qntascii/qntdr.htm.

- Call a hospital's doctor referral service, but keep in mind that these services usually refer you to doctors on staff at that particular hospital. The services do not have information on the quality of care that these doctors provide.
- Some local medical societies offer lists of member doctors. Again, these lists do not have information on the quality of care that these doctors provide.

Additional steps you can take to locate doctors include the following:

- Check with the associations listed earlier in this chapter.
- Information on doctors in some states is available on the Internet at **http://www.docboard.org**. This Web site is run by "Administrators in Medicine," a group of state medical board directors.
- The American Board of Medical Specialties can tell you if your doctor is board certified. "Certified" means that the doctor has completed a training program in a specialty and has passed an exam, or "board," to assess his or her knowledge, skills, and experience to provide quality patient care in that specialty. Primary care doctors may also be certified as specialists. The AMBS Web site is located at **http://www.abms.org/newsearch.asp**.[12] You can also contact the ABMS by phone at 1-866-ASK-ABMS.
- You can call the American Medical Association (AMA) at 800-665-2882 for information on training, specialties, and board certification for many licensed doctors in the United States. This information also can be found in "Physician Select" at the AMA's Web site: **http://www.ama-assn.org/aps/amahg.htm**.

If the previous sources did not meet your needs, you may want to log on to the Web site of the National Organization for Rare Disorders (NORD) at **http://www.rarediseases.org/**. NORD maintains a database of doctors with expertise in various rare diseases. The Metabolic Information Network (MIN), 800-945-2188, also maintains a database of physicians with expertise in various metabolic diseases.

[12] While board certification is a good measure of a doctor's knowledge, it is possible to receive quality care from doctors who are not board certified.

Selecting Your Doctor[13]

When you have compiled a list of prospective doctors, call each of their offices. First, ask if the doctor accepts your health insurance plan and if he or she is taking new patients. If the doctor is not covered by your plan, ask yourself if you are prepared to pay the extra costs. The next step is to schedule a visit with your chosen physician. During the first visit you will have the opportunity to evaluate your doctor and to find out if you feel comfortable with him or her. Ask yourself, did the doctor:

- Give me a chance to ask questions about chronic obstructive pulmonary disease?
- Really listen to my questions?
- Answer in terms I understood?
- Show respect for me?
- Ask me questions?
- Make me feel comfortable?
- Address the health problem(s) I came with?
- Ask me my preferences about different kinds of treatments for chronic obstructive pulmonary disease?
- Spend enough time with me?

Trust your instincts when deciding if the doctor is right for you. But remember, it might take time for the relationship to develop. It takes more than one visit for you and your doctor to get to know each other.

Working with Your Doctor[14]

Research has shown that patients who have good relationships with their doctors tend to be more satisfied with their care and have better results. Here are some tips to help you and your doctor become partners:

- You know important things about your symptoms and your health history. Tell your doctor what you think he or she needs to know.

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[13] This section has been adapted from the AHRQ: www.ahrq.gov/consumer/qntascii/qntdr.htm.
[14] This section has been adapted from the AHRQ: www.ahrq.gov/consumer/qntascii/qntdr.htm.

- It is important to tell your doctor personal information, even if it makes you feel embarrassed or uncomfortable.
- Bring a "health history" list with you (and keep it up to date).
- Always bring any medications you are currently taking with you to the appointment, or you can bring a list of your medications including dosage and frequency information. Talk about any allergies or reactions you have had to your medications.
- Tell your doctor about any natural or alternative medicines you are taking.
- Bring other medical information, such as x-ray films, test results, and medical records.
- Ask questions. If you don't, your doctor will assume that you understood everything that was said.
- Write down your questions before your visit. List the most important ones first to make sure that they are addressed.
- Consider bringing a friend with you to the appointment to help you ask questions. This person can also help you understand and/or remember the answers.
- Ask your doctor to draw pictures if you think that this would help you understand.
- Take notes. Some doctors do not mind if you bring a tape recorder to help you remember things, but always ask first.
- Let your doctor know if you need more time. If there is not time that day, perhaps you can speak to a nurse or physician assistant on staff or schedule a telephone appointment.
- Take information home. Ask for written instructions. Your doctor may also have brochures and audio and videotapes that can help you.
- After leaving the doctor's office, take responsibility for your care. If you have questions, call. If your symptoms get worse or if you have problems with your medication, call. If you had tests and do not hear from your doctor, call for your test results. If your doctor recommended that you have certain tests, schedule an appointment to get them done. If your doctor said you should see an additional specialist, make an appointment.

By following these steps, you will enhance the relationship you will have with your physician.

Broader Health-Related Resources

In addition to the references above, the NIH has set up guidance Web sites that can help patients find healthcare professionals. These include:[15]

- Caregivers:
  http://www.nlm.nih.gov/medlineplus/caregivers.html
- Choosing a Doctor or Healthcare Service:
  http://www.nlm.nih.gov/medlineplus/choosingadoctororhealthcareservice.html
- Hospitals and Health Facilities:
  http://www.nlm.nih.gov/medlineplus/healthfacilities.html

Vocabulary Builder

The following vocabulary builder provides definitions of words used in this chapter that have not been defined in previous chapters:

Cardiopulmonary: Pertaining to the heart and lungs. [EU]

Epidemiological: Relating to, or involving epidemiology. [EU]

Fibrosis: Process by which inflamed tissue becomes scarred. [NIH]

Interstitial: Pertaining to or situated between parts or in the interspaces of a tissue. [EU]

Irritants: Drugs that act locally on cutaneous or mucosal surfaces to produce inflammation; those that cause redness due to hyperemia are rubefacients; those that raise blisters are vesicants and those that penetrate sebaceous glands and cause abscesses are pustulants; tear gases and mustard gases are also irritants. [NIH]

Lupus: A form of cutaneous tuberculosis. It is seen predominantly in women and typically involves the nasal, buccal, and conjunctival mucosa. [NIH]

Microbiology: The study of microorganisms such as fungi, bacteria, algae, archaea, and viruses. [NIH]

Neurology: A medical specialty concerned with the study of the structures, functions, and diseases of the nervous system. [NIH]

Panniculitis: An inflammatory reaction of the subcutaneous fat, which may

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[15] You can access this information at:
http://www.nlm.nih.gov/medlineplus/healthsystem.html.

involve the connective tissue septa between the fat lobes, the septa lobules and vessels, or the fat lobules, characterized by the development of single or multiple cutaneous nodules. [EU]

Pathogen: Any disease-producing microorganism. [EU]

Pathogenesis: The cellular events and reactions that occur in the development of disease. [NIH]

Poisoning: A condition or physical state produced by the ingestion, injection or inhalation of, or exposure to a deleterious agent. [NIH]

Radon: Radon. A naturally radioactive element with atomic symbol Rn, atomic number 86, and atomic weight 222. It is a member of the noble gas family and released during the decay of radium and found in soil. There is a link between exposure to radon and lung cancer. [NIH]

Rheumatoid: Resembling rheumatism. [EU]

Sarcoidosis: An idiopathic systemic inflammatory granulomatous disorder comprised of epithelioid and multinucleated giant cells with little necrosis. It usually invades the lungs with fibrosis and may also involve lymph nodes, skin, liver, spleen, eyes, phalangeal bones, and parotid glands. [NIH]

Tuberculosis: Any of the infectious diseases of man and other animals caused by species of mycobacterium. [NIH]

Vaccine: A suspension of attenuated or killed microorganisms (bacteria, viruses, or rickettsiae), administered for the prevention, amelioration or treatment of infectious diseases. [EU]

Viral: Pertaining to, caused by, or of the nature of virus. [EU]

Viruses: Minute infectious agents whose genomes are composed of DNA or RNA, but not both. They are characterized by a lack of independent metabolism and the inability to replicate outside living host cells. [NIH]

CHAPTER 3. CLINICAL TRIALS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

Very few medical conditions have a single treatment. The basic treatment guidelines that your physician has discussed with you, or those that you have found using the techniques discussed in Chapter 1, may provide you with all that you will require. For some patients, current treatments can be enhanced with new or innovative techniques currently under investigation. In this chapter, we will describe how clinical trials work and show you how to keep informed of trials concerning chronic obstructive pulmonary disease.

What Is a Clinical Trial?[16]

Clinical trials involve the participation of people in medical research. Most medical research begins with studies in test tubes and on animals. Treatments that show promise in these early studies may then be tried with people. The only sure way to find out whether a new treatment is safe, effective, and better than other treatments for chronic obstructive pulmonary disease is to try it on patients in a clinical trial.

[16] The discussion in this chapter has been adapted from the NIH and the NEI: www.nei.nih.gov/netrials/ctivr.htm.

What Kinds of Clinical Trials Are There?

Clinical trials are carried out in three phases:

- **Phase I.** Researchers first conduct Phase I trials with small numbers of patients and healthy volunteers. If the new treatment is a medication, researchers also try to determine how much of it can be given safely.
- **Phase II.** Researchers conduct Phase II trials in small numbers of patients to find out the effect of a new treatment on chronic obstructive pulmonary disease.
- **Phase III.** Finally, researchers conduct Phase III trials to find out how new treatments for chronic obstructive pulmonary disease compare with standard treatments already being used. Phase III trials also help to determine if new treatments have any side effects. These trials--which may involve hundreds, perhaps thousands, of people--can also compare new treatments with no treatment.

How Is a Clinical Trial Conducted?

Various organizations support clinical trials at medical centers, hospitals, universities, and doctors' offices across the United States. The "principal investigator" is the researcher in charge of the study at each facility participating in the clinical trial. Most clinical trial researchers are medical doctors, academic researchers, and specialists. The "clinic coordinator" knows all about how the study works and makes all the arrangements for your visits.

All doctors and researchers who take part in the study on chronic obstructive pulmonary disease carefully follow a detailed treatment plan called a protocol. This plan fully explains how the doctors will treat you in the study. The "protocol" ensures that all patients are treated in the same way, no matter where they receive care.

Clinical trials are controlled. This means that researchers compare the effects of the new treatment with those of the standard treatment. In some cases, when no standard treatment exists, the new treatment is compared with no treatment. Patients who receive the new treatment are in the treatment group. Patients who receive a standard treatment or no treatment are in the "control" group. In some clinical trials, patients in the treatment group get a new medication while those in the control group get a placebo. A placebo is a harmless substance, a "dummy" pill, that has no effect on chronic obstructive pulmonary disease. In other clinical trials, where a new surgery

or device (not a medicine) is being tested, patients in the control group may receive a "sham treatment." This treatment, like a placebo, has no effect on chronic obstructive pulmonary disease and does not harm patients.

Researchers assign patients "randomly" to the treatment or control group. This is like flipping a coin to decide which patients are in each group. If you choose to participate in a clinical trial, you will not know which group you will be appointed to. The chance of any patient getting the new treatment is about 50 percent. You cannot request to receive the new treatment instead of the placebo or sham treatment. Often, you will not know until the study is over whether you have been in the treatment group or the control group. This is called a "masked" study. In some trials, neither doctors nor patients know who is getting which treatment. This is called a "double masked" study. These types of trials help to ensure that the perceptions of the patients or doctors will not affect the study results.

Natural History Studies

Unlike clinical trials in which patient volunteers may receive new treatments, natural history studies provide important information to researchers on how chronic obstructive pulmonary disease develops over time. A natural history study follows patient volunteers to see how factors such as age, sex, race, or family history might make some people more or less at risk for chronic obstructive pulmonary disease. A natural history study may also tell researchers if diet, lifestyle, or occupation affects how a disease or disorder develops and progresses. Results from these studies provide information that helps answer questions such as: How fast will a disease or disorder usually progress? How bad will the condition become? Will treatment be needed?

What Is Expected of Patients in a Clinical Trial?

Not everyone can take part in a clinical trial for a specific disease or disorder. Each study enrolls patients with certain features or eligibility criteria. These criteria may include the type and stage of disease or disorder, as well as, the age and previous treatment history of the patient. You or your doctor can contact the sponsoring organization to find out more about specific clinical trials and their eligibility criteria. If you are interested in joining a clinical trial, your doctor must contact one of the trial's investigators and provide details about your diagnosis and medical history.

If you participate in a clinical trial, you may be required to have a number of medical tests. You may also need to take medications and/or undergo surgery. Depending upon the treatment and the examination procedure, you may be required to receive inpatient hospital care. Or, you may have to return to the medical facility for follow-up examinations. These exams help find out how well the treatment is working. Follow-up studies can take months or years. However, the success of the clinical trial often depends on learning what happens to patients over a long period of time. Only patients who continue to return for follow-up examinations can provide this important long-term information.

Recent Trials on Chronic Obstructive Pulmonary Disease

The National Institutes of Health and other organizations sponsor trials on various diseases and disorders. Because funding for research goes to the medical areas that show promising research opportunities, it is not possible for the NIH or others to sponsor clinical trials for every disease and disorder at all times. The following lists recent trials dedicated to chronic obstructive pulmonary disease.[17] If the trial listed by the NIH is still recruiting, you may be eligible. If it is no longer recruiting or has been completed, then you can contact the sponsors to learn more about the study and, if published, the results. Further information on the trial is available at the Web site indicated. Please note that some trials may no longer be recruiting patients or are otherwise closed. Before contacting sponsors of a clinical trial, consult with your physician who can help you determine if you might benefit from participation.

- **A blinded study comparing the safety and efficacy of a fully human anti-IL8 monoclonal antibody (ABX-IL8) to placebo in patients with chronic bronchitis and COPD**

  Condition(s): Pulmonary Disease, Chronic Obstructive; Bronchitis, Chronic

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Abgenix

  Purpose - Excerpt: To determine if ABX-IL8 will improve shortness of breath.

  Phase(s): Phase II

  Study Type: Interventional

[17] These are listed at www.ClinicalTrials.gov.

Contact(s): California; Abgenix, Fremont, California, 94555, United States; Recruiting; Ami C Knoefler, B.S. 510-284-6350 knoefler_a@abgenix.com

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00035828

- **Cardiopulmonary Effects of Particulate Exposure**

  Condition(s): Respiratory Tract Diseases; Cardiac Diseases; Bronchitis

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Institute of Environmental Health Sciences (NIEHS)

  Purpose - Excerpt: The aim of this study is to assess cardiac rate and respiratory responses and rhythm after workplace exposure to combustion particulates. A repeated measurement study is being performed on acute boilermakers (apprentices and journeymen). A stratified analysis is then done on those with and without chronic bronchitis, after adjustment for relevant covariates.

  Study Type: Observational

  Contact(s): Massachusetts; Harvard School of Public Health, Boston, Massachusetts, 02115, United States; Recruiting; David C Christiani, MD 617-432-1260

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00011310

- **Effectiveness and Cost Impact of a Telecommunications System in COPD**

  Condition(s): Lung Diseases, Obstructive

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Department of Veterans Affairs; Department of Veterans Affairs Health Services Research and Development Service

  Purpose - Excerpt: Chronic obstructive pulmonary disease (COPD) is one of the most common chronic illnesses in the adult population, and accounts for approximately 25,000 discharges from VA hospitals in a calendar year. Interventions that enhance symptom self-monitoring and increase understanding of COPD therapy may reduce the occurrence of COPD-related hospitalizations and other acute health care services. However, such interventions are labor-intensive and expensive, and typically require patients to go to a medical facility on a regular basis. A novel means of providing such interventions is the Telephone-Linked Computer (TLC) system, a computer-based telecommunications system that can monitor, educate, and counsel patients through regular automated conversations in patients? homes. In previous studies, we have demonstrated the applicability of TLC technology in the clinical

monitoring of adults with chronic disease conditions such as hypertension and hypercholesterolemia. The overall goal of this project is to determine whether a TLC system for COPD care (TLC-COPD) leads to a reduction in emergency department (ED) visits and hospitalizations and to improved functional status and quality of life (QOL) in patients with COPD. The following specific objectives will be accomplished: (1) test the hypothesis that the addition of TLC-COPD to usual medical care reduces the use of acute health care services over a one-year follow-up period; (2) test the hypothesis that TLC-COPD use leads to improvements in functional status and QOL; (3) test the hypothesis that the reduction in the cost of care over the one-year follow-up period will exceed the cost of the TLC intervention; and (4) test the hypothesis that the TLC-COPD is cost effective compared with usual care in achieving improvements in functional status and QOL. Hypotheses will be tested by means of a randomized controlled trial involving subjects with COPD who receive care at two Boston-area VA hospitals. Subjects will be assigned to either TLC-COPD or a usual care control group.

Phase(s): Phase III

Study Type: Interventional

Contact(s): Massachusetts; VA Boston Health Care System, Boston, Massachusetts, 02130, United States; Recruiting; David Sparrow, DSc 617-232-9500 6400 sparrow.david@boston.va.gov

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00012805

- **Feasibility of Retinoic Acid Treatment in Emphysema (FORTE)**

  Condition(s): Emphysema; Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To conduct feasibility studies on the use of retinoids in the treatment of emphysema. Specific objectives are to identify optimal patient populations, retinoids, doses, dosing schedules, routes of administration, and outcome measures preparatory to conducting a larger, controlled, clinical trial on the efficacy of retinoid therapy in the management of emphysema.

  Phase(s): Phase II

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000621

- **Genetic Mechanisms of Chronic Obstructive Pulmonary Disease (COPD)**

  Condition(s): Chronic Obstructive Lung Disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Department of Veterans Affairs Medical Research Service

  Purpose - Excerpt: The purpose of this study is to determine whether genetic factors contribute to an individuals risk of developing obstructive lung disease from smoking cigarettes.

  Study Type: Observational

  Contact(s): Massachusetts; VA Boston Healthcare System, Boston, Massachusetts, 02130, United States; Recruiting; Daniel J Gottlieb, M.D. 617-232-9500 4176 Gottlieb.Daniel_J@boston.va.gov; Daniel J. Gottlieb, Principal Investigator

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00018408

- **National Emphysema Treatment Trial (NETT)**

  Condition(s): Emphysema; Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To evaluate the long term efficacy, morbidity and mortality associated with medical therapy with lung volume reduction surgery (LVRS) as compared to medical therapy alone and to define patient selection criteria. The trial, conducted in conjunction with a patient registry, is supported by the NHLBI, the Health Care Financing Administration (HCFA), and the Agency for Health Care Policy and Research (AHCPR).

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000606

- **Randomized Controlled Trial of Exercise Training in Patients with COPD**

  Condition(s): Lung Diseases, Obstructive

  Study Status: This study is currently recruiting patients.

Sponsor(s): Department of Veterans Affairs; Department of Veterans Affairs Health Services Research and Development Service

Purpose - Excerpt: Chronic obstructive pulmonary disease (COPD) is one of the most common chronic illnesses in the adult population, and accounts for approximately 25,000 discharges from VA hospitals in a calendar year. In addition to the burden put on the health care system, COPD is a disabling condition that adversely affects functional status and quality of life (QOL). Several reports have suggested that exercise training programs can reduce the frequency of hospitalization for COPD; however, these reports have important methodologic limitations, and such programs have not been widely implemented in the VA health care system. Although the underlying lung pathology of COPD may be unalterable, physical reconditioning has been clearly demonstrated to improve cardiorespiratory status in COPD patients. These physiologic changes have the potential to substantially improve QOL and reduce functional disability. Moreover, improved cardiorespiratory reserve may decrease the utilization of health care resources during mild to moderate exacerbation of COPD. The overall goal of this project is to determine whether exercise training leads to a reduction in chronic institutionalization, acute hospitalization, and outpatient physician visits and to improved functional status and QOL in patients with COPD. The following specific objectives will be accomplished: (1) test the hypothesis that the addition of exercise training to usual care reduces use of health care services over a one-year follow-up period; and (2) test the hypothesis that exercise training leads to improvements in functional status and QOL. Hypotheses will be tested by means of a randomized controlled trial involving subjects with COPD (aged 50-79 years) who receive care at two Boston area VA hospitals. Subjects randomized to the intervention group will receive an eight-week program of thrice-weekly exercise training sessions. Outcomes will include a standardized QOL questionnaire and objective tests of functional status (6-minute walk and activities of daily living performance).

Phase(s): Phase III

Study Type: Interventional

Contact(s): Massachusetts; VA Boston Health Care System, Boston, Massachusetts, 02130, United States; Recruiting; David Sparrow, DSc 617-232-9500 6400 sparrow.david@boston.va.gov

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00012792

- **Segmental Bronchoalveolar Lavage**

  Condition(s): Asthma; Chronic Obstructive Airway Disease; Healthy; Lung Disease; Pulmonary Fibrosis

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: Bronchoalveolar lavage is a diagnostic and therapeutic procedure conducted by placing a fiberoptic scope into the lung of a patient, and injecting sterile water (saline) into the lung and removing. The sterile water removed contains secretions, cells, and protein from the lower respiratory tract. This sample can be analyzed to provide more information about possible disease processes going on in the lungs. This protocol will be used to perform BAL, bronchial brushing, and bronchial wall biopsy in normal volunteers. The samples collected during the study will be used to examine biochemical processes in the lung that may contribute to lung disease

  Study Type: Observational

  Contact(s): Maryland; National Heart, Lung and Blood Institute (NHLBI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Patient Recruitment and Public Liaison Office 1-800-411-1222 prpl@mail.cc.nih.gov; TTY 1-866-411-1010

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00001618

- **Assessing the Occupation Burden in COPD**

  Condition(s): Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To assess the population burden of occupational exposures in the prevalence and progression of chronic obstructive pulmonary disease (COPD).

  Study Type: Epidemiology

  Contact(s): Blanc, Paul D. San Francisco, California, United States . Study chairs or principal investigators: Blanc, Paul D., Study Chair; University of California San Francisco San Francisco, California, United States

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00006513

- **Chronic Obstructive Pulmonary Disease Gene Localization**

  Condition(s): Lung Diseases; Chronic Obstructive Pulmonary Disease

Study Status: This study is no longer recruiting patients.

Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

Purpose - Excerpt: To localize within the genome a chronic obstructive pulmonary disease susceptibility gene.

Study Type: Epidemiology, Genetic Epidemiology

Contact(s): Hasstedt, Sandra J. Salt Lake City, Utah, United States . Study chairs or principal investigators: Hasstedt, Sandra J., Study Chair; University of Utah Salt Lake City, Utah, United States

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00037739

- **Diet and Chronic Obstructive Pulmonary Disease**

  Condition(s): Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To examine the relationship of specific dietary factors to risk of chronic obstructive pulmonary disease.

  Study Type: Epidemiology

  Contact(s): Camargo, Carlos A. Boston, Massachusetts, United States . Study chairs or principal investigators: Camargo, Carlos A., Study Chair; Brigham and Women's Hospital Boston, Massachusetts, United States

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00006419

- **Effects of Chronic Ozone Exposure on Lung Function**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To determine the effects of chronic ozone exposure on lung function in young men and women.

  Study Type: Epidemiology

  Contact(s): Tager, Ira B. Berkeley, California, United States . Study chairs or principal investigators: Tager, Ira B., Study Chair; University of California, Berkeley Berkeley, California, United States

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00006306

- **Efficacy of Osteopathic Manipulation in Chronic Obstructive Pulmonary Disease**

  Condition(s): Emphysema

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Center for Complementary and Alternative Medicine (NCCAM)

  Purpose - Excerpt: The purpose of this study is to determine if osteopathic manipulative treatment (OMT) is effective for persons with emphysema as a component of their chronic obstructive pulmonary disease.

  Phase(s): Phase II

  Study Type: Interventional

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00034112

- **Epidemiology of Airway Responsiveness**

  Condition(s): Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To prospectively identify factors that influence the rate of decline in pulmonary function and to identify predictors of chronic obstructive lung disease (COLD) and asthma in a population sample of older adults.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005284

- **Genetics of Airway Responsiveness and Lung Function**

  Condition(s): Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To perform a genome-wide search for genes affecting two phenotypes related to asthma and chronic obstructive pulmonary disease (COPD) in a Chinese population.

  Study Type: Epidemiology, Genetic Epidemiology

Contact(s): see Web site below

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005537

- **Honolulu Heart Program**

  Condition(s): Cardiovascular Diseases; Coronary Disease; Cerebrovascular accident; Heart Diseases; Heart Failure, Congestive; Myocardial Infarction; Asthma; Emphysema; Lung Diseases, Obstructive; Aortic aneurysm, abdominal; Bronchitis; Dementia; Hypertension; Chronic Obstructive Pulmonary Disease; Heart Failure

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To investigate coronary heart disease and stroke among American men of Japanese ancestry who were living on the island of Oahu in 1965. Morbidity and mortality surveillance of the original cohort is continuing.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005123

- **Lung Health Study (LHS) I and III**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is no longer recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: In the Lung Health Study I, to determine the effects of Special Care, compared to Usual Care, on rate of decline in pulmonary function in a group of cigarette smokers identified as having mild abnormalities in pulmonary function. In the Lung Health Study III, to determine the long-term effects of smoking cessation and continued smoking, on cardiopulmonary morbidity, mortality, and the rate of decline in the one second forced expiratory volume (FEV1) in men and women with early chronic obstructive lung disease who have been followed prospectively for 12 to 15 years.

  Phase(s): Phase III

  Study Type: Prevention

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000568

- **Alpha1-antitrypsin Deficiency Registry**

  Condition(s): Lung Diseases; Emphysema; Alpha-1 antitrypsin deficiency; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To collect data from the 37 participating clinical centers on patients with alpha1-antitrypsin deficiency, including those who received replacement therapy with an intravenous preparation of alpha1-proteinase inhibitor (A1Pi) concentrate.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005292

- **Clinical Study of Intermittent Positive Pressure Breathing (IPPB)**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To evaluate the efficacy of long-term intermittent positive pressure breathing (IPPB) treatment when used as an adjunct to the overall care of ambulatory outpatients with chronic obstructive pulmonary disease. The evaluation compared the use of IPPB with use of a powered nebulizer.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000565

- **Cost-Effectiveness of Lung Volume Reduction Surgery**

  Condition(s): Chronic Obstructive Pulmonary Disease; Emphysema

  Study Status: This study is completed.

  Sponsor(s): Department of Veterans Affairs; Department of Veterans Affairs Health Services Research and Development Service

  Purpose - Excerpt: Lung volume reduction surgery (LVRS) has been advanced as a therapy to significantly improve quality of life in patients with COPD, but to date no controlled studies have evaluated the impact of LVRS. Evaluate cost-effectiveness of LVRS compared to current

therapy for COPD. This is a case control study in which veterans undergoing LVRS at VA Puget Sound Health Care System (VAPSHCS) are compared to patients with a similar severity of disease at Boise VAMC who are not undergoing LVRS. Changes in health related quality of life are being evaluated using three instruments: the SF-36, the St. George?s Respiratory Questionnaire, and the Quality of Well-Being Scale, the latter to calculate utility associated with different health states. Costs will be determined using utilization data on outpatient visits, medications, oxygen use, inpatient days, radiology tests, laboratory tests, and emergency room visits are being collected for the twelve months before and after surgery. Costs will be calculated according to VA and community standards.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Vermont; VA Medical & Regional Office Center, White River Junction, Vermont, 05009-0001, United States; Hugh F. Huizenga, MD, MPH 802-295-9363 5480 hugh.f.huizenga@dartmouth.edu; Washington; Seattle Medical Center, Seattle, Washington, 98108, United States; Stephan D. Fihn, MD, MPH 206-764-2420 sfihn@u.washington.edu

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00013156

- **Early Risk Predictors For Chronic Pulmonary Disease**

  Condition(s): Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To continue to evaluate risk factors heretofore determined to be important predictors of chronic respiratory symptoms, diagnosis of asthma, and alterations in expected levels of lung function in children and adolescents in a new population of young adult women.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005281

- **Effect of Maternal Smoking On Neonatal Lung Function**

  Condition(s): Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

Purpose - Excerpt: To determine factors, including maternal cigarette smoking and acute respiratory illness, influencing infant lung function at birth and up to five years of age.

Study Type: Epidemiology

Contact(s): see Web site below

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005285

- **Emphysema: Physiologic Effects of Nutritional Support**

  Condition(s): Emphysema; Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To determine if enteral nutrition support (ENS) restores normal body weight and improves muscle strength, exercise performance, sensation of dyspnea, and quality of life in malnourished patients with chronic obstructive pulmonary disease.

  Phase(s): Phase II

  Study Type: Treatment, Supportive Care

  Contact(s): Rogers, Robert M. Pittsburgh, Pennsylvania, United States . Study chairs or principal investigators: Rogers, Robert M., Study Chair; University of Pittsburgh Pittsburgh, Pennsylvania, United States

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000573

- **Epidemiology and Pulmonary Response To Organic Dust Exposure**

  Condition(s): Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To characterize the nature of pulmonary responses to organic dust exposures in order to gain insight into patterns of respiratory disease in agricultural workers.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005288

- **Intervention for Resistant Pregnant Smokers**

  Condition(s): Cardiovascular Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: This 31-month supplement to Sustaining Women's Smoking Cessation Postpartum (Project PANDA) designed, implemented, and evaluated an intensified intervention for pregnant women who were unable to stop smoking with minimal assistance.

  Study Type: Demonstration and Education

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005697

- **Lay-Led Smoking Cessation Approach for Southeast Asian Men**

  Condition(s): Cardiovascular Diseases; Heart Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To develop a scientifically valid and ethnically approved, lay-led smoking cessation intervention for Southeast Asian men and women, i-e., those from Cambodia, Laos, and Vietnam.

  Study Type: Demonstration and Education

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005720

- **Longitudinal Study of Cortisol and Pulmonary Function**

  Condition(s): Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To conduct a longitudinal study of the relationship between the rate of decline of pulmonary function and measurements of cortisol concentration and excretion in a sample of middle-aged and older men and their wives. The study tested the hypothesis that persons whose plasma cortisol concentrations were relatively low, albeit within the normal range, were predisposed to excessively rapid deterioration of pulmonary function during aging.

Study Type: Epidemiology

Contact(s): O'Connor, George T. Boston, Massachusetts, United States . Study chairs or principal investigators: O'Connor, George T., Study Chair; Boston University Boston, Massachusetts, United States

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005370

- **Lung Health Study II**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To determine if participants with chronic obstructive pulmonary disease, who were assigned to inhaled corticosteroids had a lower rate of decline in lung function and lower incidence of respiratory morbidity compared to participants assigned to placebo.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000569

- **Medication Adherence in COPD--A Self-Regulation Study**

  Condition(s): Lung Diseases, Obstructive; Bronchitis; Emphysema; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To test the effectiveness of a self-management program for chronic obstructive disease (COPD) patients. The program to improve adherence could be conducted by nurses or other clinic staff in settings where comprehensive rehabilitation services were not available.

  Study Type: Longitudinal Human Study

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005717

- **Nocturnal Oxygen Therapy**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

Study Status: This study is completed.

Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

Purpose - Excerpt: To compare the efficacy of long-term use of nocturnal oxygen therapy (12 hours) with that of continuous, low-flow oxygen therapy (24 hours) in patients with chronic hypoxic lung disease.

Phase(s): Phase III

Study Type: Treatment

Contact(s): see Web site below

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000564

- **Prospective Evaluation of Airways Reactivity**

  Condition(s): Lung Diseases; Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: From 1981 to 1991, to characterize the role of allergy and airways responsiveness in modifying growth of lung function in children and young adults in a community-based random population, the Childhood Respiratory Study in East Boston. From 1992 to 1997, to examine the relationship of respiratory symptoms and illnesses, cigarette smoking, airways responsiveness, and markers of inflammation to growth and decline in lung function in two well-characterized and investigated community-based populations of children and adults, the Childhood Respiratory Study in East Boston and the Normative Aging Study.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005282

- **Sources of Variability in Peak Expiratory Flow**

  Condition(s): Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To provide information necessary for the development of standards for peak expiratory flow (PEF) test performance in populations studies.

Study Type: Epidemiology

Contact(s): see Web site below

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005382

- **Specialized Center of Research in Occupational and Immunologic Lung Disease**

  Condition(s): Lung Diseases, Obstructive; Asbestosis; Silicosis; Pneumoconiosis; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: The overall objective of the Center was to develop a scientific data base for the control and prevention of acute and chronic lung injury caused by the inhalation of a variety of agents in the workplace and in the environment. There were two epidemiologic studies. Respiratory Effects of Exposures to Irritant Gases: To collect longitudinal lung function and symptom data in chemical manufacturing workers who were exposed to chemical irritants such as ammonia, chlorine, phosgene, isocyanates, sulphur dioxide, nitrous oxide, formaldehyde, organic acids, hydrochloric acid fluorides, other aldehydes, and acid anhydrides. Workers in the Cotton Textile Industry: To detect and quantitate the risk for the development of chronic obstructive airways disease which occurred in workers exposed to cotton dust in textile manufacturing.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005280

- **Statistical Analysis of Vlagtwedde-Vlaardingen Data Set**

  Condition(s): Asthma; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To determine the effects in early adulthood of asthma, increased bronchial responsiveness, markers of allergy and smoking on pulmonary function level and the effects of these same risk factors on subsequent decline in pulmonary function, because these early adult factors presumably profoundly influence the risk for chronic obstructive pulmonary disease.

Study Type: Epidemiology

Contact(s): see Web site below

Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005425

- **Trial of Inspiratory Muscle Rest and Exercise in Chronic Obstructive Lung Disease**

  Condition(s): Lung Diseases; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To test the effectiveness of ventilatory muscle rest (VMR) using home negative pressure ventilation (NPV) in improving exercise performance, alleviating dyspnea, and improving the quality of life in patients with severe chronic obstructive lung disease.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s):. Study chairs or principal investigators: Macklem, Peter, Principal Investigator; McGill University Montreal, Quebec, Canada

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00000571

- **Tucson Epidemiology Study of Chronic Obstructive Lung Diseases**

  Condition(s): Asthma; Bronchitis; Emphysema; Lung Diseases, Obstructive; Chronic Obstructive Pulmonary Disease

  Study Status: This study is completed.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: To determine the natural history, etiology, and interrelationships of emphysema, chronic bronchitis, asthma, and related airways obstructive diseases. Also, to determine the relationship of acute lower respiratory tract illnesses in infants and children to the development of subsequent chronic lung disorders.

  Study Type: Epidemiology

  Contact(s): see Web site below

  Web Site: http://clinicaltrials.gov/ct/gui/c/a1b/show/NCT00005279

Benefits and Risks[18]

What Are the Benefits of Participating in a Clinical Trial?

If you are interested in a clinical trial, it is important to realize that your participation can bring many benefits to you and society at large:

- A new treatment could be more effective than the current treatment for chronic obstructive pulmonary disease. Although only half of the participants in a clinical trial receive the experimental treatment, if the new treatment is proved to be more effective and safer than the current treatment, then those patients who did not receive the new treatment during the clinical trial may be among the first to benefit from it when the study is over.
- If the treatment is effective, then it may improve health or prevent diseases or disorders.
- Clinical trial patients receive the highest quality of medical care. Experts watch them closely during the study and may continue to follow them after the study is over.
- People who take part in trials contribute to scientific discoveries that may help other people with chronic obstructive pulmonary disease. In cases where certain diseases or disorders run in families, your participation may lead to better care or prevention for your family members.

The Informed Consent

Once you agree to take part in a clinical trial, you will be asked to sign an "informed consent." This document explains a clinical trial's risks and benefits, the researcher's expectations of you, and your rights as a patient.

What Are the Risks?

Clinical trials may involve risks as well as benefits. Whether or not a new treatment will work cannot be known ahead of time. There is always a chance that a new treatment may not work better than a standard treatment. There is also the possibility that it may be harmful. The treatment you

[18] This section has been adapted from ClinicalTrials.gov, a service of the National Institutes of Health: http://www.clinicaltrials.gov/ct/gui/c/a1r/info/whatis?JServSessionIdzone_ct=9jmun6f291.

receive may cause side effects that are serious enough to require medical attention.

How Is Patient Safety Protected?

Clinical trials can raise fears of the unknown. Understanding the safeguards that protect patients can ease some of these fears. Before a clinical trial begins, researchers must get approval from their hospital's Institutional Review Board (IRB), an advisory group that makes sure a clinical trial is designed to protect patient safety. During a clinical trial, doctors will closely watch you to see if the treatment is working and if you are experiencing any side effects. All the results are carefully recorded and reviewed. In many cases, experts from the Data and Safety Monitoring Committee carefully monitor each clinical trial and can recommend that a study be stopped at any time. You will only be asked to take part in a clinical trial as a volunteer giving informed consent.

What Are a Patient's Rights in a Clinical Trial?

If you are eligible for a clinical trial, you will be given information to help you decide whether or not you want to participate. As a patient, you have the right to:

- Information on all known risks and benefits of the treatments in the study.
- Know how the researchers plan to carry out the study, for how long, and where.
- Know what is expected of you.
- Know any costs involved for you or your insurance provider.
- Know before any of your medical or personal information is shared with other researchers involved in the clinical trial.
- Talk openly with doctors and ask any questions.

After you join a clinical trial, you have the right to:

- Leave the study at any time. Participation is strictly voluntary. However, you should not enroll if you do not plan to complete the study.
- Receive any new information about the new treatment.
- Continue to ask questions and get answers.

- Maintain your privacy. Your name will not appear in any reports based on the study.
- Know whether you participated in the treatment group or the control group (once the study has been completed).

What about Costs?

In some clinical trials, the research facility pays for treatment costs and other associated expenses. You or your insurance provider may have to pay for costs that are considered standard care. These things may include inpatient hospital care, laboratory and other tests, and medical procedures. You also may need to pay for travel between your home and the clinic. You should find out about costs before committing to participation in the trial. If you have health insurance, find out exactly what it will cover. If you don't have health insurance, or if your insurance company will not cover your costs, talk to the clinic staff about other options for covering the cost of your care.

What Questions Should You Ask before Deciding to Join a Trial?

Questions you should ask when thinking about joining a clinical trial include the following:

- What is the purpose of the clinical trial?
- What are the standard treatments for chronic obstructive pulmonary disease? Why do researchers think the new treatment may be better? What is likely to happen to me with or without the new treatment?
- What tests and treatments will I need? Will I need surgery? Medication? Hospitalization?
- How long will the treatment last? How often will I have to come back for follow-up exams?
- What are the treatment's possible benefits to my condition? What are the short- and long-term risks? What are the possible side effects?
- Will the treatment be uncomfortable? Will it make me feel sick? If so, for how long?
- How will my health be monitored?
- Where will I need to go for the clinical trial? How will I get there?
- How much will it cost to be in the study? What costs are covered by the study? How much will my health insurance cover?

- Will I be able to see my own doctor? Who will be in charge of my care?
- Will taking part in the study affect my daily life? Do I have time to participate?
- How do I feel about taking part in a clinical trial? Are there family members or friends who may benefit from my contributions to new medical knowledge?

Keeping Current on Clinical Trials

Various government agencies maintain databases on trials. The U.S. National Institutes of Health, through the National Library of Medicine, has developed ClinicalTrials.gov to provide patients, family members, and physicians with current information about clinical research across the broadest number of diseases and conditions.

The site was launched in February 2000 and currently contains approximately 5,700 clinical studies in over 59,000 locations worldwide, with most studies being conducted in the United States. ClinicalTrials.gov receives about 2 million hits per month and hosts approximately 5,400 visitors daily. To access this database, simply go to their Web site (**www.clinicaltrials.gov**) and search by "chronic obstructive pulmonary disease" (or synonyms).

While ClinicalTrials.gov is the most comprehensive listing of NIH-supported clinical trials available, not all trials are in the database. The database is updated regularly, so clinical trials are continually being added. The following is a list of specialty databases affiliated with the National Institutes of Health that offer additional information on trials:

- For clinical studies at the Warren Grant Magnuson Clinical Center located in Bethesda, Maryland, visit their Web site: **http://clinicalstudies.info.nih.gov/**
- For clinical studies conducted at the Bayview Campus in Baltimore, Maryland, visit their Web site: **http://www.jhbmc.jhu.edu/studies/index.html**
- For heart, lung and blood trials, visit the Web page of the National Heart, Lung and Blood Institute: **http://www.nhlbi.nih.gov/studies/index.htm**

General References

The following references describe clinical trials and experimental medical research. They have been selected to ensure that they are likely to be available from your local or online bookseller or university medical library. These references are usually written for healthcare professionals, so you may consider consulting with a librarian or bookseller who might recommend a particular reference. The following includes some of the most readily available references (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **A Guide to Patient Recruitment : Today's Best Practices & Proven Strategies** by Diana L. Anderson; Paperback - 350 pages (2001), CenterWatch, Inc.; ISBN: 1930624115; **http://www.amazon.com/exec/obidos/ASIN/1930624115/icongroupinterna**
- **A Step-By-Step Guide to Clinical Trials** by Marilyn Mulay, R.N., M.S., OCN; Spiral-bound - 143 pages Spiral edition (2001), Jones & Bartlett Pub; ISBN: 0763715697; **http://www.amazon.com/exec/obidos/ASIN/0763715697/icongroupinterna**
- **The CenterWatch Directory of Drugs in Clinical Trials** by CenterWatch; Paperback - 656 pages (2000), CenterWatch, Inc.; ISBN: 0967302935; **http://www.amazon.com/exec/obidos/ASIN/0967302935/icongroupinterna**
- **The Complete Guide to Informed Consent in Clinical Trials** by Terry Hartnett (Editor); Paperback - 164 pages (2000), PharmSource Information Services, Inc.; ISBN: 0970153309; **http://www.amazon.com/exec/obidos/ASIN/0970153309/icongroupinterna**
- **Dictionary for Clinical Trials** by Simon Day; Paperback - 228 pages (1999), John Wiley & Sons; ISBN: 0471985961; **http://www.amazon.com/exec/obidos/ASIN/0471985961/icongroupinterna**
- **Extending Medicare Reimbursement in Clinical Trials** by Institute of Medicine Staff (Editor), et al; Paperback 1st edition (2000), National Academy Press; ISBN: 0309068886; **http://www.amazon.com/exec/obidos/ASIN/0309068886/icongroupinterna**
- **Handbook of Clinical Trials** by Marcus Flather (Editor); Paperback (2001), Remedica Pub Ltd; ISBN: 1901346293; **http://www.amazon.com/exec/obidos/ASIN/1901346293/icongroupinterna**

Vocabulary Builder

The following vocabulary builder gives definitions of words used in this chapter that have not been defined in previous chapters:

Aldehydes: Organic compounds containing a carbonyl group in the form -CHO. [NIH]

Allergen: A antigenic substance capable of producing immediate-type hypersensitivity (allergy). [EU]

Ammonia: Ammonia. A colorless alkaline gas. It is formed in the body during decomposition of organic materials during a large number of metabolically important reactions. [NIH]

Anemia: A reduction in the number of circulating erythrocytes or in the quantity of hemoglobin. [NIH]

Aneurysm: A sac formed by the dilatation of the wall of an artery, a vein, or the heart. The chief signs of arterial aneurysm are the formation of a pulsating tumour, and often a bruit (aneurysmal bruit) heard over the swelling. Sometimes there are symptoms from pressure on contiguous parts. [EU]

Anhydrides: Chemical compounds derived from acids by the elimination of a molecule of water. [NIH]

Antibody: An immunoglobulin molecule that has a specific amino acid sequence by virtue of which it interacts only with the antigen that induced its synthesis in cells of the lymphoid series (especially plasma cells), or with antigen closely related to it. Antibodies are classified according to their ode of action as agglutinins, bacteriolysins, haemolysins, opsonins, precipitins, etc. [EU]

Autonomic: Self-controlling; functionally independent. [EU]

Biopsy: The removal and examination, usually microscopic, of tissue from the living body, performed to establish precise diagnosis. [EU]

Cardiac: Pertaining to the heart. [EU]

Cardiorespiratory: Relating to the heart and lungs and their function. [EU]

Cardiovascular: Pertaining to the heart and blood vessels. [EU]

Chlorine: A greenish-yellow, diatomic gas that is a member of the halogen family of elements. It has the atomic symbol Cl, atomic number 17, and atomic weight 70.906. It is a powerful irritant that can cause fatal pulmonary edema. Chlorine is used in manufacturing, as a reagent in synthetic chemistry, for water purification, and in the production of chlorinated lime, which is used in fabric bleaching. [NIH]

Dementia: An acquired organic mental disorder with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. The dysfunction is multifaceted and involves memory, behavior, personality, judgment, attention, spatial relations, language, abstract thought, and other executive functions. The intellectual decline is usually progressive, and initially spares the level of consciousness. [NIH]

EKG: Measurement of electrical activity during heartbeats. [NIH]

Electrocardiogram: Measurement of electrical activity during heartbeats. [NIH]

Heparin: Heparinic acid. A highly acidic mucopolysaccharide formed of equal parts of sulfated D-glucosamine and D-glucuronic acid with sulfaminic bridges. The molecular weight ranges from six to twenty thousand. Heparin occurs in and is obtained from liver, lung, mast cells, etc., of vertebrates. Its function is unknown, but it is used to prevent blood clotting in vivo and vitro, in the form of many different salts. [NIH]

Hypercholesterolemia: Abnormally high levels of cholesterol in the blood. [NIH]

Infarction: 1. the formation of an infarct. 2. an infarct. [EU]

Institutionalization: The caring for individuals in institutions and their adaptation to routines characteristic of the institutional environment, and/or their loss of adaptation to life outside the institution. [NIH]

Isocyanates: Organic compounds that contain the -NCO radical. [NIH]

Lavage: To wash the interior of a body organ. [NIH]

LH: A small glycoprotein hormone secreted by the anterior pituitary. LH plays an important role in controlling ovulation and in controlling secretion of hormones by the ovaries and testes. [NIH]

Localization: 1. the determination of the site or place of any process or lesion. 2. restriction to a circumscribed or limited area. 3. prelocalization. [EU]

Outpatients: Persons who receive ambulatory care at an outpatient department or clinic without room and board being provided. [NIH]

Phenotype: The entire physical, biochemical, and physiological makeup of an individual as determined by his or her genes and by the environment in the broad sense. [NIH]

Physiologic: Normal; not pathologic; characteristic of or conforming to the normal functioning or state of the body or a tissue or organ; physiological. [EU]

Pneumoconiosis: Condition characterized by permanent deposition of substantial amounts of particulate matter in the lungs, usually of occupational or environmental origin, and by the tissue reaction to its presence. [NIH]

Prevalence: The number of events, e.g., instances of a given disease or other condition, in a given population at a designated time. When used without qualification, the term usually refers to the situation at specific point in time (point prevalence). Prevalence is a number, not a rate. [NIH]

Radiology: A specialty concerned with the use of x-ray and other forms of radiant energy in the diagnosis and treatment of disease. [NIH]

Retinoids: Derivatives of vitamin A. Used clinically in the treatment of severe cystic acne, psoriasis, and other disorders of keratinization. Their possible use in the prophylaxis and treatment of cancer is being actively explored. [NIH]

Saline: Salty; of the nature of a salt; containing a salt or salts. [EU]

PART II: ADDITIONAL RESOURCES AND ADVANCED MATERIAL

ABOUT PART II

In Part II, we introduce you to additional resources and advanced research on chronic obstructive pulmonary disease. All too often, patients who conduct their own research are overwhelmed by the difficulty in finding and organizing information. The purpose of the following chapters is to provide you an organized and structured format to help you find additional information resources on chronic obstructive pulmonary disease. In Part II, as in Part I, our objective is not to interpret the latest advances on chronic obstructive pulmonary disease or render an opinion. Rather, our goal is to give you access to original research and to increase your awareness of sources you may not have already considered. In this way, you will come across the advanced materials often referred to in pamphlets, books, or other general works. Once again, some of this material is technical in nature, so consultation with a professional familiar with chronic obstructive pulmonary disease is suggested.

CHAPTER 4. STUDIES ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

Every year, academic studies are published on chronic obstructive pulmonary disease or related conditions. Broadly speaking, there are two types of studies. The first are peer reviewed. Generally, the content of these studies has been reviewed by scientists or physicians. Peer-reviewed studies are typically published in scientific journals and are usually available at medical libraries. The second type of studies is non-peer reviewed. These works include summary articles that do not use or report scientific results. These often appear in the popular press, newsletters, or similar periodicals.

In this chapter, we will show you how to locate peer-reviewed references and studies on chronic obstructive pulmonary disease. We will begin by discussing research that has been summarized and is free to view by the public via the Internet. We then show you how to generate a bibliography on chronic obstructive pulmonary disease and teach you how to keep current on new studies as they are published or undertaken by the scientific community.

The Combined Health Information Database

The Combined Health Information Database summarizes studies across numerous federal agencies. To limit your investigation to research studies and chronic obstructive pulmonary disease, you will need to use the advanced search options. First, go to **http://chid.nih.gov/index.html**. From there, select the "Detailed Search" option (or go directly to that page with the following hyperlink: **http://chid.nih.gov/detail/detail.html**). The trick in

extracting studies is found in the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Journal Article." At the top of the search form, select the number of records you would like to see (we recommend 100) and check the box to display "whole records." We recommend that you type in "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box. Consider using the option "anywhere in record" to make your search as broad as possible. If you want to limit the search to only a particular field, such as the title of the journal, then select this option in the "Search in these fields" drop box. The following is a sample of what you can expect from this type of search:

- **Chronic Obstructive Pulmonary Disease and Cognitive Impairment in the Elderly**

  Source: International Psychogeriatrics. 8(1): 113-125. 1996.

  Summary: This cross-sectional epidemiological study in Lieto, Finland, compared 61 men and 21 women with chronic obstructive pulmonary disease (COPD) with aged- and sex-matched people from the same community to analyze the associations between COPD, cognitive performance, and occurrence of dementia. The cognitive assessment was based on the Mini-Mental State Examination (MMSE), previous clinical documents, and an assessment made by the research nurse after she had interviewed and tested each patient. These three measures revealed no differences between COPD patients and the age-matched people, and MMSE subtest scores did not differ significantly between these two groups of participants. The findings suggest that the relative contribution of COPD to the occurrence of cognitive impairment and dementia in older people may be none or minimal at the community level. 31 references. (AA-M).

- **Comparison of Two Teaching Methods for Self-Care Training for Patients with Chronic Obstructive Pulmonary Disease**

  Source: Patient Counselling and Health Education. 4(2):111-116, 1982.

