

THE 2002 OFFICIAL
PATIENT'S SOURCEBOOK
on

FIBROMYALGIA



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AND PHILIP M. PARKER, PH.D., EDITORS

ICON Health Publications
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Dedication

To the healthcare professionals dedicating their time and efforts to the study of fibromyalgia.

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 fibromyalgia. 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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- The Official Patient's Sourcebook on Polymyalgia Rheumatica
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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

¹ Quotation from <http://www.drkoop.com>.

² The Agency for Healthcare Research and Quality (AHRQ):
<http://www.ahrq.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 2002 Official Patient's Sourcebook on Fibromyalgia* 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 fibromyalgia, 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 fibromyalgia.

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 fibromyalgia 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 fibromyalgia (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 fibromyalgia. It also gives you sources of information that can help you find a doctor in your local area specializing in treating fibromyalgia. Collectively, the material presented in Part I is a complete primer on basic research topics for patients with fibromyalgia.

Part II moves on to advanced research dedicated to fibromyalgia. 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 fibromyalgia. 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 fibromyalgia or related disorders. The appendices are dedicated to more pragmatic issues faced by many patients with fibromyalgia. 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 fibromyalgia.

Scope

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

- Fibromyalgia Syndrome
- Fibromyositis
- Fibrositis

- Muscular Rheumatism
- Musculoskeletal Pain Syndrome
- Myofascial Pain Syndrome
- Myofasical Pain Syndrome
- Nonarticular Rheumatism
- Periarticular Fibrositis
- Psychogenic Rheumatism
- Rheumatoid Myositis
- Tension Myalgia

In addition to synonyms and related conditions, physicians may refer to fibromyalgia 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 fibromyalgia:⁴

- 729.0 rheumatism, unspecified and fibrositis
- 729.1 fibromyositis
- 729.1 myalgia and myositis, unspecified

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 fibromyalgia. 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

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."

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 fibromyalgia 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 fibromyalgia 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 fibromyalgia, 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 fibromyalgia. 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 fibromyalgia to you or even given you a pamphlet or brochure describing fibromyalgia. 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 FIBROMYALGIA: GUIDELINES

Overview

Official agencies, as well as federally-funded institutions supported by national grants, frequently publish a variety of guidelines on fibromyalgia. 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 fibromyalgia 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 fibromyalgia. 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 physicians. Among them are 97 scientists who have won the Nobel Prize for achievement in medicine.

⁵ Adapted from the NIH: <http://www.nih.gov/about/NIHoverview.html>.

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 fibromyalgia 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 Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS); fact sheets and guidelines at <http://www.nih.gov/niams/healthinfo/>

Among those listed above, the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is especially noteworthy. The mission of NIAMS, a part of the National Institutes of Health (NIH), is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases, the training of basic and clinical scientists to carry out this research, and the dissemination of information on research progress in these diseases. The National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse is a public service sponsored by the NIAMS that provides health information and information sources. The NIAMS provides the following guideline concerning fibromyalgia.⁶

What Is Fibromyalgia?⁷

Fibromyalgia is a chronic disorder characterized by widespread musculoskeletal pain, fatigue, and multiple tender points. “Tender points” refers to tenderness that occurs in precise, localized areas, particularly in the neck, spine, shoulders, and hips. People with this syndrome may also experience sleep disturbances, morning stiffness, irritable bowel syndrome, anxiety, and other symptoms.

⁶ This and other passages are adapted from the NIH and NIAMS (<http://www.niams.nih.gov/hi/index.htm>). “Adapted” signifies that the text is reproduced with attribution, with some or no editorial adjustments.

⁷ Adapted from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS): <http://www.niams.nih.gov/hi/topics/fibromyalgia/fibrofs.htm>.

How Many People Have Fibromyalgia?

According to the American College of Rheumatology, fibromyalgia affects 3 to 6 million Americans. It primarily occurs in women of childbearing age, but children, the elderly, and men can also be affected.

What Causes Fibromyalgia?

Although the cause of fibromyalgia is unknown, researchers have several theories about causes or triggers of the disorder. Some scientists believe that the syndrome may be caused by an injury or trauma. This injury may affect the central nervous system. Fibromyalgia may be associated with changes in muscle metabolism, such as decreased blood flow, causing fatigue and decreased strength. Others believe the syndrome may be triggered by an infectious agent such as a virus in susceptible people, but no such agent has been identified.

How Is Fibromyalgia Diagnosed?

Fibromyalgia is difficult to diagnose because many of the symptoms mimic those of other disorders. The physician reviews the patient's medical history and makes a diagnosis of fibromyalgia based on a history of chronic widespread pain that persists for more than 3 months. The American College of Rheumatology (ACR) has developed criteria for fibromyalgia that physicians can use in diagnosing the disorder. According to ACR criteria, a person is considered to have fibromyalgia if he or she has widespread pain in combination with tenderness in at least 11 of 18 specific tender point sites.

How Is Fibromyalgia Treated?

Treatment of fibromyalgia requires a comprehensive approach. The physician, physical therapist, and patient may all play an active role in the management of fibromyalgia. Studies have shown that aerobic exercise, such as swimming and walking, improves muscle fitness and reduces muscle pain and tenderness. Heat and massage may also give short-term relief. Antidepressant medications may help elevate mood, improve quality of sleep, and relax muscles. Patients with fibromyalgia may benefit from a combination of exercise, medication, physical therapy, and relaxation.

What Research Is Being Conducted on Fibromyalgia?

The NIAMS is sponsoring research that will increase understanding of the specific abnormalities that cause and accompany fibromyalgia with the hope of developing better ways to diagnose, treat, and prevent this disorder.

Recent NIAMS studies show that abnormally low levels of the hormone cortisol may be associated with fibromyalgia. At Brigham and Women's Hospital in Boston, Massachusetts, and at the University of Michigan Medical Center in Ann Arbor, researchers are studying regulation of the function of the adrenal gland (which makes cortisol) in fibromyalgia. People whose bodies make inadequate amounts of cortisol experience many of the same symptoms as people with fibromyalgia. It is hoped that these studies will increase understanding about fibromyalgia and may suggest new ways to treat the disorder.

NIAMS research studies are looking at different aspects of the disorder. At the University of Alabama in Birmingham, researchers are concentrating on how specific brain structures are involved in the painful symptoms of fibromyalgia. At George Washington University in Washington, DC, scientists are investigating the causes of a post-Lyme disease syndrome as a model for fibromyalgia. Some patients develop a fibromyalgia-like condition following Lyme disease, an infectious disorder associated with arthritis and other symptoms.

NIAMS-supported research on fibromyalgia also includes several projects at the Institute's Multipurpose Arthritis and Musculoskeletal Diseases Centers. Researchers at these centers are studying individuals who do not seek medical care, but who meet the criteria for fibromyalgia. (Potential subjects are located through advertisements in local newspapers asking for volunteers with widespread pain or aching.) Other studies at the Centers are attempting to uncover better ways to manage the pain associated with the disorder through behavioral interventions such as relaxation training.

In March 1998, NIAMS and several other NIH institutes and offices issued a Request for Proposals to promote research studies of fibromyalgia. As a result of this request, NIAMS and its partners recently funded 15 new fibromyalgia projects totaling more than \$3.6 million.

The NIAMS supports and encourages outstanding basic and clinical research that increases the understanding of fibromyalgia. However, much more research needs to be done before fibromyalgia can be successfully treated or prevented.

The Federal Government, in collaboration with researchers, physicians, and private voluntary health organizations, is committed to research efforts that are directed at significantly improving the health of all Americans afflicted with fibromyalgia.

Where Can I Get More Information about Fibromyalgia?

Arthritis Foundation

1330 West Peachtree Street

Atlanta, GA 30309

404/872-7100

800/283-7800 or call your local chapter (listed in the telephone directory)

<http://www.arthritis.org>

This is the main voluntary organization devoted to all forms of arthritis. The Foundation publishes a pamphlet on fibrositis. Single copies are free with a self-addressed stamped envelope. The Foundation also can provide physician referrals.

Fibromyalgia Network

P.O. Box 31750

Tucson, AZ 85751-1750

800/853-2929

Contact: Ms. Kristin Thorson

Fibromyalgia Partnership (formerly Fibromyalgia Association of Greater Washington)

140 Zinn Way

Linden, VA 22642-5609

(toll free) 866/725-4404

Fax: 540-622-2998

<http://www.fmpartnership.org>

National Fibromyalgia Awareness Campaign (NFAC)

2415 N. River Trail Road, Suite 200

Orange, CA 92865

714/921-0150

Fax: 714/921-8139

These are the main organizations devoted to fibromyalgia. They publish newsletters and provide pamphlets on the disease.

The National Institute of Arthritis and Musculoskeletal and Skin Diseases Information Clearinghouse is a public service sponsored by the NIAMS that provides health information and information sources. The NIAMS, a component of the National Institutes of Health, leads and coordinates the Federal medical effort in arthritis, musculoskeletal, bone, muscle, and skin diseases by conducting and supporting research projects, research training, clinical trials, and epidemiological studies, and by disseminating information on research initiatives and research results.