  Summary: The results of a self-teaching module developed by the Utah Lung Association were compared with those of an established group method for teaching 13 self-care skills to patients with chronic obstructive pulmonary disease (COPD). On referral from their physicians, COPD patients in eight rural locations in Utah were assigned at random to receive training through a group or a self-teaching process. Knowledge gain, skill attainment, skill implementation, and beneficial results were measured at the end of instruction and again 6 months later. The two teaching methods were compared by analyzing the data on 34 patients

matched for the variables of smoking, diagnosis, and severity of disease. No statistically significant differences were observed between the two educational methods on any of the parameters measured. The fact that approximately three out of four patients benefited from either process suggests that the self-teaching module is as effective as group instruction. 6 references.

- **Evaluation of a Community-Based Education Program for Individuals With Chronic Obstructive Pulmonary Disease**

  Source: Journal of Rehabilitation. 46(2):23-27, April-June 1980.

  Summary: Breathing Workshops, the Vermont Lung Association's community-based group education program, was evaluated to assess its success in promoting the development of preventive and restorative health care behaviors in persons with chronic obstructive pulmonary diseases (COPD). The program's six sessions are attended by persons with COPD and their families. Sessions present factual information, demonstrate self-help skills, and offer group discussion opportunities dealing with the psychosocial aspects of living with COPD. In the evaluation, a group attending the program and a control group were administered questionnaires prior to and 4 months after the program. Results indicated that participants increased their understanding and knowledge of COPD, their readiness to seek health care, and their compliance with self-help activities. Some of these changes were not statistically significant when compared with the control group. Changes in control group members included a decrease in their perceived chance for improvement. 16 references.

- **Effect of Cigar Smoking on the Risk of Cardiovascular Disease, Chronic Obstructive Pulmonary Disease, and Cancer in Men**

  Source: New England Journal of Medicine. 340(23): 1773-1780. June 10, 1999.

  Summary: Sales of cigars in the United States have been increasing since 1993. Cigar smoking is a known risk factor for certain cancers and for chronic obstructive pulmonary disease (COPD). However, unlike the relation between cigarette smoking and cardiovascular disease, the association between cigar smoking and cardiovascular disease has not been clearly established. This article reports on a cohort study among 17,774 men, 30 to 85 years of age at base line (from 1964 to 1973) who were enrolled in the Kaiser Permanente health plan and who reported that they had never smoked cigarettes and did not currently smoke a pipe. Those who smoked cigars (1546 men) and those who did not (16,228) were followed from 1971 through the end of 1995 for a first

hospitalization for or death from a major cardiovascular disease or COPD, and through the end of 1996 for a diagnosis of cancer. In multivariate analyses, cigar smokers, as compared with nonsmokers, were at higher risk for coronary heart disease, COPD, and cancers of the upper aerodigestive tract and lung, with evidence of dose response effects. There appeared to be a synergistic relationship between cigar smoking and alcohol consumption with respect to the risk of oropharyngeal cancers and cancers of the upper aerodigestive tract. The authors conclude that, independent of other risk factors, regular cigar smoking can increase the risk of coronary heart disease, COPD, and cancers of the upper aerodigestive tract and lung. 4 tables. 47 references. (AA-M).

- **Acupuncture in Asthma and Pulmonary Disease: An Analysis of Efficacy and Safety**

  Source: Journal of Alternative and Complementary Medicine: Research on Paradigm, Practice and Policy. 2(1): 179-206. 1996.

  Summary: This journal article describes a review of the efficacy and safety of acupuncture in asthma and chronic obstructive pulmonary diseases. It explores the background of acupuncture and traditional Chinese medicine, and parallels with orthodox western medicine. It discusses problems of definition, prevalence of asthma and chronic bronchitis, study design, the problem of a placebo for acupuncture and the effect of the placebo problem on the interpretation of the outcome, models and parameters, and problems with trial design. The author initially reviewed 21 studies and selected 15 (based on design and clinical relevance) for further review. The author examined several aspects of the effect of acupuncture in treating pulmonary disease: bronchial asthma (nine studies), histamine-induced bronchoconstriction/asthma (two studies), methacholine-induced bronchoconstriction/asthma (one study), exercise-induced asthma (two studies), chronic disabling breathlessness (one study), and chronic bronchitis (one study). The author concludes that available evidence supports the efficacy and safety of acupuncture in the treatment of asthma and some pulmonary diseases, but that more research, of higher methodological quality, is needed. This journal article contains 8 tables and 79 references.

- **Use Of Nebulized Glutathione in the Treatment of Emphysema: A Case Report**

  Source: Alternative Medicine Review. 5(5): 429-431. October 2000.

  Summary: This journal article reports the successful treatment of emphysema with nebulized glutathione, a sulfhydryl-containing

tripeptide known to be a major antioxidant in the lung. A male patient, age 95 years, presented with an acute respiratory crisis secondary to emphysema and apparent bronchial infection. Treatment with nebulized glutathione led to a rapid resolution of the crisis, as well as a marked improvement in the chronic course of the disease. This treatment was subsequently used for six patients with emphysema, five of whom reported improved breathing after one application and later asked to continue treatment. The authors found that nebulized glutathione is best administered daily from 4 ml vials. They also report the improvement of respiratory function with nebulized glutathione treatment in cases of chronic bronchitis and asthma. In the authors' opinion, this treatment may be considered an option for acute respiratory crises due to chronic obstructive pulmonary disease. The article has 10 references.

- **Evaluation of a Patient Education Program for Chronic Obstructive Pulmonary Disease**

  Source: Mayo Clinic Proceedings. 52(2):106-111, February 1977.

  Summary: A study involving 65 patients under treatment for chronic obstructive pulmonary disease (COPD) at an emphysema clinic and 20 patients without lung disease was designed to evaluate the efficacy of an audiovisual instructional program. The audiovisual program, which the patient and the patient's spouse attend during the first visit to the clinic, is followed by an examination by a physician and a consultation by a technician that includes instruction concerning use of nebulized medication, breathing exercises, and physical exercise. The program is presented in a soundproof cubicle, utilizing pictures of the bronchial tree, a normal lung, and an emphysematous lung; a model of the lung; a videotape player; and audiotape player; and a clipboard containing an outline of the presentation. A 10-question test was developed to evaluate the level of knowledge about COPD in 65 consecutive clinic patients and 20 control patients. Pre- and postteaching test results indicate that (1) patients completing the program improved their knowledge significantly; (2) variations in the educational levels of the patients had no significant bearing on their performance on the test; and (3) COPD patients and their spouses accepted the program enthusiastically. A copy of the test is appended.

Federally-Funded Research on Chronic Obstructive Pulmonary Disease

The U.S. Government supports a variety of research studies relating to chronic obstructive pulmonary disease and associated conditions. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.[19] CRISP (Computerized Retrieval of Information on Scientific Projects) is a searchable database of federally-funded biomedical research projects conducted at universities, hospitals, and other institutions. Visit the site at **http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket**. You can perform targeted searches by various criteria including geography, date, as well as topics related to chronic obstructive pulmonary disease and related conditions.

For most of the studies, the agencies reporting into CRISP provide summaries or abstracts. As opposed to clinical trial research using patients, many federally-funded studies use animals or simulated models to explore chronic obstructive pulmonary disease and related conditions. In some cases, therefore, it may be difficult to understand how some basic or fundamental research could eventually translate into medical practice. The following sample is typical of the type of information found when searching the CRISP database for chronic obstructive pulmonary disease:

- **Project Title: Chronic Obstructive Pulmonary Disease and Surfactant Proteins**

  Principal Investigator & Institution: Lallos, Christine; ; Pennsylvania State Univ Hershey Med Ctr 500 University Dr Hershey, Pa 17033

  Timing: Fiscal Year 2000; Project Start 5-AUG-1995; Project End 0-NOV-2004

  Summary: Chronic obstructive pulmonary disease (COPD)is a lung disease that is presumed to have many causes. Pulmonary surfactant, a protein found in the lungs is required for normal lung function. This study will investigate whether the genes that determine pulmonary surfactant in patients with COPD are different from those of people who do not have COPD.

  Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

[19] Healthcare projects are funded by the National Institutes of Health (NIH), Substance Abuse and Mental Health Services (SAMHSA), Health Resources and Services Administration (HRSA), Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDCP), Agency for Healthcare Research and Quality (AHRQ), and Office of Assistant Secretary of Health (OASH).

- **Project Title: Chronic Obstructive Pulmonary Disease Gene Localization**

  Principal Investigator & Institution: Hasstedt, Sandra J.; Associate Professor; Human Genetics; University of Utah 110 Park Bldg Salt Lake City, Ut 84112

  Timing: Fiscal Year 2001; Project Start 1-APR-2001; Project End 1-MAR-2003

  Summary: (Applicant's Abstract): Chronic obstructive pulmonary disease (COPD) is a slowly progressive disorder characterized by airways obstruction that lasts for at least several months. The two major causes of COPD are chronic bronchitis and emphysema. Either disorder may occur with or without airways obstruction, but airways obstruction causes impairment of lung function leading to disability and death. COPD is a major health problem in the United States and throughout the world, consistently ranking among the most common causes of death in the United States. Cigarette smoking is the primary environmental factor that increases the risk of COPD, but other environmental factors have also been implicated. However, despite a well-established role, environmental factors alone do not cause COPD. Symptomatic COPD develops in only 10-20 percent of heavy cigarette smokers, probably those with a genetic susceptibility, although common COPD susceptibility genes have yet to be identified. This project proposes a single specific aim: to localize, within the genome, a COPD susceptibility gene. The strategy proposed is to apply statistical linkage analysis to family data. Pulmonary measurements have already been collected on 159 members of 16 pedigrees and evidence supporting a COPD susceptibility gene in these pedigrees has been obtained from segregation analysis. Each of 11,995 genetic markers, which have already been genotyped on pedigree members, will be tested for evidence of linkage to the inferred COPD susceptibility gene. Evidence of linkage to one or more genetic markers will identify genomic locations of COPD susceptibility genes. The high density of markers will allow fine-mapping of the gene. Successful completion of this gene localization project is the necessary prerequisite for a project to identify and characterize a COPD susceptibility gene. Identifying a gene that when mutated increases the risk of COPD may increase understanding of pulmonary function, as well as allowing gene-carriers to be identified and made aware of their susceptibility.

  Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Diet and Chronic Obstructive Pulmonary Disease**

  Principal Investigator & Institution: Camargo, Carlos A.; Director, Emnet Coordinating Center; Brigham and Women's Hospital 75 Francis St Boston, Ma 02115

  Timing: Fiscal Year 2000; Project Start 1-JUL-2000; Project End 0-JUN-2003

  Summary: Chronic obstructive pulmonary disease (COPD) morbidity and mortality are rising, a trend that is unique among the top five causes of death in the USA. Despite the enormity of the problem, there are relatively few epidemiologic studies on COPD risk factors besides cigarette smoking. The proposed study examines the relationship between dietary factors and COPD among participants in the Nurses' Health Study, an ongoing prospective cohort study of 121,700 women, ages 39-64 in 1985. This cohort has been followed by means of biennial questionnaires which inquire about a variety of topics, including dietary intake (using a validated semi-quantitative food frequency questionnaire) and physician diagnosis of COPD. In 1998, all participants with a history of COPD were sent a supplementary questionnaire regarding specifics of COPD diagnosis and related topics. The primary aim of the proposed study will be to examine the relation of dietary factors to risk of newly-diagnosed COPD during 1985-1998. During this time period, there were approximately 2,100 cases of "confirmed" COPD (i.e., physician diagnosis and pulmonary function tests [PFTs] at time of diagnosis or abnormal FEV-1 in past year) and "probable" COPD (i.e., physician diagnosis and recent respiratory symptoms, but PFTsnot known). Preliminary data support the validity of these case definitions, and this will be examined further by reviewing 600 medical records. Likewise, potential under-diagnosis will be examined in a random sample of past and current smokers who have never reported COPD or asthma. The specific dietary hypotheses are that high intakes of antioxidants (e.g., vitamin C, vitamin E, and carotenoids), magnesium, potassium, and n-3 polyunsaturated fatty acids (e.g., fish oils) decrease risk of COPD, whereas high intakes of specific fatty acids (e.g., linoleic acid) increase risk. The cohort size and 13-year follow-up provide greater than 90 percent power to detect a trend across quintiles of dietary intake. In 1998, among approximately 2,400 prevalent cases with diet data, study investigators will address a secondary aim: to determine the relation of dietary factors to COPD severity during 1998-2000. COPD severity will be assessed by self-report of current medications, recent symptoms, activity limitations, and health care utilization (e.g., emergency room or urgent office visits for COPD exacerbations). The rising prevalence of COPD, particularly among women, along with its high societal cost, make COPD prevention an

important public health goal. The proposed study is cost-effective, as it makes use of an existing cohort, and it will provide information that could have direct clinical application to reduce risk of COPD.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Genetic Epidemiology of Early Onset Chronic Obstructive Pulmonary Disease**

  Principal Investigator & Institution: Speizer, Frank E.; Professor; Brigham and Women's Hospital 75 Francis St Boston, Ma 02115

  Timing: Fiscal Year 2000

  Summary: The purpose of this study is to determine the genetic and environmental factors which contribute to the development of early-onset chronic obstructive pulmonary disease (COPD). These factors will be determined by studying individuals with early-onset COPD and their relatives using a series of blood and urine tests.

  Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Quality of Life in Chronic Obstructive Pulmonary Disease**

  Principal Investigator & Institution: Kupferberg, David H.; Medicine; University of California San Diego Gilman & La Jolla Village Dr San Diego, Ca 92093

  Timing: Fiscal Year 2001; Project Start 1-FEB-2002

  Summary: (provided by applicant): Pulmonary rehabilitation has become increasingly well established as a standard of care for patients with chronic lung diseases. Despite the expanding body of scientific evidence demonstrating benefits of such programs, there are several important issues that need further investigation. First, few of the published studies have long-term follow-up beyond six months. The value of pulmonary rehabilitation will be limited unless the effects can be captured and quantified over longer periods of time. Second, the literature does not clearly identify the relationship of physiologic and other symptom or health status measures such as health related quality of life (HRQOL) as outcome measures. Third, the quality-adjusted life year (QALY) concept is becoming important in medical and health services research. However, there are no studies that systematically measure QALYs over time in patients with chronic lung disease. This proposal will provide important information about long-term outcomes in pulmonary rehabilitation, incorporating analyses with HRQOL and QALY data. The first phase of this study will compare and contrast general and disease-specific measures obtained as part of an existing clinical trial of maintenance

therapy after pulmonary rehabilitation in a cohort of patients with chronic obstructive pulmonary disease. The second phase will obtain new data from a 5-7 year follow-up of this same cohort in order to evaluate long-term: (a) changes in HRQOL, spirometry and survival; and (b) predictors of survival and QALYs.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Bioinfomatics Center for Innate Immunity PGA**

  Principal Investigator & Institution: Klimecki, Walter T.; Associate Research Scientist; None; University of Arizona Tucson, Az 85721

  Timing: Fiscal Year 2001; Project Start 0-SEP-2000; Project End 1-JUL-2004

  Summary: PROPOSED PROGRAM (Adapted from the Applicant's Abstract) Asthma, chronic obstructive pulmonary disease (COPD), myocardial infarction (MI), and deep venous thrombosis (DVT) are among the most common diseases of the lung, heart, and blood (ref). The combined health care costs for these conditions approximate 100 billion dollars per year. The goal of the RFA HL- 99-024 Genomic Applications for Heart, Lung, and Blood Research is to develop and expand genomic knowledge within the heart, lung, and blood community and apply that knowledge to disease pathobiology. There have been considerable advances in the understanding of the disease mechanisms for these conditions, and all four are associated with the development of a local inflammatory process. It has become apparent that cells and cytokines that are part of the innate immune system control the early phases of this process of airway, lung, and blood vessel inflammation. The proposal builds on the strengths of three institutions: the Respiratory Sciences Center at the University of Arizona (UA), the Department of Medicine at Brigham & Women's Hospital (BWH), and the Bioinformatics Program at Children's Hospital in Boston (CH), to develop a human variation discovery program on the theme of non-cognate immunity and its broad relationship to heart, lung, and blood diseases. The Arizona/BWH PGA will provide the scientific community with a complete screen of the genetic variants in a subset of innate immunity genes that are most likely to influence the risk for the four diseases noted above. The investigators will also perform a preliminary assessment of the association of these variants with the four phenotypes under study, to guide researchers in these areas away from variants with low likelihood of being relevant and toward those showing promising functional and epidemiologic evidence of influencing any of the four disease phenotypes. To accomplish this broad goal, the investigators have the following specific aims: (1) To screen for polymorphisms 100 genes known to be directly or indirectly related to the innate immune response; (2) To genotype a sample of

individuals of Hispanic, non-Hispanic White, and African American ethnicity for all the newly discovered polymorphisms; (3) To perform association studies and phylogenetic analysis to identify SNPs most likely to be involved in the determination of asthma, chronic obstructive pulmonary disease, myocardial infarction, and deep venous thrombosis; (4) To disseminate the information on ethnic-specific and phenotype-specific distribution of the polymorphisms under study on a web site within 60 days of the completion of the genotyping studies; (5) To develop a training program that will allow individuals with different knowledge and experience to become acquainted with modern genetic techniques in the fields of high throughput sequencing and genotyping; study design, data handling and data analysis in genetic epidemiology; and ethical issues in population genetics.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Conditioning and Sympathetic Outflow in Chronic Obstruct**

  Principal Investigator & Institution: Daley, Joseph C.; Medicine; Pennsylvania State Univ Hershey Med Ctr 500 University Dr Hershey, Pa 17033

  Timing: Fiscal Year 2000; Project Start 1-FEB-2000

  Summary: Exercise capacity is reduced in chronic obstructive pulmonary disease. Although ventilatory capacity is impaired in these patients, this does not seem to be the primary limiting factor in exercise tolerance. The relationship of reduced oxidative capacity in exercising skeletal muscle and the pattern of sympathetic nervous system activation is not well understood. The purpose of the proposed research is to examine sympathetic nervous system activation and muscle work capacity pre and post localized exercise conditioning to determine if responses in the COPD group are a) altered from normals and b) improved with training. Differences will be further explored to evaluate for specific metabolic abnormalities.

  Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Effect of Distractive Auditory Stimuli In COPD Patients**

  Principal Investigator & Institution: Bauldoff, Gerene S.; Acute/Tertiary Care; University of Pittsburgh at Pittsburgh 4200 5Th Ave Pittsburgh, Pa 15260

  Timing: Fiscal Year 2000; Project Start 5-SEP-2000

  Summary: Dyspnea, defined as the unpleasant awareness of labored breathing, is a complex phenomenon, and is the primary disabling

symptom in chronic obstructive pulmonary disease (COPD). As conceptualized by Haas (1993), dyspneic stimuli are first processed preconsciously. If this information reaches conscious perception, it is interpreted as dyspnea, manifested by breathlessness and anxiety. By occupying attention channels that normally carry dyspneagenic information, distractive auditory stimuli (DAS) may reduce the sensation of dyspnea, promote continued use of exercise, and thereby improve functional performance and health-related quality of life (HRQoL). The purpose of this study is to determine the impact of a home-based exercise program which uses DAS on dyspnea (University of California at San Diego Shortness of Breath Questionnaire), anxiety (Spielberger State-Trait Anxiety Inventory), functional performance (6 Minute Walk), and HRQoL (St. George's Respiratory Questionnaire) in patients with COPD. This study will use a prospective, randomized, repeated measures (baseline, 4 weeks and 8 weeks) design. Subjects will be patients with COPD (FEV1 less than 60 percent predicted) who have completed a pulmonary rehabilitation program. The independent variable will be DAS in the form of music vs. no DAS. The dependent variables will be: dyspnea, anxiety, functional performance, and health-related quality of life. Descriptive variables will include: gender, age, educational level, and pulmonary function indices (FVC, FEV1, FEV1/FVC ratio). The proposed intervention is inexpensive, can be easily implemented with minimal training, and may be a motivator of exercise adherence, given its potential to reduce the sensation of dyspnea.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Functonal Genomics Center for Innate Immunity PGA**

  Principal Investigator & Institution: Stampfer, Meir J.; Professor and Chair; Brigham and Women's Hospital 75 Francis St Boston, Ma 02115

  Timing: Fiscal Year 2000; Project Start 0-SEP-2000; Project End 1-JUL-2004

  Summary: PROPOSED PROGRAM (Adapted from the Applicant's Abstract) Asthma, chronic obstructive pulmonary disease (COPD), myocardial infarction (MI), and deep venous thrombosis (DVT) are among the most common diseases of the lung, heart, and blood (ref). The combined health care costs for these conditions approximate 100 billion dollars per year. The goal of the RFA HL- 99-024 Genomic Applications for Heart, Lung, and Blood Research is to develop and expand genomic knowledge within the heart, lung, and blood community and apply that knowledge to disease pathobiology. There have been considerable advances in the understanding of the disease mechanisms for these conditions, and all four are associated with the development of a local inflammatory process. It has become apparent that cells and cytokines

that are part of the innate immune system control the early phases of this process of airway, lung, and blood vessel inflammation. The proposal builds on the strengths of three institutions: the Respiratory Sciences Center at the University of Arizona (UA), the Department of Medicine at Brigham & Women's Hospital (BWH), and the Bioinformatics Program at Children's Hospital in Boston (CH), to develop a human variation discovery program on the theme of non-cognate immunity and its broad relationship to heart, lung, and blood diseases. The Arizona/BWH PGA will provide the scientific community with a complete screen of the genetic variants in a subset of innate immunity genes that are most likely to influence the risk for the four diseases noted above. The investigators will also perform a preliminary assessment of the association of these variants with the four phenotypes under study, to guide researchers in these areas away from variants with low likelihood of being relevant and toward those showing promising functional and epidemiologic evidence of influencing any of the four disease phenotypes. To accomplish this broad goal, the investigators have the following specific aims: (1) To screen for polymorphisms 100 genes known to be directly or indirectly related to the innate immune response; (2) To genotype a sample of individuals of Hispanic, non-Hispanic White, and African American ethnicity for all the newly discovered polymorphisms; (3) To perform association studies and phylogenetic analysis to identify SNPs most likely to be involved in the determination of asthma, chronic obstructive pulmonary disease, myocardial infarction, and deep venous thrombosis; (4) To disseminate the information on ethnic-specific and phenotype-specific distribution of the polymorphisms under study on a web site within 60 days of the completion of the genotyping studies; (5) To develop a training program that will allow individuals with different knowledge and experience to become acquainted with modern genetic techniques in the fields of high throughput sequencing and genotyping; study design, data handling and data analysis in genetic epidemiology; and ethical issues in population genetics.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Genotyping Center for Innate Immunity PGA**

  Principal Investigator & Institution: Kwiatkowski, David J.; Associate Professor; Brigham and Women's Hospital 75 Francis St Boston, Ma 02115

  Timing: Fiscal Year 2000; Project Start 0-SEP-2000; Project End 1-JUL-2004

  Summary: PROPOSED PROGRAM (Adapted from the Applicant's Abstract) Asthma, chronic obstructive pulmonary disease (COPD), myocardial infarction (MI), and deep venous thrombosis (DVT) are among the most common diseases of the lung, heart, and blood (ref). The

combined health care costs for these conditions approximate 100 billion dollars per year. The goal of the RFA HL- 99-024 Genomic Applications for Heart, Lung, and Blood Research is to develop and expand genomic knowledge within the heart, lung, and blood community and apply that knowledge to disease pathobiology. There have been considerable advances in the understanding of the disease mechanisms for these conditions, and all four are associated with the development of a local inflammatory process. It has become apparent that cells and cytokines that are part of the innate immune system control the early phases of this process of airway, lung, and blood vessel inflammation. The proposal builds on the strengths of three institutions: the Respiratory Sciences Center at the University of Arizona (UA), the Department of Medicine at Brigham & Women's Hospital (BWH), and the Bioinformatics Program at Children's Hospital in Boston (CH), to develop a human variation discovery program on the theme of non-cognate immunity and its broad relationship to heart, lung, and blood diseases. The Arizona/BWH PGA will provide the scientific community with a complete screen of the genetic variants in a subset of innate immunity genes that are most likely to influence the risk for the four diseases noted above. The investigators will also perform a preliminary assessment of the association of these variants with the four phenotypes under study, to guide researchers in these areas away from variants with low likelihood of being relevant and toward those showing promising functional and epidemiologic evidence of influencing any of the four disease phenotypes. To accomplish this broad goal, the investigators have the following specific aims: (1) To screen for polymorphisms 100 genes known to be directly or indirectly related to the innate immune response; (2) To genotype a sample of individuals of Hispanic, non-Hispanic White, and African American ethnicity for all the newly discovered polymorphisms; (3) To perform association studies and phylogenetic analysis to identify SNPs most likely to be involved in the determination of asthma, chronic obstructive pulmonary disease, myocardial infarction, and deep venous thrombosis; (4) To disseminate the information on ethnic-specific and phenotype-specific distribution of the polymorphisms under study on a web site within 60 days of the completion of the genotyping studies; (5) To develop a training program that will allow individuals with different knowledge and experience to become acquainted with modern genetic techniques in the fields of high throughput sequencing and genotyping; study design, data handling and data analysis in genetic epidemiology; and ethical issues in population genetics.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Multimedia Education for COPD Patients**

  Principal Investigator & Institution: Feld, Steve; ; Rvision Corporation 5025 Lowell Blvd, #14 Denver, Co 80221

  Timing: Fiscal Year 2000; Project Start 0-SEP-1996; Project End 1-AUG-2002

  Summary: In Phase I of this SBIR research project, RVision demonstrated the ability to design, videotape, and study the efficacy of customized education and exercise tapes for Chronic Obstructive Pulmonary Disease (COPD) patients. A library of 30 segments was produced and software developed that allows clinicians to create individualized videos for patients to use at home. In a pilot study, the customized tapes were evaluated with 22 COPD patients. The study found tape patients showed improvement in their fatigue level and leisure activities. The study also found that customized videotapes were capable of producing actual behavioral changes including an improved ability to perform prescribed exercises correctly. Perceptually, 90 percent of tape recipients rated the tape either "good" or "excellent," 65 percent stated the tape helped them "a lot" and another 25 percent stated it helped "somewhat." 80 percent of tape recipients stated that they would "strongly recommend" the tape to someone else with COPD. In Phase II, RVision will produce a comprehensive library of customizable video exercise and education segments for COPD patients. In addition, RVision will incorporate an assessment of readiness for change in order to "tailor" messages to the individual. Phase II will conclude with a randomized trial of COPD patients to assess the efficacy of the customized tapes. PROPOSED COMMERCIAL APPLICATION: NOT AVAILABLE

  Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

- **Project Title: Nanocomposite Membrane for Oxygen Concentration**

  Principal Investigator & Institution: Tempelman, Linda A.; ; Giner, Inc. 89 Rumford Ave Newton, Ma 02466

  Timing: Fiscal Year 2002; Project Start 1-MAR-2002; Project End 0-AUG-2002

  Summary: (provided by applicant): The proposed work addresses the need for improved materials and portable devices for oxygen concentration and delivery to ease the disabling effects of chronic obstructive pulmonary disease. Phase I research will examine the process and compositional variables for a new oxygen permselective membrane using an interpenetrating polymer network exhibiting facilitated oxygen transport. The relationship of input air pressure, temperature, and humidity on the diffusion rates and selectivity for oxygen through this

membrane will be determined in order to optimize performance. This work will also focus on applying reported results using an inexpensive doped-polyphenylene oxide ionomer membrane as well as a control Nafion membrane. The doped ionomer membrane is easy and inexpensive to make and can be fabricated into arrays of microtubes for efficient concentration of oxygen from ambient air. The combination of these microarrays together with a small air pump and battery is expected to have acceptable weight and volume for a portable device operating continuously. The research in Phase I will include measurements of the mechanical strength, permeation rates for oxygen and nitrogen and physical uniformity, and ageing characteristics of the membrane as a function of temperature and humidity. Phase II will focus on design, fabrication and testing of a practical, lightweight oxygen concentrator. PROPOSED COMMERCIAL APPLICATION: The oxygen concentrator system could be used at home, during air travel and in hospital settings for patients suffering from chronic obstructive pulmonary disease. The market for stationary and portable medical oxygen delivery systems is estimated to be $3 billion annually. The simplicity and low cost of the materials proposed for the hollow fiber array will have a significant impact on the cost of individual units. Units are expected to have low maintenance costs and a long service life. A variety of industrial applications are anticipated where cost effective on-site oxygen concentration is important for medical industrial processes and disinfection of waste streams.

Website: http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket

E-Journals: PubMed Central[20]

PubMed Central (PMC) is a digital archive of life sciences journal literature developed and managed by the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM).[21] Access to this growing archive of e-journals is free and unrestricted.[22] To search, go to **http://www.pubmedcentral.nih.gov/index.html#search**, and type

[20] Adapted from the National Library of Medicine:
http://www.pubmedcentral.nih.gov/about/intro.html.

[21] With PubMed Central, NCBI is taking the lead in preservation and maintenance of open access to electronic literature, just as NLM has done for decades with printed biomedical literature. PubMed Central aims to become a world-class library of the digital age.

[22] The value of PubMed Central, in addition to its role as an archive, lies the availability of data from diverse sources stored in a common format in a single repository. Many journals already have online publishing operations, and there is a growing tendency to publish material online only, to the exclusion of print.

"chronic obstructive pulmonary disease" (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for chronic obstructive pulmonary disease in the PubMed Central database:

- **"Hospital at home" versus hospital care in patients with exacerbations of chronic obstructive pulmonary disease: prospective randomised controlled trial** by L Davies, M Wilkinson, S Bonner, P M A Calverley, and R M Angus; 2000 November 18
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=27532
- **Chronic obstructive pulmonary disease, asthma and protective effects of food intake: from hypothesis to evidence?** by Henriette A. Smit; 2001
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=59508
- **Complexity of terminal airspace geometry assessed by lung computed tomography in normal subjects and patients with chronic obstructive pulmonary disease** by Michiaki Mishima, Toyohiro Hirai, Harumi Itoh, Yasutaka Nakano, Hiroaki Sakai, Shigeo Muro, Koichi Nishimura, Yoshitaka Oku, Kazuo Chin, Motoharu Ohi, Takashi Nakamura, Jason H. T. Bates, Adriano M. Alencar, and Bela Suki; 1999 August 3
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=17692
- **First Siena International Conference on Animal Models of Chronic Obstructive Pulmonary Disease, Certosa di Pontignano, University of Siena, Italy, September 30-October 2, 2001** by David Hele; 2002
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=64810
- **Identifying asthma and chronic obstructive pulmonary disease in patients with persistent cough presenting to general practitioners: descriptive study** by H A Thiadens, G H de Bock, F W Dekker, J A N Huysman, J C van Houwelingen, M P Springer, and D S Postma; 1998 April 25
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=28529
- **Oral mucolytic drugs for exacerbations of chronic obstructive pulmonary disease: systematic review** by Phillippa J Poole and Peter N Black; 2001 May 26
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=31920
- **Randomised, double blind, placebo controlled study of fluticasone propionate in patients with moderate to severe chronic obstructive pulmonary disease: the ISOLDE trial** by P S Burge, P M A Calverley, P W Jones, S Spencer, J A Anderson, and T K Maslen; 2000 May 13
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=27372

- **Skeletal muscle dysfunction in chronic obstructive pulmonary disease** by M Jeffery Mador and Erkan Bozkanat; 2001
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=59579
- **The genetics of chronic obstructive pulmonary disease** by David A. Lomas and Edwin K. Silverman; 2001
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=59565

The National Library of Medicine: PubMed

One of the quickest and most comprehensive ways to find academic studies in both English and other languages is to use PubMed, maintained by the National Library of Medicine. The advantage of PubMed over previously mentioned sources is that it covers a greater number of domestic and foreign references. It is also free to the public.[23] If the publisher has a Web site that offers full text of its journals, PubMed will provide links to that site, as well as to sites offering other related data. User registration, a subscription fee, or some other type of fee may be required to access the full text of articles in some journals.

To generate your own bibliography of studies dealing with chronic obstructive pulmonary disease, simply go to the PubMed Web site at **www.ncbi.nlm.nih.gov/pubmed**. Type "chronic obstructive pulmonary disease" (or synonyms) into the search box, and click "Go." The following is the type of output you can expect from PubMed for "chronic obstructive pulmonary disease" (hyperlinks lead to article summaries):

- **Inspiratory resistance versus general physical training in patients with chronic obstructive pulmonary disease.**
  Author(s): Madsen F, Secher NH, Kay L, Kok-Jensen A, Rube N.
  Source: Eur J Respir Dis. 1985 September; 67(3): 167-76.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4076355&dopt=Abstract

- **Multifocal atrial tachycardia as a prognostic indicator in patients with severe chronic obstructive pulmonary disease requiring mechanical**

[23] PubMed was developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM) at the National Institutes of Health (NIH). The PubMed database was developed in conjunction with publishers of biomedical literature as a search tool for accessing literature citations and linking to full-text journal articles at Web sites of participating publishers. Publishers that participate in PubMed supply NLM with their citations electronically prior to or at the time of publication.

ventilation.
Author(s): Tsai YH, Lee CJ, Lan RS, Lee CH.
Source: Changgeng Yi Xue Za Zhi. 1991 September; 14(3): 163-7.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1933624&dopt=Abstract

- **Noninvasive positive pressure ventilation in the setting of severe, acute exacerbations of chronic obstructive pulmonary disease: more effective and less expensive.**
  Author(s): Keenan SP, Gregor J, Sibbald WJ, Cook D, Gafni A.
  Source: Critical Care Medicine. 2000 June; 28(6): 2094-102. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10890671&dopt=Abstract

- **Nonpharmacologic treatment of chronic obstructive pulmonary disease.**
  Author(s): Fairshter RD, Wilson AF.
  Source: Compr Ther. 1982 September; 8(9): 35-41. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6754240&dopt=Abstract

- **Patients with chronic obstructive pulmonary disease: their beliefs about measures that increase activity tolerance.**
  Author(s): McBride S.
  Source: Rehabil Nurs. 1994 January-February; 19(1): 37-41.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8159863&dopt=Abstract

- **Pharmacotherapy for chronic obstructive pulmonary disease.**
  Author(s): Petty TL.
  Source: Postgraduate Medicine. 1986 August; 80(2): 56-66. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3526310&dopt=Abstract

- **Physiologic status, coping, and hardiness as predictors of outcomes in chronic obstructive pulmonary disease.**
  Author(s): Narsavage GL, Weaver TE.
  Source: Nurs Res. 1994 March-April; 43(2): 90-4.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8152944&dopt=Abstract

- **Pre-operative short-term pulmonary rehabilitation for patients of chronic obstructive pulmonary disease undergoing coronary artery bypass graft surgery.**
  Author(s): Rajendran AJ, Pandurangi UM, Murali R, Gomathi S, Vijayan VK, Cherian KM.
  Source: Indian Heart J. 1998 September-October; 50(5): 531-4.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10052279&dopt=Abstract

- **Psychological and cognitive outcomes of a randomized trial of exercise among patients with chronic obstructive pulmonary disease.**
  Author(s): Emery CF, Schein RL, Hauck ER, MacIntyre NR.
  Source: Health Psychol. 1998 May; 17(3): 232-40.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9619472&dopt=Abstract

- **Psychophysiologic aspects of dyspnea in chronic obstructive pulmonary disease: a pilot study.**
  Author(s): Gift AG, Cahill CA.
  Source: Heart & Lung : the Journal of Critical Care. 1990 May; 19(3): 252-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2341263&dopt=Abstract

- **Psychosocial concomitants to rehabilitation in chronic obstructive pulmonary disease. Part 2. Psychosocial treatment.**
  Author(s): Dudley DL, Glaser EM, Jorgenson BN, Logan DL.
  Source: Chest. 1980 April; 77(4): 544-51. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6987045&dopt=Abstract

- **Pulmonary exercises in chronic obstructive pulmonary diseases.**
  Author(s): Blocker WP Jr, Gonzalez FR.
  Source: Journal of the American Geriatrics Society. 1970 August; 18(8): 615-22. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5431997&dopt=Abstract

- **Pulmonary rehabilitation in chronic obstructive pulmonary disease.**
  Author(s): Folgering H, Rooyackers J.

Source: The European Respiratory Journal : Official Journal of the European Society for Clinical Respiratory Physiology. 1998 March; 11(3): 520-3. Review. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9596095&dopt=Abstract

- **Quality of life in patients with chronic obstructive pulmonary disease improves after rehabilitation at home.**
  Author(s): Wijkstra PJ, Van Altena R, Kraan J, Otten V, Postma DS, Koeter GH.
  Source: The European Respiratory Journal : Official Journal of the European Society for Clinical Respiratory Physiology. 1994 February; 7(2): 269-73.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8162979&dopt=Abstract

- **Reliability of a commercially available threshold loading device in healthy subjects and in patients with chronic obstructive pulmonary disease.**
  Author(s): Gosselink R, Wagenaar RC, Decramer M.
  Source: Thorax. 1996 June; 51(6): 601-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8693441&dopt=Abstract

- **Resistive breathing training in patients with chronic obstructive pulmonary disease.**
  Author(s): Belman MJ, Thomas SG, Lewis MI.
  Source: Chest. 1986 November; 90(5): 662-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3769566&dopt=Abstract

- **Resistive breathing training in severe chronic obstructive pulmonary disease. A pilot study.**
  Author(s): Andersen JB, Dragsted L, Kann T, Johansen SH, Nielsen KB, Karbo E, Bentzen L.
  Source: Scand J Respir Dis. 1979 June; 60(3): 151-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=493905&dopt=Abstract

- **Respiratory muscle endurance training in chronic obstructive pulmonary disease: impact on exercise capacity, dyspnea, and quality of life.**

Author(s): Scherer TA, Spengler CM, Owassapian D, Imhof E, Boutellier U.
Source: American Journal of Respiratory and Critical Care Medicine. 2000 November; 162(5): 1709-14.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11069801&dopt=Abstract

- **Respiratory muscle function in patients with chronic obstructive pulmonary disease: its relationship to disability and to respiratory therapy.**
  Author(s): Sharp JT, Danon J, Druz WS, Goldberg NB, Fishman H, Machnach W.
  Source: Am Rev Respir Dis. 1974 December; 110(6 Pt 2): 154-68. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4613221&dopt=Abstract

- **Respiratory muscle training for patients with chronic obstructive pulmonary disease.**
  Author(s): Reid WD, Samrai B.
  Source: Physical Therapy. 1995 November; 75(11): 996-1005. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7480129&dopt=Abstract

- **Reversal of electrocardiogram to normal in chronic obstructive pulmonary disease with emphysema.**
  Author(s): Dines DE, Parkin TW.
  Source: Archives of Internal Medicine. 1967 December; 120(6): 721-4. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4228639&dopt=Abstract

- **Rib cage dimensions in hyperinflated patients with severe chronic obstructive pulmonary disease.**
  Author(s): Cassart M, Gevenois PA, Estenne M.
  Source: American Journal of Respiratory and Critical Care Medicine. 1996 September; 154(3 Pt 1): 800-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8810622&dopt=Abstract

- **Right ventricular function at rest and during exercise in chronic obstructive pulmonary disease.**

Author(s): Matthay RA, Arroliga AC, Wiedemann HP, Schulman DS, Mahler DA.
Source: Chest. 1992 May; 101(5 Suppl): 255S-262S. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1576846&dopt=Abstract

- **Strategies to forestall morbidity and mortality in chronic obstructive pulmonary disease.**
  Author(s): Petty TL.
  Source: Med Sect Proc. 1983; : 67-78. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6379640&dopt=Abstract

- **Targeted inspiratory muscle training improves respiratory muscle function and reduces dyspnea in patients with chronic obstructive pulmonary disease.**
  Author(s): Harver A, Mahler DA, Daubenspeck JA.
  Source: Annals of Internal Medicine. 1989 July 15; 111(2): 117-24.
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  Source: Immunopharmacology and Immunotoxicology. 1992; 14(3): 421-37.
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  Author(s): Westreich N, Paguyo N, Cohen S, Grismer J.
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  Author(s): Hodgkin JE, Balchum OJ, Kass I, Glaser EM, Miller WF, Haas A, Shaw DB, Kimbel P, Petty TL.

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  Author(s): Barach AL.
  Source: Ann Allergy. 1966 February; 24(2): 51-7. No Abstract Available.
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  Source: Scand J Respir Dis. 1974; 55(1): 25-36. No Abstract Available.
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  Author(s): Trendelenburg F, Reinert M.
  Source: Scand J Respir Dis Suppl. 1974; 89: 41-7. No Abstract Available.
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  Source: Postgraduate Medicine. 1966 August; 40(2): 153-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5329763&dopt=Abstract

- **The circulation in patients with chronic bronchitis and emphysema at rest and during exercise, with special reference to the influence of changes in blood viscosity and blood volume on the pulmonary circulation.**
  Author(s): Segel N, Bishop JM.
  Source: The Journal of Clinical Investigation. 1966 October; 45(10): 1555-68. No Abstract Available.
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  Author(s): Lamson DW, Brignall MS.
  Source: Alternative Medicine Review : a Journal of Clinical Therapeutic. 2000 October; 5(5): 429-31.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11056412&dopt=Abstract

- **Treatment of obstructive emphysema accompanied by edema with lung-ventilating and diuresis regimen--a dynamic observation of P (A-a) O2.**
  Author(s): Shao CR, Tang YX, Fang MZ, Li KN.
  Source: J Tradit Chin Med. 1989 March; 9(1): 45-7. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2761283&dopt=Abstract

Vocabulary Builder

Accommodation: Adjustment, especially that of the eye for various distances. [EU]

Angiography: Radiography of blood vessels after injection of a contrast medium. [NIH]

Antioxidant: One of many widely used synthetic or natural substances added to a product to prevent or delay its deterioration by action of oxygen in the air. Rubber, paints, vegetable oils, and prepared foods commonly contain antioxidants. [EU]

Antiproliferative: Counteracting a process of proliferation. [EU]

Anxiety: The unpleasant emotional state consisting of psychophysiological responses to anticipation of unreal or imagined danger, ostensibly resulting from unrecognized intrapsychic conflict. Physiological concomitants include increased heart rate, altered respiration rate, sweating, trembling, weakness, and fatigue; psychological concomitants include feelings of impending danger, powerlessness, apprehension, and tension. [EU]

Arginine: An essential amino acid that is physiologically active in the L-form. [NIH]

Arterial: Pertaining to an artery or to the arteries. [EU]

Artery: Vessel-carrying blood from the heart to various parts of the body. [NIH]

Assay: Determination of the amount of a particular constituent of a mixture, or of the biological or pharmacological potency of a drug. [EU]

Atrial: Pertaining to an atrium. [EU]

Bronchiectasis: Chronic dilatation of the bronchi marked by fetid breath and paroxysmal coughing, with the expectoration of mucopurulent matter. It may effect the tube uniformly (cylindric b.), or occur in irregular pockets (sacculated b.) or the dilated tubes may have terminal bulbous enlargements (fusiform b.). [EU]

Bronchoconstriction: Tightening of the muscles surrounding the bronchi, the tubes that branch from the windpipe. [NIH]

Capillary: Any one of the minute vessels that connect the arterioles and venules, forming a network in nearly all parts of the body. Their walls act as semipermeable membranes for the interchange of various substances, including fluids, between the blood and tissue fluid; called also vas capillare. [EU]

CHD: Coronary heart disease. A type of heart disease caused by narrowing of the coronary arteries that feed the heart, which needs a constant supply of oxygen and nutrients carried by the blood in the coronary arteries. When the coronary arteries become narrowed or clogged by fat and cholesterol deposits and cannot supply enough blood to the heart, CHD results. [NIH]

Concomitant: Accompanying; accessory; joined with another. [EU]

Cortical: Pertaining to or of the nature of a cortex or bark. [EU]

Cyclic: Pertaining to or occurring in a cycle or cycles; the term is applied to chemical compounds that contain a ring of atoms in the nucleus. [EU]

Diuresis: Increased excretion of urine. [EU]

Dystrophy: Any disorder arising from defective or faulty nutrition, especially the muscular dystrophies. [EU]

Endogenous: Developing or originating within the organisms or arising from causes within the organism. [EU]

Endothelium: The layer of epithelial cells that lines the cavities of the heart and of the blood and lymph vessels, and the serous cavities of the body, originating from the mesoderm. [EU]

Epithelium: The covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. Epithelium is classified into types on the basis of the number of layers deep and the shape of the superficial cells. [EU]

Fetus: Unborn offspring from 7 or 8 weeks after conception until birth. [NIH]

Gestation: The period of development of the young in viviparous animals, from the time of fertilization of the ovum until birth. [EU]

Hematocrit: Measurement of the volume of packed red cells in a blood

specimen by centrifugation. The procedure is performed using a tube with graduated markings or with automated blood cell counters. It is used as an indicator of erythrocyte status in disease. For example, anemia shows a low hematocrit, polycythemia, high values. [NIH]

Hemodynamics: The movements of the blood and the forces involved in systemic or regional blood circulation. [NIH]

Histamine: 1H-Imidazole-4-ethanamine. A depressor amine derived by enzymatic decarboxylation of histidine. It is a powerful stimulant of gastric secretion, a constrictor of bronchial smooth muscle, a vasodilator, and also a centrally acting neurotransmitter. [NIH]

Hydrogen: Hydrogen. The first chemical element in the periodic table. It has the atomic symbol H, atomic number 1, and atomic weight 1. It exists, under normal conditions, as a colorless, odorless, tasteless, diatomic gas. Hydrogen ions are protons. Besides the common H1 isotope, hydrogen exists as the stable isotope deuterium and the unstable, radioactive isotope tritium. [NIH]

Hyperalgesia: Excessive sensitiveness or sensibility to pain. [EU]

Hypoxia: Too little oxygen available to meet the needs of the body's tissues. [NIH]

Immaturity: The state or quality of being unripe or not fully developed. [EU]

Intravascular: Within a vessel or vessels. [EU]

Lumen: The cavity or channel within a tube or tubular organ. [EU]

Mediator: An object or substance by which something is mediated, such as (1) a structure of the nervous system that transmits impulses eliciting a specific response; (2) a chemical substance (transmitter substance) that induces activity in an excitable tissue, such as nerve or muscle; or (3) a substance released from cells as the result of the interaction of antigen with antibody or by the action of antigen with a sensitized lymphocyte. [EU]

Membrane: Thin, flexible film of proteins and lipids that encloses the contents of a cell; it controls the substances that go into and come out of the cell. Also, a thin layer of tissue that covers the surface or lines the cavity of an organ. [NIH]

Metoprolol: Adrenergic beta-1-blocking agent with no stimulatory action. It is less bound to plasma albumin than alprenolol and may be useful in angina pectoris, hypertension, or cardiac arrhythmias. [NIH]

Microscopy: The application of microscope magnification to the study of materials that cannot be properly seen by the unaided eye. [NIH]

Microspheres: Small uniformly-sized spherical particles frequently labeled with radioisotopes or various reagents acting as tags or markers. [NIH]

Modulator: A specific inductor that brings out characteristics peculiar to a definite region. [EU]

Molecular: Of, pertaining to, or composed of molecules : a very small mass of matter. [EU]

Monocrotaline: A pyrrolizidine alkaloid and a toxic plant constituent that poisons livestock and humans through the ingestion of contaminated grains and other foods. The alkaloid causes pulmonary artery hypertension, right ventricular hypertrophy, and pathological changes in the pulmonary vasculature. Significant attenuation of the cardiopulmonary changes are noted after oral magnesium treatment. [NIH]

Mucolytic: Destroying or dissolving mucin; an agent that so acts : a mucopolysaccharide or glycoprotein, the chief constituent of mucus. [EU]

Neurosurgery: A surgical specialty concerned with the treatment of diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system. [NIH]

Ovary: Either of the paired glands in the female that produce the female germ cells and secrete some of the female sex hormones. [NIH]

Oxygenation: To provide with oxygen. [NIH]

Palliative: 1. affording relief, but not cure. 2. an alleviating medicine. [EU]

Pathologic: 1. indicative of or caused by a morbid condition. 2. pertaining to pathology (= branch of medicine that treats the essential nature of the disease, especially the structural and functional changes in tissues and organs of the body caused by the disease). [EU]

Pathophysiology: Altered functions in an individual or an organ due to disease. [NIH]

Pediatrics: A medical specialty concerned with maintaining health and providing medical care to children from birth to adolescence. [NIH]

Perfusion: The passage of fluid through an organ. [NIH]

Perinatal: Pertaining to or occurring in the period shortly before and after birth; variously defined as beginning with completion of the twentieth to twenty-eighth week of gestation and ending 7 to 28 days after birth. [EU]

Phosphorylation: The introduction of a phosphoryl group into a compound through the formation of an ester bond between the compound and a phosphorus moiety. [NIH]

Postnatal: Occurring after birth, with reference to the newborn. [EU]

Preclinical: Before a disease becomes clinically recognizable. [EU]

Receptor: 1. a molecular structure within a cell or on the surface characterized by (1) selective binding of a specific substance and (2) a specific physiologic effect that accompanies the binding, e.g., cell-surface receptors for peptide hormones, neurotransmitters, antigens, complement fragments, and immunoglobulins and cytoplasmic receptors for steroid

hormones. 2. a sensory nerve terminal that responds to stimuli of various kinds. [EU]

Reflex: 1; reflected. 2. a reflected action or movement; the sum total of any particular involuntary activity. [EU]

Refractory: Not readily yielding to treatment. [EU]

Respiration: Process of exchanging oxygen from the air for carbon dioxide from the body; includes the mechanical process of breathing, gas exchange, and oxygen and carbon dioxide transport to and from the cells. [NIH]

Shunt: 1. to turn to one side; to divert; to bypass. 2. a passage or anastomosis between two natural channels, especially between blood vessels. Such structures may be formed physiologically (e.g. to bypass a thrombosis) or they may be structural anomalies. 3. a surgically created anastomosis; also, the operation of forming a shunt. [EU]

Spectrum: A charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction. By extension, a measurable range of activity, such as the range of bacteria affected by an antibiotic (antibacterial s.) or the complete range of manifestations of a disease. [EU]

Sulfur: An element that is a member of the chalcogen family. It has an atomic symbol S, atomic number 16, and atomic weight 32.066. It is found in the amino acids cysteine and methionine. [NIH]

Surfactant: A fat-containing protein in the respiratory passages which reduces the surface tension of pulmonary fluids and contributes to the elastic properties of pulmonary tissue. [NIH]

Sympathetic: 1. pertaining to, caused by, or exhibiting sympathy. 2. a sympathetic nerve or the sympathetic nervous system. [EU]

Systemic: Relating to a process that affects the body generally; in this instance, the way in which blood is supplied through the aorta to all body organs except the lungs. [NIH]

Tachyarrhythmia: Tachycardia associated with an irregularity in the normal heart rhythm. [EU]

Tachycardia: Excessive rapidity in the action of the heart; the term is usually applied to a heart rate above 100 per minute and may be qualified as atrial, junctional (nodal), or ventricular, and as paroxysmal. [EU]

Thoracic: Pertaining to or affecting the chest. [EU]

Thrombosis: The formation, development, or presence of a thrombus. [EU]

Tomography: The recording of internal body images at a predetermined plane by means of the tomograph; called also body section roentgenography. [EU]

Toxicity: The quality of being poisonous, especially the degree of virulence

of a toxic microbe or of a poison. [EU]

Toxicology: The science concerned with the detection, chemical composition, and pharmacologic action of toxic substances or poisons and the treatment and prevention of toxic manifestations. [NIH]

Vasoactive: Exerting an effect upon the calibre of blood vessels. [EU]

Vasoconstriction: The diminution of the calibre of vessels, especially constriction of arterioles leading to decreased blood flow to a part. [EU]

Vasodilator: An agent that widens blood vessels. [NIH]

Vasomotor: 1. affecting the calibre of a vessel, especially of a blood vessel. 2. any element or agent that effects the calibre of a blood vessel. [EU]

Ventricular: Pertaining to a ventricle. [EU]

Viscosity: A physical property of fluids that determines the internal resistance to shear forces. [EU]

CHAPTER 5. PATENTS ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

You can learn about innovations relating to chronic obstructive pulmonary disease by reading recent patents and patent applications. Patents can be physical innovations (e.g. chemicals, pharmaceuticals, medical equipment) or processes (e.g. treatments or diagnostic procedures). The United States Patent and Trademark Office defines a patent as a grant of a property right to the inventor, issued by the Patent and Trademark Office.[24] Patents, therefore, are intellectual property. For the United States, the term of a new patent is 20 years from the date when the patent application was filed. If the inventor wishes to receive economic benefits, it is likely that the invention will become commercially available to patients with chronic obstructive pulmonary disease within 20 years of the initial filing. It is important to understand, therefore, that an inventor's patent does not indicate that a product or service is or will be commercially available to patients with chronic obstructive pulmonary disease. The patent implies only that the inventor has "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States. While this relates to U.S. patents, similar rules govern foreign patents.