More Guideline Sources

The guideline above on fibromyalgia 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 fibromyalgia. 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 fibromyalgia. 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>. From there you can either search using the alphabetical index or browse by broad topic areas.

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 fibromyalgia 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:

- **Systemic Lupus and the Nervous System**

Source: Rockville, MD: Lupus Foundation of America, Inc. 1997. 6 p.

Contact: Available from Lupus Foundation of America, Inc. 1300 Piccard Drive, Suite 200, Rockville, MD 20850-4303. (800) 558-0121 or (301) 670-9292. Website: www.lupus.org/lupus. Price: Available as part of a package of 21 different lupus-related brochures for \$3.95 plus shipping and handling.

Summary: This pamphlet for people with lupus discusses nervous system involvement in systemic lupus erythematosus (SLE). It explains how lupus may affect the nervous system and it categorizes the signs and symptoms associated with nervous system involvement. Major symptoms of central nervous system lupus include central nervous system vasculitis, cognitive dysfunction, lupus headache, the antiphospholipid syndrome, organic brain syndrome, and fibromyalgia. The pamphlet highlights central nervous system symptoms resulting from medications used to treat SLE, uncommon causes of central nervous system symptoms in SLE, and symptoms of peripheral nervous system lupus. It explains how a doctor evaluates and treats nervous system symptoms. The pamphlet also provides information on the Lupus Foundation of America.

- **Managing Fibromyalgia: Getting Past the Pain**

Source: San Bruno, CA: StayWell Company. 1997. 6 p.

Contact: Available from StayWell Company. 1100 Grundy Lane, San Bruno, CA 94066-3030. (800) 333-3032. Website: www.staywell.com. Price: Call or write for current pricing on single and bulk orders.

Summary: This brochure provides people who have fibromyalgia with information on managing this chronic disorder that causes muscle pain and body stiffness. Symptoms include the presence of tender points, a

burning or throbbing pain in many parts of the body, stiffness or aching all over the body, trouble sleeping, constant tiredness, headaches, and bowel problems. People who have fibromyalgia can feel better by following a treatment plan that includes gentle exercise and good sleep habits. Other ways to feel better include reducing or managing stress, maintaining health, and consulting a doctor about sleep problems. Medications also may be used to promote sleep and relieve pain.

- **Fibromyalgia**

Source: Atlanta, GA: Arthritis Foundation. 1992. 13 p.

Contact: Available from National Chronic Fatigue Syndrome and Fibromyalgia Association. 3521 Broadway, Suite 222, Kansas City, MO 64111. (816) 931-4777; FAX (816) 931-5557. Price: Free. Also Available from Arthritis Foundation. P.O. Box 19000, Atlanta, GA 30326. (800) 283-7800.

Summary: This brochure presents information about fibromyalgia, a syndrome characterized by generalized muscular pain and fatigue. Possible causes of fibromyalgia, its signs and symptoms, diagnosis, treatment, and coping are described. The goals and services of the Arthritis Foundation and the American College of Rheumatology are also briefly discussed.

- **Juvenile Fibromyalgia Packet**

Source: Linden, VA: National Fibromyalgia Partnership, Inc. 2001. [packet of several articles and booklets].

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org. Price: \$5.00.

Summary: This information packet, which consists of a booklet, several articles, a bibliography, and a resource list, provides school personnel and children who have fibromyalgia and their parents with information on this chronic disease. The booklet presents guidelines for schools so that personnel can construct an appropriate servicing plan for students who have chronic fatigue and immune dysfunction syndrome or fibromyalgia. The booklet addresses educational issues and accommodation, identifies children at risk, and provides a checklist for school nurses and others who evaluate problems in children in the school setting. One article describes the characteristics of fibromyalgia in children and the special issues confronting children who have this disorder. Another article offers suggestions on parenting a child who has

fibromyalgia. A third article focuses on diagnosing and treating fibromyalgia in children, managing a child's condition, and dealing with educational issues. Another article uses fantasy to educate children who have fibromyalgia on how to see their disability. The bibliography, compiled from a search of Entrez-PubMed (MEDLINE), lists articles on fibromyalgia and related diseases in children. The resource list presents organizations and Web sites that can be of help to young people with fibromyalgia and related conditions.

- **Men and Fibromyalgia Packet**

Source: Linden, VA: National Fibromyalgia Partnership, Inc. 2001. [packet of several articles and booklets].

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org. Price: \$2.00.