In this chapter, we show you how to locate information on patents and their inventors. If you find a patent that is particularly interesting to you, contact the inventor or the assignee for further information.

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[24]Adapted from The U. S. Patent and Trademark Office:
http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm.

Patents on Chronic Obstructive Pulmonary Disease

By performing a patent search focusing on chronic obstructive pulmonary disease, you can obtain information such as the title of the invention, the names of the inventor(s), the assignee(s) or the company that owns or controls the patent, a short abstract that summarizes the patent, and a few excerpts from the description of the patent. The abstract of a patent tends to be more technical in nature, while the description is often written for the public. Full patent descriptions contain much more information than is presented here (e.g. claims, references, figures, diagrams, etc.). We will tell you how to obtain this information later in the chapter. The following is an example of the type of information that you can expect to obtain from a patent search on chronic obstructive pulmonary disease:

- **Method of treating chronic obstructive pulmonary disease**

  Inventor(s): Killian; Anthony (Pittsburgh, PA)

  Assignee(s): Tap Holdings Inc. (Deerfield, IL)

  Patent Number: 6,020,380

  Date filed: November 25, 1998

  Abstract: A class of .OMEGA.-substituted-1,4-benzoquinon-2-yl]alkanoic acids are useful in the treatment of chronic obstructive pulmonary disease (COPD). The preferred compound for the method of treatment is 7-(3,5,6-trimethyl-1,4-benzoquinon-2-yl)-7-phenylheptanoic acid or a pharmaceutically acceptable salt, ester or pro-drug thereof.

  Excerpt(s): The present invention relates to a method of medical treatment. More particularly, the present invention concerns the use of certain .OMEGA.-substituted (1,4-benzoquinon-2-yl)-alkanoic acids for the treatment of chronic obstructive pulmonary disease. ... Although the prevalence of chronic obstructive pulmonary disease (COPD) is not known, it is estimated that approximately 14 million persons in the United States suffer from the condition, with the estimated number having increased some 42% between 1982 and 1995. Estimates of COPD in population-based studies in the United States range between 4% to 6% of adult white males and from 1% to 3% of adult white females. ... Because of the wide prevalence of chronic obstructive pulmonary disease, and its high ranking among the leading causes of death, there is a continuing need for the discovery and development of new agents for the treatment and amelioration of the disease.

  Web site: http://www.delphion.com/details?pn=US06020380__

- **Use of oxandrolone in the treatment of chronic obstructive pulmonary disease**

  Inventor(s): Bowen; Robert E. (Martinsburg, WV)

  Assignee(s): Bio-Technology General Corp. (Iselin, NJ)

  Patent Number: 5,872,147

  Date filed: December 5, 1997

  Abstract: The subject invention provides a method of treating a symptom associated with chronic obstructive pulmonary disease in a patient suffering from chronic obstructive pulmonary disease which comprises administering a therapeutically effective amount of an oxandrolone to the patient. The subject invention further provides a method of improving functional capacity and/or pulmonary function in a patient suffering from chronic obstructive pulmonary disease which comprises administering a therapeutically effective amount of an oxandrolone to the patient.

  Excerpt(s): The subject invention discloses the use of an oxandrolone for the treatment of symptoms associated with chronic obstructive pulmonary disease and symptoms associated with ARDS. ... The subject invention provides a method of treating a symptom associated with chronic obstructive pulmonary disease in a patient suffering from chronic obstructive pulmonary disease which comprises administering a therapeutically effective amount of an oxandrolone to the patient. ... The subject invention further provides a method of improving functional capacity and/or pulmonary function in a patient suffering from chronic obstructive pulmonary disease which comprises administering a therapeutically effective amount of an oxandrolone to the patient.

  Web site: http://www.delphion.com/details?pn=US05872147__

Patent Applications on Chronic Obstructive Pulmonary Disease

As of December 2000, U.S. patent applications are open to public viewing.[25] Applications are patent requests which have yet to be granted (the process to achieve a patent can take several years). The following patent applications have been filed since December 2000 relating to chronic obstructive pulmonary disease:

[25] This has been a common practice outside the United States prior to December 2000.

- **Combination therapy of chronic obstructive pulmonary disease using muscarinic receptor antagonists**

  Inventor(s): Reiss, Theodore F. ; (Summit, NJ), Bach, Mark A. ; (Scotch Plains, NJ), Yao, Sui-Long ; (West Windsor, NJ)

  Correspondence: Merck And Co Inc; P O Box 2000; Rahway; NJ; 070650907

  Patent Application Number: 20020052312

  Date filed: May 29, 2001

  Abstract: The present invention provides a method for the treatment of chronic obstructive pulmonary disease using an oral muscarinic receptor antagonists in combination with at least one other therapeutic agent, as well as combination dosage forms therefor.

  Excerpt(s): Chronic obstructive pulmonary disease (COPD) is persistent obstruction of the airways caused by emphysema or inflammation of the small airways in chronic bronchitis. In the United States, about 14 million people suffer from chronic obstructive pulmonary disease. It's second only to heart disease as a cause of disability that makes people stop working, and it's the fourth most common cause of death. ... The present invention concerns a method for treating patients with chronic obstructive pulmonary disease using an oral muscarinic antagonist in combination with at least one other therapeutic agent. The invention further provides a pharmaceutical composition containing an oral muscarinic antagonist in combination with at least one other therapeutic agent. ... The present invention provides a method for the treatment of chronic obstructive pulmonary disease in a patient in need of such treatment, which comprises administering orally to said patient a therapeutically effective amount of a muscarinic M3 receptor antagonist in combination with a therapeutically effective amount of at least one other therapeutic agent selected from the group consisting of: .beta.2-agonist, antitussive, corticosteroid, decongestant, histamine H1 antagonist (antihistamine), dopamine antagonist, leukotriene antagonist, 5-lipooxygenase inhibitor, phosphodiesterase IV inhibitor, VLA-4 antagonist, and theophylline.

  Web site: http://appft1.uspto.gov/netahtml/PTO/search-bool.html

- **Diazepinoindoles for the treatment of chronic obstructive pulmonary disease**

  Inventor(s): Doherty, Annette ; (Chatenay-Malabry, FR)

  Correspondence: Warner-Lambert Company; 2800 Plymouth Road; Ann Arbor; MI; 48105; US

  Patent Application Number: 20020010175

  Date filed: June 7, 2001

  Abstract: The present invention relates to the use of diazepinoindoles of the formula (I): 1in which A is aryl or nitrogen-containing heteroaryl, and B is a hydroxyl or amino radical,for the treatment of chronic obstructive pulmonary disease.

  Excerpt(s): The present invention relates to the use of diazepinoindoles for the treatment of chronic obstructive pulmonary disease (hereinafter COPD). ... for the manufacture of a medicament for the treatment of chronic obstructive pulmonary disease or COPD.

  Web site: http://appft1.uspto.gov/netahtml/PTO/search-bool.html

- **Use of substituted amidino compounds in the treatment of chronic obstructive pulmonary disease**

  Inventor(s): Marshall, Paul J. ; (Flanders, NJ), Fujimoto, Roger A. ; (Morristown, NJ)

  Correspondence: Thomas Hoxie; Novartis Corporation; Patent and Trademark Dept; 564 Morris Avenue; Summit; NJ; 079011027

  Patent Application Number: 20010000341

  Date filed: December 7, 2000

  Abstract: Use in medicaments for the treatment of chronic obstructive pulmonary disease of compounds of formula 1wherein the C(.dbd.NH)--NHR.sub.3 group may be in tautomeric or isomeric form, or a pharmaceutically acceptable salt thereof, in which:R.sub.1 is amino which is mono- or disubstituted by a substituent selected from an aliphatic hydrocarbon radical, an araliphatic hydrocarbon radical, an aromatic radical, and a cycloaliphatic hydrocarbon radical or is amino which is disubstituted by a divalent aliphatic hydrocarbon radical or a said radical interrupted by oxygen;R.sub.2 is hydrogen, halogen, trifluoromethyl, an aliphatic hydrocarbon radical, hydroxy or is hydroxy which is etherified by an aliphatic, araliphatic or aromatic alcohol or by an aliphatic alcohol which is substituted by carboxy, by esterified carboxy or by amidated carboxy or which is esterified by an aliphatic or araliphatic carboxylic

acid;R.sub.3 is hydrogen or an acyl radical which is derived from an organic carbonic acid, an organic carboxylic acid, a sulfonic acid, or a carbamic acid;X.sub.1 and X.sub.3, independently or one another, are oxygen (--O--) or sulphur (--S--); and X.sub.2 is a divalent aliphatic hydrocarbon radical which may be interrupted by an aromatic radical;wherein the phenyl rings of formula I may be, independently or one another, further substituted by one or more substituents selected from halogen, trifluoromethyl, an aliphatic hydrocarbon radical, hydroxy, and hydroxy which is etherified by an aliphatic alcohol or which is esterified by an aliphatic or araliphatic carboxylic acid;wherein aryl in the above definitions may be, independently of one another, further substituted by one or more substituents selected from halogen, trifluoromethyl, an aliphatic hydrocarbon radical, hydroxy, and hydroxy which is etherified by an aliphatic alcohol or which is esterified by an aliphatic or araliphatic carboxylic acid;wherein a cycloaliphatic hydrocarbon radical may be substituted by an aliphatic radical.

Excerpt(s): 1. This invention relates to the use of organic compounds, particularly substituted amidino compounds, in the treatment of chronic obstructive respiratory diseases, particularly chronic obstructive pulmonary disease (COPD), including emphysema, cystic fibrosis and, especially, chronic bronchitis. ... 12. In another aspect, the invention provides pharmacologically active compounds of formula I and pharmaceutically acceptable salts thereof for use in the treatment of chronic obstructive pulmonary disease. ... 13. In a further aspect, the invention provides a method for the treatment of chronic obstructive pulmonary disease which comprises administering to a mammal in need of such treatment an effective amount of a pharmacologically active compound of formula I, or a pharmaceutically acceptable salt thereof, as hereinbefore defined.

Web site: http://appft1.uspto.gov/netahtml/PTO/search-bool.html

Keeping Current

In order to stay informed about patents and patent applications dealing with chronic obstructive pulmonary disease, you can access the U.S. Patent Office archive via the Internet at no cost to you. This archive is available at the following Web address: **http://www.uspto.gov/main/patents.htm**. Under "Services," click on "Search Patents." You will see two broad options: (1) Patent Grants, and (2) Patent Applications. To see a list of granted patents, perform the following steps: Under "Patent Grants," click "Quick Search." Then, type "chronic obstructive pulmonary disease" (or synonyms) into the

"Term 1" box. After clicking on the search button, scroll down to see the various patents which have been granted to date on chronic obstructive pulmonary disease. You can also use this procedure to view pending patent applications concerning chronic obstructive pulmonary disease. Simply go back to **http://www.uspto.gov/main/patents.htm**. Under "Services," click on "Search Patents." Select "Quick Search" under "Patent Applications." Then proceed with the steps listed above.

Vocabulary Builder

Antihistamine: A drug that counteracts the action of histamine. The antihistamines are of two types. The conventional ones, as those used in allergies, block the H1 histamine receptors, whereas the others block the H2 receptors. Called also antihistaminic. [EU]

Antitussive: An agent that relieves or prevents cough. [EU]

Decongestant: An agent that reduces congestion or swelling. [EU]

Dopamine: A catecholamine neurotransmitter that is found primarily in the basal ganglia of the central nervous system. Major functions include the peripheral inhibition and excitation of certain muscles; cardiac excitation; and metabolic, endocrine and central nervous system actions. [NIH]

Manifest: Being the part or aspect of a phenomenon that is directly observable : concretely expressed in behaviour. [EU]

Medicament: A medicinal substance or agent. [EU]

Nitrogen: An element with the atomic symbol N, atomic number 7, and atomic weight 14. Nitrogen exists as a diatomic gas and makes up about 78% of the earth's atmosphere by volume. It is a constituent of proteins and nucleic acids and found in all living cells. [NIH]

Oxandrolone: A synthetic hormone with anabolic and androgenic properties. [NIH]

CHAPTER 6. BOOKS ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

This chapter provides bibliographic book references relating to chronic obstructive pulmonary disease. You have many options to locate books on chronic obstructive pulmonary disease. The simplest method is to go to your local bookseller and inquire about titles that they have in stock or can special order for you. Some patients, however, feel uncomfortable approaching their local booksellers and prefer online sources (e.g. **www.amazon.com** and **www.bn.com**). In addition to online booksellers, excellent sources for book titles on chronic obstructive pulmonary disease include the Combined Health Information Database and the National Library of Medicine. Once you have found a title that interests you, visit your local public or medical library to see if it is available for loan.

Book Summaries: Federal Agencies

The Combined Health Information Database collects various book abstracts from a variety of healthcare institutions and federal agencies. To access these summaries, go directly to **http://chid.nih.gov/detail/detail.html**. You will need to use the "Detailed Search" option. To find book summaries, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer. For the format option, select "Monograph/Book." Now type "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box. You will only receive results on books. You should check back periodically with this

database which is updated every 3 months. The following is a typical result when searching for books on chronic obstructive pulmonary disease:

- **Cigars: Health Effects and Trends**

  Source: Bethesda, MD, U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute, Smoking and Tobacco Control Monograph 9, 232 p., February 1998.

  Contact: National Cancer Institute, Offices of Cancer Communications, Building 31, Room 10A24, 9000 Rockville Pike, Bethesda, MD 20892. (800) 422-6237. NIH Publication No. 98-4302.

  Summary: Cigars: Health Effects and Trends is organized into eight chapters devoted to (1) an overview and the current state of the science, (2) trends in cigar consumption and smoking prevalence, (3) chemistry and toxicology, (4) disease consequences, (5) indoor pollution from cigar smoke, (6) pharmacology and abuse potential of cigars, (7) marketing and promotion of cigars, and (8) policies regulating cigars. Consumption of cigars in the United States has increased dramatically since 1993. The premium cigar category has increased 154 percent since 1993. Males are more likely to smoke cigars than females. In a 1996 survey of Massachusetts students in grades 6 through 12, cigar use among males ranged from 3.2 percent in the sixth grade to 30 percent in high school. Cigar smoke contains the same carcinogenic compounds identified in cigarette smoke. The risk associated with cigar use is less than that of cigarette use because of less regular use and less inhalation with cigars. Regular cigar smoking causes cancer of the lung, oral cavity, larynx, esophagus, and probably the pancreas. Heavy cigar smokers are at risk for coronary heart disease, chronic obstructive pulmonary disease, and aortic aneurysm. The risk of oral cancer is similar among cigar smokers and cigarette smokers. Environmental tobacco smoke from cigars is an increasing source of indoor air pollution. Cigars contain varying amounts of nicotine. There is enough nicotine absorption among regular cigar smokers to suspect that nicotine dependence would develop, but studies have not yet confirmed this. Promotional activities and advertising have (1) increased the visibility of cigar consumption, (2) normalized cigar use, and (3) removed barriers to cigar use. The cigar industry has had a voluntary code since 1965 to avoid using sex or celebrity to sell cigars, but these are regular features of cigar marketing. Cigars have less federal and state regulation compared to cigarettes and smokeless tobacco.

- **Handbook of Health Behavior Change**

  Source: New York, NY, Springer Publishing Company, 607 p., 1998.

Contact: Springer Publishing Company, 536 Broadway, New York, NY 10012.

Summary: The Handbook of Health Behavior Change presents reviews of studies evaluating theoretical and empirical health behavior change interventions for preventing and treating major diseases. Intended as a resource for practitioners of behavioral medicine, the book consists of 24 chapters organized into seven main sections addressing (1) behavior change and maintenance: theory and measurement; (2) lifestyle interventions and maintenance of behaviors; (3) obstacles to lifestyle change and adherence; (4) lifestyle change and adherence issues within specific populations; (5) lifestyle change and adherence issues among patients with chronic disease; (6) adherence issues in clinical trials; and (7) lifestyle change and adherence: the broader context. The chapters grouped under the section on behavior and maintenance address (1) theoretical models and strategies for improving adherence and disease management, (2) relapse prevention and maintenance of optimal health, (3) the transtheoretical model of behavior change, (4) models for provider-patient interaction and their application to health behavior change, and (5) measuring adherence with medication regimens. The chapters grouped under the section on lifestyle interventions and behavior maintenance address (1) adherence to treatment for nicotine dependence, (2) promoting dietary change, (3) adherence to physical activity, (4) adoption and maintenance of safer sexual practices, and (5) intervention elements promoting adherence to mindfulness-based stress reduction programs. The chapters grouped under obstacles to lifestyle change and adherence address (1) biological obstacles to adoption and maintenance of health promoting behaviors, (2) improving physicians' implementation of clinical practice guidelines in primary care practice, and (3) adolescent tobacco use and the social context. The chapters in the section on lifestyle change and adherence issues within specific populations address (1) lifestyle interventions for the young, (2) problems with adherence in the elderly, and (3) adherence issues among adolescents with chronic disease. The chapters under the section on lifestyle change and adherence issues among patients with chronic disease address (1) comanagement of chronic obstructive pulmonary disease, (2) issues in diabetes self-management, and (3) adherence issues among cancer patients. The chapters grouped under adherence issues in clinical trials address (1) prerandomization compliance screening from a statistician's viewpoint; and (2) predictors of patient adherence: patient characteristics. The chapters grouped under the section on lifestyle change and adherence viewed in a broader context address (1) adherence and the placebo effect, (2) collaboration between professionals and

mediating structures in the community, and (3) ethical issues in lifestyle change and adherence.

- **Handbook of Black American Health: The Mosaic of Conditions, Issues, Policies, and Prospects**

  Source: Westport, CT, Greenwood Press, 453 p., 1994.

  Contact: Greenwood Press, 88 Post Road West, Westport, CT 06881.

  Summary: The Handbook of Black American Health: The Mosaic of Conditions, Issues, Policies, and Prospects, contains five sections. Section one, Cardiovascular and Related Chronic Conditions, addresses (1) an American overview of the epidemiology of cardiovascular diseases, (2) coronary artery disease in blacks, (3) cerebrovascular disease in blacks, (4) a community perspective of hypertension, and (5) end-stage renal disease. Section two, General Chronic Conditions, discusses (1) cancer and black Americans, (2) diabetes mellitus in the African-American Population, (3) chronic obstructive pulmonary disease in Blacks, (4) a biopsychosocial model of sickle-cell disease, and (5) a survey of major entities relating to ophthalmology in blacks. Section three, Mental and Behavior-Related Conditions, describes (1) acquired immunodeficiency syndrome (AIDS) and sexually-transmitted diseases (STD's); (2) the impact of intentional injury on the health of African-Americans through homicide, suicide, and assaultive violence; (3) the problems of unintentional injuries and some preventive strategies; (4) chemical use and dependency among African Americans; (5) infant mortality and related issues; (6) black Americans at risk through social status, stress, and health; (7) findings, questions, and directions of the mental health of African Americans; and (8) nutrition concerns of black Americans. Section four, Sociopolitical Conditions and Related Issues, discusses (1) the epidemiology of homelessness in black America; (2) the physical, psychological, and social health of black older Americans; (3) the urban infrastructure as a social, environment, and health risk to African Americans; (4) the growth, development, and health of black children; and (5) issues of underrepresentation of black health care providers and related professionals. The fifth section, Legal and Social Policy Issues, addresses (1) the politics and health agenda for a multiracial and multicultural society, (2) barriers to health services utilization and African Americans, (3) empowerment as health education intervention aimed at improving the health status of African Americans, and (4) the outlook for the future in improving the health of the black community.

- **Fitness and Rehabilitation Programs for Special Populations**

  Source: Dubuque, IA, WCB Brown and Benchmark, 326 p., 1994.

Contact: WCB Brown and Benchmark, 2460 Kerper Boulevard, Dubuque, IA 52001.

Summary: Fitness and Rehabilitation Programs for Special Populations provides exercise specialists with the materials necessary to develop safe and effective exercise programs for special populations. As individuals with disabilities begin to understand the benefits of an active lifestyle and are more fully integrated into society, exercise specialists can expect to see an increase in the number of these persons accessing their community-based fitness centers. At the same time, health care professionals such as physicians, physical and occupational therapists, and nurses are starting to implement more cardiovascular fitness programs in hospitals, outpatient clinics, retirement centers, and nursing home facilities. The textbook is divided into nine chapters. Following the first chapter, which deals with an overview of general exercise physiology concepts, there are eight chapters addressing specific disabilities or health limitations, including aging, arthritis, obesity, diabetes, asthma and chronic obstructive pulmonary disease, spinal cord injury, mental retardation, and pregnancy. Each chapter covers three basic areas: (1) An overview of the physiology and/or pathophysiology of the condition, (2) a compendium of selected research on each disability or health limitation, and (3) a translation of the research into practical exercise guidelines and activities to facilitate program development. Much of the information presented has been carefully sorted into concise tables for quick access and easy referral, and general exercise guidelines and special activities are provided at the end of each chapter.

- **Disease Prevention: Health Facts**

  Source: Santa Cruz, CA, ETR Associates, 90 p., 1994.

  Contact: ETR Associates, P.O. Box 1830, Santa Cruz, CA 95061. (800) 321-4407.

  Summary: Disease Prevention: Health Facts, a book in the Health Facts series, presents issues of concern surrounding disease prevention. Its purpose is to provide background information for educators as they teach young people about health. Section one, Influences on Health and Disease, discusses the definition of disease; what risk means; and primary, secondary, and tertiary prevention. Section two, Infectious Disease, highlights the infection cycle, natural defenses, and the immune response. It discusses the importance of immunization and the diseases prevented by immunization, including (1) diphtheria, (2) tetanus, (3) pertussis, (4) influenza, (5) pneumococcal pneumonia, (6) measles, (7) rubella, (8) mumps, and (9) hepatitis B. Section three, Lifestyle Choices

and Chronic Disease, lists the components of a healthy lifestyle and explains how lifestyle can help prevent certain chronic diseases such as heart disease, cancer, stroke and chronic obstructive pulmonary disease. Section four, Other Noninfectious Diseases, discusses heredity, environment, autoimmune diseases, and diseases with unknown causes. Autoimmune diseases include multiple sclerosis, rheumatoid arthritis, and systemic lupus erythematosus. Section five, Mental Illness, explains the four general categories of mental illness: (1) Schizophrenia, (2) mood disorders, (3) borderline personality disorder, and (4) anxiety disorders. Categories of practitioners who can provide help for people with mental illness include (1) psychiatrists, (2) clinical psychologists, (3) clinical or psychiatric social workers, (4) psychiatric nurses, (5) mental health counselors, and (6) marriage and family counselors. A glossary and list of resources are provided.

- **Complete Bedside Companion: No-Nonsense Advice on Caring for the Seriously Ill**

  Source: New York, NY: Simon and Schuster Consumer Group. 1998. 544 p.

  Contact: Available from Simon and Schuster Consumer Group. 1633 Broadway, New York, NY 10019-6785. (212) 654-8232. Fax (212) 654-4758. PRICE: $27.00. ISBN: 0684801434.

  Summary: This book for caregivers traces the sequences of events common to a life-threatening illness and examines the concerns and crises that arise on the journey from diagnosis to death and beyond. The first eleven chapters cover the hospital and medical team, working with the doctors, essential nursing skills (preventing infection, skin care, hygiene, wound care, toileting, preventing falls, measuring vital signs, administering medications, and managing pain), emotional considerations, support services (mustering family and friends, utilizing social support and nursing care services), consumer activism (including drug and treatment trials), caring for the caregivers (respite care, caring for oneself, caring for other loved ones), paying the bills and other financial concerns, preparing for death (legal issues, advanced medical directives, withholding treatment), death and dying, and the aftermath of death (grieving, funeral arrangements). The second section consists of eight chapters focusing on specific illnesses: cancer, cardiovascular disease, cerebrovascular stroke or traumatic brain injury (TBI), chronic obstructive pulmonary disease (emphysema and chronic bronchitis), diabetes, AIDS, liver disease, kidney disease, and progressive neurological disease (Alzheimer's, Parkinsons, amyotrophic lateral sclerosis). Each chapter outlines initial symptoms, diagnostic tests and procedures, treatment methods and their side effects, tips on preventing

and managing common complications, how the illness typically progresses, and medical terms related to the illness. The text concludes with a lengthy resource list, a bibliography, and a detailed subject index.

Book Summaries: Online Booksellers

Commercial Internet-based booksellers, such as Amazon.com and Barnes & Noble.com, offer summaries which have been supplied by each title's publisher. Some summaries also include customer reviews. Your local bookseller may have access to in-house and commercial databases that index all published books (e.g. Books in Print®). The following have been recently listed with online booksellers as relating to chronic obstructive pulmonary disease (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **Coming to terms with chronic bronchitis** by John Hargreaves Harley William; ISBN: 0901548235; http://www.amazon.com/exec/obidos/ASIN/0901548235/icongroupinterna
- **Nature cure for bronchitis and emphysema** by Clifford Quick; ISBN: 0852690002; http://www.amazon.com/exec/obidos/ASIN/0852690002/icongroupinterna
- **Social and emotional effects of chronic bronchitis** by M. F. Rubeck; ISBN: 0901548278; http://www.amazon.com/exec/obidos/ASIN/0901548278/icongroupinterna

The National Library of Medicine Book Index

The National Library of Medicine at the National Institutes of Health has a massive database of books published on healthcare and biomedicine. Go to the following Internet site, **http://locatorplus.gov/**, and then select "Search LOCATORplus." Once you are in the search area, simply type "chronic obstructive pulmonary disease" (or synonyms) into the search box, and select "books only." From there, results can be sorted by publication date,

author, or relevance. The following was recently catalogued by the National Library of Medicine:[26]

- **Acute respiratory failure in chronic obstructive pulmonary disease.** Author: edited by Jean-Philippe Derenne, William A. Whitelaw, Thomas Similowski; Year: 1996; New York: M. Dekker, c1996; ISBN: 0824794877 (hbk.: alk. paper)
  http://www.amazon.com/exec/obidos/ASIN/0824794877/icongroupinterna
- **Acute respiratory failure in chronic obstructive pulmonary disease.** Author: W. Douglas Pitcher; Year: 1993; [S.l.: s.n., 1993]
- **Chronic obstructive pulmonary disease: a behavioral perspective.** Author: edited by A. John McSweeny, Igor Grant; Year: 1988; New York: Dekker, c1988; ISBN: 0824776933
  http://www.amazon.com/exec/obidos/ASIN/0824776933/icongroupinterna
- **Chronic obstructive pulmonary disease: current concepts.** Author: [edited by] John E. Hodgkin, Thomas L. Petty; Year: 1987; Philadelphia: Saunders, 1987; ISBN: 0721618979
  http://www.amazon.com/exec/obidos/ASIN/0721618979/icongroupinterna
- **Chronic obstructive pulmonary disease: pathogenesis to treatment.** Author: Barnes, Peter J., 1946-; Year: 2001; Chichester; New York: John Wiley & Sons, 2001; ISBN: 0471494372 (hbk.: alk. paper)
  http://www.amazon.com/exec/obidos/ASIN/0471494372/icongroupinterna
- **Chronic obstructive pulmonary disease: program guidelines for occupational therapists and other health professionals.** Author: Linda Dempster Ogden, Charlotte deRenne; Year: 1985; Laurel, Md.: RAMSCO Pub. Co., c1985; ISBN: 0943596041 (pbk.)
  http://www.amazon.com/exec/obidos/ASIN/0943596041/icongroupinterna

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[26] In addition to LOCATORPlus, in collaboration with authors and publishers, the National Center for Biotechnology Information (NCBI) is adapting biomedical books for the Web. The books may be accessed in two ways: (1) by searching directly using any search term or phrase (in the same way as the bibliographic database PubMed), or (2) by following the links to PubMed abstracts. Each PubMed abstract has a "Books" button that displays a facsimile of the abstract in which some phrases are hypertext links. These phrases are also found in the books available at NCBI. Click on hyperlinked results in the list of books in which the phrase is found. Currently, the majority of the links are between the books and PubMed. In the future, more links will be created between the books and other types of information, such as gene and protein sequences and macromolecular structures. See **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Books.**

- **Chronic obstructive pulmonary disease.** Author: Peter J. Barnes, Simon Godfrey; Year: 2000; London: Martin Dunitz, c2000; ISBN: 1853179507 http://www.amazon.com/exec/obidos/ASIN/1853179507/icongroupinterna
- **Chronic obstructive pulmonary disease.** Author: edited by P.M.A. Calverley and N.B. Pride; Year: 1995; London; New York: Chapman & Hall, 1995; ISBN: 0412464500 (alk. paper) http://www.amazon.com/exec/obidos/ASIN/0412464500/icongroupinterna
- **Chronic obstructive pulmonary disease.** Author: [edited by] Neil S. Cherniack; Year: 1991; Philadelphia: Saunders, 1991; ISBN: 072162300X http://www.amazon.com/exec/obidos/ASIN/072162300X/icongroupinterna
- **Chronic obstructive pulmonary disease.** Author: [prepared by Division of Lung Diseases, National Heart, Lung, and Blood Institute]; Year: 1986; [Bethesda, Md.?]: U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, [1986]
- **Chronic obstructive pulmonary disease.** Author: edited by Thomas L. Petty; Year: 1985; New York: Dekker, c1985; ISBN: 0824773853 http://www.amazon.com/exec/obidos/ASIN/0824773853/icongroupinterna
- **Chronic obstructive pulmonary disease.** Author: edited by Hugo D. Montenegro; Year: 1984; New York: Churchill Livingstone, 1984; ISBN: 0443082618 http://www.amazon.com/exec/obidos/ASIN/0443082618/icongroupinterna
- **Chronic obstructive pulmonary disease.** Author: American Lung Association and its medical section, American Thoracic Society; Year: 1977; New York: The Association, c1977
- **Chronic pulmonary conditions in children: case studies for nutrition management.** Author: project director, Sherie A. Sondel; authors, Ellen K. Bowser ... [et al.]; Year: 1999; Chicago, Ill.: Pediatric Nutrition Dietetic Practice Group, American Dietetic Association, [1999?]; ISBN: 0880911824 (softbound) http://www.amazon.com/exec/obidos/ASIN/0880911824/icongroupinterna
- **Clinical epidemiology of chronic obstructive pulmonary disease.** Author: edited by Michael J. Hensley, Nicholas A. Saunders; Year: 1989; New York: M. Dekker, c1989; ISBN: 0824780876 (alk. paper)

http://www.amazon.com/exec/obidos/ASIN/0824780876/icongroupinterna

- **Clinical management of chronic obstructive pulmonary disease.** Author: edited by Thomas Similowski, William A. Whitelaw, Jean-Philippe Derenne; Year: 2002; New York: Marcel Dekker, c2002; ISBN: 0824706102 (alk. paper)
  http://www.amazon.com/exec/obidos/ASIN/0824706102/icongroupinterna
- **Combination therapy for asthma and chronic obstructive pulmonary disease.** Author: edited by Richard J. Martin, Monica Kraft; Year: 2000; New York: Marcel Dekker, c2000; ISBN: 0824703715 (alk. paper)
  http://www.amazon.com/exec/obidos/ASIN/0824703715/icongroupinterna
- **Guidelines for the treatment of chronic obstructive pulmonary disease (COPD).** Author: Canadian Respiratory Review Panel; Year: 1998; Toronto: Optimal Therapy Initiative, 1998; ISBN: 1894332008
- **Handbook of chronic obstructive pulmonary disease.** Author: P. John Rees, Peter M.A. Calverley; Year: 2002; London: Martin Dunitz; Florence, KY: Distributed in the USA by Taylor & Francis, 2002; ISBN: 1853179167
  http://www.amazon.com/exec/obidos/ASIN/1853179167/icongroupinterna
- **Hospital-based pulmonary rehabilitation programmes for patients with severe chronic obstructive pulmonary disease.** Author: A. McBride, R. Milne; Year: 1999; Bristol, UK: South and West Regional Health Authority, 1999
- **Living well with emphysema and bronchitis: a handbook for everyone with chronic obstructive pulmonary disease.** Author: Myra B. Shayevitz, Berton R. Shayevitz; Year: 1985; Garden City, N.Y.: Doubleday, 1985; ISBN: 0385194382
  http://www.amazon.com/exec/obidos/ASIN/0385194382/icongroupinterna
- **Management of acute exacerbations of chronic obstructive pulmonary disease: prepared for Agency for Healthcare Resarch and Quality, U.S. Dept. of Health and Human Services.** Author: prepared by Duke University Evidence-based Practice Center, Center for Clinical; Year: 2001; [Rockville, Md.]: Agency for Healthcare Research and Quality, [2001]; ISBN: 1587630508
- **Managing chronic obstructive pulmonary disease.** Author: Peter J. Barnes; Year: 2001; London: Science Press, c2001; ISBN: 1858739322

- **Pulmonary rehabilitation for chronic obstructive pulmonary disease.** Author: J. Mickman ... [et al.]; Year: 1997; Minneapolis, MN: ICSI, 1997
- **Quiet killer: chronic obstructive pulmonary disease--emphysema.** Author: edited by Hannah L. Hedrick, Austin H. Kutscher, and the editors of the American Institute of Life-Threatening Illness and Loss; Year: 2002; Lanham, Md.: Scarecrow Press, 2002; ISBN: 0810841738 (cloth: alk. paper)
  http://www.amazon.com/exec/obidos/ASIN/0810841738/icongroupinterna
- **Rehabilitation and continuity of care in pulmonary disease.** Author: Donald F. May; Year: 1991; St. Louis: Mosby Year Book, c1991; ISBN: 0801656796
  http://www.amazon.com/exec/obidos/ASIN/0801656796/icongroupinterna
- **Respiratory muscles in chronic obstructive pulmonary disease.** Author: edited by A. Grassino ... [et al.]; [Peter Mead ... linguistic revision of the text]; Year: 1988; London; New York: Springer-Verlag; Verona: Bi & Gi Publishers, c1988; ISBN: 0387195092 (U.S.)
  http://www.amazon.com/exec/obidos/ASIN/0387195092/icongroupinterna
- **Some pulmonary function tests in horses: an aid to an early diagnosis of chronic obstructive pulmonary disease (heaves) in horses.** Author: door Hermann Heinrich Ludwig Sasse; Year: 1971; Rotterdam: Bronder-Offset n.v., 1971
- **Symposium on Office Management of Asthma and Chronic Obstructive Pulmonary Disease: [proceedings].** Author: Symposium on Office Management of Asthma and Chronic Obstructive Pulmonary Disease (1980: Las Vegas, Nev.); Year: 1981; Chicago, Ill.: American Osteopathic Association, c1981

Chapters on Chronic Obstructive Pulmonary Disease

Frequently, chronic obstructive pulmonary disease will be discussed within a book, perhaps within a specific chapter. In order to find chapters that are specifically dealing with chronic obstructive pulmonary disease, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and chronic obstructive pulmonary disease using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find book chapters, use the drop boxes at the bottom of the search page where "You

may refine your search by." Select the dates and language you prefer, and the format option "Book Chapter." By making these selections and typing in "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box, you will only receive results on chapters in books. The following is a typical result when searching for book chapters on chronic obstructive pulmonary disease:

- **Aging Voice: Normal Changes or Disease?**

  Source: in Linville, S.E. Vocal Aging. San Diego, CA: Singular Publishing Group. 2001. p. 203-216.

  Contact: Available from Thomson Learning Group. P.O. Box 6904, Florence, KY 41022. (800) 842-3636. Fax (606) 647-5963. Website: www.singpub.com. PRICE: $43.95 plus shipping and handling. ISBN: 1565939026.

  Summary: Normal elderly speakers vary considerably across a wide range of measures involving breathing function, phonatory characteristics, and articulatory precision. This variability results from differences among people in the rate and extent of physiological aging, as well as differences in variables such as lifestyle, genetics, and environmental factors. This chapter on the aging voice is from a text devoted to the properties of the aging voice, with emphasis on diagnosis and treatment of voice disorders in elderly patients. In this chapter, the author explores issues involved in differentiating normal laryngeal aging from pathological states. Topics include glottal gap, vocal fold atrophy, variable mucosal wave patterns, chronic obstructive pulmonary disease, and diagnostic tests. Pathological conditions producing laryngeal dysfunction are examined relative to normal changes in laryngeal function with aging. Respiratory disorders that occur frequently in elderly patients are also contrasted with normal aging. The author describes environmental factors that can influence the aged voice, including physical fitness and cigarette smoking. 43 references.

- **Patients' Experiences with Their Disease: Learning from the Differences and Sharing the Common Problems**

  Source: in Assal, J., Golay, A., and Visser, A.P., eds. New Trends in Patient Education: A Trans-Cultural and Inter-Disease Approach. Amsterdam, The Netherlands: Elsevier Science B.V. 1995. p. 301-312.

  Contact: Available from Elsevier Science. Regional Sales Office, Customer Support Department, 655 Avenue of the Americas, New York, NY 10010. (212) 633-3730. Fax (212) 633-3680. E-mail: usinfo-f@elsevier.com. Price: $209.50. ISBN: 0444822348.

Summary: This chapter, from the proceedings of an international patient education conference, presents patients' experiences and views about the psychological, professional, family, cognitive, and financial costs of several chronic diseases. Diseases covered include arterial hypertension, autonomous dialysis, back pain, bronchial asthma, chronic obstructive pulmonary disease, colostomy, diabetes mellitus, epilepsy, laryngectomy, and Parkinson's disease. (AA-M).

- **Priority Area 3: Tobacco**

  Source: in Healthy People 2000 Final Review. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, DHHS Publication No. 01-256, pp. 93-107, October 2001.

  Contact: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 6525 Belcrest Road, Hyattsville, MD 20782-2003. (301) 458-4636. internet/email: http://www.cdc.gov/nchs/products.htm.

  Summary: Priority Area 3: Tobacco, a chapter in Healthy People 2000 Final Review, summarizes the progress made in meeting the 26 objectives for preventing and reducing tobacco use in the Healthy People 2000 initiative. Data are available to assess the progress toward meeting 24 of the 26 objectives. All the objectives targeting mortality either met or moved toward their targets. Age-related death rates from coronary heart disease decreased for the total population. The rate for blacks also decreased but at a slower rate. Lung cancer and chronic obstructive pulmonary disease death rates slowed to rates below the Healthy People 2000 targets. The average age of first use of cigarettes increased to 12.4 years and the proportion of adolescents reporting use of cigarettes in the past month dropped from a baseline of 22.7 percent to 18.2 percent, although the proportion of high school seniors reporting a perception of social disapproval for smoking cigarettes declined. Smokeless tobacco use declined among adolescents and young adult males, and the target set for adolescents age 12 to 17 years was met. The majority of tobacco use objectives targeting institutions directly affecting youth have also shown improvement. Between 1988 and 1994, the number of school districts providing smoke-free environments more than doubled, and the number of schools providing antismoking education also increased. All 50 states and the District of Columbia have enacted laws prohibiting the sale and distribution of tobacco products to youth under age 18 years. Although these laws are not often strictly enforced, states are now required to demonstrate that they are enforcing their tobacco access laws in a manner that will reduce sales violation rates. The prevalence of

cigarette smoking among adults decreased for all groups by 1993 and then leveled off. Smoking cessation attempts by adults increased; however, they peaked in 1991 and have dropped since then. Although the prevalence of smoking among pregnant women is relatively low and has been decreasing, smoking cessation attempts in this group have declined considerably over the past decade. The number of worksites with smoking policies has increased, as has the number with outright smoking bans. All states now have tobacco control plans, whereas in 1989 only 12 states had such plans. Overall, 7 of the 24 assessed objectives met their targets. Ten objectives showed progress. One objective, states with preemptive clean air laws, showed no change from baseline. Five objectives showed mixed progress among the multiple measures used to track their progress. One objective, smoking cessation during pregnancy, moved away from its target.

- **Assessing the Targets for Prevention of Chronic Diseases**

  Source: in Community-based Prevention: Programs That Work. Brownson, R.C.; Baker, E.A.; Novick, L.F.; eds. Aspen Publishers, Inc., pp. 47-55, 1999.

  Contact: Aspen Publishers, Inc., 200 Orchard Ridge Drive, Suite 200, Gaithersburg, MD 20878. (800) 638-8437.

  Summary: Assessing the Targets for Prevention of Chronic Diseases, a chapter in Community-based Prevention: Programs That Work, describes a project designed to determine the proportion of excess deaths in Maine from stroke, heart disease, diabetes, chronic obstructive pulmonary disease (COPD), lung cancer, female breast cancer, cervical cancer, colorectal cancer, and cirrhosis and the proportion of deaths from each disease attributable to actual preventable causes. Such estimates can be used to help target resources and to determine the potential impact of state and local prevention programs. The study used mortality data from the state. The analysis not only shows the overall burden of chronic disease in Maine, but also allows county-specific estimates that are critical in targeting local efforts. Over the period from 1982 to 1991, more than 25,000, or 40 percent, of the deaths from these nine chronic diseases were attributable to preventable causes. However, in order to have prevented all of the 25,000 deaths, the most important risk factors for each disease would have had to have been completely absent, and the prevalence of other risk factors could not have increased. Even so, the figure provides an indication of the size of the preventable disease target at which prevention programs could take aim. The age distribution of excess deaths suggests that by achieving the theoretically achievable lowest rates, the greatest proportional reduction of deaths could be

achieved among those age 25 to 34 and 45 to 54, but the greatest reduction in number of deaths would be among those age 65 and older. These findings support the importance of primary prevention to avoid acquiring risk factors at young ages. Cigarette smoking was the single largest contributor to chronic disease mortality in Maine over the 10 years. Physical inactivity, high blood pressure, and diet were also major contributors to mortality. The authors discuss several limitations of these findings.

- **Other Health Education Topics**

  Source: in Health Promotion and Aging: Implications for the Health Professions. Second Edition. Haber, D. New York, NY, Springer Publishing Company, Inc., pp. 184-211, 1999.

  Contact: Springer Publishing Company, Inc., 536 Broadway, New York, NY 10012-3955.

  Summary: Other Health Education Topics, a chapter in Health Promotion and Aging: Implications for the Health Professions, discusses (1) smoking, (2) alcohol use, (3) medication usage, (4) injury prevention, and (5) sleep problems among older adults. Cigarette smoke irritates and inflames lungs and air passages, and produces mucus. Over time, this can lead to or exacerbate lung diseases, including cancer and chronic obstructive pulmonary disease (COPD). Older adults tend to be pessimistic about quitting smoking because of a long smoking history. There has been a slight increase in the prevalence of smoking among women over age 65. About 70 percent of all adult smokers visit a physician each year, and almost 80 percent of heavy smokers claim that they would stop smoking if their doctor urged them to stop. Smoking cessation methods include (1) the nicotine patch, (2) nicotine gum, (3) social support, (4) response substitution, and (5) stress management. About one-third of elderly alcoholics are late-onset, reactive problem drinkers. The American Medical Association estimates that about 3 million Americans over age 60 have a drinking problem. Some research has shown that age-specific support groups help alcoholics remain in treatment longer. Adults age 65 and older comprise 12.4 percent of the population, but account for more than 34 percent of outpatient prescription medications and almost half of those purchased over the counter. Older adults risk taking more medications than they need. Injuries are the sixth leading cause of death for persons age 65 and older. Falls and car and pedestrian accidents are the main causes of injury. As many as 40 percent of older adults complain of sleep problems that can result from arthritis, poor circulation, anxiety, or too little exercise.

- **Tobacco Use and the African American Community: A Conceptual Framework for the Year 2000 and Beyond**

  Source: in Planning and Implementing Effective Tobacco Education and Prevention Programs. Forst, M.L.; ed. Springfield, IL, Charles C. Thomas Publisher, Ltd., pp. 83-111, 1999.

  Contact: Charles C. Thomas Publisher, Ltd., 2600 South First Street, Springfield, IL 62704.

  Summary: Tobacco Use and the African American Community: A Conceptual Framework for the Year 2000 and Beyond, a chapter in Planning and Implementing Effective Tobacco Education and Prevention Programs, discusses a relevant conceptual framework for tobacco control in the African American Community. The greatest challenge the public health community faces in preventing and controlling tobacco use among African Americans is understanding the complexity of the problem. It is essential to understand the historical, contextual, cultural, and geographical needs of African Americans. The chapter examines (1) epidemiological trends and behavioral factors among African American adults and youth; (2) behavioral patterns to consider when planning interventions for African Americans; (3) health consequences of tobacco use among African Americans, including cancer, chronic obstructive pulmonary disease, coronary heart disease, and cerebrovascular disease; (4) tobacco industry targeting of the African American community; (5) information revealed in tobacco industry documents; (6) the African American response, focusing on reactions to the UPTOWN cigarette and the X cigarette, the Say No to Menthol Joe Community Crusade, and the work of the Congressional Black Caucus; (7) a conceptual framework, discussing capacity and infrastructure development and national and state initiatives; (8) program applications and principles; (9) tobacco use cessation in the African American community, including the Pathways to Freedom self-help program; and (10) program evaluation.

- **Tobacco: Health Effects and Control**

  Source: in Maxcy-Rosenau-Last Public Health and Preventive Medicine. Fourteenth Edition. Wallace, R.B.; ed. Stamford, CT, Appleton and Lange, pp. 817-845, 1998.

  Contact: Appleton and Lange, Four Stamford Plaza, P.O. Box 120041, Stamford, CT 06912-0041. internet/email: www.appletonlange.com.

  Summary: Tobacco: Health Effects and Control, a chapter in Maxcy-Rosenau-Last Public Health and Preventive Medicine, describes the toll of smoking with respect to excess mortality and economic costs, cardiovascular disease, cancer, and other smoking-related diseases. The

health risks of environmental tobacco smoke are also discussed as are trends in tobacco use, tobacco interventions, tobacco economics, the international perspective on tobacco, and challenges in tobacco prevention and control. Cardiovascular disease is considered with regard to coronary heart disease, peripheral arterial occlusive disease, cerebrovascular disease, and mechanisms of cardiovascular disease as they relate to smoking. An increased risk of lung cancer, oral, laryngeal, and esophageal cancer, bladder and renal cancer, stomach cancer, and cervical cancer is associated with smoking. Other diseases associated with smoking include chronic obstructive pulmonary disease, gastrointestinal disease, diseases of the mouth, in utero effects, and effects on young people. Health risks of environmental tobacco smoke concern the constituents of tobacco smoke, effects on children's health, sudden infant death syndrome, and development of lung cancer and other diseases. The authors review trends in tobacco use by reporting the prevalence of cigarette consumption among adults and teenagers, changes in cigarettes, cigars and pipes, smokeless tobacco, and other tobacco products. The authors discuss treatments for tobacco use/nicotine dependence, treatment for tobacco use in a managed care setting, community intervention programs, government and private sector measures, advertising and promotion, tobacco use prevention, and smoking and the workplace. Despite considerable progress, smoking is still the leading cause of preventable death in the United States and most industrialized societies. Efforts to prevent tobacco use initiation and to promote cessation need to be intensified and to involve widespread use of effective strategies, with reduction of barriers to the interventions and development of innovative strategies, particularly for targeting youth.

- **Prevention of Disability in Older Persons**

  Source: in Maxcy-Rosenau-Last Public Health and Preventive Medicine. Fourteenth Edition. Wallace, R.B.; ed. Stamford, CT, Appleton and Lange, pp. 1059-1068, 1998.

  Contact: Appleton and Lange, Four Stamford Plaza, P.O. Box 120041, Stamford, CT 06912-0041. internet/email: www.appletonlange.com.

  Summary: Prevention of Disability in Older Persons, a chapter in Maxcy-Rosenau-Last Public Health and Preventive Medicine, defines the character and magnitude of disability in old age. The chapter also reviews preventive and restorative approaches to the causes of this disability, and examines the role of health care organizations in facilitating the delivery of services. Topics include discussion of the concept and measurement of disability, the magnitude of aging and disability, and future trends. Disability is discussed with respect to

impairments and losses, disuse and deconditioning, exercise, early interventions and rehabilitation, and selected disabling conditions. The latter includes falls and fractures, incontinence, impaired hearing and vision, depression and dementia, stroke and Parkinson's disease, congestive heart failure and chronic obstructive pulmonary disease, and transitions such as retirement, bereavement, and relocation. Consideration of health care delivery involves discussion of the geriatric medicine movement, geriatric strategies, and use of comprehensive health services. The author states that increased risk of disease, disability, and death are known accompaniments of old age, with functional disability being the most consequential index when handling health in old age.

- **Women's Health and Nutrition Research: U.S. Governmental Concerns**

  Source: in Nutritional Concerns of Women. Wolinski, I.; Klimis-Tavantzis, D; eds. Boca Raton, FL, CRC Press, pp. 1-13, 1996.

  Contact: CRC Press LLC, 2000 Corporate Blvd., NW., Boca Raton, FL 33431.

  Summary: Women's Health and Nutrition Research: U.S. Governmental Concerns, a chapter in Nutritional Concerns of Women, cites three major risk factors for women: obesity, cigarette smoking, and alcohol. Of the five leading causes of death for men and women, rates of death from heart disease lead all other causes for all groups, with malignant neoplasms a close second. Lesser death rates are noted for cerebrovascular disease, accidents, chronic obstructive pulmonary disease, pneumonia, and diabetes mellitus. Emphasis is shifting from focusing on disease to focusing on prevention. Emphasis is on primary health care, of which nutrition and nutrition education should be major components. In 1983 the Task Force on Women's Health Issues was given a charge to assess problems of women's health in the context of contemporary American women's lives. Recommendations from the task force were (1) promotion of a safe, healthful, physical, and social environment; (2) provision of services for prevention and treatment of disease; (3) research and evaluation; (4) recruitment and training of health care personnel; (5) public education and dissemination of research information; and (6) the design of guidelines for legislative and regulatory measures. The three major recommendations for conducting research evaluation were (1) expansion of biomedical and behavioral research, with emphasis on conditions and diseases unique to or more prevalent in women in all age groups; (2) expansion of research and development for more effective, acceptable, and safe contraceptive methods for both men and women; and (3) expansion of studies of

causes, prevention, improved diagnosis, and treatment of debilitating diseases (such as breast and other reproductive system cancers, sexually transmitted diseases, and arthritic diseases), and certain mental disorders. The National Institutes of Health (NIH) Committee on Women's Health Issues has produced two reports in support of research related to women's health and disease, identified the limited inclusion of women in clinical trials, and recommended policies to correct this shortage. A study was requested by the Government Accounting Office to address the concerns about failure to include women in most of the major clinical trials. There were special concerns about long term trials focused on cardiovascular diseases. Creation of the Office of Research on Women's Health was announced in September of 1990. Public testimony from 62 organizations interested both in women's health and in the need for research on women's health was heard. An additional 30 organizations offered written testimony. A workshop entitled Opportunities for Research on Women's Health: What We Know and What Needs to Be Done was held in September of 1991 and set a scientific agenda for women's health at all age groupings and cross cutting major areas of science. The Public Health Service Action Plan for Women's Health in September of 1991 provided a sweeping plan for improving women's health through prevention, research, treatment, services, education, information, and policy. Healthy People 2000 has the goal of developing a national strategy to improve significantly the health of the nation over the coming decade by addressing the prevention of major chronic illnesses, injuries, and infectious diseases. Specific targets and objectives are physical activity and obesity; tobacco and heart disease; lung cancer; cigarette smoking; breast cancer and mammography; and maternal, child health, and prenatal care. The Food and Drug Administration, under the Healthy People 2000 initiative, has the lead responsibility for increasing communications between primary care providers and elderly patients. Under the Omnibus Budget Reconciliation Act of 1990, a Drug Use Review Program was mandated that requires states to provide counseling for all Medicaid patients, and a drug use review program to assure that prescriptions are appropriate, medically necessary, and unlikely to produce adverse effects. A Campaign on Women and Medicines was initiated to ensure safer and more effective use of medicines through improved communication. The Office of Research on Women's Health is responsible for assuring that research conducted and supported by the National Institutes of Health addresses issues regarding women's health and that there is appropriate participation of women in clinical research, especially in clinical trials. The Women's Health Initiative addresses the three leading causes of death and disability among American women over 45 years of age:

cardiovascular diseases, cancer, and osteoporosis. The Community Randomized Trial was established to evaluate strategies to achieve healthful behaviors, including improved diet, nutritional supplementation, smoking prevention and cessation, increased physical activity, and early disease detection for women of all races, ethnic groups, and socioeconomic strata. The anticipated cooperative efforts across health care disciplines over the next decades offer great promise of advancement in the area of women's health. 17 references.

- **Health Education: Other Topics**

  Source: in Health Promotion and Aging. Haber, D. New York, NY, Springer Publishing Company, pp. 134-159, 1994.

  Contact: Springer Publishing Company, Inc., 536 Broadway, New York, NY 10012.

  Summary: Health Education: Other Topics, a book chapter in Health Promotion and Aging, discusses smoking, alcohol, medication usage, and injury prevention among elderly persons. Diseases associated with smoking include coronary heart disease, lung cancer, and chronic obstructive pulmonary disease. In general, older adults smoke less than do younger adults, but older smokers are likely to be pessimistic about their ability to quit because of a history of unsuccessful quit attempts. However, older adults can still experience improved quality of life after they quit smoking. Research has shown that even brief smoking cessation counseling by physicians can effectively help patients to quit. The transdermal patch is often included as part of a smoking cessation program because it combats withdrawal symptoms. Alcoholism can be assessed through the CAGE questionnaire, which includes four questions: (1) Have you ever thought about cutting down?, (2) Have you ever felt annoyed when others criticize your drinking?, (3) Have you ever felt guilty about drinking?, and (4) Have you ever used alcohol as an eye opener?. Problems associated with alcoholism include an increased risk of falls and accidents, dementias, medical problems, and interactions with prescription and over-the-counter drugs, and malnutrition. Treatment alternatives consist of detoxification programs, Alcoholics Anonymous (AA), and self-management strategies. Elderly people also run the risk of misusage of medications, including polypharmacy (using more medication than clinically indicated). Prevention against drug abuse involves avoiding unnecessary medication and obtaining advice from pharmacists. Falls cause the majority of injuries resulting in the death of older persons. Elderly persons can reduce the risk of falls in the home by obtaining proper illumination and convenient light switches, hand rails, and nonslip treads on stairs; lowering bed height;

participating in exercise; and avoiding the misuse of medications and alcohol. The American Association of Retired Persons (AARP) operates a driver safety class for midlife and older motorists, called 55-Alive, a driver education refresher course for persons over age 50. Questions for discussion are provided at the end of the chapter. The chapter also gives information about programs, organizations, and resource materials.

- **Patients with Common Systemic Diseases**

  Source: in Newman, M.G. and van Winkelhoff, A.J., eds. Antibiotic and Antimicrobial Use in Dental Practice. 2nd ed. Chicago, IL: Quintessence Publishing Co, Inc. 2001. p. 243-255.

  Contact: Available from Quintessence Publishing Co, Inc. 551 Kimberly Drive, Carol Stream, IL 60188-9981. (800) 621-0387 or (630) 682-3223. Fax (630) 682-3288. E-mail: quintpub@aol.com. Website: www.quintpub.com. PRICE: $32.00 plus shipping and handling. ISBN: 0867153970.

  Summary: This chapter on the use of antibiotics in patients with common systemic diseases is from a textbook that integrates basic facts and principles of antibiotic therapy with recently emerged concepts of care in dentistry. The authors note that patients being treated for chronic systemic disorders are often on multiple drug regimens; it is therefore essential that clinicians obtain a complete medical history and consider possible drug interactions before prescribing any medications. Because dental procedures may produce considerable bacteremia, it is particularly important that dentists have an understanding of a patient's underlying pathophysiology before making appropriate treatment planning decisions. Clinicians also should consult with the physicians of patients at increased risk of infection before prescribing an antibiotic regimen. Topics covered include diabetes mellitus, bleeding and coagulation disorders, anemias, white blood cell disorders (leukemia, lymphoma, multiple myeloma), rheumatoid arthritis, systemic lupus erythematosus, Sjogren syndrome, renal (kidney) disease, liver diseases, cardiovascular diseases, chronic obstructive pulmonary disease, asthma, and tuberculosis. Important principles, key facts, and clinical insights are highlighted and the chapter concludes with a list of references. 1 figure. 2 tables. 33 references.

- **Respiratory Disorders**

  Source: in Grundy, M.C.; Shaw, L.; and Hamilton, D.V. Illustrated Guide to Dental Care for the Medically Compromised Patient. St. Louis, MO: Mosby-Year Book, Inc. 1993. p. 37-40.

Contact: Available from Mosby-Year Book, Inc. 11830 Westline Industrial Drive, St. Louis, MO 63146-9934. (800) 426-4545 or (314) 872-8370; Fax (800) 535-9935 or (314) 432-1380; E-mail: customer.support@mosby.com; http://www.mosby.com. PRICE: $24.95 plus shipping and handling. ISBN: 0815140223.

Summary: This chapter, from an illustrated guide to dental care for medically compromised patients, discusses respiratory disorders. Disorders covered include chronic obstructive pulmonary disease (chronic bronchitis); bronchiectasis; cystic fibrosis; and asthma. For each condition, the authors provide a brief description, the components of medical management, and suggestions for dental care. Illustrations, including photographs, are included. 3 figures.

- **Pulmonary Disease**

  Source: in Little, J.W., et al. Dental Management of the Medically Compromised Patient. 5th ed. St. Louis, MO: Mosby, Inc. 1997. p. 241-259.

  Contact: Available from Harcourt Health Sciences. 11830 Westline Industrial Drive, St. Louis, MO 63146. (800) 325-4177. Fax (800) 874-6418. Website: www.harcourthealth.com. PRICE: $48.00 plus shipping and handling. ISBN: 0815156340.

  Summary: A working knowledge of the multitude of compromised health states is essential for dental professionals, as the majority of medically compromised patients need or want oral health care. This chapter on pulmonary (lung) disease is from a text that provides the dental practitioner with an up to date reference work describing the dental management of patients with selected medical problems. The authors focus on some of the more commonly encountered pulmonary conditions, including chronic obstructive pulmonary disease (COPD, including chronic bronchitis and emphysema), asthma, and tuberculosis. The authors discuss incidence and prevalence of each condition, its etiology (including genetic and lifestyle causes), pathophysiology and complications, signs and symptoms (clinical presentation and laboratory findings), the medical management of patients with pulmonary diseases, and the dental management of this population. 7 figures. 8 tables. 45 references.

General Home References

In addition to references for chronic obstructive pulmonary disease, you may want a general home medical guide that spans all aspects of home

healthcare. The following list is a recent sample of such guides (sorted alphabetically by title; hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Anatomica : The Complete Home Medical Reference** by Peter Forrestal (Editor); Hardcover (2000), Book Sales; ISBN: 1740480309; **http://www.amazon.com/exec/obidos/ASIN/1740480309/icongroupinterna**
- **The Breathing Disorders Sourcebook** by Francis V. Adams, M.D.; Paperback - 240 pages (November 1998), McGraw Hill - NTC; ISBN: 073730006X; **http://www.amazon.com/exec/obidos/ASIN/073730006X/icongroupintern a**
- **The HarperCollins Illustrated Medical Dictionary : The Complete Home Medical Dictionary** by Ida G. Dox, et al; Paperback - 656 pages 4th edition (2001), Harper Resource; ISBN: 0062736469; **http://www.amazon.com/exec/obidos/ASIN/0062736469/icongroupinterna**
- **The Merck Manual of Medical Information: Home Edition (Merck Manual of Medical Information Home Edition (Trade Paper)** by Robert Berkow (Editor), Mark H. Beers, M.D. (Editor); Paperback - 1536 pages (2000), Pocket Books; ISBN: 0671027263; **http://www.amazon.com/exec/obidos/ASIN/0671027263/icongroupinterna**
- **Stedman's Cardiovascular & Pulmonary Words: Includes Respiratory;** Paperback - 888 pages, 3rd edition (June 15, 2001), Lippincott, Williams & Wilkins Publishers; ISBN: 0781730562; **http://www.amazon.com/exec/obidos/ASIN/0781730562/icongroupinterna**

Vocabulary Builder

Antimicrobial: Killing microorganisms, or suppressing their multiplication or growth. [EU]

Atrophy: A wasting away; a diminution in the size of a cell, tissue, organ, or part. [EU]

Bacteremia: The presence of viable bacteria circulating in the blood. Fever, chills, tachycardia, and tachypnea are common acute manifestations of bacteremia. The majority of cases are seen in already hospitalized patients, most of whom have underlying diseases or procedures which render their bloodstreams susceptible to invasion. [NIH]

Bereavement: Refers to the whole process of grieving and mourning and is associated with a deep sense of loss and sadness. [NIH]

Carcinogenic: Producing carcinoma. [EU]

Cervical: Pertaining to the neck, or to the neck of any organ or structure. [EU]

Cirrhosis: Liver disease characterized pathologically by loss of the normal microscopic lobular architecture, with fibrosis and nodular regeneration. The term is sometimes used to refer to chronic interstitial inflammation of any organ. [EU]

Coagulation: 1. the process of clot formation. 2. in colloid chemistry, the solidification of a sol into a gelatinous mass; an alteration of a disperse phase or of a dissolved solid which causes the separation of the system into a liquid phase and an insoluble mass called the clot or curd. Coagulation is usually irreversible. 3. in surgery, the disruption of tissue by physical means to form an amorphous residuum, as in electrocoagulation and photocoagulation. [EU]

Colorectal: Pertaining to or affecting the colon and rectum. [EU]

Conduction: The transfer of sound waves, heat, nervous impulses, or electricity. [EU]

Detoxification: Treatment designed to free an addict from his drug habit. [EU]

Diphtheria: A localized infection of mucous membranes or skin caused by toxigenic strains of corynebacterium diphtheriae. It is characterized by the presence of a pseudomembrane at the site of infection. Diphtheria toxin, produced by C. diphtheriae, can cause myocarditis, polyneuritis, and other systemic toxic effects. [NIH]

Gastrointestinal: Pertaining to or communicating with the stomach and intestine, as a gastrointestinal fistula. [EU]

Hepatitis: Inflammation of the liver. [EU]

Immunization: Protection from disease by administering vaccines that induce the body to form antibodies against infectious agents. [NIH]

Incontinence: Inability to control excretory functions, as defecation (faecal i.) or urination (urinary i.). [EU]

Laryngectomy: Total or partial excision of the larynx. [NIH]

Larynx: An irregularly shaped, musculocartilaginous tubular structure, lined with mucous membrane, located at the top of the trachea and below the root of the tongue and the hyoid bone. It is the essential sphincter guarding the entrance into the trachea and functioning secondarily as the organ of voice. [NIH]

Lymphoma: Cancer of the lymph nodes. [NIH]

Malignant: Tending to become progressively worse and to result in death. Having the properties of anaplasia, invasion, and metastasis; said of tumours. [EU]

Mammography: Radiographic examination of the breast. [NIH]

Menthol: An alcohol produced from mint oils or prepared synthetically. [NIH]

Myeloma: A tumour composed of cells of the type normally found in the bone marrow. [EU]

Neoplasms: New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms. [NIH]

Neuromuscular: Pertaining to muscles and nerves. [EU]

Ophthalmology: A surgical specialty concerned with the structure and function of the eye and the medical and surgical treatment of its defects and diseases. [NIH]

Osteoporosis: Reduction in the amount of bone mass, leading to fractures after minimal trauma. [EU]

Pancreas: A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the islets of langerhans, while the exocrine portion is a compound acinar gland that secretes digestive enzymes. [NIH]

Perioperative: Pertaining to the period extending from the time of hospitalization for surgery to the time of discharge. [EU]

Pharmacists: Those persons legally qualified by education and training to engage in the practice of pharmacy. [NIH]

Proportional: Being in proportion : corresponding in size, degree, or intensity, having the same or a constant ratio; of, relating to, or used in determining proportions. [EU]

Psychiatric: Pertaining to or within the purview of psychiatry. [EU]

Rubella: An acute, usually benign, infectious disease caused by a togavirus and most often affecting children and nonimmune young adults, in which the virus enters the respiratory tract via droplet nuclei and spreads to the lymphatic system. It is characterized by a slight cold, sore throat, and fever, followed by enlargement of the postauricular, suboccipital, and cervical lymph nodes, and the appearances of a fine pink rash that begins on the head and spreads to become generalized. Called also German measles, roetln, röteln, and three-day measles, and rubeola in French and Spanish. [EU]

Schizophrenia: A severe emotional disorder of psychotic depth characteristically marked by a retreat from reality with delusion formation, hallucinations, emotional disharmony, and regressive behavior. [NIH]

Stomach: An organ of digestion situated in the left upper quadrant of the

abdomen between the termination of the esophagus and the beginning of the duodenum. [NIH]

Suicide: The act of killing oneself. [NIH]

Tetanus: A disease caused by tetanospasmin, a powerful protein toxin produced by clostridium tetani. Tetanus usually occurs after an acute injury, such as a puncture wound or laceration. Generalized tetanus, the most common form, is characterized by tetanic muscular contractions and hyperreflexia. Localized tetanus presents itself as a mild condition with manifestations restricted to muscles near the wound. It may progress to the generalized form. [NIH]

Transdermal: Entering through the dermis, or skin, as in administration of a drug applied to the skin in ointment or patch form. [EU]

Valves: Flap-like structures that control the direction of blood flow through the heart. [NIH]

Withdrawal: 1. a pathological retreat from interpersonal contact and social involvement, as may occur in schizophrenia, depression, or schizoid avoidant and schizotypal personality disorders. 2. (DSM III-R) a substance-specific organic brain syndrome that follows the cessation of use or reduction in intake of a psychoactive substance that had been regularly used to induce a state of intoxication. [EU]

CHAPTER 7. MULTIMEDIA ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

Information on chronic obstructive pulmonary disease can come in a variety of formats. Among multimedia sources, video productions, slides, audiotapes, and computer databases are often available. In this chapter, we show you how to keep current on multimedia sources of information on chronic obstructive pulmonary disease. We start with sources that have been summarized by federal agencies, and then show you how to find bibliographic information catalogued by the National Library of Medicine. If you see an interesting item, visit your local medical library to check on the availability of the title.

Video Recordings

Most diseases do not have a video dedicated to them. If they do, they are often rather technical in nature. An excellent source of multimedia information on chronic obstructive pulmonary disease is the Combined Health Information Database. You will need to limit your search to "video recording" and "chronic obstructive pulmonary disease" using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find video productions, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Videorecording (videotape, videocassette, etc.)." By making these selections and typing "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box, you will only receive results on video productions.

The following is a typical result when searching for video recordings on chronic obstructive pulmonary disease:

- **Poisoning Your Children: The Perils of Secondhand Smoke**

  Source: Alexandria, VA: American Academy of Otolaryngology-Head and Neck Surgery Foundation, Inc. (AAO-HNS). 1991. (videocassette).

  Contact: American Academy of Otolaryngology-Head and Neck Surgery Foundation, Inc. (AAO-HNS). One Prince Street, Alexandria, VA 22314. (703) 836-4444. Fax (703) 683-5100. PRICE: $40.00 for non-members; $30.00 for members.

  Summary: This video shows parents, grandparents, educators, and others the importance of not smoking around children. Narrated by Dr. Nancy Snyderman, an otolaryngologist who serves as medical correspondent for ABC news, the program presents statistics on the harmful effects of secondhand smoke on children. Drawing from a December 1992 Environmental Protection Agency (EPA) report on passive smoking, the program stresses that infants and children are at most risk because of possible damage to developing organs. Animated graphics show how smoke harms the body in the following ways: ear infections, runny nose, postnasal drip, cough and wheezing, asthma, pneumonia, sinusitis, colds and sore throats, bronchitis, and reduced lung function. (AA-M).

- **Diagnosing Alpha 1 Antitrypsin Deficiency**

  Source: Minneapolis, MN: Alpha 1 Association. 199x. (videocassette).

  Contact: Available from Alpha 1 Association. 8120 Penn Avenue, South, Suite 549, Minneapolis, MN 55431-1326. (800) 521-3025 or (612) 703-9979. Fax (612) 703-9977. E-mail: A1NA@alpha1.org. Website: www.alpha1.org. PRICE: $3.00 plus shipping and handling.

  Summary: This videotape program, narrated by Sandra Brandley, the Executive Director of the Alpha 1 National Association, reminds physicians of the symptoms and differential diagnosis of alpha 1 antitrypsin deficiency (A1AD or Alpha 1). The program features Dr. James Stoller, who describes the typical underdiagnosis of A1AD which is typical: the mean time until diagnosis is 7 years (from onset of symptoms) and the mean number of doctors consulted before diagnosis is 3.5. Alpha 1 is a relatively common genetic disorder that affects infants, children, and adults. It is the most common metabolic disorder that causes liver disease in infants and children; the disorder also causes cirrhosis and cancer of the liver in adults. Symptoms of A1AD deficiency in children include prolonged obstructive jaundice, low birth weight, mildly elevated liver enzymes, cholestasis, enlarged liver, abnormal

bleeding, feeding difficulties, poor growth (or failure to thrive), and ascites (abnormal accumulation of fluids). In adults, the spectrum of liver disease associated with A1AD deficiency varies from mild to severe. Symptoms include chronic active hepatitis, cryptogenic cirrhosis (liver scarring of unknown cause), portal hypertension (high blood pressure in the portal vein of the liver), and hepatocellular carcinoma (liver cancer). A rare but telling symptom is panniculitis, a chronic inflammation of subcutaneous fat featuring ulcerated skin lesions on the torso. Dr. Stoller reminds viewers of the indications for A1AD screening: premature onset of moderate to severe chronic obstructive pulmonary disease (COPD) before age 50; predominant basilar emphysema; chronic bronchitis with airflow obstruction in a nonsmoker; bronchiectasis (irreversible dilation and destruction of the bronchial walls) without clear risk factors; development of unremitting asthma; family history of A1AD; cirrhosis without apparent risk factors; and family history of panniculitis. The program includes a chart of laboratory values and the risk of development of A1AD, and a series of interviews with patients about the interplay of early diagnosis and good quality of life. The program concludes with the contact information for the Alpha 1 National Association (800-521-3025).

Bibliography: Multimedia on Chronic Obstructive Pulmonary Disease

The National Library of Medicine is a rich source of information on healthcare-related multimedia productions including slides, computer software, and databases. To access the multimedia database, go to the following Web site: **http://locatorplus.gov/**. Select "Search LOCATORplus." Once in the search area, simply type in chronic obstructive pulmonary disease (or synonyms). Then, in the option box provided below the search box, select "Audiovisuals and Computer Files." From there, you can choose to sort results by publication date, author, or relevance. The following multimedia has been indexed on chronic obstructive pulmonary disease. For more information, follow the hyperlink indicated:

- **Caring for the patient with chronic obstructive pulmonary disease.** Source: HSN, Hospital Satellite Network; a production of the Wrightwood Group; Year: 1988; Format: Videorecording; [Los Angeles, Calif.]: The Network, c1988
- **Chronic obstructive pulmonary disease : breathing patterns.** Source: Institute of Rehabilitation Medicine, New York University Medical Center; produced by National Medical Audiovisual Center; Year: 1968;

Format: Motion picture; New York: The Center; [Atlanta: for loan by National Medical Audiovisual Center; Washington: for sale by National Audiovisual Center, 1968]

- **Chronic obstructive pulmonary disease : diaphragmatic breathing.** Source: Institute of Rehabilitation Medicine, New York University Medical Center; produced by National Medical Audiovisual Center; Year: 1968; Format: Motion picture; New York: The Center; [Atlanta: for loan by National Medical Audiovisual Center; Washington: for sale by National Audiovisual Center, 1968]
- **Chronic obstructive pulmonary disease : the use of oxygen in physical mat therapy National Medical Audiovisual Center.** Year: 1969; Format: Motion picture; Bethesda, MD: National Medical Audiovisual Center, 1969
- **Chronic obstructive pulmonary disease :intermittent positive pressure breathing National Medical Audiovisual Center.** Year: 1968; Format: Motion picture; Bethesda, MD: National Medical Audiovisual Center, 1969
- **Chronic obstructive pulmonary disease.** Source: Association of Pathology Chairmen and National Medical Audiovisual Center; Year: 1975; Format: Slide; Syracuse, N. Y.: The Association, 1975
- **Chronic obstructive pulmonary disease.** Source: presented as an educational service by Allen & Hanburys, division of Glaxco Inc.; a Vision Associates/Health Science Media production; Year: 1989; Format: Videorecording; [Research Triangle Park, N.C.]: Glaxo, c1989
- **Chronic obstructive pulmonary disease.** Source: [presented by] Council on Continuing Physician Education; Year: 1981; Format: Videorecording; Chicago, Ill.: American Medical Association, c1981
- **Chronic obstructive pulmonary disease.** Source: AACN [and] Medi-Sim, Inc; Year: 1987; Format: Electronic resource; Edwardsville, KS: Medi-Sim, c1987
- **Chronically ill : pain, profit, and managed care.** Source: a presentation of Films for the Humanities and Sciences; Year: 2000; Format: Videorecording; Princeton, N.J.: Films for the Humanities and Sciences, c2000
- **COPD, chronic obstructive pulmonary disease.** Source: Vito A. Angelillo; Year: 1990; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, 1990
- **Diagnosis and assessment of chronic obstructive pulmonary disease.** Source: presented by the American Thoracic Society, American Lung Association ALA/ATS Component Committee on Learning Resources; Year: 1979; Format: Slide; New York: The Committee, 1979

- **Epidemiology and natural course of chronic obstructive pulmonary disease.** Source: presented by the American Thoracic Society, American Lung Association, ALA/ATS Component Committee on Learning Resources; Year: 1980; Format: Slide; New York: The Committee, c1980
- **Management of chronic obstructive pulmonary disease : in hospital.** Source: David J. Pierson; produced by Biomedical Communications, University of Arizona, Health Sciences Center; Year: 1981; Format: Slide; [New York, N.Y.]: American Lung Association for American Thoracic Society, c1981
- **Management of chronic obstructive pulmonary disease, outpatient.** Source: Biomedical Communications, University of Arizona Health Sciences Center; presented by the American Thoracic Society, American Lung Association; Year: 1982; Format: Slide; [New York]: ALA/ATS Component Committee on Learning Resources, c1982
- **Management of COPD : an update.** Source: American Academy of Family Physicians; Year: 2001; Format: Videorecording; Leawood, KS: The Academy, c2001
- **Managing your chronic obstructive pulmonary disease.** Source: [presented by] Milner-Fenwick; Year: 2001; Format: Videorecording; Timonium, MD: Milner-Fenwick, c2001
- **Nursing care of the elderly patient with chronic obstructive pulmonary disease .** Year: 1988; Format: Videorecording; [New York, N.Y.]: American Journal of Nursing Company, c1988
- **Nursing management of chronic obstructive pulmonary disease.** Source: [presented by] Mosby; Samuel Merritt College, Studio Three Productions; Year: 1995; Format: Videorecording; St. Louis, Mo.: Mosby-Year Book, c1995
- **Optimizing control of chronic obstructive pulmonary disease.** Source: moderator, Thomas L. Petty; faculty, Christopher B. Cooper, Mitchell Friedman, Louis Kuritzky; Year: 1997; Format: Videorecording; Secaucus. N.J.: Network for Continuing Medical Education, c1997
- **Orientation to chronic obstructive pulmonary disease and lung cancer.** Source: American Lung Association, American Thoracic Society; produced by Emerson-Braxton & Co., Inc; Year: 1983; Format: Slide; [New York, N.Y.]: The Association, c1983
- **Shingles : treating the chronic pain.** Source: a presentation of Films for the Humanities & Sciences; Year: 2000; Format: Videorecording; Princeton, N.J.: Films for the Humanities & Sciences, c2000
- **Spirometry : early detection of chronic obstructive pulmonary disease.** Source: Wexler Films; [presented by] the Oregon Thoracic Society, medical section of the Oregon Tuberculosis Association; Year: 1968;

Format: Motion picture; United States: National Tuberculosis and Respiratory Disease Association, c1968

Vocabulary Builder

Ascites: Effusion and accumulation of serous fluid in the abdominal cavity; called also abdominal or peritoneal dropsy, hydroperitonia, and hydrops abdominis. [EU]

Carcinoma: A malignant new growth made up of epithelial cells tending to infiltrate the surrounding tissues and give rise to metastases. [EU]

Cholestasis: Impairment of biliary flow at any level from the hepatocyte to Vater's ampulla. [NIH]

Hepatocellular: Pertaining to or affecting liver cells. [EU]

Jaundice: A clinical manifestation of hyperbilirubinemia, consisting of deposition of bile pigments in the skin, resulting in a yellowish staining of the skin and mucous membranes. [NIH]

Otolaryngology: A surgical specialty concerned with the study and treatment of disorders of the ear, nose, and throat. [NIH]

Sinusitis: Inflammation of a sinus. The condition may be purulent or nonpurulent, acute or chronic. Depending on the site of involvement it is known as ethmoid, frontal, maxillary, or sphenoid sinusitis. [EU]

CHAPTER 8. PHYSICIAN GUIDELINES AND DATABASES

Overview

Doctors and medical researchers rely on a number of information sources to help patients with their conditions. Many will subscribe to journals or newsletters published by their professional associations or refer to specialized textbooks or clinical guides published for the medical profession. In this chapter, we focus on databases and Internet-based guidelines created or written for this professional audience.

NIH Guidelines

For the more common diseases, The National Institutes of Health publish guidelines that are frequently consulted by physicians. Publications are typically written by one or more of the various NIH Institutes. For physician guidelines, commonly referred to as "clinical" or "professional" guidelines, you can visit the following Institutes:

- Office of the Director (OD); guidelines consolidated across agencies available at **http://www.nih.gov/health/consumer/conkey.htm**
- National Institute of General Medical Sciences (NIGMS); fact sheets available at **http://www.nigms.nih.gov/news/facts/**
- National Library of Medicine (NLM); extensive encyclopedia (A.D.A.M., Inc.) with guidelines: **http://www.nlm.nih.gov/medlineplus/healthtopics.html**
- National Heart, Lung, and Blood Institute (NHLBI); guidelines available at **http://www.nhlbi.nih.gov/guidelines/index.htm**

The NHLBI recently recommended the following guidelines and references to physicians treating patients with lung conditions:

Asthma

General:

- National Asthma Education and Prevention Program Slide Sets: **http://hin.nhlbi.nih.gov/naepp_slds/menu.htm**
- Action Against Asthma: A Strategic Plan for the Department of Health and Human Services: **http://aspe.hhs.gov/sp/asthma**
- Asthma Management Model System (Web Site): **http://www.nhlbisupport.com/asthma/index.html**
- Asthma Management in Minority Children: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/ast_chil.htm**
- AsthmaMemo: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/asth_mem.htm**
- Data Fact Sheet: Asthma Statistics: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/asthstat.htm**
- Diagnosing and Managing Asthma in the Elderly: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/as_elder.htm**
- Guidelines for the Diagnosis and Management of Asthma: NAEPP Expert Panel Report 2: **http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm**
- NAEPP Task Force on the Cost Effectiveness, Quality of Care, and Financing of Asthma Care: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/ast_cost.htm**
- Nurses: Partners in Asthma Care: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/nurs_gde.htm**
- Practical Guide for the Diagnosis and Management of Asthma: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/practgde.htm**
- Report of the Working Group on Asthma and Pregnancy: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/astpreg.txt**
- The Role of the Pharmacist in Improving Asthma Care: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/asmapmcy.htm**
- World Asthma Day 2001 (May 3, 2001): **http://www.nhlbi.nih.gov/health/prof/lung/asthma/wad_2/index.htm**

Schools/child care centers:

- NAEPP Resolution on Asthma Management at School: **http://www.nhlbi.nih.gov/health/public/lung/asthma/resolut.htm**
- Asthma and Physical Activity in the School: **http://www.nhlbi.nih.gov/health/public/lung/asthma/phy_asth.htm**
- Asthma Awareness Curriculum for the Elementary Classroom: **http://www.nhlbi.nih.gov/health/prof/lung/asthma/school/index.htm**
- How Asthma-Friendly Is Your School? (¿Su escuela tiene en cuenta a los niños con asma?): **http://www.nhlbi.nih.gov/health/public/lung/asthma/friendhi.htm**
- How Asthma-Friendly Is Your Child-Care Setting? (¿Su guardería infantil tiene en cuenta a los niños con asma?): **http://www.nhlbi.nih.gov/health/public/lung/asthma/child_ca.htm**
- School Asthma Education Slide Set: **http://hin.nhlbi.nih.gov/naepp_slds/menu.htm**

See also:

- Asthma Clinical Research Network (ACRN): **http://www.acrn.org/**[27]
- Global Initiative for Asthma: **http://www.nhlbi.nih.gov/health/prof/lung/gina.htm**
- National Asthma Education and Prevention Program: **http://www.nhlbi.nih.gov/about/naepp/index.htm**

National Emphysema Treatment Trial (NETT)

- News Release: NHLBI-Funded Emphysema Study Finds Certain Patients at High Risk for Death Following Lung Surgery, August 14, 2001: **http://www.nhlbi.nih.gov/new/press/01-08-14.htm**
- News Release: NHLBI/HCFA Lung Volume Reduction Surgery Study Participants Announced, December 20, 1996: **http://www.nhlbi.nih.gov/health/prof/lung/nett/lvrspr.htm**
- Background and Study Information: **http://www.nhlbi.nih.gov/health/prof/lung/nett/lvrsweb.htm**

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[27] Please note: This link, which goes outside the NHLBI Web site, will open a new browser window; to return to this document, either close the new window, or toggle back (ALT-TAB for Windows users, Apple-TAB for Macintosh users).

- Participating Centers:
  http://www.nhlbi.nih.gov/health/prof/lung/nett/lvrsctr.htm

Other Pulmonary Information

Global Initiative for Chronic Obstructive Lung Disease (GOLD):

- COPD Guideline Tool for Palm OS: **http://hin.nhlbi.nih.gov/copd.htm**
- Workshop Report: **http://www.nhlbi.nih.gov/health/prof/lung/gold.htm**
- Tuberculosis Academic Awards:
  http://www.nhlbi.nih.gov/funding/training/tbaa/index.htm
- Acute Respiratory Distress Syndrome Clinical Network (ARDSNet):
  http://hedwig.mgh.harvard.edu/ardsnet/
- Pulmonary Immunobiology and Inflammation in Pulmonary Diseases NHLBI, Workshop Summary:
  http://www.nhlbi.nih.gov/meetings/workshops/pul_inflam.htm
- Pharmacological Therapy for Idiopathic Pulmonary Fibrosis: Past, Present, and Future, NHLBI Workshop Summary:
  http://www.nhlbi.nih.gov/meetings/workshops/ipf-sum.htm
- Nurses: Help Your Patients Stop Smoking:
  http://www.nhlbi.nih.gov/health/prof/lung/other/nurssmok.txt

See also:

- List of Publications:
  http://www.nhlbi.nih.gov/health/pubs/pub_prof.htm
- Information Center: **http://www.nhlbi.nih.gov/health/infoctr/index.htm**
- Lung Information for Patients/Public:
  http://www.nhlbi.nih.gov/health/public/lung/index.htm

NIH Databases

In addition to the various Institutes of Health that publish professional guidelines, the NIH has designed a number of databases for professionals.[28]

[28] Remember, for the general public, the National Library of Medicine recommends the databases referenced in MEDLINE*plus* (**http://medlineplus.gov/** or **http://www.nlm.nih.gov/medlineplus/databases.html**).

Physician-oriented resources provide a wide variety of information related to the biomedical and health sciences, both past and present. The format of these resources varies. Searchable databases, bibliographic citations, full text articles (when available), archival collections, and images are all available. The following are referenced by the National Library of Medicine:[29]

- **Bioethics:** Access to published literature on the ethical, legal and public policy issues surrounding healthcare and biomedical research. This information is provided in conjunction with the Kennedy Institute of Ethics located at Georgetown University, Washington, D.C.: **http://www.nlm.nih.gov/databases/databases_bioethics.html**
- **HIV/AIDS Resources:** Describes various links and databases dedicated to HIV/AIDS research: **http://www.nlm.nih.gov/pubs/factsheets/aidsinfs.html**
- **NLM Online Exhibitions:** Describes "Exhibitions in the History of Medicine": **http://www.nlm.nih.gov/exhibition/exhibition.html**. Additional resources for historical scholarship in medicine: **http://www.nlm.nih.gov/hmd/hmd.html**
- **Biotechnology Information:** Access to public databases. The National Center for Biotechnology Information conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information for the better understanding of molecular processes affecting human health and disease: **http://www.ncbi.nlm.nih.gov/**
- **Population Information:** The National Library of Medicine provides access to worldwide coverage of population, family planning, and related health issues, including family planning technology and programs, fertility, and population law and policy: **http://www.nlm.nih.gov/databases/databases_population.html**
- **Cancer Information:** Access to caner-oriented databases: **http://www.nlm.nih.gov/databases/databases_cancer.html**
- **Profiles in Science:** Offering the archival collections of prominent twentieth-century biomedical scientists to the public through modern digital technology: **http://www.profiles.nlm.nih.gov/**
- **Chemical Information:** Provides links to various chemical databases and references: **http://sis.nlm.nih.gov/Chem/ChemMain.html**
- **Clinical Alerts:** Reports the release of findings from the NIH-funded clinical trials where such release could significantly affect morbidity and mortality: **http://www.nlm.nih.gov/databases/alerts/clinical_alerts.html**

[29] See **http://www.nlm.nih.gov/databases/databases.html**.

- **Space Life Sciences:** Provides links and information to space-based research (including NASA): **http://www.nlm.nih.gov/databases/databases_space.html**
- **MEDLINE:** Bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the healthcare system, and the pre-clinical sciences: **http://www.nlm.nih.gov/databases/databases_medline.html**
- **Toxicology and Environmental Health Information (TOXNET):** Databases covering toxicology and environmental health: **http://sis.nlm.nih.gov/Tox/ToxMain.html**
- **Visible Human Interface:** Anatomically detailed, three-dimensional representations of normal male and female human bodies: **http://www.nlm.nih.gov/research/visible/visible_human.html**

While all of the above references may be of interest to physicians who study and treat chronic obstructive pulmonary disease, the following are particularly noteworthy.

The Combined Health Information Database

A comprehensive source of information on clinical guidelines written for professionals is the Combined Health Information Database. You will need to limit your search to "Brochure/Pamphlet," "Fact Sheet," or "Information Package" and chronic obstructive pulmonary disease using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For the publication date, select "All Years," select your preferred language, and the format option "Fact Sheet." By making these selections and typing "chronic obstructive pulmonary disease" (or synonyms) into the "For these words:" box above, you will only receive results on fact sheets dealing with chronic obstructive pulmonary disease. The following is a sample result:

- **State of the State's Health: A Report from the Oklahoma State Board of Health**

  Source: Oklahoma State Board of Health, 5 p., 1999.

  Contact: www.health.state.ok.us/board/state99/index.html. (accessed May 16, 2000).

Summary: The State of the State's Health, the third annual report of the Oklahoma State Board of Health, discusses current health status indicators of Oklahoma residents, which include (1) leading causes of death; (2) socioeconomic issues affecting health; (3) the prevalence of behavioral risk factors such as smoking, obesity, firearms, and seat belt use; and (4) issues affecting the health of youth, particularly tobacco addiction, motor vehicle crashes, suicide, and teen pregnancy. The report notes that although Oklahoma's health problems vary in nature and in severity from region to region, the overall state of health of Oklahoma residents is declining or has not improved compared to national health trends. The national death rate declined 16 percent since 1980, while Oklahoma's death rate initially declined and then began to increase after 1984. Among the five leading causes of death, the current injury death rate in Oklahoma is 24 percent above the national average; deaths from chronic obstructive pulmonary disease, heart disease, and stroke are 18, 17, and 13 percent, respectively, above the United States rates; and the cancer death rate is essentially the same as the national rate. Adult seat belt use in Oklahoma increased from 46 percent in 1993 to 60 percent in 1997. In 1997, however, 71 percent of the persons killed in traffic crashes in Oklahoma were not wearing seat belts. Alcohol was a factor in at least 28 percent of these motor vehicle-related deaths. If seat belt use in Oklahoma increased to 80 percent, it is estimated that 120 deaths and more than 2,600 injuries would be prevented, saving the state an estimated 174 million dollars annually. Oklahoma's adult smoking rate in 1997 amounted to 24.6 percent, compared to a median of 23.2 percent for all states. Oklahoma has the ninth highest smoking-attributable death rate in the United States, resulting in over 6,000 premature deaths each year, more than from any other single cause. More than 75 percent of all adult smokers in Oklahoma became regular smokers during their teenage years. The total estimated costs of tobacco use in Oklahoma exceed 1 billion dollars annually, including 390 million dollars in direct medical costs. Oklahoma's per capita sales rate was 111.8 cigarette packs in 1997 compared to a national median of 90.0 packs. The report presents a summary of an initial action agenda that could help mitigate some of the negative health trends that Oklahomans are experiencing.

- **South Dakota Health Check-up**

  Source: Pierre, SD, South Dakota Department of Health, 178 p., 1999.

  Contact: South Dakota Department of Health.

  Summary: South Dakota Health Check-up contains demographic and health status data at the county, state, and national level. Health care resources information is provided at the county and state level. The

categories include Demographic Information, Health Status Indicators, Health Care Resources, Maps, and Technical notes. Demographic information includes (1) the population, (2) percent white, (3) percent Native American, (4) percent 65 years of age or over, (5) percent age 4 years and under, and (6) the number and percent of the population under 100 and 200 percent of poverty. Health Status Indicators includes the (1) percent of low birth weight infants, (2) percent of mothers receiving care in the first trimester of pregnancy, (3) percent of mothers who smoked while pregnant, (4) percent of mothers who drank alcohol while pregnant, (5) fertility rate, (6) adolescent birth rate, (7) chlamydia rate, (8) percent of children with age appropriate immunizations, (9) infant mortality rate, (10) neonatal mortality rate, (11) postneonatal mortality rate, (12) fetal death rate, and (13) age-adjusted death rates. Age-adjusted death rates are provided for (1) all causes, (2) chronic obstructive pulmonary disease, (3) all cancer, (4) female breast cancer, (5) colorectal cancer, (6) lung cancer, (7) unintentional injuries, (8) motor vehicle accidents, (9) suicide, (10) cardiovascular disease, (11) coronary heart disease, and (12) stroke. Health Care Resources includes (1) full-time equivalents for primary care physicians and mid-levels and locations of primary care clinics, (2) community health nurses, (3) community hospitals, (4) rural primary care hospitals, (5) nursing homes, (6) assisted living centers, and (7) home health providers. Maps include all the rates by indicator for each county, shown on a map of South Dakota. Technical Notes includes definitions of the indicators and explanations of statistical concepts and factors affecting the rates.

- **Toward a Healthy Wyoming: Health Objectives for the Year 2000**

  Source: Cheyenne, WY, Wyoming Department of Health, 100 p., May 15, 1994.

  Contact: Wyoming Department of Health, 117 Hathaway Building, Cheyenne, WY 82002. (307) 777-7656.

  Summary: Toward A Healthy Wyoming: Health Objectives for the Year 2000 describes health objectives for the state of Wyoming based largely on the national Healthy People 2000 objectives. Health problems addressed by Wyoming 2000 include (1) pulmonary diseases, including chronic obstructive pulmonary disease and lung cancer; (2) unintentional injuries, including motor vehicle crashes, poisoning, and occupational deaths; (3) oral health problems; (4) cancer, including breast cancer, prostate cancer, and skin cancer; (5) communicable diseases, including human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), tuberculosis, vaccine-preventable diseases, and sexually transmitted diseases (STD's); (6) violence, including suicide,

domestic violence, sexual assault, and child abuse; (7) maternal and child health, including infant mortality, low birth weight, developmental disabilities, and fetal alcohol syndrome; (8) chronic diseases, including cardiovascular disease, diabetes, and osteoporosis; and (9) mental health and mental disorders. Risk factors associated with Wyoming's health problems include (1) nutrition, (2) tobacco, (3) unsafe sex and teenage pregnancy, (4) alcohol abuse, (5) physical inactivity, (6) non-use of safety equipment, (7) environmental hazards, and (8) inadequate access to primary care and preventive services. The report cross references health problems and risk factors by identifying major risk factors known to cause each health problem and the health problems known to result from each risk factor. The report also describes three broad approaches seen by the Wyoming Department of Health as fundamental to making progress in the areas of health promotion and disease prevention: (1) Enhanced interagency collaboration and cooperation, (2) community-based health planning, and (3) comprehensive school health education.

- **Tobacco Use and Its Health Consequences: A Report on the Leading Cause of Death and Disability in West Virginia**

  Source: Charleston, WV, West Virginia Department of Health and Human Resources, Bureau of Public Health, Office of Epidemiology and Health Promotion, 81 p., October 1990.

  Contact: West Virginia Department of Health and Human Resources, Bureau of Public Health, Office of Epidemiology and Health Promotion, 1411 West Virginia Street, E., Charleston, WV 25301. (304) 348-0644.

  Summary: Tobacco Use and Its Health Consequences: A Report on the Leading Cause of Death and Disability in West Virginia is a compilation of the data available to the West Virginia Bureau of Public Health (WVBPH) in evaluating tobacco use problems in West Virginia. The report focuses on five topics: (1) The prevalence of tobacco use in the State as reported by the Behavioral Risk Factor Survey, addressing regional prevalences of tobacco use between 1984 and 1988, smoking prevalence among high school students, and tobacco use among rural youth; (2) the health consequences of tobacco use, discussing nicotine addiction, cigarette smoking, exposure to environmental tobacco smoke, and smokeless tobacco use; (3) the health costs of tobacco use, including coronary heart disease, premature heart disease, malignant neoplasms, lung cancer cerebrovascular disease, chronic obstructive pulmonary disease, and residential fire fatalities; (4) the prevalence of tobacco use during pregnancy, and (5) the current status of tobacco-use legislation and policies in West Virginia. The 1985 Current Population Survey conducted by the Census Bureau reported that 32 percent of West

Virginians over age 16 smoked cigarettes, compared to a 28 percent rate in the United States. Among the 37 States who participated in the 1988 Behavioral Risk Factor Survey, West Virginia ranks first in the use of smokeless tobacco and sixth in smoking prevalence.

- **Use and Analysis of Health Data. Respiratory Diseases in Wisconsin: Costs and Prevention. Working Papers**

  Source: Madison, WI, Wisconsin Department of Health and Social Services, Division of Health, Center for Health Statistics, 43 p., June 1988.

  Contact: Wisconsin Department of Health and Social Services, Morbidity Data System, Center for Health Statistics, P.O. Box 309, Madison, WI 53701. (608) 267-9545.

  Summary: A report by the Wisconsin Department of Health and Social Services describes preventable elements of selected respiratory diseases and documents the burden of such illnesses and associated therapies. The report targets administrators of health care services and entitlement programs, health planners, and health care professionals. Its purpose is to describe preventable elements of selected respiratory diseases and to document the burden of the illness and associated therapies. The goal of the report is to contribute to improvements in public health in Wisconsin by increasing awareness of approaches to preventing respiratory disease, unnecessary treatments, and related expenses. The report presents rough, conservative cost estimates for hospitalizations, with average per diem charges based on results of the Annual Survey of Hospitals in Wisconsin in 1986. The report also includes estimates of allowed reimbursements for Medicaid claims for fiscal year 1986. The report focuses on six areas: (1) Childhood middle ear disease (otitis media), (2) tonsillectomy and adenoidectomy, (3) asthma, (4) smoking-related respiratory diseases (chronic obstructive pulmonary disease and lung cancer), (5) occupational lung disease (silicosis and asbestos-related diseases and hypersensitivity pneumonitis), and (6) vaccine-preventable respiratory diseases (influenza and pneumococcal disease).

- **Smoking Is Killing Your Constituents: A Report on Smoking-related Deaths and the Economic Costs of Smoking in West Virginia**

  Source: Charleston, WV, American Lung Association of West Virginia. Charleston, WV, West Virginia Department of Health and Human Resources, Bureau of Public Health, 14 p., March 1993.

  Contact: American Lung Association of West Virginia, 415 Dickinson Street, P.O. Box 3980, Charleston, WV 25339. (304) 342-6600. West Virginia Department of Health and Human Resources, Bureau of Public

Health, State Capitol Complex, Building 3, Room 519, Charleston, WV 25305. (304) 558-2971.

Summary: Smoking is Killing Your Constituents: A Report on Smoking-related Deaths and the Economic Costs of Smoking in West Virginia provides data on the effects of smoking in West Virginia. Section one, Smoking Prevalence in West Virginia, notes the State has one of the worst smoking rates in the nation, with more than one in four West Virginians smoking. West Virginia is one of only four States that do not require licensing of parties that sell tobacco products. Section two, Deaths in West Virginia Due to Smoking, presents statistics on smoking-related deaths. The West Virginia lung cancer rate is 23 percent higher than the United States rate. More than one in five deaths in West Virginia are related to smoking cigarettes. The West Virginia death rate from chronic obstructive pulmonary disease such as emphysema and chronic bronchitis is 34.5 percent higher than the United States rate. Section three, Economic Impact of Smoking in West Virginia, notes that each American, including those who do not smoke, is paying a hidden tax of approximately $221 per person per year for the consequences of smoking. Each person in West Virginia, including those who do not smoke, pays approximately $304 per year for the consequences of smoking. Each year, smoking-related diseases cost West Virginia more than $500 million.