Summary: This information packet, which consists of several articles, a bibliography, and a resource list, provides men who have fibromyalgia with information on this chronic disease. One article presents comments from men who have fibromyalgia. Their comments demonstrate the isolation, frustration, and embarrassment they feel. Another article reports on an informal research study on fibromyalgia in men conducted by a person with a website devoted to fibromyalgia. Findings are presented in terms of the ages of the men affected; the causes or onset of fibromyalgia; the symptoms reported; other accompanying illnesses; medications and other treatments being used; exercise routines reported; and family, social, and sexual issues. The third article presents a personal account of a father who has fibromyalgia. The bibliography, compiled from a search of Entrez-PubMed (MEDLINE), lists articles on fibromyalgia, particularly those relevant to men. The resource list presents websites that can be of help to men who have fibromyalgia.

- **ABCs of Fibromyalgia: Explaining FM to Your Child**

Source: Linden, VA: National Fibromyalgia Partnership, Inc. 1997. [1 booklet and 1 newsletter article].

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org. Price: \$8.00.

Summary: This information packet, which consists of a newsletter article and a booklet, provides people with fibromyalgia with information on

explaining this disorder to their children. The newsletter article presents a personal account of living with fibromyalgia and being a parent. The booklet, written for children ages 2 to 6, helps them learn about fibromyalgia by telling the story of a child whose mother has an invisible monster named fibromonster. The child in the story explains how fibromonster makes the mother feel.

- **Fibromyalgia Syndrome (FMS): A Patient's Guide**

Source: Tucson, AZ: Fibromyalgia Network. 2000. 6 p.

Contact: Available from Fibromyalgia Network. P.O. Box 31750, Tucson, AZ 85751-1750. (800) 853-2929 or (520) 290-5508. Fax (520) 290-5550.

Website: www.fmnetnews.com. Price: Single copy free; bulk orders available at cost.

Summary: This pamphlet uses a question and answer format to provide people who have fibromyalgia syndrome (FMS) with information on the etiology, symptoms, diagnosis, and treatment of this widespread musculoskeletal pain and fatigue disorder. FMS affects more women than men. Although the cause of FMS remains unknown, many triggering events are thought to awaken an underlying physiological abnormality, including infection, trauma, and the development of another disorder. Theories about the underlying physiological abnormality pertain to alterations in pain related chemical transmitters, immune system function, sleep physiology, and hormonal control. Symptoms and associated syndromes include pain, fatigue, sleep disorder, irritable bowel syndrome, chronic headaches, temporomandibular joint dysfunction syndrome, and multiple chemical sensitivities. Diagnosis is based on the finding of widespread pain in all four quadrants of the body for a minimum duration of 3 months and at least 11 of 18 tender points. Treatment is aimed at improving the quality of sleep and reducing pain. Lifestyle adjustments may help a patient conserve energy and minimize pain.

- **Getting the Most Out of Your Medicines: A Guide for Patients With FMS/CFS (Fibromyalgia Syndrome/Chronic Fatigue Syndrome)**

Source: Tucson, AZ: Fibromyalgia Network. 2000. 82 p.

Contact: Available from Fibromyalgia Network. P.O. Box 31750, Tucson, AZ 85751-1750. (800) 853-2929 or (520) 290-5508. Fax (520) 290-5550.

Website: www.fmnetnews.com. Price: \$10.00.

Summary: This booklet provides people who have fibromyalgia syndrome (FMS) and chronic fatigue syndrome (CFS) with information on medications used to improve sleep, reduce pain, and minimize

fatigue. The booklet explains the role of the central nervous system in controlling pain, sleep, and neuroendocrine/stress functions. This is followed by a discussion of the mechanism of action, dosage, and side effects of various drugs, including tricyclic antidepressants, benzodiazepines, muscle relaxants, sleeping aids, selective serotonin reuptake inhibitors, mild stimulants and neuromodulating drugs, nonsteroidal anti-inflammatory drugs, immune system modulators, calcium and sodium channel blockers, pain relievers, and antiyeast regimens. Other treatment modalities discussed include combination therapies, trigger point injections, and nutritive supplements. In addition, the booklet describes common associated syndromes and their treatment, including temporomandibular dysfunction syndrome, chronic headaches, irritable bowel and bladder syndromes, and dysautonomia. The booklet concludes with information on medicines for the future. A list of additional information resources is included. 6 figures, 4 tables, and 82 references.

- **Fibromyalgia Syndrome**

Source: Atlanta, GA: Arthritis Foundation. 1997. 12 p.