- **Cigars: More Dangerous Than You Think**

  Source: South Deerfield, MA: Channing L. Bete Co., Inc. 1999. 15 p.

  Contact: Available from Channing L. Bete Co., Inc. 200 State Road, South Deerfield, MA 01373. (800) 628-7733. Fax (800) 499-6464. E-mail: custsvcs@channing-bete.com. Website: www.channing-bete.com. Price: $1.05 for 1-99 copies; bulk copies available. Item number 73958B-01-99.

  Summary: This booklet describes the health hazards associated with smoking cigars. Contrary to a popular myth that cigar smoking is a harmless habit, the booklet explains that cigars can be addictive because of their nicotine content. The booklet explores why people start smoking cigars; the publicity and imaging that surrounds cigars and cigar users; how smoking causes cancer of the mouth, larynx, esophagus, and lungs; other risks associated with smoking cigars, including emphysema and chronic bronchitis, heart disease, and nicotine addiction; the problem of secondhand cigar smoke; and the impact of cigar smoking on one's breath, teeth, hair, clothes, and home. The booklet includes a section of ideas on how to handle a variety of situations where smoking may be encountered; and another section on tips for quitting cigar smoking. One sidebar lists the telephone numbers for some organizations through

which readers can get more information. The brochure is illustrated with line drawings of a variety of people, depicted in everyday settings.

The NLM Gateway[30]

The NLM (National Library of Medicine) Gateway is a Web-based system that lets users search simultaneously in multiple retrieval systems at the U.S. National Library of Medicine (NLM). It allows users of NLM services to initiate searches from one Web interface, providing "one-stop searching" for many of NLM's information resources or databases.[31] One target audience for the Gateway is the Internet user who is new to NLM's online resources and does not know what information is available or how best to search for it. This audience may include physicians and other healthcare providers, researchers, librarians, students, and, increasingly, patients, their families, and the public.[32] To use the NLM Gateway, simply go to the search site at **http://gateway.nlm.nih.gov/gw/Cmd**. Type "chronic obstructive pulmonary disease" (or synonyms) into the search box and click "Search." The results will be presented in a tabular form, indicating the number of references in each database category.

Results Summary

Category	Items Found
Journal Articles	9730
Books / Periodicals / Audio Visual	109
Consumer Health	27
Meeting Abstracts	49
Other Collections	32
Total	9947

[30] Adapted from NLM: **http://gateway.nlm.nih.gov/gw/Cmd?Overview.x**.

[31] The NLM Gateway is currently being developed by the Lister Hill National Center for Biomedical Communications (LHNCBC) at the National Library of Medicine (NLM) of the National Institutes of Health (NIH).

[32] Other users may find the Gateway useful for an overall search of NLM's information resources. Some searchers may locate what they need immediately, while others will utilize the Gateway as an adjunct tool to other NLM search services such as PubMed® and MEDLINEplus®. The Gateway connects users with multiple NLM retrieval systems while also providing a search interface for its own collections. These collections include various types of information that do not logically belong in PubMed, LOCATORplus, or other established NLM retrieval systems (e.g., meeting announcements and pre-1966 journal citations). The Gateway will provide access to the information found in an increasing number of NLM retrieval systems in several phases.

HSTAT[33]

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.[34] HSTAT's audience includes healthcare providers, health service researchers, policy makers, insurance companies, consumers, and the information professionals who serve these groups. HSTAT provides access to a wide variety of publications, including clinical practice guidelines, quick-reference guides for clinicians, consumer health brochures, evidence reports and technology assessments from the Agency for Healthcare Research and Quality (AHRQ), as well as AHRQ's Put Prevention Into Practice.[35] Simply search by "chronic obstructive pulmonary disease" (or synonyms) at the following Web site: **http://text.nlm.nih.gov**.

Coffee Break: Tutorials for Biologists[36]

Some patients may wish to have access to a general healthcare site that takes a scientific view of the news and covers recent breakthroughs in biology that may one day assist physicians in developing treatments. To this end, we recommend "Coffee Break," a collection of short reports on recent biological discoveries. Each report incorporates interactive tutorials that demonstrate how bioinformatics tools are used as a part of the research process. Currently, all Coffee Breaks are written by NCBI staff.[37] Each report is about 400 words and is usually based on a discovery reported in one or more

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[33] Adapted from HSTAT: **http://www.nlm.nih.gov/pubs/factsheets/hstat.html**.

[34] The HSTAT URL is **http://hstat.nlm.nih.gov/**.

[35] Other important documents in HSTAT include: the National Institutes of Health (NIH) Consensus Conference Reports and Technology Assessment Reports; the HIV/AIDS Treatment Information Service (ATIS) resource documents; the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Treatment (SAMHSA/CSAT) Treatment Improvement Protocols (TIP) and Center for Substance Abuse Prevention (SAMHSA/CSAP) Prevention Enhancement Protocols System (PEPS); the Public Health Service (PHS) Preventive Services Task Force's *Guide to Clinical Preventive Services*; the independent, nonfederal Task Force on Community Services *Guide to Community Preventive Services*; and the Health Technology Advisory Committee (HTAC) of the Minnesota Health Care Commission (MHCC) health technology evaluations.

[36] Adapted from http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html.

[37] The figure that accompanies each article is frequently supplied by an expert external to NCBI, in which case the source of the figure is cited. The result is an interactive tutorial that tells a biological story.

articles from recently published, peer-reviewed literature.[38] This site has new articles every few weeks, so it can be considered an online magazine of sorts, and intended for general background information. You can access the Coffee Break Web site at **http://www.ncbi.nlm.nih.gov/Coffeebreak/**.

Other Commercial Databases

In addition to resources maintained by official agencies, other databases exist that are commercial ventures addressing medical professionals. Here are a few examples that may interest you:

- **CliniWeb International:** Index and table of contents to selected clinical information on the Internet; see **http://www.ohsu.edu/cliniweb/**.
- **Image Engine:** Multimedia electronic medical record system that integrates a wide range of digitized clinical images with textual data stored in the University of Pittsburgh Medical Center's MARS electronic medical record system; see the Image Engine Web site: **http://www.cml.upmc.edu/cml/imageengine/imageEngine.html**.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see **http://www.mwsearch.com/**.
- **MedWeaver:** Prototype system that allows users to search differential diagnoses for any list of signs and symptoms and to search medical literature see **http://www.med.virginia.edu/~wmd4n/medweaver.html**.
- **Metaphrase:** Middleware component intended for use by both caregivers and medical records personnel. It converts the informal language generally used by caregivers into terms from formal, controlled vocabularies; see **http://www.lexical.com/Metaphrase.html**.

The Genome Project and Chronic Obstructive Pulmonary Disease

With all the discussion in the press about the Human Genome Project, it is only natural that physicians, researchers, and patients want to know about how human genes relate to chronic obstructive pulmonary disease. In the

[38] After a brief introduction that sets the work described into a broader context, the report focuses on how a molecular understanding can provide explanations of observed biology and lead to therapies for diseases. Each vignette is accompanied by a figure and hypertext links that lead to a series of pages that interactively show how NCBI tools and resources are used in the research process.

following section, we will discuss databases and references used by physicians and scientists who work in this area.

Online Mendelian Inheritance in Man (OMIM)

The Online Mendelian Inheritance in Man (OMIM) database is a catalog of human genes and genetic disorders authored and edited by Dr. Victor A. McKusick and his colleagues at Johns Hopkins and elsewhere. OMIM was developed for the World Wide Web by the National Center for Biotechnology Information (NCBI).[39] The database contains textual information, pictures, and reference information. It also contains copious links to NCBI's Entrez database of MEDLINE articles and sequence information.

Go to **http://www.ncbi.nlm.nih.gov/Omim/searchomim.html** to search the database. Type "chronic obstructive pulmonary disease" (or synonyms) in the search box, and click "Submit Search." If too many results appear, you can narrow the search by adding the word "clinical." Each report will have additional links to related research and databases. By following these links, especially the link titled "Database Links," you will be exposed to numerous specialized databases that are largely used by the scientific community. These databases are overly technical and seldom used by the general public, but offer an abundance of information. The following is an example of the results you can obtain from the OMIM for chronic obstructive pulmonary disease:

- **Emphysema, Hereditary Pulmonary**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?130700

Genes and Disease (NCBI - Map)

The Genes and Disease database is produced by the National Center for Biotechnology Information of the National Library of Medicine at the National Institutes of Health. This Web site categorizes each disorder by the system of the body associated with it. To have a full view of conditions

[39] Adapted from **http://www.ncbi.nlm.nih.gov/**. Established in 1988 as a national resource for molecular biology information, NCBI creates public databases, conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information--all for the better understanding of molecular processes affecting human health and disease.

linked to human genes, go to **http://www.ncbi.nlm.nih.gov/disease/** and browse the system pages. Since this site is regularly updated, you may wish to re-visit it from time to time. The following systems and associated disorders are addressed:

- **Metabolism:** Food and energy.
  Examples: Adreno-leukodystrophy, Atherosclerosis, Best disease, Gaucher disease, Glucose galactose malabsorption, Gyrate atrophy, Juvenile onset diabetes, Obesity, Paroxysmal nocturnal hemoglobinuria, Phenylketonuria, Refsum disease, Tangier disease, Tay-Sachs disease.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Metabolism.html**
- **Muscle and Bone:** Movement and growth.
  Examples: Duchenne muscular dystrophy, Ellis-van Creveld syndrome, Marfan syndrome, myotonic dystrophy, spinal muscular atrophy.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Muscle.html**
- **Nervous System:** Mind and body.
  Examples: Alzheimer disease, Amyotrophic lateral sclerosis, Angelman syndrome, Charcot-Marie-Tooth disease, epilepsy, essential tremor, Fragile X syndrome, Friedreich's ataxia, Huntington disease, Niemann-Pick disease, Parkinson disease, Prader-Willi syndrome, Rett syndrome, Spinocerebellar atrophy, Williams syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Brain.html**
- **Signals:** Cellular messages.
  Examples: Ataxia telangiectasia, Baldness, Cockayne syndrome, Glaucoma, SRY: sex determination, Tuberous sclerosis, Waardenburg syndrome, Werner syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Signals.html**
- **Transporters:** Pumps and channels.
  Examples: Cystic Fibrosis, deafness, diastrophic dysplasia, Hemophilia A, long-QT syndrome, Menkes syndrome, Pendred syndrome, polycystic kidney disease, sickle cell anemia, Wilson's disease, Zellweger syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Transporters.html**

Entrez

Entrez is a search and retrieval system that integrates several linked databases at the National Center for Biotechnology Information (NCBI). These databases include nucleotide sequences, protein sequences, macromolecular structures, whole genomes, and MEDLINE through PubMed. Entrez provides access to the following databases:

- **PubMed:** Biomedical literature (PubMed),
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed**
- **Nucleotide Sequence Database (Genbank):**
  Web site:
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Nucleotide
- **Protein Sequence Database:**
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Protein**
- **Structure:** Three-dimensional macromolecular structures,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Structure**
- **Genome:** Complete genome assemblies,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Genome**
- **PopSet:** Population study data sets,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Popset**
- **OMIM:** Online Mendelian Inheritance in Man,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM**
- **Taxonomy:** Organisms in GenBank,
  Web site:
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Taxonomy
- **Books:** Online books,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=books**
- **ProbeSet:** Gene Expression Omnibus (GEO),
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo**
- **3D Domains:** Domains from Entrez Structure,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo**
- **NCBI's Protein Sequence Information Survey Results:**
  Web site: **http://www.ncbi.nlm.nih.gov/About/proteinsurvey/**

To access the Entrez system at the National Center for Biotechnology Information, go to the following website and then select a database to search: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=genome**. The databases available are listed in the drop box next to "Search." In the

box next to "for," enter "chronic obstructive pulmonary disease" (or synonyms) and click "Go."

Jablonski's Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes Database[40]

This online resource can be quite useful. It has been developed to facilitate the identification and differentiation of syndromic entities. Special attention is given to the type of information that is usually limited or completely omitted in existing reference sources due to space limitations of the printed form.

At **http://www.nlm.nih.gov/mesh/jablonski/syndrome_toc/toc_a.html** you can also search across syndromes using an alphabetical index**.** You can also search at **http://www.nlm.nih.gov/mesh/jablonski/syndrome_db.html**.

The Genome Database[41]

Established at Johns Hopkins University in Baltimore, Maryland in 1990, the Genome Database (GDB) is the official central repository for genomic mapping data resulting from the Human Genome Initiative. In the spring of 1999, the Bioinformatics Supercomputing Centre (BiSC) at the Hospital for Sick Children in Toronto, Ontario assumed the management of GDB. The Human Genome Initiative is a worldwide research effort focusing on structural analysis of human DNA to determine the location and sequence of the estimated 100,000 human genes. In support of this project, GDB stores and curates data generated by researchers worldwide who are engaged in the mapping effort of the Human Genome Project (HGP). GDB's mission is to provide scientists with an encyclopedia of the human genome which is continually revised and updated to reflect the current state of scientific knowledge. Although GDB has historically focused on gene mapping, its focus will broaden as the Genome Project moves from mapping to sequence, and finally, to functional analysis.

To access the GDB, simply go to the following hyperlink: **http://www.gdb.org/**. Search "All Biological Data" by "Keyword." Type "chronic obstructive pulmonary disease" (or synonyms) into the search box,

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[40] Adapted from the National Library of Medicine: http://www.nlm.nih.gov/mesh/jablonski/about_syndrome.html.

[41] Adapted from the Genome Database: **http://gdbwww.gdb.org/gdb/aboutGDB.html#mission**.

and review the results. If more than one word is used in the search box, then separate each one with the word "and" or "or" (using "or" might be useful when using synonyms). This database is extremely technical as it was created for specialists. The articles are the results which are the most accessible to non-professionals and often listed under the heading "Citations." The contact names are also accessible to non-professionals.

Specialized References

The following books are specialized references written for professionals interested in chronic obstructive pulmonary disease (sorted alphabetically by title, hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Differential Diagnosis in Pathology: Pulmonary Disorders (Differential Diagnosis in Pathology)** by Anthony A. Gal, M.D., Michael N. Koss, M.D.; Hardcover (August 1997), Lippincott, Williams & Wilkins; ISBN: 0683303015; **http://www.amazon.com/exec/obidos/ASIN/0683303015/icongroupinterna**
- **Foundations of Respiratory Care** by Kenneth A. Wyka, William F. Clark, Paul J. Mathews; Hardcover - 1032 pages, 1st edition (January 15, 2002), Delmar Learning; ISBN: 0766808939; **http://www.amazon.com/exec/obidos/ASIN/0766808939/icongroupinterna**
- **Lung Disorders Sourcebook** by Dawn D. Matthews; Hardcover, 1st edition (March 2002), Omnigraphics, Inc.; ISBN: 0780803396; **http://www.amazon.com/exec/obidos/ASIN/0780803396/icongroupinterna**
- **Pulmonary Diseases and Disorders Companion Handbook** by Alfred P. Fishman; Paperback, 3rd edition (April 15, 2002), McGraw-Hill; ISBN: 0070220026; **http://www.amazon.com/exec/obidos/ASIN/0070220026/icongroupinterna**
- **Textbook of Respiratory Medicine (Two-Volume Set)** by John F. Murray, Jay A. Nadel; Hardcover - 2562 pages, 3rd edition (May 15, 2000), W B Saunders Co; ISBN: 0721677118; **http://www.amazon.com/exec/obidos/ASIN/0721677118/icongroupinterna**

Vocabulary Builder

Adolescence: The period of life beginning with the appearance of secondary sex characteristics and terminating with the cessation of somatic growth. The

years usually referred to as adolescence lie between 13 and 18 years of age. [NIH]

Algorithms: A procedure consisting of a sequence of algebraic formulas and/or logical steps to calculate or determine a given task. [NIH]

Chlamydia: A genus of the family chlamydiaceae whose species cause a variety of diseases in vertebrates including humans, mice, and swine. Chlamydia species are gram-negative and produce glycogen. The type species is chlamydia trachomatis. [NIH]

Endarterectomy: Surgical excision, performed under general anesthesia, of the atheromatous tunica intima of an artery. When reconstruction of an artery is performed as an endovascular procedure through a catheter, it is called atherectomy. [NIH]

Firearms: Small-arms weapons, including handguns, pistols, revolvers, rifles, shotguns, etc. [NIH]

Hypersensitivity: A state of altered reactivity in which the body reacts with an exaggerated immune response to a foreign substance. Hypersensitivity reactions are classified as immediate or delayed, types I and IV, respectively, in the Gell and Coombs classification (q.v.) of immune responses. [EU]

Idiopathic: Results from an unknown cause. [NIH]

Lipid: Any of a heterogeneous group of flats and fatlike substances characterized by being water-insoluble and being extractable by nonpolar (or fat) solvents such as alcohol, ether, chloroform, benzene, etc. All contain as a major constituent aliphatic hydrocarbons. The lipids, which are easily stored in the body, serve as a source of fuel, are an important constituent of cell structure, and serve other biological functions. Lipids may be considered to include fatty acids, neutral fats, waxes, and steroids. Compound lipids comprise the glycolipids, lipoproteins, and phospholipids. [EU]

Otitis: Inflammation of the ear, which may be marked by pain, fever, abnormalities of hearing, hearing loss, tinnitus, and vertigo. [EU]

Pneumonitis: A disease caused by inhaling a wide variety of substances such as dusts and molds. Also called "farmer's disease". [NIH]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

CHAPTER 9. DISSERTATIONS ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Overview

University researchers are active in studying almost all known diseases. The result of research is often published in the form of Doctoral or Master's dissertations. You should understand, therefore, that applied diagnostic procedures and/or therapies can take many years to develop after the thesis that proposed the new technique or approach was written.

In this chapter, we will give you a bibliography on recent dissertations relating to chronic obstructive pulmonary disease. You can read about these in more detail using the Internet or your local medical library. We will also provide you with information on how to use the Internet to stay current on dissertations.

Dissertations on Chronic Obstructive Pulmonary Disease

ProQuest Digital Dissertations is the largest archive of academic dissertations available. From this archive, we have compiled the following list covering dissertations devoted to chronic obstructive pulmonary disease. You will see that the information provided includes the dissertation's title, its author, and the author's institution. To read more about the following, simply use the Internet address indicated. The following covers recent dissertations dealing with chronic obstructive pulmonary disease:

- **A Comparison of Smoking Patterns between Counseling-assisted and Unassisted Heavy Smokers with Early Chronic Obstructive Pulmonary**

Disease (smoking Cessation, Pulmonary Disease) by Gonzales, David H., Phd from Oregon State University, 1991, 157 pages
http://wwwlib.umi.com/dissertations/fullcit/9220494

- **A Study of Selected Physiological Responses to Breathing Exercise Practice in Patients with Chronic Obstructive Pulmonary Disease** by Elwood, Evelyn, Edd from New York University, 1967, 141 pages
http://wwwlib.umi.com/dissertations/fullcit/6804809
- **Adaptation to Chronic Illness: Perceived Control and Difficulties Related to Chronic Obstructive Pulmonary Disease** by Cruzen, Dana Essex; Phd from The Claremont Graduate University, 2000, 99 pages
http://wwwlib.umi.com/dissertations/fullcit/9956027
- **An Application of Locus-of-control Theory to Chronic Obstructive Pulmonary Disease Education** by Neish, Christine Margaret Gerken, Phd from The Claremont Graduate University, 1988, 527 pages
http://wwwlib.umi.com/dissertations/fullcit/8820112
- **Chronic Obstructive Pulmonary Disease Patients and Healthy Subjects: a Comparison of Ventilatory Patterns Used during Maximal Exercise and Predicting Maximal Oxygen Uptake from Resting Pulmonary Function Testing** by Martin, Daniel, Phd from The University of Tennessee, 1985, 97 pages
http://wwwlib.umi.com/dissertations/fullcit/8600043
- **Dyspnea As a Perceptual-interpretive Response Process: a Qualitative Inductive Study of the Concept in Patients with Chronic Obstructive Pulmonary Disease** by Delaurentis Schultz, Dawn Marie; Phd from University of Rhode Island, 2000, 258 pages
http://wwwlib.umi.com/dissertations/fullcit/9999193
- **Effect of Distractive Auditory Stimuli on Post-pulmonary Rehabilitation Walking in Persons with Chronic Obstructive Pulmonary Disease** by Bauldoff, Gerene Sue; Phd from University of Pittsburgh, 2001, 163 pages
http://wwwlib.umi.com/dissertations/fullcit/3025996
- **Effect of Pulmonary Rehabilitation on Quality of Life in Individuals with Chronic Obstructive Pulmonary Disease** by Hogan, M. Timothy, Phd from University of Missouri - Columbia, 1991, 86 pages
http://wwwlib.umi.com/dissertations/fullcit/9133603

- **Effectiveness of Three Strengths of Education and Exercise on Self-efficacy for Walking and Self-efficacy for Managing Dyspnea in Patients with Chronic Obstructive Pulmonary Disease** by Tsang, Amy Hui-jiun; Phd from University of California, San Francisco, 2000, 176 pages
  http://wwwlib.umi.com/dissertations/fullcit/9984024
- **Examination of Compliance Behavior in Patients with Chronic Obstructive Pulmonary Disease** by King, Sharon K., Phd from Michigan State University, 1988, 211 pages
  http://wwwlib.umi.com/dissertations/fullcit/8814870

Keeping Current

As previously mentioned, an effective way to stay current on dissertations dedicated to chronic obstructive pulmonary disease is to use the database called *ProQuest Digital Dissertations* via the Internet, located at the following Web address: **http://wwwlib.umi.com/dissertations.** The site allows you to freely access the last two years of citations and abstracts. Ask your medical librarian if the library has full and unlimited access to this database. From the library, you should be able to do more complete searches than with the limited 2-year access available to the general public.

PART III. APPENDICES

ABOUT PART III

Part III is a collection of appendices on general medical topics which may be of interest to patients with chronic obstructive pulmonary disease and related conditions.

APPENDIX A. RESEARCHING YOUR MEDICATIONS

Overview

There are a number of sources available on new or existing medications which could be prescribed to patients with chronic obstructive pulmonary disease. While a number of hard copy or CD-Rom resources are available to patients and physicians for research purposes, a more flexible method is to use Internet-based databases. In this chapter, we will begin with a general overview of medications. We will then proceed to outline official recommendations on how you should view your medications. You may also want to research medications that you are currently taking for other conditions as they may interact with medications for chronic obstructive pulmonary disease. Research can give you information on the side effects, interactions, and limitations of prescription drugs used in the treatment of chronic obstructive pulmonary disease. Broadly speaking, there are two sources of information on approved medications: public sources and private sources. We will emphasize free-to-use public sources.

Your Medications: The Basics[42]

The Agency for Health Care Research and Quality has published extremely useful guidelines on how you can best participate in the medication aspects of chronic obstructive pulmonary disease. Taking medicines is not always as simple as swallowing a pill. It can involve many steps and decisions each day. The AHCRQ recommends that patients with chronic obstructive pulmonary disease take part in treatment decisions. Do not be afraid to ask questions and talk about your concerns. By taking a moment to ask questions early, you may avoid problems later. Here are some points to cover each time a new medicine is prescribed**:**

- Ask about all parts of your treatment, including diet changes, exercise, and medicines.
- Ask about the risks and benefits of each medicine or other treatment you might receive.
- Ask how often you or your doctor will check for side effects from a given medication.

Do not hesitate to ask what is important to you about your medicines. You may want a medicine with the fewest side effects, or the fewest doses to take each day. You may care most about cost, or how the medicine might affect how you live or work. Or, you may want the medicine your doctor believes will work the best. Telling your doctor will help him or her select the best treatment for you.

Do not be afraid to "bother" your doctor with your concerns and questions about medications for chronic obstructive pulmonary disease. You can also talk to a nurse or a pharmacist. They can help you better understand your treatment plan. Feel free to bring a friend or family member with you when you visit your doctor. Talking over your options with someone you trust can help you make better choices, especially if you are not feeling well. Specifically, ask your doctor the following:

- The name of the medicine and what it is supposed to do.
- How and when to take the medicine, how much to take, and for how long.
- What food, drinks, other medicines, or activities you should avoid while taking the medicine.
- What side effects the medicine may have, and what to do if they occur.

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[42] This section is adapted from AHCRQ: **http://www.ahcpr.gov/consumer/ncpiebro.htm**.

- If you can get a refill, and how often.
- About any terms or directions you do not understand.
- What to do if you miss a dose.
- If there is written information you can take home (most pharmacies have information sheets on your prescription medicines; some even offer large-print or Spanish versions).

Do not forget to tell your doctor about all the medicines you are currently taking (not just those for chronic obstructive pulmonary disease). This includes prescription medicines and the medicines that you buy over the counter. Then your doctor can avoid giving you a new medicine that may not work well with the medications you take now. When talking to your doctor, you may wish to prepare a list of medicines you currently take, the reason you take them, and how you take them. Be sure to include the following information for each:

- Name of medicine
- Reason taken
- Dosage
- Time(s) of day

Also include any over-the-counter medicines, such as:

- Laxatives
- Diet pills
- Vitamins
- Cold medicine
- Aspirin or other pain, headache, or fever medicine
- Cough medicine
- Allergy relief medicine
- Antacids
- Sleeping pills
- Others (include names)

Learning More about Your Medications

Because of historical investments by various organizations and the emergence of the Internet, it has become rather simple to learn about the medications your doctor has recommended for chronic obstructive pulmonary disease. One such source is the United States Pharmacopeia. In 1820, eleven physicians met in Washington, D.C. to establish the first compendium of standard drugs for the United States. They called this compendium the "U.S. Pharmacopeia (USP)." Today, the USP is a non-profit organization consisting of 800 volunteer scientists, eleven elected officials, and 400 representatives of state associations and colleges of medicine and pharmacy. The USP is located in Rockville, Maryland, and its home page is located at **www.usp.org**. The USP currently provides standards for over 3,700 medications. The resulting USP DI® Advice for the Patient® can be accessed through the National Library of Medicine of the National Institutes of Health. The database is partially derived from lists of federally approved medications in the Food and Drug Administration's (FDA) Drug Approvals database.[43]

While the FDA database is rather large and difficult to navigate, the Phamacopeia is both user-friendly and free to use. It covers more than 9,000 prescription and over-the-counter medications. To access this database, simply type the following hyperlink into your Web browser: **http://www.nlm.nih.gov/medlineplus/druginformation.html**. To view examples of a given medication (brand names, category, description, preparation, proper use, precautions, side effects, etc.), simply follow the hyperlinks indicated within the United States Pharmacopoeia (USP). It is important to read the disclaimer by the USP (**http://www.nlm.nih.gov/medlineplus/drugdisclaimer.html**) before using the information provided.

Of course, we as editors cannot be certain as to what medications you are taking. Therefore, we have compiled a list of medications associated with the treatment of chronic obstructive pulmonary disease. Once again, due to space limitations, we only list a sample of medications and provide hyperlinks to ample documentation (e.g. typical dosage, side effects, drug-interaction risks, etc.). The following drugs have been mentioned in the Pharmacopeia and other sources as being potentially applicable to chronic obstructive pulmonary disease:

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[43] Though cumbersome, the FDA database can be freely browsed at the following site: **www.fda.gov/cder/da/da.htm**.

Alpha 1 -Proteinase Inhibitor, Human

- **Systemic - U.S. Brands:** Prolastin
  http://www.nlm.nih.gov/medlineplus/druginfo/alpha1proteinaseinhibitorhuman202022.html

Azithromycin

- **Systemic - U.S. Brands:** Zithromax
  http://www.nlm.nih.gov/medlineplus/druginfo/azithromycinsystemic202642.html

Benzonatate

- **Systemic - U.S. Brands:** Tessalon
  http://www.nlm.nih.gov/medlineplus/druginfo/benzonatatesystemic202085.html

Bronchodilators, Adrenergic

- **Inhalation - U.S. Brands:** Adrenalin Chloride; Airet; Alupent; Arm-a-Med Isoetharine; Arm-a-Med Metaproterenol; Asthmahaler Mist; AsthmaNefrin; Beta-2; Brethaire; Bronkaid Mist; Bronkaid Suspension Mist; Bronkometer; Bronkosol; Dey-Lute Isoetharine; Dey-Lute Metaproterenol; Isupr
  http://www.nlm.nih.gov/medlineplus/druginfo/bronchodilatorsadrenergicinhal202095.html
- **Oral/Injection - U.S.** Brands: Adrenalin; Alupent; Ana-Guard; Brethine; Bricanyl; EpiPen Auto-Injector; EpiPen Jr. Auto-Injector; Isuprel; Proventil; Proventil Repetabs; Ventolin; Volmax
  http://www.nlm.nih.gov/medlineplus/druginfo/bronchodilatorsadrenergicorali202096.html

Bronchodilators, Theophylline

- **Systemic - U.S. Brands:** Aerolate Sr; Asmalix; Choledyl; Choledyl SA; Elixophyllin; Lanophyllin; Phyllocontin; Quibron-T Dividose; Quibron-T/SR Dividose; Respbid; Slo-Bid Gyrocaps; Slo-Phyllin; Theo-24; Theobid Duracaps; Theochron; Theo-Dur; Theolair; Theolair-SR; Theo-Time; Th
  http://www.nlm.nih.gov/medlineplus/druginfo/bronchodilatorstheophyllinesys201945.html

Dextromethorphan

- **Systemic - U.S. Brands:** Cough-X; Creo-Terpin; Trocal
  http://www.nlm.nih.gov/medlineplus/druginfo/dextromethorphansystemic202187.html

Diphtheria and Tetanus Toxoids and Pertussis Vaccine Adsorbed

- **Systemic - U.S. Brands:** Acel-Imune; Certiva; Infanrix; Tripedia
  http://www.nlm.nih.gov/medlineplus/druginfo/diphtheriaandtetanustoxoidsand202201.html

- **Systemic - U.S. Brands:** Tetramune
  http://www.nlm.nih.gov/medlineplus/druginfo/diphtheriaandtetanustoxoidsand202911.html

Dyphylline

- **Systemic - U.S. Brands:** Dilor; Dilor-400; Lufyllin; Lufyllin-400
  http://www.nlm.nih.gov/medlineplus/druginfo/dyphyllinesystemic202752.html

Epinephrine

- **Ophthalmic - U.S. Brands:** Epifrin; Epinal; Eppy/N; Glaucon
  http://www.nlm.nih.gov/medlineplus/druginfo/epinephrineophthalmic202213.html

Guaifenesin

- **Systemic - U.S. Brands:** Anti-Tuss; Breonesin; Fenesin; Gee-Gee; Genatuss; Glycotuss; Glytuss; Guiatuss; Halotussin; Hytuss; Hytuss-2X; Pneumomist; Robitussin; Sinumist-SR; Uni-tussin
  http://www.nlm.nih.gov/medlineplus/druginfo/guaifenesinsystemic202270.html

Ipratropium

- **Inhalation - U.S. Brands:** Atrovent
  http://www.nlm.nih.gov/medlineplus/druginfo/ipratropiuminhalation202304.html
- **Nasal - U.S. Brands:** Atrovent
  http://www.nlm.nih.gov/medlineplus/druginfo/ipratropiumnasal202713.html

Ipratropium and Albuterol

- **Inhalation-Local - U.S.** Brands: Combivent; DuoNeb
  http://www.nlm.nih.gov/medlineplus/druginfo/ipratropiumandalbuterolinhalat203487.html

Levofloxacin

- **Ophthalmic - U.S. Brands:** Quixin
  http://www.nlm.nih.gov/medlineplus/druginfo/levofloxacinophthalmic500189.html

Loracarbef

- **Systemic - U.S. Brands:** Lorabid
  http://www.nlm.nih.gov/medlineplus/druginfo/loracarbefsystemic202680.html

Oxtriphylline and Guaifenesin

- **Systemic - U.S. Brands:** Brondelate
  http://www.nlm.nih.gov/medlineplus/druginfo/oxtriphyllineandguaifenesinsys202430.html

Palivizumab

- **Systemic - U.S. Brands:** Synagis
  http://www.nlm.nih.gov/medlineplus/druginfo/palivizumabsystemic203646.html

Penicillins and Beta-Lactamase Inhibitors

- **Systemic - U.S. Brands:** Augmentin; Timentin; Unasyn; Zosyn
  http://www.nlm.nih.gov/medlineplus/druginfo/penicillinsandbetalactamaseinh202705.html

Respiratory Syncytial Virus Immune Globulin Intravenous

- **Systemic - U.S. Brands:** RespiGam
  http://www.nlm.nih.gov/medlineplus/druginfo/respiratorysyncytialvirusimmun203069.html

Sparfloxacin

- **Systemic - U.S. Brands:** Zagam
  http://www.nlm.nih.gov/medlineplus/druginfo/sparfloxacinsystemic203530.html

Sulfonamides and Trimethoprim

- **Systemic - U.S. Brands:** Bactrim; Bactrim DS; Bactrim I.V.; Bactrim Pediatric; Cofatrim Forte; Cotrim; Cotrim DS; Cotrim Pediatric; Septra; Septra DS; Septra Grape Suspension; Septra I.V.; Septra Suspension; Sulfatrim; Sulfatrim Pediatric; Sulfatrim S/S; Sulfatrim Suspension; S
  http://www.nlm.nih.gov/medlineplus/druginfo/sulfonamidesandtrimethoprimsys202781.html

Theophylline and Guaifenesin

- **Systemic - U.S. Brands:** Bronchial; Elixophyllin-GG; Glyceryl-T; Quibron; Quibron-300; Theocon; Theolate
  http://www.nlm.nih.gov/medlineplus/druginfo/theophyllineandguaifenesinsyst202557.html

Theophylline, Ephedrine, and Hydroxyzine

- **Systemic - U.S. Brands:** Marax; Marax-DF
  http://www.nlm.nih.gov/medlineplus/druginfo/theophyllineephedrineandhydrox202555.html

Zanamivir

- **Inhalation--Systemic - U.S.** Brands: Relenza
  http://www.nlm.nih.gov/medlineplus/druginfo/zanamivirinhalationsystemic500004.html

Commercial Databases

In addition to the medications listed in the USP above, a number of commercial sites are available by subscription to physicians and their institutions. You may be able to access these sources from your local medical library or your doctor's office.

Reuters Health Drug Database

The Reuters Health Drug Database can be searched by keyword at the hyperlink: **http://www.reutershealth.com/frame2/drug.html**. The following medications are listed in the Reuters' database as associated with chronic obstructive pulmonary disease (including those with contraindications):[44]

[44] Adapted from *A to Z Drug Facts* by Facts and Comparisons.

- **Acebutolol HCl**
  http://www.reutershealth.com/atoz/html/Acebutolol_HCl.htm
- **Amyl Nitrite**
  http://www.reutershealth.com/atoz/html/Amyl_Nitrite.htm
- **Atenolol**
  http://www.reutershealth.com/atoz/html/Atenolol.htm
- **Atenolol Chlorthalidone**
  http://www.reutershealth.com/atoz/html/Atenolol_Chlorthalidone.htm
- **Atorvastatin Calcium**
  http://www.reutershealth.com/atoz/html/Atorvastatin_Calcium.htm
- **Atropine**
  http://www.reutershealth.com/atoz/html/Atropine.htm
- **Azithromycin**
  http://www.reutershealth.com/atoz/html/Azithromycin.htm
- **Basiliximab**
  http://www.reutershealth.com/atoz/html/Basiliximab.htm
- **Beclomethasone Dipropionate**
  http://www.reutershealth.com/atoz/html/Beclomethasone_Dipropionate.htm
- **Betaxolol HCl**
  http://www.reutershealth.com/atoz/html/Betaxolol_HCl.htm
- **Bisoprolol Fumarate**
  http://www.reutershealth.com/atoz/html/Bisoprolol_Fumarate.htm
- **Bupropion HCl**
  http://www.reutershealth.com/atoz/html/Bupropion_HCl.htm
- **Candesartan Cilexetil**
  http://www.reutershealth.com/atoz/html/Candesartan_Cilexetil.htm
- **Cefaclor**
  http://www.reutershealth.com/atoz/html/Cefaclor.htm
- **Cefdinir**
  http://www.reutershealth.com/atoz/html/Cefdinir.htm
- **Cefixime**
  http://www.reutershealth.com/atoz/html/Cefixime.htm
- **Cefprozil**
  http://www.reutershealth.com/atoz/html/Cefprozil.htm

- **Ceftibuten**
  http://www.reutershealth.com/atoz/html/Ceftibuten.htm
- **Cidofovir**
  http://www.reutershealth.com/atoz/html/Cidofovir.htm
- **Clopidogrel**
  http://www.reutershealth.com/atoz/html/Clopidogrel.htm
- **Delavirdine Mesylate**
  http://www.reutershealth.com/atoz/html/Delavirdine_Mesylate.htm
- **Dirithromycin**
  http://www.reutershealth.com/atoz/html/Dirithromycin.htm
- **Donepezil**
  http://www.reutershealth.com/atoz/html/Donepezil.htm
- **Enalapril Maleate**
  http://www.reutershealth.com/atoz/html/Enalapril_Maleate.htm
- **Esmolol HCl**
  http://www.reutershealth.com/atoz/html/Esmolol_HCl.htm
- **Estradiol**
  http://www.reutershealth.com/atoz/html/Estradiol.htm
- **Estrogens Conjugated**
  http://www.reutershealth.com/atoz/html/Estrogens_Conjugated.htm
- **Estropipate**
  http://www.reutershealth.com/atoz/html/Estropipate.htm
- **Estropipate (Piperazine Estrone Sulfate)**
  http://www.reutershealth.com/atoz/html/Estropipate_(Piperazine_Estrone_Sulfate).htm
- **Fluoxetine HCl**
  http://www.reutershealth.com/atoz/html/Fluoxetine_HCl.htm
- **Fluticasone Propionate**
  http://www.reutershealth.com/atoz/html/Fluticasone_Propionate.htm
- **Fluvastatin**
  http://www.reutershealth.com/atoz/html/Fluvastatin.htm
- **Galantamine Hydrobromide**
  http://www.reutershealth.com/atoz/html/Galantamine_Hydrobromide.htm
- **Gatifloxacin**
  http://www.reutershealth.com/atoz/html/Gatifloxacin.htm

- **Glatiramer Acetate**
  http://www.reutershealth.com/atoz/html/Glatiramer_Acetate.htm
- **Infliximab**
  http://www.reutershealth.com/atoz/html/Infliximab.htm
- **Interferon Alfacon-I**
  http://www.reutershealth.com/atoz/html/Interferon_Alfacon-I.htm
- **Iodine**
  http://www.reutershealth.com/atoz/html/Iodine.htm
- **Ipratropium Bromide**
  http://www.reutershealth.com/atoz/html/Ipratropium_Bromide.htm
- **Ipratropium Bromide Albuterol Sulfate**
  http://www.reutershealth.com/atoz/html/Ipratropium_Bromide_Albuterol_Sulfate.htm
- **Isoetharine**
  http://www.reutershealth.com/atoz/html/Isoetharine.htm
- **Isoproterenol**
  http://www.reutershealth.com/atoz/html/Isoproterenol.htm
- **Isosorbide Dinitrate**
  http://www.reutershealth.com/atoz/html/Isosorbide_Dinitrate.htm
- **Lamotrigine**
  http://www.reutershealth.com/atoz/html/Lamotrigine.htm
- **Levobunolol**
  http://www.reutershealth.com/atoz/html/Levobunolol.htm
- **Lomefloxacin HCl**
  http://www.reutershealth.com/atoz/html/Lomefloxacin_HCl.htm
- **Lopinavir Ritonavir**
  http://www.reutershealth.com/atoz/html/Lopinavir_Ritonavir.htm
- **Loracarbef**
  http://www.reutershealth.com/atoz/html/Loracarbef.htm
- **Loratadine**
  http://www.reutershealth.com/atoz/html/Loratadine.htm
- **Metaproterenol Sulfate**
  http://www.reutershealth.com/atoz/html/Metaproterenol_Sulfate.htm
- **Montelukast Sodium**
  http://www.reutershealth.com/atoz/html/Montelukast_Sodium.htm

- **Moxifloxacin HCl**
  http://www.reutershealth.com/atoz/html/Moxifloxacin_HCl.htm
- **Mycophenolate Mofetil**
  http://www.reutershealth.com/atoz/html/Mycophenolate_Mofetil.htm
- **Nateglinide**
  http://www.reutershealth.com/atoz/html/Nateglinide.htm
- **Nitroglycerin**
  http://www.reutershealth.com/atoz/html/Nitroglycerin.htm
- **Oseltamivir Phosphate**
  http://www.reutershealth.com/atoz/html/Oseltamivir_Phosphate.htm
- **Oxybutynin Chloride**
  http://www.reutershealth.com/atoz/html/Oxybutynin_Chloride.htm
- **Pantoprazole**
  http://www.reutershealth.com/atoz/html/Pantoprazole.htm
- **Pantoprazole Sodium**
  http://www.reutershealth.com/atoz/html/Pantoprazole_Sodium.htm
- **Paroxetine HCl**
  http://www.reutershealth.com/atoz/html/Paroxetine_HCl.htm
- **Penbutolol Sulfate**
  http://www.reutershealth.com/atoz/html/Penbutolol_Sulfate.htm
- **Phenylpropanolamine HCl Guaifenesin**
  http://www.reutershealth.com/atoz/html/Phenylpropanolamine_HCl_Guaifenesin.htm
- **Repaglinide**
  http://www.reutershealth.com/atoz/html/Repaglinide.htm
- **Risedronate Sodium**
  http://www.reutershealth.com/atoz/html/Risedronate_Sodium.htm
- **Rivastigmine Tartrate**
  http://www.reutershealth.com/atoz/html/Rivastigmine_Tartrate.htm
- **Rofecoxib**
  http://www.reutershealth.com/atoz/html/Rofecoxib.htm
- **Ropinirole Hydrochloride**
  http://www.reutershealth.com/atoz/html/Ropinirole_Hydrochloride.htm
- **Salmeterol**
  http://www.reutershealth.com/atoz/html/Salmeterol.htm

- **Sertraline HCl**
  http://www.reutershealth.com/atoz/html/Sertraline_HCl.htm
- **Sibutramine Hydrochloride**
  http://www.reutershealth.com/atoz/html/Sibutramine_Hydrochloride.htm
- **Sildenafil**
  http://www.reutershealth.com/atoz/html/Sildenafil.htm
- **Sirolimus**
  http://www.reutershealth.com/atoz/html/Sirolimus.htm
- **Sparfloxacin**
  http://www.reutershealth.com/atoz/html/Sparfloxacin.htm
- **Tacrine HCl**
  http://www.reutershealth.com/atoz/html/Tacrine_HCl.htm
- **Tacrolimus**
  http://www.reutershealth.com/atoz/html/Tacrolimus.htm
- **Terazosin**
  http://www.reutershealth.com/atoz/html/Terazosin.htm
- **Terbutaline Sulfate**
  http://www.reutershealth.com/atoz/html/Terbutaline_Sulfate.htm
- **Theophylline**
  http://www.reutershealth.com/atoz/html/Theophylline.htm
- **Tolterodine Tartrate**
  http://www.reutershealth.com/atoz/html/Tolterodine_Tartrate.htm
- **Topiramate**
  http://www.reutershealth.com/atoz/html/Topiramate.htm
- **Travoprost**
  http://www.reutershealth.com/atoz/html/Travoprost.htm
- **Trimethoprim Sulfamethoxazole**
  http://www.reutershealth.com/atoz/html/Trimethoprim_Sulfamethoxazole.htm
- **Unoprostone Isopropyl**
  http://www.reutershealth.com/atoz/html/Unoprostone_Isopropyl.htm
- **Zaleplon**
  http://www.reutershealth.com/atoz/html/Zaleplon.htm

Mosby's GenRx

Mosby's GenRx database (also available on CD-Rom and book format) covers 45,000 drug products including generics and international brands. It provides prescribing information, drug interactions, and patient information. Information from Mosby's Gen Rx database can be obtained at the following hyperlink: **http://www.genrx.com/Mosby/PhyGenRx/group.html**.

Physicians Desk Reference

The Physicians Desk Reference database (also available in CD-Rom and book format) is a full-text drug database. The database is searchable by brand name, generic name or by indication. It features multiple drug interactions reports. Information can be obtained at the following hyperlink: **http://physician.pdr.net/physician/templates/en/acl/psuser_t.htm**.

Other Web Sites

A number of additional Web sites discuss drug information. As an example, you may like to look at **www.drugs.com** which reproduces the information in the Pharmacopeia as well as commercial information. You may also want to consider the Web site of the Medical Letter, Inc. which allows users to download articles on various drugs and therapeutics for a nominal fee: **http://www.medletter.com/**.

Contraindications and Interactions (Hidden Dangers)

Some of the medications mentioned in the previous discussions can be problematic for patients with chronic obstructive pulmonary disease--not because they are used in the treatment process, but because of contraindications, or side effects. Medications with contraindications are those that could react with drugs used to treat chronic obstructive pulmonary disease or potentially create deleterious side effects in patients with chronic obstructive pulmonary disease. You should ask your physician about any contraindications, especially as these might apply to other medications that you may be taking for common ailments.

Drug-drug interactions occur when two or more drugs react with each other. This drug-drug interaction may cause you to experience an unexpected side effect. Drug interactions may make your medications less effective, cause

unexpected side effects, or increase the action of a particular drug. Some drug interactions can even be harmful to you.

Be sure to read the label every time you use a nonprescription or prescription drug, and take the time to learn about drug interactions. These precautions may be critical to your health. You can reduce the risk of potentially harmful drug interactions and side effects with a little bit of knowledge and common sense.

Drug labels contain important information about ingredients, uses, warnings, and directions which you should take the time to read and understand. Labels also include warnings about possible drug interactions. Further, drug labels may change as new information becomes available. This is why it's especially important to read the label every time you use a medication. When your doctor prescribes a new drug, discuss all over-the-counter and prescription medications, dietary supplements, vitamins, botanicals, minerals and herbals you take as well as the foods you eat. Ask your pharmacist for the package insert for each prescription drug you take. The package insert provides more information about potential drug interactions.

A Final Warning

At some point, you may hear of alternative medications from friends, relatives, or in the news media. Advertisements may suggest that certain alternative drugs can produce positive results for patients with chronic obstructive pulmonary disease. Exercise caution--some of these drugs may have fraudulent claims, and others may actually hurt you. The Food and Drug Administration (FDA) is the official U.S. agency charged with discovering which medications are likely to improve the health of patients with chronic obstructive pulmonary disease. The FDA warns patients to watch out for[45]:

- Secret formulas (real scientists share what they know)
- Amazing breakthroughs or miracle cures (real breakthroughs don't happen very often; when they do, real scientists do not call them amazing or miracles)
- Quick, painless, or guaranteed cures
- If it sounds too good to be true, it probably isn't true.

[45] This section has been adapted from **http://www.fda.gov/opacom/lowlit/medfraud.html**.

If you have any questions about any kind of medical treatment, the FDA may have an office near you. Look for their number in the blue pages of the phone book. You can also contact the FDA through its toll-free number, 1-888-INFO-FDA (1-888-463-6332), or on the World Wide Web at **www.fda.gov**.

General References

In addition to the resources provided earlier in this chapter, the following general references describe medications (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **Delmar's Respiratory Care Drug Reference** by Fred Hill; Paperback - 575 pages, 1st edition (January 15, 1999), Delmar Learning; ISBN: 0827390661; **http://www.amazon.com/exec/obidos/ASIN/0827390661/icongroupinterna**
- **Mosby's Respiratory Care Drug Reference** by Joseph L., Jr. Rau; Paperback - 352 pages, 1st edition (January 15, 1997), Mosby-Year Book; ISBN: 0815184565; **http://www.amazon.com/exec/obidos/ASIN/0815184565/icongroupinterna**
- **Pharmacology in Respiratory Care** by Stuart R. Levine, Henry Hitner, Arthur J. McLaughlin, Jr.; Hardcover - 386 pages (May 11, 2001), Appleton & Lange; ISBN: 0071347275; **http://www.amazon.com/exec/obidos/ASIN/0071347275/icongroupinterna**
- **Respiratory Care Drug Reference** by Arthur McLaughlin; Paperback - 383 pages, 2 edition (March 1997), Unknown; ISBN: 0834207885; **http://www.amazon.com/exec/obidos/ASIN/0834207885/icongroupinterna**

Vocabulary Builder

The following vocabulary builder gives definitions of words used in this chapter that have not been defined in previous chapters:

Amyl Nitrite: A vasodilator that is administered by inhalation. It is also used recreationally due to its supposed ability to induce euphoria and act as an aphrodisiac. [NIH]

Atenolol: A cardioselective beta-adrenergic blocker possessing properties and potency similar to propranolol, but without a negative inotropic effect. [NIH]

Azithromycin: A semi-synthetic macrolide antibiotic structurally related to erythromycin. It has been used in the treatment of Mycobacterium avium intracellulare infections, toxoplasmosis, and cryptosporidiosis. [NIH]

Cefaclor: Semisynthetic, broad-spectrum antibiotic derivative of cephalexin. [NIH]

Cefixime: A third-generation cephalosporin antibiotic that is stable to hydrolysis by beta-lactamases. [NIH]

Dyphylline: A theophylline derivative with broncho- and vasodilator properties. It is used in the treatment of asthma, cardiac dyspnea, and bronchitis. [NIH]

Epinephrine: The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics. [NIH]

Estradiol: The most potent mammalian estrogenic hormone. It is produced in the ovary, placenta, testis, and possibly the adrenal cortex. [NIH]

Iodine: A nonmetallic element of the halogen group that is represented by the atomic symbol I, atomic number 53, and atomic weight of 126.90. It is a nutritionally essential element, especially important in thyroid hormone synthesis. In solution, it has anti-infective properties and is used topically. [NIH]

Isoetharine: Adrenergic beta-2 agonist used as bronchodilator for emphysema, bronchitis and asthma. [NIH]

Isosorbide Dinitrate: A vasodilator used in the treatment of angina. Its actions are similar to nitroglycerin but with a slower onset of action. [NIH]

Levobunolol: A nonselective beta-adrenoceptor antagonist used in the treatment of glaucoma. [NIH]

Loratadine: A second-generation histamine H1 receptor antagonist used in the treatment of allergic rhinitis and urticaria. Unlike most classical antihistamines it lacks central nervous system depressing effects such as drowsiness. [NIH]

Nitroglycerin: A highly volatile organic nitrate that acts as a dilator of arterial and venous smooth muscle and is used in the treatment of angina. It provides relief through improvement of the balance between myocardial oxygen supply and demand. Although total coronary blood flow is not increased, there is redistribution of blood flow in the heart when partial occlusion of coronary circulation is effected. [NIH]

Ophthalmic: Pertaining to the eye. [EU]

Sirolimus: A macrolide compound obtained from Streptomyces

hygroscopicus that acts by selectively blocking the transcriptional activation of cytokines thereby inhibiting cytokine production. It is bioactive only when bound to immunophilins. Sirolimus is a potent immunosuppressant and possesses both antifungal and antineoplastic properties. [NIH]

Tacrolimus: A macrolide isolated from the culture broth of a strain of Streptomyces tsukubaensis that has strong immunosuppressive activity in vivo and prevents the activation of T-lymphocytes in response to antigenic or mitogenic stimulation in vitro. [NIH]

Toxoids: Preparations of pathogenic organisms or their derivatives made nontoxic and intended for active immunologic prophylaxis. They include deactivated toxins. [NIH]

APPENDIX B. RESEARCHING ALTERNATIVE MEDICINE

Overview

Complementary and alternative medicine (CAM) is one of the most contentious aspects of modern medical practice. You may have heard of these treatments on the radio or on television. Maybe you have seen articles written about these treatments in magazines, newspapers, or books. Perhaps your friends or doctor have mentioned alternatives.

In this chapter, we will begin by giving you a broad perspective on complementary and alternative therapies. Next, we will introduce you to official information sources on CAM relating to chronic obstructive pulmonary disease. Finally, at the conclusion of this chapter, we will provide a list of readings on chronic obstructive pulmonary disease from various authors. We will begin, however, with the National Center for Complementary and Alternative Medicine's (NCCAM) overview of complementary and alternative medicine.

What Is CAM?[46]

Complementary and alternative medicine (CAM) covers a broad range of healing philosophies, approaches, and therapies. Generally, it is defined as those treatments and healthcare practices which are not taught in medical schools, used in hospitals, or reimbursed by medical insurance companies. Many CAM therapies are termed "holistic," which generally means that the healthcare practitioner considers the whole person, including physical, mental, emotional, and spiritual health. Some of these therapies are also

[46] Adapted from the NCCAM: **http://nccam.nih.gov/nccam/fcp/faq/index.html#what-is**.

known as "preventive," which means that the practitioner educates and treats the person to prevent health problems from arising, rather than treating symptoms after problems have occurred.

People use CAM treatments and therapies in a variety of ways. Therapies are used alone (often referred to as alternative), in combination with other alternative therapies, or in addition to conventional treatment (sometimes referred to as complementary). Complementary and alternative medicine, or "integrative medicine," includes a broad range of healing philosophies, approaches, and therapies. Some approaches are consistent with physiological principles of Western medicine, while others constitute healing systems with non-Western origins. While some therapies are far outside the realm of accepted Western medical theory and practice, others are becoming established in mainstream medicine.

Complementary and alternative therapies are used in an effort to prevent illness, reduce stress, prevent or reduce side effects and symptoms, or control or cure disease. Some commonly used methods of complementary or alternative therapy include mind/body control interventions such as visualization and relaxation, manual healing including acupressure and massage, homeopathy, vitamins or herbal products, and acupuncture.

What Are the Domains of Alternative Medicine?[47]

The list of CAM practices changes continually. The reason being is that these new practices and therapies are often proved to be safe and effective, and therefore become generally accepted as "mainstream" healthcare practices. Today, CAM practices may be grouped within five major domains: (1) alternative medical systems, (2) mind-body interventions, (3) biologically-based treatments, (4) manipulative and body-based methods, and (5) energy therapies. The individual systems and treatments comprising these categories are too numerous to list in this sourcebook. Thus, only limited examples are provided within each.

Alternative Medical Systems

Alternative medical systems involve complete systems of theory and practice that have evolved independent of, and often prior to, conventional biomedical approaches. Many are traditional systems of medicine that are

[47] Adapted from the NCCAM: http://nccam.nih.gov/nccam/fcp/classify/index.html.

practiced by individual cultures throughout the world, including a number of venerable Asian approaches.

Traditional oriental medicine emphasizes the balance or disturbances of qi (pronounced chi) or vital energy in health and disease, respectively. Traditional oriental medicine consists of a group of techniques and methods including acupuncture, herbal medicine, oriental massage, and qi gong (a form of energy therapy). Acupuncture involves stimulating specific anatomic points in the body for therapeutic purposes, usually by puncturing the skin with a thin needle.

Ayurveda is India's traditional system of medicine. Ayurvedic medicine (meaning "science of life") is a comprehensive system of medicine that places equal emphasis on body, mind, and spirit. Ayurveda strives to restore the innate harmony of the individual. Some of the primary Ayurvedic treatments include diet, exercise, meditation, herbs, massage, exposure to sunlight, and controlled breathing.

Other traditional healing systems have been developed by the world's indigenous populations. These populations include Native American, Aboriginal, African, Middle Eastern, Tibetan, and Central and South American cultures. Homeopathy and naturopathy are also examples of complete alternative medicine systems.

Homeopathic medicine is an unconventional Western system that is based on the principle that "like cures like," i.e., that the same substance that in large doses produces the symptoms of an illness, in very minute doses cures it. Homeopathic health practitioners believe that the more dilute the remedy, the greater its potency. Therefore, they use small doses of specially prepared plant extracts and minerals to stimulate the body's defense mechanisms and healing processes in order to treat illness.

Naturopathic medicine is based on the theory that disease is a manifestation of alterations in the processes by which the body naturally heals itself and emphasizes health restoration rather than disease treatment. Naturopathic physicians employ an array of healing practices, including the following: diet and clinical nutrition, homeopathy, acupuncture, herbal medicine, hydrotherapy (the use of water in a range of temperatures and methods of applications), spinal and soft-tissue manipulation, physical therapies (such as those involving electrical currents, ultrasound, and light), therapeutic counseling, and pharmacology.

Mind-Body Interventions

Mind-body interventions employ a variety of techniques designed to facilitate the mind's capacity to affect bodily function and symptoms. Only a select group of mind-body interventions having well-documented theoretical foundations are considered CAM. For example, patient education and cognitive-behavioral approaches are now considered "mainstream." On the other hand, complementary and alternative medicine includes meditation, certain uses of hypnosis, dance, music, and art therapy, as well as prayer and mental healing.

Biological-Based Therapies

This category of CAM includes natural and biological-based practices, interventions, and products, many of which overlap with conventional medicine's use of dietary supplements. This category includes herbal, special dietary, orthomolecular, and individual biological therapies.

Herbal therapy employs an individual herb or a mixture of herbs for healing purposes. An herb is a plant or plant part that produces and contains chemical substances that act upon the body. Special diet therapies, such as those proposed by Drs. Atkins, Ornish, Pritikin, and Weil, are believed to prevent and/or control illness as well as promote health. Orthomolecular therapies aim to treat disease with varying concentrations of chemicals such as magnesium, melatonin, and mega-doses of vitamins. Biological therapies include, for example, the use of laetrile and shark cartilage to treat cancer and the use of bee pollen to treat autoimmune and inflammatory diseases.

Manipulative and Body-Based Methods

This category includes methods that are based on manipulation and/or movement of the body. For example, chiropractors focus on the relationship between structure and function, primarily pertaining to the spine, and how that relationship affects the preservation and restoration of health. Chiropractors use manipulative therapy as an integral treatment tool.

In contrast, osteopaths place particular emphasis on the musculoskeletal system and practice osteopathic manipulation. Osteopaths believe that all of the body's systems work together and that disturbances in one system may have an impact upon function elsewhere in the body. Massage therapists manipulate the soft tissues of the body to normalize those tissues.

Energy Therapies

Energy therapies focus on energy fields originating within the body (biofields) or those from other sources (electromagnetic fields). Biofield therapies are intended to affect energy fields (the existence of which is not yet experimentally proven) that surround and penetrate the human body. Some forms of energy therapy manipulate biofields by applying pressure and/or manipulating the body by placing the hands in or through these fields. Examples include Qi gong, Reiki and Therapeutic Touch.

Qi gong is a component of traditional oriental medicine that combines movement, meditation, and regulation of breathing to enhance the flow of vital energy (qi) in the body, improve blood circulation, and enhance immune function. Reiki, the Japanese word representing Universal Life Energy, is based on the belief that, by channeling spiritual energy through the practitioner, the spirit is healed and, in turn, heals the physical body. Therapeutic Touch is derived from the ancient technique of "laying-on of hands." It is based on the premises that the therapist's healing force affects the patient's recovery and that healing is promoted when the body's energies are in balance. By passing their hands over the patient, these healers identify energy imbalances.

Bioelectromagnetic-based therapies involve the unconventional use of electromagnetic fields to treat illnesses or manage pain. These therapies are often used to treat asthma, cancer, and migraine headaches. Types of electromagnetic fields which are manipulated in these therapies include pulsed fields, magnetic fields, and alternating current or direct current fields.

Can Alternatives Affect My Treatment?

A critical issue in pursuing complementary alternatives mentioned thus far is the risk that these might have undesirable interactions with your medical treatment. It becomes all the more important to speak with your doctor who can offer advice on the use of alternatives. Official sources confirm this view. Though written for women, we find that the National Women's Health Information Center's advice on pursuing alternative medicine is appropriate for patients of both genders and all ages.[48]

[48] Adapted from **http://www.4woman.gov/faq/alternative.htm**.

Is It Okay to Want Both Traditional and Alternative Medicine?

Should you wish to explore non-traditional types of treatment, be sure to discuss all issues concerning treatments and therapies with your healthcare provider, whether a physician or practitioner of complementary and alternative medicine. Competent healthcare management requires knowledge of both conventional and alternative therapies you are taking for the practitioner to have a complete picture of your treatment plan.

The decision to use complementary and alternative treatments is an important one. Consider before selecting an alternative therapy, the safety and effectiveness of the therapy or treatment, the expertise and qualifications of the healthcare practitioner, and the quality of delivery. These topics should be considered when selecting any practitioner or therapy.

Finding CAM References on Chronic Obstructive Pulmonary Disease

Having read the previous discussion, you may be wondering which complementary or alternative treatments might be appropriate for chronic obstructive pulmonary disease. For the remainder of this chapter, we will direct you to a number of official sources which can assist you in researching studies and publications. Some of these articles are rather technical, so some patience may be required.

The Combined Health Information Database

For a targeted search, The Combined Health Information Database is a bibliographic database produced by health-related agencies of the Federal Government (mostly from the National Institutes of Health). This database is updated four times a year at the end of January, April, July, and October. Check the titles, summaries, and availability of CAM-related information by using the "Simple Search" option at the following Web site: **http://chid.nih.gov/simple/simple.html**. In the drop box at the top, select "Complementary and Alternative Medicine." Then type "chronic obstructive pulmonary disease" (or synonyms) in the second search box. We recommend that you select 100 "documents per page" and to check the "whole records" options. The following was extracted using this technique:

- **Complementary and Alternative Medicine in the Management of Pain, Dyspnea, and Nausea and Vomiting Near the End of Life: A Systematic Review**

  Source: Journal of Pain and Symptom Management. 20(5): 374-387. November 2000.

  Summary: This journal article reviews evidence for the efficacy of complementary and alternative medicine (CAM) modalities in treating pain, dyspnea, and nausea and vomiting in patients near the end of life. Nine original articles were identified from a search of the MEDLINE, CancerLIT, AIDSLINE, PsycLIT, CINAHL, and Social Work Abstracts databases, and another 12 from the reference lists of retrieved papers or from consultation with experts. All studies evaluated the efficacy of a CAM modality in symptomatic adult patients with incurable conditions. Two reviewers independently extracted information about study design, subjects, sample size, age, response rate, CAM modality, and outcomes. Of the 21 studies, 11 were randomized controlled trials, 2 were non-randomized controlled trial, and 8 were case series. Results suggest that acupuncture, transcutaneous electrical nerve stimulation, supportive group therapy, self-hypnosis, and massage therapy may provide pain relief in cancer pain or in dying patients. Relaxation/imagery may improve oral mucositis pain. Patients with severe chronic obstructive pulmonary disease may benefit from use of acupuncture, acupressure, and muscle relaxation with breathing retraining to relieve dyspnea. Despite the paucity of controlled trials, the authors conclude that some data exist to support the use of certain CAM modalities in terminally ill patients. The article has 1 figure, 4 tables, and 38 references. (AA-M).

- **Therapeutic Use of Music for Dyspnea and Anxiety in Patients With COPD Who Live at Home**

  Source: Journal of Holistic Nursing. 17(3): 229-250. September 1999.

  Summary: This journal article describes a study of the feasibility and effectiveness of using music as an intervention for dyspnea and anxiety in patients with chronic obstructive pulmonary disease (COPD). Twenty-four participants with COPD who lived in their homes participated in this 5-week study. The participants were given a 20-minute tape of preferred music, and were instructed to use the music whenever they became dyspneic. Baseline data were collected during Week 1. Measures of anxiety and dyspnea were obtained on Week 2, prior to and immediately after using the music. These measures were repeated during Week 5. In addition, participants were given a music diary to record their level of dyspnea immediately prior to and after listening to the music. There was a significant decrease in dyspnea following the use of music as

recorded in the music diary. In addition, there was a significant decrease in anxiety and dyspnea following the use of music on Week 2. There was no significant change in anxiety or dyspnea over the 5-week period. The results suggest that people with COPD will use music at home for dyspnea, and that the music may help relieve their dyspnea. The article has 2 tables and 46 references.

National Center for Complementary and Alternative Medicine

The National Center for Complementary and Alternative Medicine (NCCAM) of the National Institutes of Health (**http://nccam.nih.gov**) has created a link to the National Library of Medicine's databases to allow patients to search for articles that specifically relate to chronic obstructive pulmonary disease and complementary medicine. To search the database, go to the following Web site: **www.nlm.nih.gov/nccam/camonpubmed.html**. Select "CAM on PubMed." Enter "chronic obstructive pulmonary disease" (or synonyms) into the search box. Click "Go." The following references provide information on particular aspects of complementary and alternative medicine (CAM) that are related to chronic obstructive pulmonary disease:

- **133Xenon washout patterns during diaphragmatic breathing. Studies in normal subjects and patients with chronic obstructive pulmonary disease.**
  Author(s): Brach BB, Chao RP, Sgroi VL, Minh VD, Ashburn WL, Moser KM.
  Source: Chest. 1977 June; 71(6): 735-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=862443&dopt=Abstract

- **A comparison of autogenic drainage and the active cycle of breathing techniques in patients with chronic obstructive pulmonary diseases.**
  Author(s): Savci S, Ince DI, Arikan H.
  Source: J Cardiopulm Rehabil. 2000 January-February; 20(1): 37-43.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10680096&dopt=Abstract

- **A study of the long-term effect of therapy in chronic obstructive pulmonary disease.**
  Author(s): Emirgil C, Sobol BJ, Norman J, Moskowitz E, Goyal P, Wadhwani B.

Source: The American Journal of Medicine. 1969 September; 47(3): 367-77. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4897276&dopt=Abstract

- **Adjunct therapy in chronic obstructive pulmonary disease.**
  Author(s): Lefcoe NM, Paterson NA.
  Source: The American Journal of Medicine. 1973 March; 54(3): 343-50. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4569964&dopt=Abstract

- **An occupational therapy program for the chronic obstructive pulmonary disease patient.**
  Author(s): Berzins GF.
  Source: Am J Occup Ther. 1970 April; 24(3): 181-6. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5418047&dopt=Abstract

- **Arm training reduces the VO2 and VE cost of unsupported arm exercise and elevation in chronic obstructive pulmonary disease.**
  Author(s): Epstein SK, Celli BR, Martinez FJ, Couser JI, Roa J, Pollock M, Benditt JO.
  Source: J Cardiopulm Rehabil. 1997 May-June; 17(3): 171-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9187983&dopt=Abstract

- **Arrhythmias in patients with chronic obstructive pulmonary disease.**
  Author(s): Brashear RE.
  Source: The Medical Clinics of North America. 1984 July; 68(4): 969-81. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6381932&dopt=Abstract

- **Athletic training in chronic obstructive pulmonary disease.**
  Author(s): Shayevitz MB, Shayevitz BR.
  Source: Clinics in Sports Medicine. 1986 July; 5(3): 471-91. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3521897&dopt=Abstract

- **Biofeedback training for reduced respiratory rate in chronic obstructive pulmonary disease: a preliminary study.**
  Author(s): Sitzman J, Kamiya J, Johnston J.
  Source: Nurs Res. 1983 July-August; 32(4): 218-23.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6553245&dopt=Abstract

- **Breathing pattern retraining and exercise in persons with chronic obstructive pulmonary disease.**
  Author(s): Collins EG, Langbein WE, Fehr L, Maloney C.
  Source: Aacn Clin Issues. 2001 May; 12(2): 202-9. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11759548&dopt=Abstract

- **Breathing retraining in chronic obstructive pulmonary disease.**
  Author(s): Breslin EH.
  Source: J Cardiopulm Rehabil. 1995 January-February; 15(1): 25-33. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8529084&dopt=Abstract

- **Bronchopulmonary hygiene physical therapy in bronchiectasis and chronic obstructive pulmonary disease: a systematic review.**
  Author(s): Jones A, Rowe BH.
  Source: Heart & Lung : the Journal of Critical Care. 2000 March-April; 29(2): 125-35. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10739489&dopt=Abstract

- **Chest physiotherapy for chronic obstructive pulmonary disease.**
  Author(s): Kass I, Rubin H.
  Source: Postgraduate Medicine. 1970 October; 48(4): 145-51. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5505754&dopt=Abstract

- **Chiropractic management of chronic obstructive pulmonary disease.**
  Author(s): Meyer JJ.

Source: Journal of Manipulative and Physiological Therapeutics. 1989 August; 12(4): 314-6. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2769095&dopt=Abstract

- **Chiropractic management of chronic obstructive pulmonary disease.**
  Author(s): Masarsky CS, Weber M.
  Source: Journal of Manipulative and Physiological Therapeutics. 1988 December; 11(6): 505-10.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3253396&dopt=Abstract

- **Chronic obstructive pulmonary disease symptom effects of long-term cumulative exposure to ambient levels of total suspended particulates and sulfur dioxide in California Seventh-Day Adventist residents.**
  Author(s): Euler GL, Abbey DE, Magie AR, Hodgkin JE.
  Source: Archives of Environmental Health. 1987 July-August; 42(4): 213-22.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3662608&dopt=Abstract

- **Chronic obstructive pulmonary disease.**
  Author(s): Mahler DA, Barlow PB, Matthay RA.
  Source: Clinics in Geriatric Medicine. 1986 May; 2(2): 285-312. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3516366&dopt=Abstract

- **Chronic obstructive pulmonary disease.**
  Author(s): Miller WF.
  Source: Hosp Pract (Hosp Ed). 1981 February; 16(2): 89-106.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7193179&dopt=Abstract

- **Chronic obstructive pulmonary disease. Major objectives of management.**
  Author(s): Saroea HG.
  Source: Postgraduate Medicine. 1993 August; 94(2): 113-6, 121-2.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8341621&dopt=Abstract

- **Chronic obstructive pulmonary disease: considerations in treatment, from acute respiratory failure to long-term outpatient care.**
  Author(s): Dines DE.
  Source: Bol Asoc Med P R. 1968 May; 60(5): 205-13. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4983041&dopt=Abstract

- **Chronic obstructive pulmonary disease: current comprehensive care for emphysema and bronchitis.**
  Author(s): Johannsen JM.
  Source: The Nurse Practitioner. 1994 January; 19(1): 59-67. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8139803&dopt=Abstract

- **Chronic obstructive pulmonary disease: some thoughts on the current state of our knowledge.**
  Author(s): Sobol BJ, Emirgil C.
  Source: Chest. 1973 August; 64(2): 151-3. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4725067&dopt=Abstract

- **Comparison of three protocols for breathing exercises during immersion in 38 degrees C water for chronic obstructive pulmonary disease.**
  Author(s): Kurabayashi H, Machida I, Handa H, Akiba T, Kubota K.
  Source: American Journal of Physical Medicine & Rehabilitation / Association of Academic Physiatrists. 1998 March-April; 77(2): 145-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9558016&dopt=Abstract

- **Concentrations of elastinolytic metalloproteinases in respiratory tract secretions of healthy horses and horses with chronic obstructive pulmonary disease.**
  Author(s): Raulo SM, Sorsa TA, Maisi PS.
  Source: Am J Vet Res. 2000 September; 61(9): 1067-73.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10976738&dopt=Abstract

- **Correlation of psychophysiologic variables with vocational rehabilitation outcome in patients with chronic obstructive pulmonary**

disease.
Author(s): Kass I, Dyksterhuis JE, Rubin H, Patil KD.
Source: Chest. 1975 April; 67(4): 433-40.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=235407&dopt=Abstract

- **Current trends and treatments in chronic obstructive pulmonary disease.**
  Author(s): Kwiatkowski M, Jain M.
  Source: Lippincotts Prim Care Pract. 1998 November-December; 2(6): 545-58. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9883151&dopt=Abstract

- **Cycle ergometer and inspiratory muscle training in chronic obstructive pulmonary disease.**
  Author(s): Larson JL, Covey MK, Wirtz SE, Berry JK, Alex CG, Langbein WE, Edwards L.
  Source: American Journal of Respiratory and Critical Care Medicine. 1999 August; 160(2): 500-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10430720&dopt=Abstract

- **Diaphragmatic breathing exercises. Therapy in chronic obstructive pulmonary disease.**
  Author(s): Sackner MA.
  Source: Jama : the Journal of the American Medical Association. 1975 January 20; 231(3): 295-6. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1172741&dopt=Abstract

- **Dyspnea in the patient with chronic obstructive pulmonary disease. Etiology and management.**
  Author(s): Sweer L, Zwillich CW.
  Source: Clinics in Chest Medicine. 1990 September; 11(3): 417-45. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1976053&dopt=Abstract

- **Effect of incentive breathing on lung functions in chronic obstructive pulmonary disease (COPD).**
  Author(s): Tiwary RS, Lakhera SC, Kain TC, Sinha KC.

Source: J Assoc Physicians India. 1989 November; 37(11): 689-91.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2632530&dopt=Abstract

- **Effect of progressive relaxation on dyspnea and state anxiety in patients with chronic obstructive pulmonary disease.**
  Author(s): Renfroe KL.
  Source: Heart & Lung : the Journal of Critical Care. 1988 July; 17(4): 408-13.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3292465&dopt=Abstract

- **Effective physical therapy for chronic obstructive pulmonary disease. Pilot study of exercise in hot spring water.**
  Author(s): Kurabayashi H, Kubota K, Machida I, Tamura K, Take H, Shirakura T.
  Source: American Journal of Physical Medicine & Rehabilitation / Association of Academic Physiatrists. 1997 May-June; 76(3): 204-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9207705&dopt=Abstract

- **Effectiveness of immunomodulating treatment (thymostimulin) in chronic obstructive pulmonary disease.**
  Author(s): Banos V, Gomez J, Garcia A, Ruiz J, Alvarez R, Lorenzo M, Canteras M, Valdes M.
  Source: Respiration; International Review of Thoracic Diseases. 1997; 64(3): 220-3.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9154674&dopt=Abstract

- **Effects of breathing retraining in patients with chronic obstructive pulmonary disease.**
  Author(s): Casciari RJ, Fairshter RD, Harrison A, Morrison JT, Blackburn C, Wilson AF.
  Source: Chest. 1981 April; 79(4): 393-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7226902&dopt=Abstract

- **Effects of metoprolol on digitalis-resistant atrial tachyarrhythmias in chronic obstructive pulmonary disease.**
  Author(s): Burgersdijk C, van der Meer FJ, van der Vijver JC.

Source: The Netherlands Journal of Medicine. 1984; 27(8): 283-6. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6504226&dopt=Abstract

- **Efficacy of diaphragmatic breathing in persons with chronic obstructive pulmonary disease: a review of the literature.**
  Author(s): Cahalin LP, Braga M, Matsuo Y, Hernandez ED.
  Source: J Cardiopulm Rehabil. 2002 January-February; 22(1): 7-21. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11839992&dopt=Abstract

- **Elements in the design of rehabilitation efficacy in chronic obstructive pulmonary disease.**
  Author(s): Goldstein RS, Lacasse Y.
  Source: Monaldi Arch Chest Dis. 1998 August; 53(4): 460-5. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9828604&dopt=Abstract

- **Epidemiology of chronic obstructive pulmonary disease.**
  Author(s): Anto JM, Vermeire P, Vestbo J, Sunyer J.
  Source: The European Respiratory Journal : Official Journal of the European Society for Clinical Respiratory Physiology. 2001 May; 17(5): 982-94. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11488336&dopt=Abstract

- **Evaluation of a community-based education program for individuals with chronic obstructive pulmonary disease.**
  Author(s): Ashikaga T, Vacek PM, Lewis SO.
  Source: Journal of Rehabilitation. 1980 April-June; 46(2): 23-7. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7392019&dopt=Abstract

- **Evaluation of an exercise therapy program for patients with chronic obstructive pulmonary disease.**
  Author(s): Nicholas JJ, Gilbert R, Gabe R, Auchincloss JH Jr.

Source: Am Rev Respir Dis. 1970 July; 102(1): 1-9. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5427400&dopt=Abstract

- **Exercise training and chronic obstructive pulmonary disease: past and future research directions.**
  Author(s): Berry MJ, Walschlager SA.
  Source: J Cardiopulm Rehabil. 1998 May-June; 18(3): 181-91. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9632319&dopt=Abstract

- **Exercise training in chronic obstructive pulmonary disease.**
  Author(s): Bourjeily G, Rochester CL.
  Source: Clinics in Chest Medicine. 2000 December; 21(4): 763-81. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11194785&dopt=Abstract

- **Feedback-controlled negative pressure ventilation in patients with stable severe hypercapnic chronic obstructive pulmonary disease.**
  Author(s): Kossler W, Lahrmann H, Brath H, Wei T, Frank W, Wild M, Zwick H, Wanke T.
  Source: Respiration; International Review of Thoracic Diseases. 2000; 67(4): 362-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10940787&dopt=Abstract

- **Gelatinolytic activity in tracheal epithelial lining fluid and in blood from horses with chronic obstructive pulmonary disease.**
  Author(s): Raulo SM, Maisi P.
  Source: Am J Vet Res. 1998 July; 59(7): 818-23.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9659544&dopt=Abstract

- **Gender differences in coping styles and coping effectiveness in chronic obstructive pulmonary disease groups.**
  Author(s): Frey JA.
  Source: Heart & Lung : the Journal of Critical Care. 2000 September-October; 29(5): 367-77.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10986532&dopt=Abstract

- **High-intensity inspiratory muscle training in patients with chronic obstructive pulmonary disease and severely reduced function.**
  Author(s): Covey MK, Larson JL, Wirtz SE, Berry JK, Pogue NJ, Alex CG, Patel M.
  Source: J Cardiopulm Rehabil. 2001 July-August; 21(4): 231-40.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11508185&dopt=Abstract

- **How well do we care for patients with end stage chronic obstructive pulmonary disease (COPD)? A comparison of palliative care and quality of life in COPD and lung cancer.**
  Author(s): Gore JM, Brophy CJ, Greenstone MA.
  Source: Thorax. 2000 December; 55(12): 1000-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11083884&dopt=Abstract

- **Inspiratory muscle training in patients with chronic obstructive pulmonary disease.**
  Author(s): Kim MJ, Larson JL, Covey MK, Vitalo CA, Alex CG, Patel M.
  Source: Nurs Res. 1993 November-December; 42(6): 356-62.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8247819&dopt=Abstract

- **Inspiratory muscle training in patients with chronic obstructive pulmonary disease.**
  Author(s): Chen H, Dukes R, Martin BJ.
  Source: Am Rev Respir Dis. 1985 February; 131(2): 251-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3970455&dopt=Abstract

- **Inspiratory muscle training with a pressure threshold breathing device in patients with chronic obstructive pulmonary disease.**
  Author(s): Larson JL, Kim MJ, Sharp JT, Larson DA.
  Source: Am Rev Respir Dis. 1988 September; 138(3): 689-96.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3202422&dopt=Abstract

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering CAM and related topics. The following is a representative sample:

- Alternative Medicine Foundation, Inc.: **http://www.herbmed.org/**
- AOL: **http://search.aol.com/cat.adp?id=169&layer=&from=subcats**
- Chinese Medicine: **http://www.newcenturynutrition.com/**
- drkoop.com®: **http://www.drkoop.com/InteractiveMedicine/IndexC.html**
- Family Village: **http://www.familyvillage.wisc.edu/med_altn.htm**
- Google: **http://directory.google.com/Top/Health/Alternative/**
- Open Directory Project: **http://dmoz.org/Health/Alternative/**
- TPN.com: **http://www.tnp.com/**
- Yahoo.com: **http://dir.yahoo.com/Health/Alternative_Medicine/**
- WebMD®Health: **http://my.webmd.com/drugs_and_herbs**
- WellNet: **http://www.wellnet.ca/herbsa-c.htm**

The following is a specific Web list relating to chronic obstructive pulmonary disease; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **General Overview**

  Bronchitis
  Source: Healthnotes, Inc.; www.healthnotes.com
  Hyperlink:
  http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

  Bronchitis
  Source: Integrative Medicine Communications; www.onemedicine.com
  Hyperlink:
  http://www.drkoop.com/InteractiveMedicine/ConsLookups/Uses/bronchitis.html

Bronchitis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Chronic Obstructive Pulmonary Disease
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Chronic obstructive pulmonary disease
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/InteractiveMedicine/ConsLookups/Uses/chronicobstructivepulmonarydisease.html

Chronic Obstructive Pulmonary Disease
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Emphysema
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

- **Alternative Therapy**

Acupuncture
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsModalities/Acupuncturecm.html

Aromatherapy
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,664,00.html

Color therapy
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,683,00.html

Ionized Air (Negative Ions)
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Therapy/Ionized_Air.htm

Osteopathy
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,724,00.html

Tai Chi
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsModalities/TaiChicm.html

- **Chinese Medicine**

Beiling Jiaonang
Alternative names: Beiling Capsules
Source: Pharmacopoeia Commission of the Ministry of Health, People's Republic of China
Hyperlink: http://www.newcenturynutrition.com/cgi-local/patent_herbs_db/db.cgi?db=default&Chinese=Beiling%20Jiaonang&mh=10&sb=---&view_records=View+Records

Gancao Jingao
Alternative names: Liquorice Extract; Gancao JingaoExtractum Glycyrrhizae
Source: Pharmacopoeia Commission of the Ministry of Health, People's Republic of China
Hyperlink: http://www.newcenturynutrition.com/cgi-local/patent_herbs_db/db.cgi?db=default&Chinese=Gancao%20Jingao&mh=10&sb=---&view_records=View+Records

Manshanhong
Alternative names: Dahurian Rhododendron Leaf; Folium Rhododendri Daurici
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

Manshanhongyou
Alternative names: Daurian Rhododendron Oil; Oleum Rhododendri Daurici
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

Mujingye
Alternative names: Hempleaf Negundo Chastetree Leaf; Folium Viticis Negundo
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

Mujingyou
Alternative names: Negundo Chastetree Oil; Oleum Viticis Negundo
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

Reyanning Keli
Alternative names: Reyanning Granules; Reyanning Keli
(Rey Yan Ning Ke Li)
Source: Pharmacopoeia Commission of the Ministry of Health, People's Republic of China
Hyperlink: http://www.newcenturynutrition.com/cgi-local/patent_herbs_db/db.cgi?db=default&Chinese=Reyanning%20Keli&mh=10&sb=---&view_records=View+Records

Yanbaicaisu
Alternative names: Bergenin; Yanbaicaisu (Yan Bai Cai Su); Bergeninum
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

- **Homeopathy**

Antimonium tartaricum
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Antimonium_tartaricum.htm

Bryonia
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Bryonia.htm

Calcarea carbonica
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Calcarea_carbonica.htm

Causticum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Causticum.htm

Chamomilla
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Chamomilla.htm

Dulcamara
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Dulcamara.htm

Hepar sulphuris calcareum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Hepar_sulphuris_calcareum.htm

Kali bichromicum
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Kali_bichromicum.htm

Pulsatilla
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Pulsatilla.htm

Silicea (Silica)
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Silicea.htm

Sulphur
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Homeo_Homeoix/Sulphur.htm

- **Herbs and Supplements**

Alpha-Linolenic Acid
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Amino Acids Overview
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Amino_Acids.htm

Angelica
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsa-c.htm

Anise
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Anise
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Anise
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Anise
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsa-c.htm

Antibiotics
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Astragalus
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10006,00.html

Barberry
Alternative names: Berberis vulgaris, Berberry
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Barberrych.html

Berberis vulgaris
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Barberrych.html

Berberry
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Barberrych.html

Beta-Carotene
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Beta-Carotene
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Beta-Carotene
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Beta-Carotene
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Beta-Carotene
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Blood Root
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsa-c.htm

Blue Flag
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Boneset
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Bromelain
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Bromelain.htm

Bromelain
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Bromelain
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,760,00.html

Cardiac Glycosides
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Catnip
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsa-c.htm

Cayenne
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Cephalosporins
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsDepletions/AntibioticMedicationsCephalosporinscl.html

Chinese Scullcap
Alternative names: Scutellaria baicalensis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Scullcap_Chinese.htm

Cinnamomum
Alternative names: Cinnamon; Cinnamomum zeylanicum
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Cobalamin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Coenzyme Q10
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Coenzyme Q10
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Coenzyme_Q10.htm

Coleus forskohlii
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000136.html

CoQ10
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Cysteine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Cysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsSupplements/Cysteinecs.html

Cysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Cysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Damiana
Alternative names: Turnera diffusa
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Damiana.htm

Dandelion
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Docosahexaenoic Acid
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/DHA.htm

Echinacea
Alternative names: Echinacea purpurea, Echinacea angustifolia, Echinacea pallida
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Echinacea.htm

Echinacea
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Echinacea
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,775,00.html

Eicosapentaenoic Acid
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Elecampane
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Elecampane
Alternative names: Inula helenium
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Elecampane.htm

Elecampane
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Elecampane
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Elecampane
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000152.html

Elecampane
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsd-f.htm

English Lavendar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lavenderch.html

Ephedra
Alternative names: Ephedra sinensis, Ma huang
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Ephedrach.html

Ephedra sinensis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Ephedrach.html

Eucalyptus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Eucalyptus
Alternative names: Eucalyptus globulus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Eucalyptus.htm

Eucalyptus
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Eucalyptus
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Eucalyptus
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Fennel
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsd-f.htm

Fenugreek
Alternative names: Trigonella foenum-graecum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Fenugreek.htm

Fenugreek
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000156.html

Fenugreek
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsd-f.htm

French Lavendar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lavenderch.html

Ginger
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Ginseng
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Glycyrrhiza glabra
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Golden Rod
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Goldenseal
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Gotu Kola
Alternative names: Centella asiatica
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Gotu_Kola.htm

Grindelia
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Herbal Medicine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Herbal Medicine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Herbal Medicine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Herbal Medicine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Horehound
Alternative names: Marrubium vulgare
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Horehound.htm

Horehound
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Horehound
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Horehound
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10036,00.html

Horseradish
Alternative names: Cochlearia armoracia
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Horseradish.htm

Horseradish
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Horseradish
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Hyssop
Alternative names: Hyssopus officinalis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Hyssop.htm

Hyssop
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Hyssop
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Indian Tobacco
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Indian Tobacco
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lobeliach.html

Inositol
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Ipratropium Bromide
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Drug/Ipratropium_Bromide.htm

Ipriflavone
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000189.html

Ivy Leaf
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Ivy Leaf
Alternative names: Hedera helix
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Ivy_Leaf.htm

Lavandula
Alternative names: Lavender; Lavandula sp.
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Lavandula angustifolia
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lavenderch.html

Lavender
Alternative names: Lavandula angustifolia, English Lavendar, French Lavendar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lavenderch.html

Lavender
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Licorice
Alternative names: Glycyrrhiza glabra, Spanish Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Limetree
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lindench.html

Linden
Alternative names: Tilia cordata, Tilia platyphyllos, Limetree
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lindench.html

Linden
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Lipase
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Lipase
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Lobelia
Alternative names: Lobelia inflata
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Lobelia.htm

Lobelia
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Lobelia
Alternative names: Lobelia inflata, Indian Tobacco
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lobeliach.html

Lobelia
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsj-l.htm

Lobelia inflata
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lobeliach.html

Lomatium
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Loracarbef
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Drug/Loracarbef.htm

Ma huang
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Ephedrach.html

Ma Huang
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsm-o.htm

Marshmallow
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsm-o.htm

Mullein
Alternative names: Verbascum thapsus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Mullein.htm

Mullein
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Mullein
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Mullein flower
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,865,00.html

NAC (N-acetylcysteine)
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,809,00.html

N-Acetyl Cysteine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/N_Acetyl_Cysteine.htm

N-Acetyl Cysteine (NAC)
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000211.html

N-acetylcysteine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

N-acetylcysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Ocimum
Alternative names: Basil, Albahaca; Ocimum basilicum
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Omnipen
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Parsley
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Pau d'arco
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,811,00.html

Plantago major
Alternative names: Plantain; Plantago major/lanceolata
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Plantago major
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Plantain
Alternative names: Plantago lanceolata, Plantago major
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Plantain.htm

Plantain
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsp-r.htm

Pleurisy Root
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Pleurisy Root
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Pleurisy Root
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsp-r.htm

Pollen
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Principen
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Quinolones
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsDepletions/AntibioticMedicationsQuinolonescl.html

Red Clover
Alternative names: Trifolium pratense , beebread, cow clover, cow grass, meadow clover, purple clover
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/RedCloverch.html

Reishi
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000229.html

Rosemary
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Rosemary
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Rosemary
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Rosmarinus
Alternative names: Rosemary; Rosmarinus officinalis L.
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Skunk Cabbage
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbss-v.htm

Slippery elm
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10056,00.html

Spanish Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Sundew
Alternative names: Drosera rotundifolia, Drosera ramentacea, Drosera intermedia, Drosera anglica
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Sundew.htm

Sundew
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Taurine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Theophylline/Aminophylline
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Drug/Theophylline.htm

Thyme
Alternative names: Thymus vulgaris
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Thyme.htm

Thyme
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Thyme
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Thyme
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Thyme
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Thyme
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Thyme
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbss-v.htm

Thymus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Thymus Extracts
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Thymus_Extracts.htm

Tilia cordata
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lindench.html

Tilia platyphyllos
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Lindench.html

Tylophora
Alternative names: Tylophora indica, Tylophora asthmatica
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Tylophora.htm

Wild Cherry Bark
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsw-z.htm

Wild Indigo
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Yerba Santa
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Yerba Santa
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000250.html

- **Related Conditions**

Cancer, Lung
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CancerLungcc.html

Common Cold
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CommonColdcc.html

Cough
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cough.htm

Cystic Fibrosis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Cystic Fibrosis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Immune Function
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Immune_Function.htm

Laryngitis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Laryngitiscc.html

Lung Cancer
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CancerLungcc.html

Osteoporosis
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000270.html

Pulmonary Hypertension
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Respiratory Infection, Bronchitis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Respiratory Infection, Cold
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CommonColdcc.html

General References

A good place to find general background information on CAM is the National Library of Medicine. It has prepared within the MEDLINEplus system an information topic page dedicated to complementary and alternative medicine. To access this page, go to the MEDLINEplus site at: **www.nlm.nih.gov/medlineplus/alternativemedicine.html.** This Web site provides a general overview of various topics and can lead to a number of general sources. The following additional references describe, in broad terms, alternative and complementary medicine (sorted alphabetically by title; hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Alternative Medicine for Dummies** by James Dillard (Author); Audio Cassette, Abridged edition (1998), Harper Audio; ISBN: 0694520659; **http://www.amazon.com/exec/obidos/ASIN/0694520659/icongroupinterna**

- **Complementary and Alternative Medicine Secrets** by W. Kohatsu (Editor); Hardcover (2001), Hanley & Belfus; ISBN: 1560534400; **http://www.amazon.com/exec/obidos/ASIN/1560534400/icongroupinterna**
- **Dictionary of Alternative Medicine** by J. C. Segen; Paperback-2nd edition (2001), Appleton & Lange; ISBN: 0838516211; **http://www.amazon.com/exec/obidos/ASIN/0838516211/icongroupinterna**
- **Eat, Drink, and Be Healthy: The Harvard Medical School Guide to Healthy Eating** by Walter C. Willett, MD, et al; Hardcover - 352 pages (2001), Simon & Schuster; ISBN: 0684863375; **http://www.amazon.com/exec/obidos/ASIN/0684863375/icongroupinterna**
- **Encyclopedia of Natural Medicine, Revised 2nd Edition** by Michael T. Murray, Joseph E. Pizzorno; Paperback - 960 pages, 2nd Rev edition (1997), Prima Publishing; ISBN: 0761511571; **http://www.amazon.com/exec/obidos/ASIN/0761511571/icongroupinterna**
- **Integrative Medicine: An Introduction to the Art & Science of Healing** by Andrew Weil (Author); Audio Cassette, Unabridged edition (2001), Sounds True; ISBN: 1564558541; **http://www.amazon.com/exec/obidos/ASIN/1564558541/icongroupinterna**
- **New Encyclopedia of Herbs & Their Uses** by Deni Bown; Hardcover - 448 pages, Revised edition (2001), DK Publishing; ISBN: 078948031X; **http://www.amazon.com/exec/obidos/ASIN/078948031X/icongroupinterna**
- **Textbook of Complementary and Alternative Medicine** by Wayne B. Jonas; Hardcover (2003), Lippincott, Williams & Wilkins; ISBN: 0683044370; **http://www.amazon.com/exec/obidos/ASIN/0683044370/icongroupinterna**

For additional information on complementary and alternative medicine, ask your doctor or write to:

National Institutes of Health
National Center for Complementary and Alternative Medicine Clearinghouse
P. O. Box 8218
Silver Spring, MD 20907-8218

APPENDIX C. RESEARCHING NUTRITION

Overview

Since the time of Hippocrates, doctors have understood the importance of diet and nutrition to patients' health and well-being. Since then, they have accumulated an impressive archive of studies and knowledge dedicated to this subject. Based on their experience, doctors and healthcare providers may recommend particular dietary supplements to patients with chronic obstructive pulmonary disease. Any dietary recommendation is based on a patient's age, body mass, gender, lifestyle, eating habits, food preferences, and health condition. It is therefore likely that different patients with chronic obstructive pulmonary disease may be given different recommendations. Some recommendations may be directly related to chronic obstructive pulmonary disease, while others may be more related to the patient's general health. These recommendations, themselves, may differ from what official sources recommend for the average person.

In this chapter we will begin by briefly reviewing the essentials of diet and nutrition that will broadly frame more detailed discussions of chronic obstructive pulmonary disease. We will then show you how to find studies dedicated specifically to nutrition and chronic obstructive pulmonary disease.

Food and Nutrition: General Principles

What Are Essential Foods?

Food is generally viewed by official sources as consisting of six basic elements: (1) fluids, (2) carbohydrates, (3) protein, (4) fats, (5) vitamins, and

(6) minerals. Consuming a combination of these elements is considered to be a healthy diet:

- **Fluids** are essential to human life as 80-percent of the body is composed of water. Water is lost via urination, sweating, diarrhea, vomiting, diuretics (drugs that increase urination), caffeine, and physical exertion.
- **Carbohydrates** are the main source for human energy (thermoregulation) and the bulk of typical diets. They are mostly classified as being either simple or complex. Simple carbohydrates include sugars which are often consumed in the form of cookies, candies, or cakes. Complex carbohydrates consist of starches and dietary fibers. Starches are consumed in the form of pastas, breads, potatoes, rice, and other foods. Soluble fibers can be eaten in the form of certain vegetables, fruits, oats, and legumes. Insoluble fibers include brown rice, whole grains, certain fruits, wheat bran and legumes.
- **Proteins** are eaten to build and repair human tissues. Some foods that are high in protein are also high in fat and calories. Food sources for protein include nuts, meat, fish, cheese, and other dairy products.
- **Fats** are consumed for both energy and the absorption of certain vitamins. There are many types of fats, with many general publications recommending the intake of unsaturated fats or those low in cholesterol.

Vitamins and minerals are fundamental to human health, growth, and, in some cases, disease prevention. Most are consumed in your diet (exceptions being vitamins K and D which are produced by intestinal bacteria and sunlight on the skin, respectively). Each vitamin and mineral plays a different role in health. The following outlines essential vitamins:

- **Vitamin A** is important to the health of your eyes, hair, bones, and skin; sources of vitamin A include foods such as eggs, carrots, and cantaloupe.
- **Vitamin B^1**, also known as thiamine, is important for your nervous system and energy production; food sources for thiamine include meat, peas, fortified cereals, bread, and whole grains.
- **Vitamin B^2**, also known as riboflavin, is important for your nervous system and muscles, but is also involved in the release of proteins from nutrients; food sources for riboflavin include dairy products, leafy vegetables, meat, and eggs.
- **Vitamin B^3**, also known as niacin, is important for healthy skin and helps the body use energy; food sources for niacin include peas, peanuts, fish, and whole grains

- **Vitamin B^6**, also known as pyridoxine, is important for the regulation of cells in the nervous system and is vital for blood formation; food sources for pyridoxine include bananas, whole grains, meat, and fish.
- **Vitamin B^{12}** is vital for a healthy nervous system and for the growth of red blood cells in bone marrow; food sources for vitamin B^{12} include yeast, milk, fish, eggs, and meat.
- **Vitamin C** allows the body's immune system to fight various diseases, strengthens body tissue, and improves the body's use of iron; food sources for vitamin C include a wide variety of fruits and vegetables.
- **Vitamin D** helps the body absorb calcium which strengthens bones and teeth; food sources for vitamin D include oily fish and dairy products.
- **Vitamin E** can help protect certain organs and tissues from various degenerative diseases; food sources for vitamin E include margarine, vegetables, eggs, and fish.
- **Vitamin K** is essential for bone formation and blood clotting; common food sources for vitamin K include leafy green vegetables.
- **Folic Acid** maintains healthy cells and blood and, when taken by a pregnant woman, can prevent her fetus from developing neural tube defects; food sources for folic acid include nuts, fortified breads, leafy green vegetables, and whole grains.

It should be noted that one can overdose on certain vitamins which become toxic if consumed in excess (e.g. vitamin A, D, E and K).

Like vitamins, minerals are chemicals that are required by the body to remain in good health. Because the human body does not manufacture these chemicals internally, we obtain them from food and other dietary sources. The more important minerals include:

- **Calcium** is needed for healthy bones, teeth, and muscles, but also helps the nervous system function; food sources for calcium include dry beans, peas, eggs, and dairy products.
- **Chromium** is helpful in regulating sugar levels in blood; food sources for chromium include egg yolks, raw sugar, cheese, nuts, beets, whole grains, and meat.
- **Fluoride** is used by the body to help prevent tooth decay and to reinforce bone strength; sources of fluoride include drinking water and certain brands of toothpaste.

- **Iodine** helps regulate the body's use of energy by synthesizing into the hormone thyroxine; food sources include leafy green vegetables, nuts, egg yolks, and red meat.
- **Iron** helps maintain muscles and the formation of red blood cells and certain proteins; food sources for iron include meat, dairy products, eggs, and leafy green vegetables.
- **Magnesium** is important for the production of DNA, as well as for healthy teeth, bones, muscles, and nerves; food sources for magnesium include dried fruit, dark green vegetables, nuts, and seafood.
- **Phosphorous** is used by the body to work with calcium to form bones and teeth; food sources for phosphorous include eggs, meat, cereals, and dairy products.
- **Selenium** primarily helps maintain normal heart and liver functions; food sources for selenium include wholegrain cereals, fish, meat, and dairy products.
- **Zinc** helps wounds heal, the formation of sperm, and encourage rapid growth and energy; food sources include dried beans, shellfish, eggs, and nuts.

The United States government periodically publishes recommended diets and consumption levels of the various elements of food. Again, your doctor may encourage deviations from the average official recommendation based on your specific condition. To learn more about basic dietary guidelines, visit the Web site: **http://www.health.gov/dietaryguidelines/**. Based on these guidelines, many foods are required to list the nutrition levels on the food's packaging. Labeling Requirements are listed at the following site maintained by the Food and Drug Administration: **http://www.cfsan.fda.gov/~dms/lab-cons.html**. When interpreting these requirements, the government recommends that consumers become familiar with the following abbreviations before reading FDA literature:[49]

- **DVs (Daily Values):** A new dietary reference term that will appear on the food label. It is made up of two sets of references, DRVs and RDIs.
- **DRVs (Daily Reference Values):** A set of dietary references that applies to fat, saturated fat, cholesterol, carbohydrate, protein, fiber, sodium, and potassium.
- **RDIs (Reference Daily Intakes):** A set of dietary references based on the Recommended Dietary Allowances for essential vitamins and minerals

[49] Adapted from the FDA: **http://www.fda.gov/fdac/special/foodlabel/dvs.html**.

and, in selected groups, protein. The name "RDI" replaces the term "U.S. RDA."

- **RDAs (Recommended Dietary Allowances):** A set of estimated nutrient allowances established by the National Academy of Sciences. It is updated periodically to reflect current scientific knowledge.

What Are Dietary Supplements?[50]

Dietary supplements are widely available through many commercial sources, including health food stores, grocery stores, pharmacies, and by mail. Dietary supplements are provided in many forms including tablets, capsules, powders, gel-tabs, extracts, and liquids. Historically in the United States, the most prevalent type of dietary supplement was a multivitamin/mineral tablet or capsule that was available in pharmacies, either by prescription or "over the counter." Supplements containing strictly herbal preparations were less widely available. Currently in the United States, a wide array of supplement products are available, including vitamin, mineral, other nutrients, and botanical supplements as well as ingredients and extracts of animal and plant origin.

The Office of Dietary Supplements (ODS) of the National Institutes of Health is the official agency of the United States which has the expressed goal of acquiring "new knowledge to help prevent, detect, diagnose, and treat disease and disability, from the rarest genetic disorder to the common cold."[51] According to the ODS, dietary supplements can have an important impact on the prevention and management of disease and on the maintenance of health.[52] The ODS notes that considerable research on the effects of dietary supplements has been conducted in Asia and Europe where the use of plant products, in particular, has a long tradition. However, the overwhelming majority of supplements have not been studied scientifically.

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[50] This discussion has been adapted from the NIH: http://ods.od.nih.gov/whatare/whatare.html.

[51] Contact: The Office of Dietary Supplements, National Institutes of Health, Building 31, Room 1B29, 31 Center Drive, MSC 2086, Bethesda, Maryland 20892-2086, Tel: (301) 435-2920, Fax: (301) 480-1845, E-mail: **ods@nih.gov**.

[52] Adapted from **http://ods.od.nih.gov/about/about.html**. The Dietary Supplement Health and Education Act defines dietary supplements as "a product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: a vitamin, mineral, amino acid, herb or other botanical; or a dietary substance for use to supplement the diet by increasing the total dietary intake; or a concentrate, metabolite, constituent, extract, or combination of any ingredient described above; and intended for ingestion in the form of a capsule, powder, softgel, or gelcap, and not represented as a conventional food or as a sole item of a meal or the diet."

To explore the role of dietary supplements in the improvement of health care, the ODS plans, organizes, and supports conferences, workshops, and symposia on scientific topics related to dietary supplements. The ODS often works in conjunction with other NIH Institutes and Centers, other government agencies, professional organizations, and public advocacy groups.

To learn more about official information on dietary supplements, visit the ODS site at **http://ods.od.nih.gov/whatare/whatare.html**. Or contact:

The Office of Dietary Supplements
National Institutes of Health
Building 31, Room 1B29
31 Center Drive, MSC 2086
Bethesda, Maryland 20892-2086
Tel: (301) 435-2920
Fax: (301) 480-1845
E-mail: ods@nih.gov

Finding Studies on Chronic Obstructive Pulmonary Disease

The NIH maintains an office dedicated to patient nutrition and diet. The National Institutes of Health's Office of Dietary Supplements (ODS) offers a searchable bibliographic database called the IBIDS (International Bibliographic Information on Dietary Supplements). The IBIDS contains over 460,000 scientific citations and summaries about dietary supplements and nutrition as well as references to published international, scientific literature on dietary supplements such as vitamins, minerals, and botanicals.[53] IBIDS is available to the public free of charge through the ODS Internet page: **http://ods.od.nih.gov/databases/ibids.html**.

After entering the search area, you have three choices: (1) IBIDS Consumer Database, (2) Full IBIDS Database, or (3) Peer Reviewed Citations Only. We recommend that you start with the Consumer Database. While you may not find references for the topics that are of most interest to you, check back periodically as this database is frequently updated. More studies can be found by searching the Full IBIDS Database. Healthcare professionals and

[53] Adapted from http://ods.od.nih.gov. IBIDS is produced by the Office of Dietary Supplements (ODS) at the National Institutes of Health to assist the public, healthcare providers, educators, and researchers in locating credible, scientific information on dietary supplements. IBIDS was developed and will be maintained through an interagency partnership with the Food and Nutrition Information Center of the National Agricultural Library, U.S. Department of Agriculture.

researchers generally use the third option, which lists peer-reviewed citations. In all cases, we suggest that you take advantage of the "Advanced Search" option that allows you to retrieve up to 100 fully explained references in a comprehensive format. Type "chronic obstructive pulmonary disease" (or synonyms) into the search box. To narrow the search, you can also select the "Title" field.

The following information is typical of that found when using the "Full IBIDS Database" when searching using "chronic obstructive pulmonary disease" (or a synonym):

- **Comparison of the effects of salmeterol and ipratropium bromide on exercise performance and breathlessness in patients with stable chronic obstructive pulmonary disease.**
  Author(s): Department of Medicine, Aristotle University of Thessaloniki, Greece.
  Source: Patakas, D Andreadis, D Mavrofridis, E Argyropoulou, P Respir-Med. 1998 September; 92(9): 1116-21 0954-6111
- **Disturbances in leptin metabolism are related to energy imbalance during acute exacerbations of chronic obstructive pulmonary disease.**
  Author(s): Department of Pulmonology, Heart and Lung Function Laboratory, University Hospital Maastricht, Maastricht, The Netherlands. E.Creutzberg@PUL.Unimaas.NL
  Source: Creutzberg, E C Wouters, E F Vanderhoven Augustin, I M Dentener, M A Schols, A M Am-J-Respir-Crit-Care-Med. 2000 October; 162(4 Pt 1): 1239-45 1073-449X
- **Dose response relation to oral theophylline in severe chronic obstructive airways disease.**
  Author(s): Chest Unit, Pontefract General Infirmary, West Yorkshire.
  Source: Chrystyn, H Mulley, B A Peake, M D BMJ. 1988 December 10; 297(6662): 1506-10 0959-8138
- **Effects of oral doxofylline on inflammatory changes and altered cell proliferation in chronic obstructive bronchitis.**
  Author(s): Unita Operativa di Pneumologia Riabilitativa, Ospedale Zappatoni, Cassano d'Adda, Milano, Italy.
  Source: Cogo, R Castronuovo, A Eur-Rev-Med-Pharmacol-Sci. 2000 Jan-April; 4(1-2): 15-20

- **Localization of gamma-glutamylcysteine synthetase messenger RNA expression in lungs of smokers and patients with chronic obstructive pulmonary disease.**
  Author(s): Respiratory Medicine Unit, ELEGI Laboratories, University of Edinburgh, Medical School, Edinburgh, Scotland, UK. ir@srv1.med.ed.ac.uk
  Source: Rahman, I van Schadewijk, A A Hiemstra, P S Stolk, J van Krieken, J H MacNee, W de Boer, W I Free-Radic-Biol-Med. 2000 March 15; 28(6): 920-5 0891-5849
- **Plasma leptin is related to proinflammatory status and dietary intake in patients with chronic obstructive pulmonary disease.**
  Author(s): Department of Pulmonology, Maastricht University, Maastricht, The Netherlands. ASC@SLON.AZM.NL
  Source: Schols, A M Creutzberg, E C Buurman, W A Campfield, L A Saris, W H Wouters, E F Am-J-Respir-Crit-Care-Med. 1999 October; 160(4): 1220-6 1073-449X

Federal Resources on Nutrition

In addition to the IBIDS, the United States Department of Health and Human Services (HHS) and the United States Department of Agriculture (USDA) provide many sources of information on general nutrition and health. Recommended resources include:

- healthfinder®, HHS's gateway to health information, including diet and nutrition:
  http://www.healthfinder.gov/scripts/SearchContext.asp?topic=238&page=0
- The United States Department of Agriculture's Web site dedicated to nutrition information: **www.nutrition.gov**
- The Food and Drug Administration's Web site for federal food safety information: **www.foodsafety.gov**
- The National Action Plan on Overweight and Obesity sponsored by the United States Surgeon General:
  http://www.surgeongeneral.gov/topics/obesity/
- The Center for Food Safety and Applied Nutrition has an Internet site sponsored by the Food and Drug Administration and the Department of Health and Human Services: **http://vm.cfsan.fda.gov/**
- Center for Nutrition Policy and Promotion sponsored by the United States Department of Agriculture: **http://www.usda.gov/cnpp/**

- Food and Nutrition Information Center, National Agricultural Library sponsored by the United States Department of Agriculture: **http://www.nal.usda.gov/fnic/**
- Food and Nutrition Service sponsored by the United States Department of Agriculture: **http://www.fns.usda.gov/fns/**

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering food and nutrition. The following is a representative sample:

- AOL: **http://search.aol.com/cat.adp?id=174&layer=&from=subcats**
- Family Village: **http://www.familyvillage.wisc.edu/med_nutrition.html**
- Google: **http://directory.google.com/Top/Health/Nutrition/**
- Healthnotes: **http://www.thedacare.org/healthnotes/**
- Open Directory Project: **http://dmoz.org/Health/Nutrition/**
- Yahoo.com: **http://dir.yahoo.com/Health/Nutrition/**
- WebMD®Health: **http://my.webmd.com/nutrition**
- WholeHealthMD.com: **http://www.wholehealthmd.com/reflib/0,1529,,00.html**

The following is a specific Web list relating to chronic obstructive pulmonary disease; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **Vitamins**

  Vitamin A
  Source: Healthnotes, Inc.; www.healthnotes.com
  Hyperlink:
  http://www.thedacare.org/healthnotes/Supp/Vitamin_A.htm

  Vitamin A
  Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
  Hyperlink:
  http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10066,00.html
  Vitamin C

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Vitamin_C.htm

Vitamin C and flavonoids
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,935,00.html

Vitamin E
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Vitamin_E.htm

- **Minerals**

Alpha-Tocopherol
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Alpha-Tocopherol
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Carnitine
Source: Prima Communications, Inc.
Hyperlink: http://www.personalhealthzone.com/pg000088.html

L-Carnitine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

L-Carnitine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Carnitine.htm

Magnesium
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Magnesium
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Magnesium.htm

Magnesium
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Magnesium
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,890,00.html

Pancreatin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Selenium
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Selenium
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

- **Food and Diet**

Bananas
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Bananas
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Bananas
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Barley
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Celery
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Cheese
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Eggs
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Eggs
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Fats
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Cystic_Fibrosis.htm

Fats
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Fish
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Fish
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Garlic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Garlic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Garlic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Garlic
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Garlic
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,786,00.html

Honey
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Hypertension
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PrimaryPulmonaryHypertensioncc.html

Magnesium Sulfate
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Meat
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Milk
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Milk
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Milk
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Mushrooms
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10046,00.html

Natural Sweeteners
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Natural_Sweeteners.htm

Nuts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Oats
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Omega-3 Fatty Acids
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/COPD.htm

Onions
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Onions
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Onions
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Oranges
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Peanuts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Pickles
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Pineapple
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Plums
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Refined Sweeteners
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Refined_Sweeteners.htm

Rye
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Saturated Fats
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Seeds
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Sugar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Sugar Alcohols
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Sugar_Alcohols.htm

Tea
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Bronchitis.htm

Tea
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Tea
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Tea
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Water
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/ChronicObstructivePulmonaryDiseasecc.html

Water
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Water
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Wheat
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Bronchitiscc.html

Wheat
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/CysticFibrosiscc.html

Vocabulary Builder

The following vocabulary builder defines words used in the references in this chapter that have not been defined in previous chapters:

Carbohydrates: A nutrient that supplies 4 calories/gram. They may be simple or complex. Simple carbohydrates are called sugars, and complex carbohydrates are called starch and fiber (cellulose). An organic compound—containing carbon, hydrogen, and oxygen—that is formed by photosynthesis in plants. Carbohydrates are heat producing and are classified as monosaccharides, disaccharides, or polysaccharides. [NIH]

Coronavirus: A genus of the family coronaviridae which causes respiratory or gastrointestinal disease in a variety of vertebrates. [NIH]

Degenerative: Undergoing degeneration : tending to degenerate; having the character of or involving degeneration; causing or tending to cause degeneration. [EU]

Diarrhea: Passage of excessively liquid or excessively frequent stools. [NIH]

Leptin: A 16-kD peptide hormone secreted from white adipocytes and implicated in the regulation of food intake and energy balance. Leptin provides the key afferent signal from fat cells in the feedback system that controls body fat stores. [NIH]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Papain: A proteolytic enzyme obtained from Carica papaya. It is also the name used for a purified mixture of papain and chymopapain that is used as a topical enzymatic debriding agent. EC 3.4.22.2. [NIH]

Polymyxin: Basic polypeptide antibiotic group obtained from Bacillus polymyxa. They affect the cell membrane by detergent action and may cause neuromuscular and kidney damage. At least eleven different members of the polymyxin group have been identified, each designated by a letter. [NIH]

Riboflavin: Nutritional factor found in milk, eggs, malted barley, liver,

kidney, heart, and leafy vegetables. The richest natural source is yeast. It occurs in the free form only in the retina of the eye, in whey, and in urine; its principal forms in tissues and cells are as FMN and FAD. [NIH]

Selenium: An element with the atomic symbol Se, atomic number 34, and atomic weight 78.96. It is an essential micronutrient for mammals and other animals but is toxic in large amounts. Selenium protects intracellular structures against oxidative damage. It is an essential component of glutathione peroxidase. [NIH]

Thyroxine: An amino acid of the thyroid gland which exerts a stimulating effect on thyroid metabolism. [NIH]

APPENDIX D. FINDING MEDICAL LIBRARIES

Overview

At a medical library you can find medical texts and reference books, consumer health publications, specialty newspapers and magazines, as well as medical journals. In this Appendix, we show you how to quickly find a medical library in your area.

Preparation

Before going to the library, highlight the references mentioned in this sourcebook that you find interesting. Focus on those items that are not available via the Internet, and ask the reference librarian for help with your search. He or she may know of additional resources that could be helpful to you. Most importantly, your local public library and medical libraries have Interlibrary Loan programs with the National Library of Medicine (NLM), one of the largest medical collections in the world. According to the NLM, most of the literature in the general and historical collections of the National Library of Medicine is available on interlibrary loan to any library. NLM's interlibrary loan services are only available to libraries. If you would like to access NLM medical literature, then visit a library in your area that can request the publications for you.[54]

[54] Adapted from the NLM: http://www.nlm.nih.gov/psd/cas/interlibrary.html.

Finding a Local Medical Library

The quickest method to locate medical libraries is to use the Internet-based directory published by the National Network of Libraries of Medicine (NN/LM). This network includes 4626 members and affiliates that provide many services to librarians, health professionals, and the public. To find a library in your area, simply visit **http://nnlm.gov/members/adv.html** or call 1-800-338-7657.

Medical Libraries Open to the Public

In addition to the NN/LM, the National Library of Medicine (NLM) lists a number of libraries that are generally open to the public and have reference facilities. The following is the NLM's list plus hyperlinks to each library Web site. These Web pages can provide information on hours of operation and other restrictions. The list below is a small sample of libraries recommended by the National Library of Medicine (sorted alphabetically by name of the U.S. state or Canadian province where the library is located):[55]

- **Alabama:** Health InfoNet of Jefferson County (Jefferson County Library Cooperative, Lister Hill Library of the Health Sciences), **http://www.uab.edu/infonet/**
- **Alabama:** Richard M. Scrushy Library (American Sports Medicine Institute), **http://www.asmi.org/LIBRARY.HTM**
- **Arizona:** Samaritan Regional Medical Center: The Learning Center (Samaritan Health System, Phoenix, Arizona), **http://www.samaritan.edu/library/bannerlibs.htm**
- **California:** Kris Kelly Health Information Center (St. Joseph Health System), **http://www.humboldt1.com/~kkhic/index.html**
- **California:** Community Health Library of Los Gatos (Community Health Library of Los Gatos), **http://www.healthlib.org/orgresources.html**
- **California:** Consumer Health Program and Services (CHIPS) (County of Los Angeles Public Library, Los Angeles County Harbor-UCLA Medical Center Library) - Carson, CA, **http://www.colapublib.org/services/chips.html**
- **California:** Gateway Health Library (Sutter Gould Medical Foundation)
- **California:** Health Library (Stanford University Medical Center), **http://www-med.stanford.edu/healthlibrary/**

[55] Abstracted from **http://www.nlm.nih.gov/medlineplus/libraries.html**.

- **California:** Patient Education Resource Center - Health Information and Resources (University of California, San Francisco), **http://sfghdean.ucsf.edu/barnett/PERC/default.asp**
- **California:** Redwood Health Library (Petaluma Health Care District), **http://www.phcd.org/rdwdlib.html**
- **California:** San José PlaneTree Health Library, **http://planetreesanjose.org/**
- **California:** Sutter Resource Library (Sutter Hospitals Foundation), **http://go.sutterhealth.org/comm/resc-library/sac-resources.html**
- **California:** University of California, Davis. Health Sciences Libraries
- **California:** ValleyCare Health Library & Ryan Comer Cancer Resource Center (ValleyCare Health System), **http://www.valleycare.com/library.html**
- **California:** Washington Community Health Resource Library (Washington Community Health Resource Library), **http://www.healthlibrary.org/**
- **Colorado:** William V. Gervasini Memorial Library (Exempla Healthcare), **http://www.exempla.org/conslib.htm**
- **Connecticut:** Hartford Hospital Health Science Libraries (Hartford Hospital), **http://www.harthosp.org/library/**
- **Connecticut:** Healthnet: Connecticut Consumer Health Information Center (University of Connecticut Health Center, Lyman Maynard Stowe Library), **http://library.uchc.edu/departm/hnet/**
- **Connecticut:** Waterbury Hospital Health Center Library (Waterbury Hospital), **http://www.waterburyhospital.com/library/consumer.shtml**
- **Delaware:** Consumer Health Library (Christiana Care Health System, Eugene du Pont Preventive Medicine & Rehabilitation Institute), **http://www.christianacare.org/health_guide/health_guide_pmri_health_info.cfm**
- **Delaware:** Lewis B. Flinn Library (Delaware Academy of Medicine), **http://www.delamed.org/chls.html**
- **Georgia:** Family Resource Library (Medical College of Georgia), **http://cmc.mcg.edu/kids_families/fam_resources/fam_res_lib/frl.htm**
- **Georgia:** Health Resource Center (Medical Center of Central Georgia), **http://www.mccg.org/hrc/hrchome.asp**
- **Hawaii:** Hawaii Medical Library: Consumer Health Information Service (Hawaii Medical Library), **http://hml.org/CHIS/**

- **Idaho:** DeArmond Consumer Health Library (Kootenai Medical Center), **http://www.nicon.org/DeArmond/index.htm**
- **Illinois:** Health Learning Center of Northwestern Memorial Hospital (Northwestern Memorial Hospital, Health Learning Center), **http://www.nmh.org/health_info/hlc.html**
- **Illinois:** Medical Library (OSF Saint Francis Medical Center), **http://www.osfsaintfrancis.org/general/library/**
- **Kentucky:** Medical Library - Services for Patients, Families, Students & the Public (Central Baptist Hospital), **http://www.centralbap.com/education/community/library.htm**
- **Kentucky:** University of Kentucky - Health Information Library (University of Kentucky, Chandler Medical Center, Health Information Library), **http://www.mc.uky.edu/PatientEd/**
- **Louisiana:** Alton Ochsner Medical Foundation Library (Alton Ochsner Medical Foundation), **http://www.ochsner.org/library/**
- **Louisiana:** Louisiana State University Health Sciences Center Medical Library-Shreveport, **http://lib-sh.lsuhsc.edu/**
- **Maine:** Franklin Memorial Hospital Medical Library (Franklin Memorial Hospital), **http://www.fchn.org/fmh/lib.htm**
- **Maine:** Gerrish-True Health Sciences Library (Central Maine Medical Center), **http://www.cmmc.org/library/library.html**
- **Maine:** Hadley Parrot Health Science Library (Eastern Maine Healthcare), **http://www.emh.org/hll/hpl/guide.htm**
- **Maine:** Maine Medical Center Library (Maine Medical Center), **http://www.mmc.org/library/**
- **Maine:** Parkview Hospital, **http://www.parkviewhospital.org/communit.htm#Library**
- **Maine:** Southern Maine Medical Center Health Sciences Library (Southern Maine Medical Center), **http://www.smmc.org/services/service.php3?choice=10**
- **Maine:** Stephens Memorial Hospital Health Information Library (Western Maine Health), **http://www.wmhcc.com/hil_frame.html**
- **Manitoba, Canada:** Consumer & Patient Health Information Service (University of Manitoba Libraries), **http://www.umanitoba.ca/libraries/units/health/reference/chis.html**
- **Manitoba, Canada:** J.W. Crane Memorial Library (Deer Lodge Centre), **http://www.deerlodge.mb.ca/library/libraryservices.shtml**

- **Maryland:** Health Information Center at the Wheaton Regional Library (Montgomery County, Md., Dept. of Public Libraries, Wheaton Regional Library), **http://www.mont.lib.md.us/healthinfo/hic.asp**
- **Massachusetts:** Baystate Medical Center Library (Baystate Health System), **http://www.baystatehealth.com/1024/**
- **Massachusetts:** Boston University Medical Center Alumni Medical Library (Boston University Medical Center), **http://med-libwww.bu.edu/library/lib.html**
- **Massachusetts:** Lowell General Hospital Health Sciences Library (Lowell General Hospital), **http://www.lowellgeneral.org/library/HomePageLinks/WWW.htm**
- **Massachusetts:** Paul E. Woodard Health Sciences Library (New England Baptist Hospital), **http://www.nebh.org/health_lib.asp**
- **Massachusetts:** St. Luke's Hospital Health Sciences Library (St. Luke's Hospital), **http://www.southcoast.org/library/**
- **Massachusetts:** Treadwell Library Consumer Health Reference Center (Massachusetts General Hospital), **http://www.mgh.harvard.edu/library/chrcindex.html**
- **Massachusetts:** UMass HealthNet (University of Massachusetts Medical School), **http://healthnet.umassmed.edu/**
- **Michigan:** Botsford General Hospital Library - Consumer Health (Botsford General Hospital, Library & Internet Services), **http://www.botsfordlibrary.org/consumer.htm**
- **Michigan:** Helen DeRoy Medical Library (Providence Hospital and Medical Centers), **http://www.providence-hospital.org/library/**
- **Michigan:** Marquette General Hospital - Consumer Health Library (Marquette General Hospital, Health Information Center), **http://www.mgh.org/center.html**
- **Michigan:** Patient Education Resouce Center - University of Michigan Cancer Center (University of Michigan Comprehensive Cancer Center), **http://www.cancer.med.umich.edu/learn/leares.htm**
- **Michigan:** Sladen Library & Center for Health Information Resources - Consumer Health Information, **http://www.sladen.hfhs.org/library/consumer/index.html**
- **Montana:** Center for Health Information (St. Patrick Hospital and Health Sciences Center), **http://www.saintpatrick.org/chi/librarydetail.php3?ID=41**

- **National:** Consumer Health Library Directory (Medical Library Association, Consumer and Patient Health Information Section), **http://caphis.mlanet.org/directory/index.html**
- **National:** National Network of Libraries of Medicine (National Library of Medicine) - provides library services for health professionals in the United States who do not have access to a medical library, **http://nnlm.gov/**
- **National:** NN/LM List of Libraries Serving the Public (National Network of Libraries of Medicine), **http://nnlm.gov/members/**
- **Nevada:** Health Science Library, West Charleston Library (Las Vegas Clark County Library District), **http://www.lvccld.org/special_collections/medical/index.htm**
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library), **http://www.dartmouth.edu/~biomed/resources.htmld/conshealth.htmld/**
- **New Jersey:** Consumer Health Library (Rahway Hospital), **http://www.rahwayhospital.com/library.htm**
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center), **http://www.englewoodhospital.com/links/index.htm**
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center), **http://www.geocities.com/ResearchTriangle/9360/**
- **New York:** Choices in Health Information (New York Public Library) - NLM Consumer Pilot Project participant, **http://www.nypl.org/branch/health/links.html**
- **New York:** Health Information Center (Upstate Medical University, State University of New York), **http://www.upstate.edu/library/hic/**
- **New York:** Health Sciences Library (Long Island Jewish Medical Center), **http://www.lij.edu/library/library.html**
- **New York:** ViaHealth Medical Library (Rochester General Hospital), **http://www.nyam.org/library/**
- **Ohio:** Consumer Health Library (Akron General Medical Center, Medical & Consumer Health Library), **http://www.akrongeneral.org/hwlibrary.htm**
- **Oklahoma:** Saint Francis Health System Patient/Family Resource Center (Saint Francis Health System), **http://www.sfh-tulsa.com/patientfamilycenter/default.asp**

- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center), **http://www.mcmc.net/phrc/**
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center), **http://www.hmc.psu.edu/commhealth/**
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center), **http://www.geisinger.edu/education/commlib.shtml**
- **Pennsylvania:** HealthInfo Library (Moses Taylor Hospital), **http://www.mth.org/healthwellness.html**
- **Pennsylvania:** Hopwood Library (University of Pittsburgh, Health Sciences Library System), **http://www.hsls.pitt.edu/chi/hhrcinfo.html**
- **Pennsylvania:** Koop Community Health Information Center (College of Physicians of Philadelphia), **http://www.collphyphil.org/kooppg1.shtml**
- **Pennsylvania:** Learning Resources Center - Medical Library (Susquehanna Health System), **http://www.shscares.org/services/lrc/index.asp**
- **Pennsylvania:** Medical Library (UPMC Health System), **http://www.upmc.edu/passavant/library.htm**
- **Quebec, Canada:** Medical Library (Montreal General Hospital), **http://ww2.mcgill.ca/mghlib/**
- **South Dakota:** Rapid City Regional Hospital - Health Information Center (Rapid City Regional Hospital, Health Information Center), **http://www.rcrh.org/education/LibraryResourcesConsumers.htm**
- **Texas:** Houston HealthWays (Houston Academy of Medicine-Texas Medical Center Library), **http://hhw.library.tmc.edu/**
- **Texas:** Matustik Family Resource Center (Cook Children's Health Care System), **http://www.cookchildrens.com/Matustik_Library.html**
- **Washington:** Community Health Library (Kittitas Valley Community Hospital), **http://www.kvch.com/**
- **Washington:** Southwest Washington Medical Center Library (Southwest Washington Medical Center), **http://www.swmedctr.com/Home/**

APPENDIX E. YOUR RIGHTS AND INSURANCE

Overview

Any patient with chronic obstructive pulmonary disease faces a series of issues related more to the healthcare industry than to the medical condition itself. This appendix covers two important topics in this regard: your rights and responsibilities as a patient, and how to get the most out of your medical insurance plan.

Your Rights as a Patient

The President's Advisory Commission on Consumer Protection and Quality in the Healthcare Industry has created the following summary of your rights as a patient.[56]

Information Disclosure

Consumers have the right to receive accurate, easily understood information. Some consumers require assistance in making informed decisions about health plans, health professionals, and healthcare facilities. Such information includes:

- ***Health plans.*** Covered benefits, cost-sharing, and procedures for resolving complaints, licensure, certification, and accreditation status, comparable measures of quality and consumer satisfaction, provider

[56]Adapted from Consumer Bill of Rights and Responsibilities: **http://www.hcqualitycommission.gov/press/cbor.html#head1**.

network composition, the procedures that govern access to specialists and emergency services, and care management information.

- ***Health professionals.*** Education, board certification, and recertification, years of practice, experience performing certain procedures, and comparable measures of quality and consumer satisfaction.
- ***Healthcare facilities.*** Experience in performing certain procedures and services, accreditation status, comparable measures of quality, worker, and consumer satisfaction, and procedures for resolving complaints.
- ***Consumer assistance programs.*** Programs must be carefully structured to promote consumer confidence and to work cooperatively with health plans, providers, payers, and regulators. Desirable characteristics of such programs are sponsorship that ensures accountability to the interests of consumers and stable, adequate funding.

Choice of Providers and Plans

Consumers have the right to a choice of healthcare providers that is sufficient to ensure access to appropriate high-quality healthcare. To ensure such choice, the Commission recommends the following:

- ***Provider network adequacy.*** All health plan networks should provide access to sufficient numbers and types of providers to assure that all covered services will be accessible without unreasonable delay -- including access to emergency services 24 hours a day and 7 days a week. If a health plan has an insufficient number or type of providers to provide a covered benefit with the appropriate degree of specialization, the plan should ensure that the consumer obtains the benefit outside the network at no greater cost than if the benefit were obtained from participating providers.
- ***Women's health services.*** Women should be able to choose a qualified provider offered by a plan -- such as gynecologists, certified nurse midwives, and other qualified healthcare providers -- for the provision of covered care necessary to provide routine and preventative women's healthcare services.
- ***Access to specialists.*** Consumers with complex or serious medical conditions who require frequent specialty care should have direct access to a qualified specialist of their choice within a plan's network of providers. Authorizations, when required, should be for an adequate number of direct access visits under an approved treatment plan.

- ***Transitional care.*** Consumers who are undergoing a course of treatment for a chronic or disabling condition (or who are in the second or third trimester of a pregnancy) at the time they involuntarily change health plans or at a time when a provider is terminated by a plan for other than cause should be able to continue seeing their current specialty providers for up to 90 days (or through completion of postpartum care) to allow for transition of care.
- ***Choice of health plans.*** Public and private group purchasers should, wherever feasible, offer consumers a choice of high-quality health insurance plans.

Access to Emergency Services

Consumers have the right to access emergency healthcare services when and where the need arises. Health plans should provide payment when a consumer presents to an emergency department with acute symptoms of sufficient severity--including severe pain--such that a "prudent layperson" could reasonably expect the absence of medical attention to result in placing that consumer's health in serious jeopardy, serious impairment to bodily functions, or serious dysfunction of any bodily organ or part.

Participation in Treatment Decisions

Consumers have the right and responsibility to fully participate in all decisions related to their healthcare. Consumers who are unable to fully participate in treatment decisions have the right to be represented by parents, guardians, family members, or other conservators. Physicians and other health professionals should:

- Provide patients with sufficient information and opportunity to decide among treatment options consistent with the informed consent process.
- Discuss all treatment options with a patient in a culturally competent manner, including the option of no treatment at all.
- Ensure that persons with disabilities have effective communications with members of the health system in making such decisions.
- Discuss all current treatments a consumer may be undergoing.
- Discuss all risks, benefits, and consequences to treatment or nontreatment.

- Give patients the opportunity to refuse treatment and to express preferences about future treatment decisions.
- Discuss the use of advance directives -- both living wills and durable powers of attorney for healthcare -- with patients and their designated family members.
- Abide by the decisions made by their patients and/or their designated representatives consistent with the informed consent process.

Health plans, health providers, and healthcare facilities should:

- Disclose to consumers factors -- such as methods of compensation, ownership of or interest in healthcare facilities, or matters of conscience -- that could influence advice or treatment decisions.
- Assure that provider contracts do not contain any so-called "gag clauses" or other contractual mechanisms that restrict healthcare providers' ability to communicate with and advise patients about medically necessary treatment options.
- Be prohibited from penalizing or seeking retribution against healthcare professionals or other health workers for advocating on behalf of their patients.

Respect and Nondiscrimination

Consumers have the right to considerate, respectful care from all members of the healthcare industry at all times and under all circumstances. An environment of mutual respect is essential to maintain a quality healthcare system. To assure that right, the Commission recommends the following:

- Consumers must not be discriminated against in the delivery of healthcare services consistent with the benefits covered in their policy, or as required by law, based on race, ethnicity, national origin, religion, sex, age, mental or physical disability, sexual orientation, genetic information, or source of payment.
- Consumers eligible for coverage under the terms and conditions of a health plan or program, or as required by law, must not be discriminated against in marketing and enrollment practices based on race, ethnicity, national origin, religion, sex, age, mental or physical disability, sexual orientation, genetic information, or source of payment.

Confidentiality of Health Information

Consumers have the right to communicate with healthcare providers in confidence and to have the confidentiality of their individually identifiable healthcare information protected. Consumers also have the right to review and copy their own medical records and request amendments to their records.

Complaints and Appeals

Consumers have the right to a fair and efficient process for resolving differences with their health plans, healthcare providers, and the institutions that serve them, including a rigorous system of internal review and an independent system of external review. A free copy of the Patient's Bill of Rights is available from the American Hospital Association.[57]

Patient Responsibilities

Treatment is a two-way street between you and your healthcare providers. To underscore the importance of finance in modern healthcare as well as your responsibility for the financial aspects of your care, the President's Advisory Commission on Consumer Protection and Quality in the Healthcare Industry has proposed that patients understand the following "Consumer Responsibilities."[58] In a healthcare system that protects consumers' rights, it is reasonable to expect and encourage consumers to assume certain responsibilities. Greater individual involvement by the consumer in his or her care increases the likelihood of achieving the best outcome and helps support a quality-oriented, cost-conscious environment. Such responsibilities include:

- Take responsibility for maximizing healthy habits such as exercising, not smoking, and eating a healthy diet.
- Work collaboratively with healthcare providers in developing and carrying out agreed-upon treatment plans.
- Disclose relevant information and clearly communicate wants and needs.

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[57] To order your free copy of the Patient's Bill of Rights, telephone 312-422-3000 or visit the American Hospital Association's Web site: http://www.aha.org. Click on "Resource Center," go to "Search" at bottom of page, and then type in "Patient's Bill of Rights." The Patient's Bill of Rights is also available from Fax on Demand, at 312-422-2020, document number 471124.

[58] Adapted from http://www.hcqualitycommission.gov/press/cbor.html#head1.

- Use your health insurance plan's internal complaint and appeal processes to address your concerns.
- Avoid knowingly spreading disease.
- Recognize the reality of risks, the limits of the medical science, and the human fallibility of the healthcare professional.
- Be aware of a healthcare provider's obligation to be reasonably efficient and equitable in providing care to other patients and the community.
- Become knowledgeable about your health plan's coverage and options (when available) including all covered benefits, limitations, and exclusions, rules regarding use of network providers, coverage and referral rules, appropriate processes to secure additional information, and the process to appeal coverage decisions.
- Show respect for other patients and health workers.
- Make a good-faith effort to meet financial obligations.
- Abide by administrative and operational procedures of health plans, healthcare providers, and Government health benefit programs.

Choosing an Insurance Plan

There are a number of official government agencies that help consumers understand their healthcare insurance choices.[59] The U.S. Department of Labor, in particular, recommends ten ways to make your health benefits choices work best for you.[60]

1. Your options are important. There are many different types of health benefit plans. Find out which one your employer offers, then check out the plan, or plans, offered. Your employer's human resource office, the health plan administrator, or your union can provide information to help you match your needs and preferences with the available plans. The more information you have, the better your healthcare decisions will be.

2. Reviewing the benefits available. Do the plans offered cover preventive care, well-baby care, vision or dental care? Are there deductibles? Answers to these questions can help determine the out-of-pocket expenses you may

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[59] More information about quality across programs is provided at the following AHRQ Web site:
http://www.ahrq.gov/consumer/qntascii/qnthplan.htm.

[60] Adapted from the Department of Labor:
http://www.dol.gov/dol/pwba/public/pubs/health/top10-text.html.

face. Matching your needs and those of your family members will result in the best possible benefits. Cheapest may not always be best. Your goal is high quality health benefits.

3. Look for quality. The quality of healthcare services varies, but quality can be measured. You should consider the quality of healthcare in deciding among the healthcare plans or options available to you. Not all health plans, doctors, hospitals and other providers give the highest quality care. Fortunately, there is quality information you can use right now to help you compare your healthcare choices. Find out how you can measure quality. Consult the U.S. Department of Health and Human Services publication "Your Guide to Choosing Quality Health Care" on the Internet at **www.ahcpr.gov/consumer**.

4. Your plan's summary plan description (SPD) provides a wealth of information. Your health plan administrator can provide you with a copy of your plan's SPD. It outlines your benefits and your legal rights under the Employee Retirement Income Security Act (ERISA), the federal law that protects your health benefits. It should contain information about the coverage of dependents, what services will require a co-pay, and the circumstances under which your employer can change or terminate a health benefits plan. Save the SPD and all other health plan brochures and documents, along with memos or correspondence from your employer relating to health benefits.

5. Assess your benefit coverage as your family status changes. Marriage, divorce, childbirth or adoption, and the death of a spouse are all life events that may signal a need to change your health benefits. You, your spouse and dependent children may be eligible for a special enrollment period under provisions of the Health Insurance Portability and Accountability Act (HIPAA). Even without life-changing events, the information provided by your employer should tell you how you can change benefits or switch plans, if more than one plan is offered. If your spouse's employer also offers a health benefits package, consider coordinating both plans for maximum coverage.

6. Changing jobs and other life events can affect your health benefits. Under the Consolidated Omnibus Budget Reconciliation Act (COBRA), you, your covered spouse, and your dependent children may be eligible to purchase extended health coverage under your employer's plan if you lose your job, change employers, get divorced, or upon occurrence of certain other events. Coverage can range from 18 to 36 months depending on your situation. COBRA applies to most employers with 20 or more workers and

requires your plan to notify you of your rights. Most plans require eligible individuals to make their COBRA election within 60 days of the plan's notice. Be sure to follow up with your plan sponsor if you don't receive notice, and make sure you respond within the allotted time.

7. HIPAA can also help if you are changing jobs, particularly if you have a medical condition. HIPAA generally limits pre-existing condition exclusions to a maximum of 12 months (18 months for late enrollees). HIPAA also requires this maximum period to be reduced by the length of time you had prior "creditable coverage." You should receive a certificate documenting your prior creditable coverage from your old plan when coverage ends.

8. Plan for retirement. Before you retire, find out what health benefits, if any, extend to you and your spouse during your retirement years. Consult with your employer's human resources office, your union, the plan administrator, and check your SPD. Make sure there is no conflicting information among these sources about the benefits you will receive or the circumstances under which they can change or be eliminated. With this information in hand, you can make other important choices, like finding out if you are eligible for Medicare and Medigap insurance coverage.

9. Know how to file an appeal if your health benefits claim is denied. Understand how your plan handles grievances and where to make appeals of the plan's decisions. Keep records and copies of correspondence. Check your health benefits package and your SPD to determine who is responsible for handling problems with benefit claims. Contact PWBA for customer service assistance if you are unable to obtain a response to your complaint.

10. You can take steps to improve the quality of the healthcare and the health benefits you receive. Look for and use things like Quality Reports and Accreditation Reports whenever you can. Quality reports may contain consumer ratings -- how satisfied consumers are with the doctors in their plan, for instance-- and clinical performance measures -- how well a healthcare organization prevents and treats illness. Accreditation reports provide information on how accredited organizations meet national standards, and often include clinical performance measures. Look for these quality measures whenever possible. Consult "Your Guide to Choosing Quality Health Care" on the Internet at **www.ahcpr.gov/consumer**.

Medicare and Medicaid

Illness strikes both rich and poor families. For low-income families, Medicaid is available to defer the costs of treatment. The Health Care Financing Administration (HCFA) administers Medicare, the nation's largest health insurance program, which covers 39 million Americans. In the following pages, you will learn the basics about Medicare insurance as well as useful contact information on how to find more in-depth information about Medicaid.[61]

Who is Eligible for Medicare?

Generally, you are eligible for Medicare if you or your spouse worked for at least 10 years in Medicare-covered employment and you are 65 years old and a citizen or permanent resident of the United States. You might also qualify for coverage if you are under age 65 but have a disability or End-Stage Renal disease (permanent kidney failure requiring dialysis or transplant). Here are some simple guidelines:

You can get Part A at age 65 without having to pay premiums if:

- You are already receiving retirement benefits from Social Security or the Railroad Retirement Board.
- You are eligible to receive Social Security or Railroad benefits but have not yet filed for them.
- You or your spouse had Medicare-covered government employment.

If you are under 65, you can get Part A without having to pay premiums if:

- You have received Social Security or Railroad Retirement Board disability benefit for 24 months.
- You are a kidney dialysis or kidney transplant patient.

Medicare has two parts:

- Part A (Hospital Insurance). Most people do not have to pay for Part A.
- Part B (Medical Insurance). Most people pay monthly for Part B.

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[61] This section has been adapted from the Official U.S. Site for Medicare Information: **http://www.medicare.gov/Basics/Overview.asp**.

Part A (Hospital Insurance)

Helps Pay For: Inpatient hospital care, care in critical access hospitals (small facilities that give limited outpatient and inpatient services to people in rural areas) and skilled nursing facilities, hospice care, and some home healthcare.

Cost: Most people get Part A automatically when they turn age 65. You do not have to pay a monthly payment called a premium for Part A because you or a spouse paid Medicare taxes while you were working.

If you (or your spouse) did not pay Medicare taxes while you were working and you are age 65 or older, you still may be able to buy Part A. If you are not sure you have Part A, look on your red, white, and blue Medicare card. It will show "Hospital Part A" on the lower left corner of the card. You can also call the Social Security Administration toll free at 1-800-772-1213 or call your local Social Security office for more information about buying Part A. If you get benefits from the Railroad Retirement Board, call your local RRB office or 1-800-808-0772. For more information, call your Fiscal Intermediary about Part A bills and services. The phone number for the Fiscal Intermediary office in your area can be obtained from the following Web site: **http://www.medicare.gov/Contacts/home.asp**.

Part B (Medical Insurance)

Helps Pay For: Doctors, services, outpatient hospital care, and some other medical services that Part A does not cover, such as the services of physical and occupational therapists, and some home healthcare. Part B helps pay for covered services and supplies when they are medically necessary.

Cost: As of 2001, you pay the Medicare Part B premium of $50.00 per month. In some cases this amount may be higher if you did not choose Part B when you first became eligible at age 65. The cost of Part B may go up 10% for each 12-month period that you were eligible for Part B but declined coverage, except in special cases. You will have to pay the extra 10% cost for the rest of your life.

Enrolling in Part B is your choice. You can sign up for Part B anytime during a 7-month period that begins 3 months before you turn 65. Visit your local Social Security office, or call the Social Security Administration at 1-800-772-1213 to sign up. If you choose to enroll in Part B, the premium is usually taken out of your monthly Social Security, Railroad Retirement, or Civil Service Retirement payment. If you do not receive any of the above

payments, Medicare sends you a bill for your part B premium every 3 months. You should receive your Medicare premium bill in the mail by the 10th of the month. If you do not, call the Social Security Administration at 1-800-772-1213, or your local Social Security office. If you get benefits from the Railroad Retirement Board, call your local RRB office or 1-800-808-0772. For more information, call your Medicare carrier about bills and services. The phone number for the Medicare carrier in your area can be found at the following Web site: **http://www.medicare.gov/Contacts/home.asp**. You may have choices in how you get your healthcare including the Original Medicare Plan, Medicare Managed Care Plans (like HMOs), and Medicare Private Fee-for-Service Plans.

Medicaid

Medicaid is a joint federal and state program that helps pay medical costs for some people with low incomes and limited resources. Medicaid programs vary from state to state. People on Medicaid may also get coverage for nursing home care and outpatient prescription drugs which are not covered by Medicare. You can find more information about Medicaid on the HCFA.gov Web site at **http://www.hcfa.gov/medicaid/medicaid.htm**.

States also have programs that pay some or all of Medicare's premiums and may also pay Medicare deductibles and coinsurance for certain people who have Medicare and a low income. To qualify, you must have:

- Part A (Hospital Insurance),
- Assets, such as bank accounts, stocks, and bonds that are not more than $4,000 for a single person, or $6,000 for a couple, and
- A monthly income that is below certain limits.

For more information on these programs, look at the Medicare Savings Programs brochure, **http://www.medicare.gov/Library/PDFNavigation/PDFInterim.asp?Language=English&Type=Pub&PubID=10126**. There are also Prescription Drug Assistance Programs available. Find information on these programs which offer discounts or free medications to individuals in need at **http://www.medicare.gov/Prescription/Home.asp**.

NORD's Medication Assistance Programs

Finally, the National Organization for Rare Disorders, Inc. (NORD) administers medication programs sponsored by humanitarian-minded pharmaceutical and biotechnology companies to help uninsured or under-insured individuals secure life-saving or life-sustaining drugs.[62] NORD programs ensure that certain vital drugs are available "to those individuals whose income is too high to qualify for Medicaid but too low to pay for their prescribed medications." The program has standards for fairness, equity, and unbiased eligibility. It currently covers some 14 programs for nine pharmaceutical companies. NORD also offers early access programs for investigational new drugs (IND) under the approved "Treatment INDs" programs of the Food and Drug Administration (FDA). In these programs, a limited number of individuals can receive investigational drugs that have yet to be approved by the FDA. These programs are generally designed for rare diseases or disorders. For more information, visit **www.rarediseases.org**.

Additional Resources

In addition to the references already listed in this chapter, you may need more information on health insurance, hospitals, or the healthcare system in general. The NIH has set up an excellent guidance Web site that addresses these and other issues. Topics include:[63]

- Health Insurance: **http://www.nlm.nih.gov/medlineplus/healthinsurance.html**
- Health Statistics: **http://www.nlm.nih.gov/medlineplus/healthstatistics.html**
- HMO and Managed Care: **http://www.nlm.nih.gov/medlineplus/managedcare.html**
- Hospice Care: **http://www.nlm.nih.gov/medlineplus/hospicecare.html**
- Medicaid: **http://www.nlm.nih.gov/medlineplus/medicaid.html**
- Medicare: **http://www.nlm.nih.gov/medlineplus/medicare.html**
- Nursing Homes and Long-term Care: **http://www.nlm.nih.gov/medlineplus/nursinghomes.html**

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[62] Adapted from NORD: **http://www.rarediseases.org/cgi-bin/nord/progserv#patient?id=rPIzL9oD&mv_pc=30**.

[63] You can access this information at: **http://www.nlm.nih.gov/medlineplus/healthsystem.html**.

- Patient's Rights, Confidentiality, Informed Consent, Ombudsman Programs, Privacy and Patient Issues: **http://www.nlm.nih.gov/medlineplus/patientissues.html**
- Veteran's Health, Persian Gulf War, Gulf War Syndrome, Agent Orange: **http://www.nlm.nih.gov/medlineplus/veteranshealth.html**

Vocabulary Builder

Dizziness: An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness. [NIH]

Fatigue: The state of weariness following a period of exertion, mental or physical, characterized by a decreased capacity for work and reduced efficiency to respond to stimuli. [NIH]

Impotence: The inability to perform sexual intercourse. [NIH]

Insomnia: Inability to sleep; abnormal wakefulness. [EU]

ONLINE GLOSSARIES

The Internet provides access to a number of free-to-use medical dictionaries and glossaries. The National Library of Medicine has compiled the following list of online dictionaries:

- ADAM Medical Encyclopedia (A.D.A.M., Inc.), comprehensive medical reference: **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**
- MedicineNet.com Medical Dictionary (MedicineNet, Inc.): **http://www.medterms.com/Script/Main/hp.asp**
- Merriam-Webster Medical Dictionary (Inteli-Health, Inc.): **http://www.intelihealth.com/IH/**
- Multilingual Glossary of Technical and Popular Medical Terms in Eight European Languages (European Commission) - Danish, Dutch, English, French, German, Italian, Portuguese, and Spanish: **http://allserv.rug.ac.be/~rvdstich/eugloss/welcome.html**
- On-line Medical Dictionary (CancerWEB): **http://www.graylab.ac.uk/omd/**
- Technology Glossary (National Library of Medicine) - Health Care Technology: **http://www.nlm.nih.gov/nichsr/ta101/ta10108.htm**
- Terms and Definitions (Office of Rare Diseases): **http://rarediseases.info.nih.gov/ord/glossary_a-e.html**

Beyond these, MEDLINEplus contains a very user-friendly encyclopedia covering every aspect of medicine (licensed from A.D.A.M., Inc.). The ADAM Medical Encyclopedia Web site address is **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**. ADAM is also available on commercial Web sites such as drkoop.com (**http://www.drkoop.com/**) and Web MD (**http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a)**. Topics of interest can be researched by using keywords before continuing elsewhere, as these basic definitions and concepts will be useful in more advanced areas of research. You may choose to print various pages specifically relating to chronic obstructive pulmonary disease and keep them on file. The NIH, in particular, suggests that patients with chronic obstructive pulmonary disease visit the following Web sites in the ADAM Medical Encyclopedia:

- **Basic Guidelines for Chronic Obstructive Pulmonary Disease**

Bronchitis
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/001087.htm

Chronic bronchitis
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000119.htm

Chronic obstructive pulmonary disease
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000091.htm

COPD
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000091.htm

Emphysema
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000136.htm

- **Signs & Symptoms for Chronic Obstructive Pulmonary Disease**

Ankle, feet, and leg swelling
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003104.htm

Anxiety, stress, and tension
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm

Bluish coloration of the skin
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003215.htm

Breath sounds
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003323.htm

Breathing difficulty
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm

Breathing difficulty, lying down
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003076.htm

Clubbing of the fingers or toes
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003282.htm

Cough
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003072.htm

Coughing up blood
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003073.htm

Cyanosis
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003215.htm

Difficulty falling asleep
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003210.htm

Dizziness
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003093.htm

Dyspnea
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm

Excessive daytime sleepiness
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003208.htm

Eyes, bulging
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003033.htm

Fatigue
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003088.htm

Headache
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003024.htm

Headaches
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003024.htm

Impotence
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003164.htm

Insomnia
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003210.htm

Lung disease
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000066.htm

Memory loss
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003257.htm

Nasal flaring
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003055.htm

Rales
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003323.htm

Shortness of breath
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm

Stress
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm

Tachycardia
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003077.htm

Tachypnea
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003071.htm

Vision abnormalities
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003029.htm

Weight loss
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003107.htm

Wheezing
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003070.htm

- **Diagnostics and Tests for Chronic Obstructive Pulmonary Disease**

Alpha-1 antitrypsin
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003715.htm

Arterial blood gas
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003855.htm

Arterial blood gases
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003855.htm

Blood gases
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003855.htm

CAT scan
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003330.htm

CBC
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003642.htm

CEA
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003574.htm

Chest MRI
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003794.htm

Chest X-ray
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003804.htm

Contraction
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003405.htm

Diffusing capacity
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003854.htm

Pulmonary function
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003443.htm

Pulmonary function tests
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003853.htm

Pulmonary ventilation/perfusion scan
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003828.htm

Serum alpha-1 antitrypsin level
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003715.htm

Urine pH
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003583.htm

X-ray
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003337.htm

- **Surgery and Procedures for Chronic Obstructive Pulmonary Disease**

Lung transplant
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003010.htm

- **Background Topics for Chronic Obstructive Pulmonary Disease**

Acute
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002215.htm

Aggravated by
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002227.htm

Chronic
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002312.htm

Cigarette smoking
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002032.htm

Exercise
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/001941.htm

Incidence
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002387.htm

Inspection
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002388.htm

Lung disease - support group
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002158.htm

Noninvasive
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002269.htm

Physical examination
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002274.htm

Respiratory
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002290.htm

Smoking
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002032.htm

Support group
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002150.htm

Online Dictionary Directories

The following are additional online directories compiled by the National Library of Medicine, including a number of specialized medical dictionaries and glossaries:

- Medical Dictionaries: Medical & Biological (World Health Organization): **http://www.who.int/hlt/virtuallibrary/English/diction.htm#Medical**

- MEL-Michigan Electronic Library List of Online Health and Medical Dictionaries (Michigan Electronic Library): **http://mel.lib.mi.us/health/health-dictionaries.html**
- Patient Education: Glossaries (DMOZ Open Directory Project): **http://dmoz.org/Health/Education/Patient_Education/Glossaries/**
- Web of Online Dictionaries (Bucknell University): **http://www.yourdictionary.com/diction5.html#medicine**

CHRONIC OBSTRUCTIVE PULMONARY DISEASE GLOSSARY

The following is a complete glossary of terms used in this sourcebook. The definitions are derived from official public sources including the National Institutes of Health [NIH] and the European Union [EU]. After this glossary, we list a number of additional hardbound and electronic glossaries and dictionaries that you may wish to consult.

Abdomen: That portion of the body that lies between the thorax and the pelvis. [NIH]

Abdominal: Pertaining to the abdomen. [EU]

Accommodation: Adjustment, especially that of the eye for various distances. [EU]

Adolescence: The period of life beginning with the appearance of secondary sex characteristics and terminating with the cessation of somatic growth. The years usually referred to as adolescence lie between 13 and 18 years of age. [NIH]

Aerosol: A solution of a drug which can be atomized into a fine mist for inhalation therapy. [EU]

Airways: Tubes that carry air into and out of the lungs. [NIH]

Albuterol: A racemic mixture with a 1:1 ratio of the r-isomer, levalbuterol, and s-albuterol. It is a short-acting beta2-adrenergic agonist with its main clinical use in asthma. [NIH]

Aldehydes: Organic compounds containing a carbonyl group in the form -CHO. [NIH]

Algorithms: A procedure consisting of a sequence of algebraic formulas and/or logical steps to calculate or determine a given task. [NIH]

Allergen: A antigenic substance capable of producing immediate-type hypersensitivity (allergy). [EU]

Alveoli: Tiny sac-like air spaces in the lungs where transfer of carbon dioxide from blood into the lungs and oxygen from air into blood takes place. [NIH]

Ammonia: Ammonia. A colorless alkaline gas. It is formed in the body during decomposition of organic materials during a large number of metabolically important reactions. [NIH]

Ampicillin: Semi-synthetic derivative of penicillin that functions as an orally active broad-spectrum antibiotic. [NIH]

Amyl Nitrite: A vasodilator that is administered by inhalation. It is also used recreationally due to its supposed ability to induce euphoria and act as an aphrodisiac. [NIH]

Anemia: A reduction in the number of circulating erythrocytes or in the quantity of hemoglobin. [NIH]

Aneurysm: A sac formed by the dilatation of the wall of an artery, a vein, or the heart. The chief signs of arterial aneurysm are the formation of a pulsating tumour, and often a bruit (aneurysmal bruit) heard over the swelling. Sometimes there are symptoms from pressure on contiguous parts. [EU]

Angiography: Radiography of blood vessels after injection of a contrast medium. [NIH]

Anhydrides: Chemical compounds derived from acids by the elimination of a molecule of water. [NIH]

Ankle: That part of the lower limb directly above the foot. [NIH]

Antibiotic: A drug that kills or inhibits the growth of bacteria. [NIH]

Antibody: An immunoglobulin molecule that has a specific amino acid sequence by virtue of which it interacts only with the antigen that induced its synthesis in cells of the lymphoid series (especially plasma cells), or with antigen closely related to it. Antibodies are classified according to their ode of action as agglutinins, bacteriolysins, haemolysins, opsonins, precipitins, etc. [EU]

Antihistamine: A drug that counteracts the action of histamine. The antihistamines are of two types. The conventional ones, as those used in allergies, block the H1 histamine receptors, whereas the others block the H2 receptors. Called also antihistaminic. [EU]

Antimicrobial: Killing microorganisms, or suppressing their multiplication or growth. [EU]

Antioxidant: One of many widely used synthetic or natural substances added to a product to prevent or delay its deterioration by action of oxygen in the air. Rubber, paints, vegetable oils, and prepared foods commonly contain antioxidants. [EU]

Antiproliferative: Counteracting a process of proliferation. [EU]

Antitussive: An agent that relieves or prevents cough. [EU]

Anxiety: The unpleasant emotional state consisting of psychophysiological responses to anticipation of unreal or imagined danger, ostensibly resulting from unrecognized intrapsychic conflict. Physiological concomitants include increased heart rate, altered respiration rate, sweating, trembling, weakness, and fatigue; psychological concomitants include feelings of impending danger, powerlessness, apprehension, and tension. [EU]

Arginine: An essential amino acid that is physiologically active in the L-form. [NIH]

Aromatic: Having a spicy odour. [EU]

Arterial: Pertaining to an artery or to the arteries. [EU]

Arteries: The vessels carrying blood away from the heart. [NIH]

Artery: Vessel-carrying blood from the heart to various parts of the body. [NIH]

Ascites: Effusion and accumulation of serous fluid in the abdominal cavity; called also abdominal or peritoneal dropsy, hydroperitonia, and hydrops abdominis. [EU]

Assay: Determination of the amount of a particular constituent of a mixture, or of the biological or pharmacological potency of a drug. [EU]

Asymptomatic: Showing or causing no symptoms. [EU]

Atenolol: A cardioselective beta-adrenergic blocker possessing properties and potency similar to propranolol, but without a negative inotropic effect. [NIH]

Atrial: Pertaining to an atrium. [EU]

Atrophy: A wasting away; a diminution in the size of a cell, tissue, organ, or part. [EU]

Atropine: A toxic alkaloid, originally from Atropa belladonna, but found in other plants, mainly Solanaceae. [NIH]

Auditory: Pertaining to the sense of hearing. [EU]

Autonomic: Self-controlling; functionally independent. [EU]

Azithromycin: A semi-synthetic macrolide antibiotic structurally related to erythromycin. It has been used in the treatment of Mycobacterium avium intracellulare infections, toxoplasmosis, and cryptosporidiosis. [NIH]

Bacteremia: The presence of viable bacteria circulating in the blood. Fever, chills, tachycardia, and tachypnea are common acute manifestations of bacteremia. The majority of cases are seen in already hospitalized patients, most of whom have underlying diseases or procedures which render their bloodstreams susceptible to invasion. [NIH]

Beclomethasone: An anti-inflammatory, synthetic glucocorticoid. It is used topically as an anti-inflammatory agent and in aerosol form for the treatment of asthma. [NIH]

Bereavement: Refers to the whole process of grieving and mourning and is associated with a deep sense of loss and sadness. [NIH]

Biopsy: The removal and examination, usually microscopic, of tissue from the living body, performed to establish precise diagnosis. [EU]

Bronchial: Pertaining to one or more bronchi. [EU]

Bronchiectasis: Chronic dilatation of the bronchi marked by fetid breath and paroxysmal coughing, with the expectoration of mucopurulent matter. It may effect the tube uniformly (cylindric b.), or occur in irregular pockets (sacculated b.) or the dilated tubes may have terminal bulbous enlargements (fusiform b.). [EU]

Bronchiole: The smaller airways of the lungs. [NIH]

Bronchitis: Inflammation of one or more bronchi. [EU]

Bronchoconstriction: Tightening of the muscles surrounding the bronchi, the tubes that branch from the windpipe. [NIH]

Bronchodilator: A drug that relaxes the smooth muscles in the constricted airway. [NIH]

Capillary: Any one of the minute vessels that connect the arterioles and venules, forming a network in nearly all parts of the body. Their walls act as semipermeable membranes for the interchange of various substances, including fluids, between the blood and tissue fluid; called also vas capillare. [EU]

Capsules: Hard or soft soluble containers used for the oral administration of medicine. [NIH]

Carbohydrates: A nutrient that supplies 4 calories/gram. They may be simple or complex. Simple carbohydrates are called sugars, and complex carbohydrates are called starch and fiber (cellulose). An organic compound—containing carbon, hydrogen, and oxygen—that is formed by photosynthesis in plants. Carbohydrates are heat producing and are classified as monosaccharides, disaccharides, or polysaccharides. [NIH]

Carcinogenic: Producing carcinoma. [EU]

Carcinoma: A malignant new growth made up of epithelial cells tending to infiltrate the surrounding tissues and give rise to metastases. [EU]

Cardiac: Pertaining to the heart. [EU]

Cardiopulmonary: Pertaining to the heart and lungs. [EU]

Cardiorespiratory: Relating to the heart and lungs and their function. [EU]

Cardiovascular: Pertaining to the heart and blood vessels. [EU]

Cataract: An opacity, partial or complete, of one or both eyes, on or in the lens or capsule, especially an opacity impairing vision or causing blindness. The many kinds of cataract are classified by their morphology (size, shape, location) or etiology (cause and time of occurrence). [EU]

Cefaclor: Semisynthetic, broad-spectrum antibiotic derivative of cephalexin. [NIH]

Cefixime: A third-generation cephalosporin antibiotic that is stable to hydrolysis by beta-lactamases. [NIH]

Cell: Basic subunit of every living organism; the simplest unit that can exist as an independent living system. [NIH]

Cerebrovascular: Pertaining to the blood vessels of the cerebrum, or brain. [EU]

Cervical: Pertaining to the neck, or to the neck of any organ or structure. [EU]

CHD: Coronary heart disease. A type of heart disease caused by narrowing of the coronary arteries that feed the heart, which needs a constant supply of oxygen and nutrients carried by the blood in the coronary arteries. When the coronary arteries become narrowed or clogged by fat and cholesterol deposits and cannot supply enough blood to the heart, CHD results. [NIH]

Chlamydia: A genus of the family chlamydiaceae whose species cause a variety of diseases in vertebrates including humans, mice, and swine. Chlamydia species are gram-negative and produce glycogen. The type species is chlamydia trachomatis. [NIH]

Chlorine: A greenish-yellow, diatomic gas that is a member of the halogen family of elements. It has the atomic symbol Cl, atomic number 17, and atomic weight 70.906. It is a powerful irritant that can cause fatal pulmonary edema. Chlorine is used in manufacturing, as a reagent in synthetic chemistry, for water purification, and in the production of chlorinated lime, which is used in fabric bleaching. [NIH]

Cholestasis: Impairment of biliary flow at any level from the hepatocyte to Vater's ampulla. [NIH]

Cirrhosis: Liver disease characterized pathologically by loss of the normal microscopic lobular architecture, with fibrosis and nodular regeneration. The term is sometimes used to refer to chronic interstitial inflammation of any organ. [EU]

Coagulation: 1. the process of clot formation. 2. in colloid chemistry, the solidification of a sol into a gelatinous mass; an alteration of a disperse phase or of a dissolved solid which causes the separation of the system into a liquid phase and an insoluble mass called the clot or curd. Coagulation is usually irreversible. 3. in surgery, the disruption of tissue by physical means to form an amorphous residuum, as in electrocoagulation and photocoagulation. [EU]

Codeine: An opioid analgesic related to morphine but with less potent analgesic properties and mild sedative effects. It also acts centrally to suppress cough. [NIH]

Collapse: 1. a state of extreme prostration and depression, with failure of circulation. 2. abnormal falling in of the walls of any part of organ. [EU]

Colorectal: Pertaining to or affecting the colon and rectum. [EU]

Concomitant: Accompanying; accessory; joined with another. [EU]

Conduction: The transfer of sound waves, heat, nervous impulses, or

electricity. [EU]

Constrict: Tighten; narrow. [NIH]

Contraceptive: An agent that diminishes the likelihood of or prevents conception. [EU]

Coronary: Encircling in the manner of a crown; a term applied to vessels; nerves, ligaments, etc. The term usually denotes the arteries that supply the heart muscle and, by extension, a pathologic involvement of them. [EU]

Coronavirus: A genus of the family coronaviridae which causes respiratory or gastrointestinal disease in a variety of vertebrates. [NIH]

Cortical: Pertaining to or of the nature of a cortex or bark. [EU]

Corticosteroids: Drugs that mimic the action of a group of hormones produced by adrenal glands; they are anti-inflammatory and act as bronchodilators. [NIH]

Cyanosis: Bluish color of the skin due to insufficient oxygen in the blood. [NIH]

Cyclic: Pertaining to or occurring in a cycle or cycles; the term is applied to chemical compounds that contain a ring of atoms in the nucleus. [EU]

Danazol: A synthetic steroid with antigonadotropic and anti-estrogenic activities that acts as an anterior pituitary suppressant by inhibiting the pituitary output of gonadotropins. It possesses some androgenic properties. Danazol has been used in the treatment of endometriosis and some benign breast disorders. [NIH]

Decongestant: An agent that reduces congestion or swelling. [EU]

Degenerative: Undergoing degeneration : tending to degenerate; having the character of or involving degeneration; causing or tending to cause degeneration. [EU]

Dehydration: The condition that results from excessive loss of body water. Called also anhydration, deaquation and hypohydration. [EU]

Dementia: An acquired organic mental disorder with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. The dysfunction is multifaceted and involves memory, behavior, personality, judgment, attention, spatial relations, language, abstract thought, and other executive functions. The intellectual decline is usually progressive, and initially spares the level of consciousness. [NIH]

Dentists: Individuals licensed to practice dentistry. [NIH]

Detoxification: Treatment designed to free an addict from his drug habit. [EU]

Diarrhea: Passage of excessively liquid or excessively frequent stools. [NIH]

Diffusion: The process of becoming diffused, or widely spread; the

spontaneous movement of molecules or other particles in solution, owing to their random thermal motion, to reach a uniform concentration throughout the solvent, a process requiring no addition of energy to the system. [EU]

Digitalis: A drug used to increase the force of the heart's contraction and to regulate specific irregularities of heart rhythm. [NIH]

Diphtheria: A localized infection of mucous membranes or skin caused by toxigenic strains of corynebacterium diphtheriae. It is characterized by the presence of a pseudomembrane at the site of infection. Diphtheria toxin, produced by C. diphtheriae, can cause myocarditis, polyneuritis, and other systemic toxic effects. [NIH]

Diuresis: Increased excretion of urine. [EU]

Dizziness: An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness. [NIH]

Dopamine: A catecholamine neurotransmitter that is found primarily in the basal ganglia of the central nervous system. Major functions include the peripheral inhibition and excitation of certain muscles; cardiac excitation; and metabolic, endocrine and central nervous system actions. [NIH]

Dyphylline: A theophylline derivative with broncho- and vasodilator properties. It is used in the treatment of asthma, cardiac dyspnea, and bronchitis. [NIH]

Dyspnea: Shortness of breath; difficult or labored breathing. [NIH]

Dystrophy: Any disorder arising from defective or faulty nutrition, especially the muscular dystrophies. [EU]

Efficacy: The extent to which a specific intervention, procedure, regimen, or service produces a beneficial result under ideal conditions. Ideally, the determination of efficacy is based on the results of a randomized control trial. [NIH]

EKG: Measurement of electrical activity during heartbeats. [NIH]

Elastic: Susceptible of resisting and recovering from stretching, compression or distortion applied by a force. [EU]

Elasticity: Resistance and recovery from distortion of shape. [NIH]

Electrocardiogram: Measurement of electrical activity during heartbeats. [NIH]

Emphysema: Chronic lung disease in which there is permanent destruction of alveoli. [NIH]

Endarterectomy: Surgical excision, performed under general anesthesia, of the atheromatous tunica intima of an artery. When reconstruction of an artery is performed as an endovascular procedure through a catheter, it is called atherectomy. [NIH]

Endogenous: Developing or originating within the organisms or arising from causes within the organism. [EU]

Endothelium: The layer of epithelial cells that lines the cavities of the heart and of the blood and lymph vessels, and the serous cavities of the body, originating from the mesoderm. [EU]

Enzyme: Substance, made by living cells, that causes specific chemical changes. [NIH]

Ephedrine: A sympathomimetic drug that stimulates thermogenesis in laboratory animals and humans. Animal studies show that it may reduce fat content and, therefore, body weight by mechanisms that probably involve increased expenditure and reduced food intake. [NIH]

Epidemiological: Relating to, or involving epidemiology. [EU]

Epinephrine: The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics. [NIH]

Epithelium: The covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. Epithelium is classified into types on the basis of the number of layers deep and the shape of the superficial cells. [EU]

Erythromycin: A bacteriostatic antibiotic substance produced by Streptomyces erythreus. Erythromycin A is considered its major active component. In sensitive organisms, it inhibits protein synthesis by binding to 50S ribosomal subunits. This binding process inhibits peptidyl transferase activity and interferes with translocation of amino acids during translation and assembly of proteins. [NIH]

Estradiol: The most potent mammalian estrogenic hormone. It is produced in the ovary, placenta, testis, and possibly the adrenal cortex. [NIH]

Expectorant: 1. promoting the ejection, by spitting, of mucus or other fluids from the lungs and trachea. 2. an agent that promotes the ejection of mucus or exudate from the lungs, bronchi, and trachea; sometimes extended to all remedies that quiet cough (antitussives). [EU]

Fatigue: The state of weariness following a period of exertion, mental or physical, characterized by a decreased capacity for work and reduced efficiency to respond to stimuli. [NIH]

Ferrets: Semidomesticated variety of European polecat much used for hunting rodents and/or rabbits and as a laboratory animal. [NIH]

Fetus: Unborn offspring from 7 or 8 weeks after conception until birth. [NIH]

Fibrosis: Process by which inflamed tissue becomes scarred. [NIH]

Firearms: Small-arms weapons, including handguns, pistols, revolvers, rifles, shotguns, etc. [NIH]

Gastrointestinal: Pertaining to or communicating with the stomach and intestine, as a gastrointestinal fistula. [EU]

Gestation: The period of development of the young in viviparous animals, from the time of fertilization of the ovum until birth. [EU]

Heartbeat: One complete contraction of the heart. [NIH]

Hematocrit: Measurement of the volume of packed red cells in a blood specimen by centrifugation. The procedure is performed using a tube with graduated markings or with automated blood cell counters. It is used as an indicator of erythrocyte status in disease. For example, anemia shows a low hematocrit, polycythemia, high values. [NIH]

Hemodynamics: The movements of the blood and the forces involved in systemic or regional blood circulation. [NIH]

Heparin: Heparinic acid. A highly acidic mucopolysaccharide formed of equal parts of sulfated D-glucosamine and D-glucuronic acid with sulfaminic bridges. The molecular weight ranges from six to twenty thousand. Heparin occurs in and is obtained from liver, lung, mast cells, etc., of vertebrates. Its function is unknown, but it is used to prevent blood clotting in vivo and vitro, in the form of many different salts. [NIH]

Hepatitis: Inflammation of the liver. [EU]

Hepatocellular: Pertaining to or affecting liver cells. [EU]

Heredity: 1. the genetic transmission of a particular quality or trait from parent to offspring. 2. the genetic constitution of an individual. [EU]

Histamine: 1H-Imidazole-4-ethanamine. A depressor amine derived by enzymatic decarboxylation of histidine. It is a powerful stimulant of gastric secretion, a constrictor of bronchial smooth muscle, a vasodilator, and also a centrally acting neurotransmitter. [NIH]

Homicide: The killing of one person by another. [NIH]

Hydrogen: Hydrogen. The first chemical element in the periodic table. It has the atomic symbol H, atomic number 1, and atomic weight 1. It exists, under normal conditions, as a colorless, odorless, tasteless, diatomic gas. Hydrogen ions are protons. Besides the common H1 isotope, hydrogen exists as the stable isotope deuterium and the unstable, radioactive isotope tritium. [NIH]

Hyperalgesia: Excessive sensitiveness or sensibility to pain. [EU]

Hypercholesterolemia: Abnormally high levels of cholesterol in the blood. [NIH]

Hypersensitivity: A state of altered reactivity in which the body reacts with

an exaggerated immune response to a foreign substance. Hypersensitivity reactions are classified as immediate or delayed, types I and IV, respectively, in the Gell and Coombs classification (q.v.) of immune responses. [EU]

Hypertension: High blood pressure (i.e., abnormally high blood pressure tension involving systolic and/or diastolic levels). The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure defines hypertension as a systolic blood pressure of 140 mm Hg or greater, a diastolic blood pressure of 90 mm Hg or greater, or taking hypertensive medication. The cause may be adrenal, benign, essential, Goldblatt's, idiopathic, malignant PATE, portal, postpartum, primary, pulmonary, renal or renovascular. [NIH]

Hypoventilation: A state in which there is a reduced amount of air entering the pulmonary alveoli. [EU]

Hypoxemia: Too little oxygen in the blood. [NIH]

Hypoxia: Too little oxygen available to meet the needs of the body's tissues. [NIH]

Idiopathic: Results from an unknown cause. [NIH]

Immaturity: The state or quality of being unripe or not fully developed. [EU]

Immersion: The placing of a body or a part thereof into a liquid. [NIH]

Immunization: Protection from disease by administering vaccines that induce the body to form antibodies against infectious agents. [NIH]

Impotence: The inability to perform sexual intercourse. [NIH]

Incontinence: Inability to control excretory functions, as defecation (faecal i.) or urination (urinary i.). [EU]

Infarction: 1. the formation of an infarct. 2. an infarct. [EU]

Inflammation: Response of the body tissues to injury; typical signs are swelling, redness, and pain. [NIH]

Influenza: An acute viral infection involving the respiratory tract. It is marked by inflammation of the nasal mucosa, the pharynx, and conjunctiva, and by headache and severe, often generalized, myalgia. [NIH]

Infusion: The therapeutic introduction of a fluid other than blood, as saline solution, solution, into a vein. [EU]

Inhalation: The drawing of air or other substances into the lungs. [EU]

Insomnia: Inability to sleep; abnormal wakefulness. [EU]

Institutionalization: The caring for individuals in institutions and their adaptation to routines characteristic of the institutional environment, and/or their loss of adaptation to life outside the institution. [NIH]

Intermittent: Occurring at separated intervals; having periods of cessation

of activity. [EU]

Interstitial: Pertaining to or situated between parts or in the interspaces of a tissue. [EU]

Intravascular: Within a vessel or vessels. [EU]

Iodine: A nonmetallic element of the halogen group that is represented by the atomic symbol I, atomic number 53, and atomic weight of 126.90. It is a nutritionally essential element, especially important in thyroid hormone synthesis. In solution, it has anti-infective properties and is used topically. [NIH]

Ipratropium: A muscarinic antagonist structurally related to atropine but often considered safer and more effective for inhalation use. It is used for various bronchial disorders, in rhinitis, and as an antiarrhythmic. [NIH]

Irritants: Drugs that act locally on cutaneous or mucosal surfaces to produce inflammation; those that cause redness due to hyperemia are rubefacients; those that raise blisters are vesicants and those that penetrate sebaceous glands and cause abscesses are pustulants; tear gases and mustard gases are also irritants. [NIH]

Isocyanates: Organic compounds that contain the -NCO radical. [NIH]

Isoetharine: Adrenergic beta-2 agonist used as bronchodilator for emphysema, bronchitis and asthma. [NIH]

Isoproterenol: Isopropyl analog of epinephrine; beta-sympathomimetic that acts on the heart, bronchi, skeletal muscle, alimentary tract, etc. It is used mainly as bronchodilator and heart stimulant. [NIH]

Isosorbide Dinitrate: A vasodilator used in the treatment of angina. Its actions are similar to nitroglycerin but with a slower onset of action. [NIH]

Jaundice: A clinical manifestation of hyperbilirubinemia, consisting of deposition of bile pigments in the skin, resulting in a yellowish staining of the skin and mucous membranes. [NIH]

Laryngectomy: Total or partial excision of the larynx. [NIH]

Larynx: An irregularly shaped, musculocartilaginous tubular structure, lined with mucous membrane, located at the top of the trachea and below the root of the tongue and the hyoid bone. It is the essential sphincter guarding the entrance into the trachea and functioning secondarily as the organ of voice. [NIH]

Lavage: To wash the interior of a body organ. [NIH]

Leptin: A 16-kD peptide hormone secreted from white adipocytes and implicated in the regulation of food intake and energy balance. Leptin provides the key afferent signal from fat cells in the feedback system that controls body fat stores. [NIH]

Lesion: Any pathological or traumatic discontinuity of tissue or loss of function of a part. [EU]

Levobunolol: A nonselective beta-adrenoceptor antagonist used in the treatment of glaucoma. [NIH]

LH: A small glycoprotein hormone secreted by the anterior pituitary. LH plays an important role in controlling ovulation and in controlling secretion of hormones by the ovaries and testes. [NIH]

Lip: Either of the two fleshy, full-blooded margins of the mouth. [NIH]

Lipid: Any of a heterogeneous group of flats and fatlike substances characterized by being water-insoluble and being extractable by nonpolar (or fat) solvents such as alcohol, ether, chloroform, benzene, etc. All contain as a major constituent aliphatic hydrocarbons. The lipids, which are easily stored in the body, serve as a source of fuel, are an important constituent of cell structure, and serve other biological functions. Lipids may be considered to include fatty acids, neutral fats, waxes, and steroids. Compound lipids comprise the glycolipids, lipoproteins, and phospholipids. [EU]

Localization: 1. the determination of the site or place of any process or lesion. 2. restriction to a circumscribed or limited area. 3. prelocalization. [EU]

Loratadine: A second-generation histamine H1 receptor antagonist used in the treatment of allergic rhinitis and urticaria. Unlike most classical antihistamines it lacks central nervous system depressing effects such as drowsiness. [NIH]

Lumen: The cavity or channel within a tube or tubular organ. [EU]

Lupus: A form of cutaneous tuberculosis. It is seen predominantly in women and typically involves the nasal, buccal, and conjunctival mucosa. [NIH]

Lymphoma: Cancer of the lymph nodes. [NIH]

Malignant: Tending to become progressively worse and to result in death. Having the properties of anaplasia, invasion, and metastasis; said of tumours. [EU]

Mammography: Radiographic examination of the breast. [NIH]

Manifest: Being the part or aspect of a phenomenon that is directly observable : concretely expressed in behaviour. [EU]

Mediator: An object or substance by which something is mediated, such as (1) a structure of the nervous system that transmits impulses eliciting a specific response; (2) a chemical substance (transmitter substance) that induces activity in an excitable tissue, such as nerve or muscle; or (3) a substance released from cells as the result of the interaction of antigen with antibody or by the action of antigen with a sensitized lymphocyte. [EU]

Medicament: A medicinal substance or agent. [EU]

Membrane: Thin, flexible film of proteins and lipids that encloses the contents of a cell; it controls the substances that go into and come out of the cell. Also, a thin layer of tissue that covers the surface or lines the cavity of an organ. [NIH]

Mental: Pertaining to the mind; psychic. 2. (L. mentum chin) pertaining to the chin. [EU]

Menthol: An alcohol produced from mint oils or prepared synthetically. [NIH]

Meperidine: 1-Methyl-4-phenyl-4-piperidinecarboxylic acid ethyl ester. A narcotic analgesic that can be used for the relief of most types of moderate to severe pain, including postoperative pain and the pain of labor. Prolonged use may lead to dependence of the morphine type; withdrawal symptoms appear more rapidly than with morphine and are of shorter duration. [NIH]

Metoprolol: Adrenergic beta-1-blocking agent with no stimulatory action. It is less bound to plasma albumin than alprenolol and may be useful in angina pectoris, hypertension, or cardiac arrhythmias. [NIH]

Microbiology: The study of microorganisms such as fungi, bacteria, algae, archaea, and viruses. [NIH]

Microscopy: The application of microscope magnification to the study of materials that cannot be properly seen by the unaided eye. [NIH]

Microspheres: Small uniformly-sized spherical particles frequently labeled with radioisotopes or various reagents acting as tags or markers. [NIH]

Modulator: A specific inductor that brings out characteristics peculiar to a definite region. [EU]

Molecular: Of, pertaining to, or composed of molecules : a very small mass of matter. [EU]

Monocrotaline: A pyrrolizidine alkaloid and a toxic plant constituent that poisons livestock and humans through the ingestion of contaminated grains and other foods. The alkaloid causes pulmonary artery hypertension, right ventricular hypertrophy, and pathological changes in the pulmonary vasculature. Significant attenuation of the cardiopulmonary changes are noted after oral magnesium treatment. [NIH]

Morphine: The principal alkaloid in opium and the prototype opiate analgesic and narcotic. Morphine has widespread effects in the central nervous system and on smooth muscle. [NIH]

Mucolytic: Destroying or dissolving mucin; an agent that so acts : a mucopolysaccharide or glycoprotein, the chief constituent of mucus. [EU]

Mucus: A thick fluid produced by the lining of some organs of the body. [NIH]

Myeloma: A tumour composed of cells of the type normally found in the

bone marrow. [EU]

Nausea: An unpleasant sensation, vaguely referred to the epigastrium and abdomen, and often culminating in vomiting. [EU]

Neonatal: Pertaining to the first four weeks after birth. [EU]

Neoplasms: New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms. [NIH]

Neural: 1. pertaining to a nerve or to the nerves. 2. situated in the region of the spinal axis, as the neutral arch. [EU]

Neurology: A medical specialty concerned with the study of the structures, functions, and diseases of the nervous system. [NIH]

Neuromuscular: Pertaining to muscles and nerves. [EU]

Neurosurgery: A surgical specialty concerned with the treatment of diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system. [NIH]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Nicotine: Nicotine is highly toxic alkaloid. It is the prototypical agonist at nicotinic cholinergic receptors where it dramatically stimulates neurons and ultimately blocks synaptic transmission. Nicotine is also important medically because of its presence in tobacco smoke. [NIH]

Nitrogen: An element with the atomic symbol N, atomic number 7, and atomic weight 14. Nitrogen exists as a diatomic gas and makes up about 78% of the earth's atmosphere by volume. It is a constituent of proteins and nucleic acids and found in all living cells. [NIH]

Nitroglycerin: A highly volatile organic nitrate that acts as a dilator of arterial and venous smooth muscle and is used in the treatment of angina. It provides relief through improvement of the balance between myocardial oxygen supply and demand. Although total coronary blood flow is not increased, there is redistribution of blood flow in the heart when partial occlusion of coronary circulation is effected. [NIH]

Ophthalmic: Pertaining to the eye. [EU]

Ophthalmology: A surgical specialty concerned with the structure and function of the eye and the medical and surgical treatment of its defects and diseases. [NIH]

Osteoporosis: Reduction in the amount of bone mass, leading to fractures after minimal trauma. [EU]

Otitis: Inflammation of the ear, which may be marked by pain, fever, abnormalities of hearing, hearing loss, tinnitus, and vertigo. [EU]

Otolaryngology: A surgical specialty concerned with the study and treatment of disorders of the ear, nose, and throat. [NIH]

Outpatients: Persons who receive ambulatory care at an outpatient department or clinic without room and board being provided. [NIH]

Ovary: Either of the paired glands in the female that produce the female germ cells and secrete some of the female sex hormones. [NIH]

Overdose: 1. to administer an excessive dose. 2. an excessive dose. [EU]

Overweight: An excess of body weight but not necessarily body fat; a body mass index of 25 to 29.9 kg/m2. [NIH]

Oxandrolone: A synthetic hormone with anabolic and androgenic properties. [NIH]

Oxygenation: To provide with oxygen. [NIH]

Palliative: 1. affording relief, but not cure. 2. an alleviating medicine. [EU]

Palpitation: The sensation of rapid heartbeats. [NIH]

Pancreas: A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the islets of langerhans, while the exocrine portion is a compound acinar gland that secretes digestive enzymes. [NIH]

Panniculitis: An inflammatory reaction of the subcutaneous fat, which may involve the connective tissue septa between the fat lobes, the septa lobules and vessels, or the fat lobules, characterized by the development of single or multiple cutaneous nodules. [EU]

Papain: A proteolytic enzyme obtained from Carica papaya. It is also the name used for a purified mixture of papain and chymopapain that is used as a topical enzymatic debriding agent. EC 3.4.22.2. [NIH]

Parasympathomimetic: 1. producing effects resembling those of stimulation of the parasympathetic nerve supply to a part. 2. an agent that produces effects similar to those produced by stimulation of the parasympathetic nerves. Called also cholinergic. [EU]

Pathogen: Any disease-producing microorganism. [EU]

Pathogenesis: The cellular events and reactions that occur in the development of disease. [NIH]

Pathologic: 1. indicative of or caused by a morbid condition. 2. pertaining to pathology (= branch of medicine that treats the essential nature of the disease, especially the structural and functional changes in tissues and organs of the body caused by the disease). [EU]

Pathophysiology: Altered functions in an individual or an organ due to disease. [NIH]

Pediatrics: A medical specialty concerned with maintaining health and providing medical care to children from birth to adolescence. [NIH]

Peptic: Pertaining to pepsin or to digestion; related to the action of gastric juices. [EU]

Perfusion: The passage of fluid through an organ. [NIH]

Perinatal: Pertaining to or occurring in the period shortly before and after birth; variously defined as beginning with completion of the twentieth to twenty-eighth week of gestation and ending 7 to 28 days after birth. [EU]

Perioperative: Pertaining to the period extending from the time of hospitalization for surgery to the time of discharge. [EU]

Pharmacists: Those persons legally qualified by education and training to engage in the practice of pharmacy. [NIH]

Phenotype: The entire physical, biochemical, and physiological makeup of an individual as determined by his or her genes and by the environment in the broad sense. [NIH]

Phosphorylation: The introduction of a phosphoryl group into a compound through the formation of an ester bond between the compound and a phosphorus moiety. [NIH]

Physiologic: Normal; not pathologic; characteristic of or conforming to the normal functioning or state of the body or a tissue or organ; physiological. [EU]

Pneumoconiosis: Condition characterized by permanent deposition of substantial amounts of particulate matter in the lungs, usually of occupational or environmental origin, and by the tissue reaction to its presence. [NIH]

Pneumonitis: A disease caused by inhaling a wide variety of substances such as dusts and molds. Also called "farmer's disease". [NIH]

Poisoning: A condition or physical state produced by the ingestion, injection or inhalation of, or exposure to a deleterious agent. [NIH]

Polymyxin: Basic polypeptide antibiotic group obtained from Bacillus polymyxa. They affect the cell membrane by detergent action and may cause neuromuscular and kidney damage. At least eleven different members of the polymyxin group have been identified, each designated by a letter. [NIH]

Polyvalent: Having more than one valence. [EU]

Postnatal: Occurring after birth, with reference to the newborn. [EU]

Postural: Pertaining to posture or position. [EU]

Potassium: An element that is in the alkali group of metals. It has an atomic

symbol K, atomic number 19, and atomic weight 39.10. It is the chief cation in the intracellular fluid of muscle and other cells. Potassium ion is a strong electrolyte and it plays a significant role in the regulation of fluid volume and maintenance of the water-electrolyte balance. [NIH]

Preclinical: Before a disease becomes clinically recognizable. [EU]

Prenatal: Occurring before birth. [NIH]

Preoperative: Preceding an operation. [EU]

Prevalence: The number of events, e.g., instances of a given disease or other condition, in a given population at a designated time. When used without qualification, the term usually refers to the situation at specific point in time (point prevalence). Prevalence is a number, not a rate. [NIH]

Progesterone: Pregn-4-ene-3,20-dione. The principal progestational hormone of the body, secreted by the corpus luteum, adrenal cortex, and placenta. Its chief function is to prepare the uterus for the reception and development of the fertilized ovum. It acts as an antiovulatory agent when administered on days 5-25 of the menstrual cycle. [NIH]

Proportional: Being in proportion : corresponding in size, degree, or intensity, having the same or a constant ratio; of, relating to, or used in determining proportions. [EU]

Propoxyphene: A narcotic analgesic structurally related to methadone. Only the dextro-isomer has an analgesic effect; the levo-isomer appears to exert an antitussive effect. [NIH]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

Protease: Proteinase (= any enzyme that catalyses the splitting of interior peptide bonds in a protein). [EU]

Proteins: Polymers of amino acids linked by peptide bonds. The specific sequence of amino acids determines the shape and function of the protein. [NIH]

Psychiatric: Pertaining to or within the purview of psychiatry. [EU]

Pulmonary: Relating to the lungs. [NIH]

Radiology: A specialty concerned with the use of x-ray and other forms of radiant energy in the diagnosis and treatment of disease. [NIH]

Radon: Radon. A naturally radioactive element with atomic symbol Rn, atomic number 86, and atomic weight 222. It is a member of the noble gas family and released during the decay of radium and found in soil. There is a link between exposure to radon and lung cancer. [NIH]

Receptor: 1. a molecular structure within a cell or on the surface characterized by (1) selective binding of a specific substance and (2) a specific physiologic effect that accompanies the binding, e.g., cell-surface receptors for peptide hormones, neurotransmitters, antigens, complement fragments, and immunoglobulins and cytoplasmic receptors for steroid hormones. 2. a sensory nerve terminal that responds to stimuli of various kinds. [EU]

Reflex: 1; reflected. 2. a reflected action or movement; the sum total of any particular involuntary activity. [EU]

Refractory: Not readily yielding to treatment. [EU]

Respiration: Process of exchanging oxygen from the air for carbon dioxide from the body; includes the mechanical process of breathing, gas exchange, and oxygen and carbon dioxide transport to and from the cells. [NIH]

Respiratory: Pertaining to respiration. [EU]

Retinoids: Derivatives of vitamin A. Used clinically in the treatment of severe cystic acne, psoriasis, and other disorders of keratinization. Their possible use in the prophylaxis and treatment of cancer is being actively explored. [NIH]

Rheumatoid: Resembling rheumatism. [EU]

Riboflavin: Nutritional factor found in milk, eggs, malted barley, liver, kidney, heart, and leafy vegetables. The richest natural source is yeast. It occurs in the free form only in the retina of the eye, in whey, and in urine; its principal forms in tissues and cells are as FMN and FAD. [NIH]

Rubella: An acute, usually benign, infectious disease caused by a togavirus and most often affecting children and nonimmune young adults, in which the virus enters the respiratory tract via droplet nuclei and spreads to the lymphatic system. It is characterized by a slight cold, sore throat, and fever, followed by enlargement of the postauricular, suboccipital, and cervical lymph nodes, and the appearances of a fine pink rash that begins on the head and spreads to become generalized. Called also German measles, roetln, röteln, and three-day measles, and rubeola in French and Spanish. [EU]

Saline: Salty; of the nature of a salt; containing a salt or salts. [EU]

Sarcoidosis: An idiopathic systemic inflammatory granulomatous disorder comprised of epithelioid and multinucleated giant cells with little necrosis. It usually invades the lungs with fibrosis and may also involve lymph nodes, skin, liver, spleen, eyes, phalangeal bones, and parotid glands. [NIH]

Schizophrenia: A severe emotional disorder of psychotic depth characteristically marked by a retreat from reality with delusion formation, hallucinations, emotional disharmony, and regressive behavior. [NIH]

Secretion: 1. the process of elaborating a specific product as a result of the

activity of a gland; this activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. 2. any substance produced by secretion. [EU]

Sedative: 1. allaying activity and excitement. 2. an agent that allays excitement. [EU]

Selenium: An element with the atomic symbol Se, atomic number 34, and atomic weight 78.96. It is an essential micronutrient for mammals and other animals but is toxic in large amounts. Selenium protects intracellular structures against oxidative damage. It is an essential component of glutathione peroxidase. [NIH]

Shunt: 1. to turn to one side; to divert; to bypass. 2. a passage or anastomosis between two natural channels, especially between blood vessels. Such structures may be formed physiologically (e.g. to bypass a thrombosis) or they may be structural anomalies. 3. a surgically created anastomosis; also, the operation of forming a shunt. [EU]

Sinusitis: Inflammation of a sinus. The condition may be purulent or nonpurulent, acute or chronic. Depending on the site of involvement it is known as ethmoid, frontal, maxillary, or sphenoid sinusitis. [EU]

Sirolimus: A macrolide compound obtained from Streptomyces hygroscopicus that acts by selectively blocking the transcriptional activation of cytokines thereby inhibiting cytokine production. It is bioactive only when bound to immunophilins. Sirolimus is a potent immunosuppressant and possesses both antifungal and antineoplastic properties. [NIH]

Spectrum: A charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction. By extension, a measurable range of activity, such as the range of bacteria affected by an antibiotic (antibacterial s.) or the complete range of manifestations of a disease. [EU]

Sputum: Matter ejected from the lungs, bronchi, and trachea, through the mouth. [EU]

Stomach: An organ of digestion situated in the left upper quadrant of the abdomen between the termination of the esophagus and the beginning of the duodenum. [NIH]

Stroke: Sudden loss of function of part of the brain because of loss of blood flow. Stroke may be caused by a clot (thrombosis) or rupture (hemorrhage) of a blood vessel to the brain. [NIH]

Suicide: The act of killing oneself. [NIH]

Sulfur: An element that is a member of the chalcogen family. It has an atomic symbol S, atomic number 16, and atomic weight 32.066. It is found in the amino acids cysteine and methionine. [NIH]

Surfactant: A fat-containing protein in the respiratory passages which

reduces the surface tension of pulmonary fluids and contributes to the elastic properties of pulmonary tissue. [NIH]

Surgical: Of, pertaining to, or correctable by surgery. [EU]

Sympathetic: 1. pertaining to, caused by, or exhibiting sympathy. 2. a sympathetic nerve or the sympathetic nervous system. [EU]

Sympathomimetic: 1. mimicking the effects of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. 2. an agent that produces effects similar to those of impulses conveyed by adrenergic postganglionic fibres of the sympathetic nervous system. Called also adrenergic. [EU]

Synergistic: Acting together; enhancing the effect of another force or agent. [EU]

Systemic: Relating to a process that affects the body generally; in this instance, the way in which blood is supplied through the aorta to all body organs except the lungs. [NIH]

Tachyarrhythmia: Tachycardia associated with an irregularity in the normal heart rhythm. [EU]

Tachycardia: Excessive rapidity in the action of the heart; the term is usually applied to a heart rate above 100 per minute and may be qualified as atrial, junctional (nodal), or ventricular, and as paroxysmal. [EU]

Tacrolimus: A macrolide isolated from the culture broth of a strain of Streptomyces tsukubaensis that has strong immunosuppressive activity in vivo and prevents the activation of T-lymphocytes in response to antigenic or mitogenic stimulation in vitro. [NIH]

Telecommunications: Transmission of information over distances via electronic means. [NIH]

Terbutaline: A selective beta-2 adrenergic agonist used as a bronchodilator and tocolytic. [NIH]

Tetanus: A disease caused by tetanospasmin, a powerful protein toxin produced by clostridium tetani. Tetanus usually occurs after an acute injury, such as a puncture wound or laceration. Generalized tetanus, the most common form, is characterized by tetanic muscular contractions and hyperreflexia. Localized tetanus presents itself as a mild condition with manifestations restricted to muscles near the wound. It may progress to the generalized form. [NIH]

Tetracycline: An antibiotic originally produced by Streptomyces viridifaciens, but used mostly in synthetic form. It is an inhibitor of aminoacyl-tRNA binding during protein synthesis. [NIH]

Thermoregulation: Heat regulation. [EU]

Thoracic: Pertaining to or affecting the chest. [EU]

Thrombosis: The formation, development, or presence of a thrombus. [EU]

Thyroxine: An amino acid of the thyroid gland which exerts a stimulating effect on thyroid metabolism. [NIH]

Tolerance: 1. the ability to endure unusually large doses of a drug or toxin. 2. acquired drug tolerance; a decreasing response to repeated constant doses of a drug or the need for increasing doses to maintain a constant response. [EU]

Tomography: The recording of internal body images at a predetermined plane by means of the tomograph; called also body section roentgenography. [EU]

Toxicity: The quality of being poisonous, especially the degree of virulence of a toxic microbe or of a poison. [EU]

Toxicology: The science concerned with the detection, chemical composition, and pharmacologic action of toxic substances or poisons and the treatment and prevention of toxic manifestations. [NIH]

Toxoids: Preparations of pathogenic organisms or their derivatives made nontoxic and intended for active immunologic prophylaxis. They include deactivated toxins. [NIH]

Transcutaneous: Transdermal. [EU]

Transdermal: Entering through the dermis, or skin, as in administration of a drug applied to the skin in ointment or patch form. [EU]

Transplantation: The grafting of tissues taken from the patient's own body or from another. [EU]

Tuberculosis: Any of the infectious diseases of man and other animals caused by species of mycobacterium. [NIH]

Ulcer: A local defect, or excavation, of the surface of an organ or tissue; which is produced by the sloughing of inflammatory necrotic tissue. [EU]

Vaccination: The introduction of vaccine into the body for the purpose of inducing immunity. Coined originally to apply to the injection of smallpox vaccine, the term has come to mean any immunizing procedure in which vaccine is injected. [EU]

Vaccine: A suspension of attenuated or killed microorganisms (bacteria, viruses, or rickettsiae), administered for the prevention, amelioration or treatment of infectious diseases. [EU]

Valves: Flap-like structures that control the direction of blood flow through the heart. [NIH]

Vasoactive: Exerting an effect upon the calibre of blood vessels. [EU]

Vasoconstriction: The diminution of the calibre of vessels, especially constriction of arterioles leading to decreased blood flow to a part. [EU]

Vasodilator: An agent that widens blood vessels. [NIH]

Vasomotor: 1. affecting the calibre of a vessel, especially of a blood vessel. 2. any element or agent that effects the calibre of a blood vessel. [EU]

Vein: Vessel-carrying blood from various parts of the body to the heart. [NIH]

Ventilator: A breathing machine that is used to treat respiratory failure by promoting ventilation; also called a respirator. [NIH]

Ventricle: One of the two pumping chambers of the heart. The right ventricle receives oxygen-poor blood from the right atrium and pumps it to the lungs through the pulmonary artery. The left ventricle receives oxygen-rich blood from the left atrium and pumps it to the body through the aorta. [NIH]

Ventricular: Pertaining to a ventricle. [EU]

Viral: Pertaining to, caused by, or of the nature of virus. [EU]

Viruses: Minute infectious agents whose genomes are composed of DNA or RNA, but not both. They are characterized by a lack of independent metabolism and the inability to replicate outside living host cells. [NIH]

Viscosity: A physical property of fluids that determines the internal resistance to shear forces. [EU]

Wheezing: Breathing with a rasp or whistling sound; a sign of airway constriction or obstruction. [NIH]

Withdrawal: 1. a pathological retreat from interpersonal contact and social involvement, as may occur in schizophrenia, depression, or schizoid avoidant and schizotypal personality disorders. 2. (DSM III-R) a substance-specific organic brain syndrome that follows the cessation of use or reduction in intake of a psychoactive substance that had been regularly used to induce a state of intoxication. [EU]

General Dictionaries and Glossaries

While the above glossary is essentially complete, the dictionaries listed here cover virtually all aspects of medicine, from basic words and phrases to more advanced terms (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **Dictionary of Medical Acronymns & Abbreviations** by Stanley Jablonski (Editor), Paperback, 4th edition (2001), Lippincott Williams & Wilkins Publishers, ISBN: 1560534605, **http://www.amazon.com/exec/obidos/ASIN/1560534605/icongroupinterna**
- **Dictionary of Medical Terms : For the Nonmedical Person (Dictionary of Medical Terms for the Nonmedical Person, Ed 4)** by Mikel A. Rothenberg,

M.D, et al, Paperback - 544 pages, 4th edition (2000), Barrons Educational Series, ISBN: 0764112015,
http://www.amazon.com/exec/obidos/ASIN/0764112015/icongroupinterna

- **A Dictionary of the History of Medicine** by A. Sebastian, CD-Rom edition (2001), CRC Press-Parthenon Publishers, ISBN: 185070368X,
http://www.amazon.com/exec/obidos/ASIN/185070368X/icongroupinterna
- **Dorland's Illustrated Medical Dictionary (Standard Version)** by Dorland, et al, Hardcover - 2088 pages, 29th edition (2000), W B Saunders Co, ISBN: 0721662544,
http://www.amazon.com/exec/obidos/ASIN/0721662544/icongroupinterna
- **Dorland's Electronic Medical Dictionary** by Dorland, et al, Software, 29th Book & CD-Rom edition (2000), Harcourt Health Sciences, ISBN: 0721694934,
http://www.amazon.com/exec/obidos/ASIN/0721694934/icongroupinterna
- **Dorland's Pocket Medical Dictionary (Dorland's Pocket Medical Dictionary, 26th Ed)** Hardcover - 912 pages, 26th edition (2001), W B Saunders Co, ISBN: 0721682812,
http://www.amazon.com/exec/obidos/ASIN/0721682812/icongroupinterna/103-4193558-7304618
- **Melloni's Illustrated Medical Dictionary (Melloni's Illustrated Medical Dictionary, 4th Ed)** by Melloni, Hardcover, 4th edition (2001), CRC Press-Parthenon Publishers, ISBN: 85070094X,
http://www.amazon.com/exec/obidos/ASIN/85070094X/icongroupinterna
- **Stedman's Electronic Medical Dictionary Version 5.0 (CD-ROM for Windows and Macintosh, Individual)** by Stedmans, CD-ROM edition (2000), Lippincott Williams & Wilkins Publishers, ISBN: 0781726328,
http://www.amazon.com/exec/obidos/ASIN/0781726328/icongroupinterna
- **Stedman's Medical Dictionary** by Thomas Lathrop Stedman, Hardcover - 2098 pages, 27th edition (2000), Lippincott, Williams & Wilkins, ISBN: 068340007X,
http://www.amazon.com/exec/obidos/ASIN/068340007X/icongroupinterna
- **Tabers Cyclopedic Medical Dictionary (Thumb Index)** by Donald Venes (Editor), et al, Hardcover - 2439 pages, 19th edition (2001), F A Davis Co, ISBN: 0803606540,
http://www.amazon.com/exec/obidos/ASIN/0803606540/icongroupinterna

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