Contact: Available from Arthritis Foundation. P.O. Box 1616, Alpharetta, GA 30009-1616. (800) 207-8633. Fax (credit card orders only) (770) 442-9742. <http://www.arthritis.org>. Price: Single copy free from local Arthritis Foundation chapter (call 800-283-7800 for closest local chapter); bulk orders may be purchased from address above.

Summary: This brochure for people with fibromyalgia syndrome uses a question and answer format to provide information on the symptoms, diagnosis, triggers, and treatment of this condition. It discusses how fibromyalgia mainly affects muscles and their attachments to bones, and can be triggered by physical or emotional trauma, or both. The syndrome is diagnosed on the basis of the medical history and a physical examination; widespread pain in combination with tenderness at specific locations is the key to diagnosis. It explains that treatment includes medications to diminish pain and improve sleep, exercise programs, relaxation techniques and other measures to ease muscle tension, and educational programs to help patients understand and manage their condition. The brochure also provides information on the Arthritis Foundation. 2 figures.

- **Ontario Fibromyalgia Association: An Introduction**

Source: Toronto, Ontario: Ontario Fibromyalgia Association (OFA). 1994. [6 p.].

Contact: Available from Ontario Fibromyalgia Association (OFA). 250 Bloor Street East, Suite 901, Toronto, Ontario M4W 3P2, CANADA. (416) 967-1414 or (800) 361-1112; FAX (416) 967-7171. Price: Free.

Summary: This brochure briefly describes fibromyalgia syndrome and the Ontario Fibromyalgia Association (OFA). The OFA was developed to help people with fibromyalgia to better understand and cope with this condition, to provide support for the family, to enhance public awareness, to educate health care professionals, and to provide funds for research. The OFA has local chapters and support groups and offers a toll free support and information line as well as printed materials about fibromyalgia. The brochure includes an OFA membership application form.

- **Fibromyalgia Syndrome (FMS): Advances in Research**

Source: Tucson, AZ: Fibromyalgia Network. 1994. 20 p.

Contact: Available from Fibromyalgia Network. P.O. Box 31750, Tucson, AZ 85751-1750. (520) 290-5508 or (800) 853-2929; FAX (520) 290-5550. Price: Free.

Summary: This brochure discusses research advances in the study of fibromyalgia, its causes and treatment. Specific research topics discussed include syndrome comparisons and associations, sleep, neurotransmitters, amino acids, muscle studies, infectious agents, the immune system, brain scans, hormones, drug trials, and non-medicinal treatments. 50 references.

- **Temporomandibular Joint Dysfunction and Its Relationship to the Fibromyalgia Patient**

Source: Washington, DC: Fibromyalgia Association of Greater Washington. 1994. [2 p.].

Contact: Available from Fibromyalgia Association of Greater Washington (FMAGW). 13203 Valley Drive, Woodbridge, VA 22191. (703) 790-2324. Price: Single copy free.

Summary: This brochure outlines the relationship of temporomandibular joint dysfunction (TMD) and fibromyalgia syndrome. The brochure stresses that TMD is a complex problem even for the otherwise healthy patient, but when it is combined with the multiple symptoms of a patient with fibromyalgia syndrome, it becomes difficult to diagnose and treat effectively without a team approach involving multiple disciplines. Because of the intricate neural pathways in and around the TM joint and reflex referral arcs to far distant areas, the picture of TMD becomes complex when it is combined with the symptoms of fibromyalgia. The

causes of TMD are varied and may include trauma, loss of teeth, improperly fitted dental appliances, improper orthodontic therapy, a variety of degenerative joint disease, growth and developmental problems, tumors, and bruxism (toothgrinding). Treatment ranges from simple appliance therapy along with warm, moist compresses, a soft diet and anti-inflammatory medication, to a multidisciplinary approach involving special x-rays, computerized measurement of jaw and muscle relationships and function, and specialized appliances along with physical therapy, and rheumatological evaluation. The brochure concludes that a dentist specializing in TMD or MPD (myofascial pain dysfunction) is necessary to determine the most appropriate therapy for each patient based on the presentation, severity, and dimensions of his or her symptoms and the nature of the problems present.

- **Fibromyalgia (Fibrositis) Syndrome**

Source: Toronto, Ontario: Arthritis Society. 1994. [10 p.].

Contact: Available from Ontario Fibromyalgia Association (OFA). 250 Bloor Street East, Suite 901, Toronto, Ontario M4W 3P2, CANADA. (416) 967-1414 or (800) 361-1112; FAX (416) 967-7171. Price: Free.

Summary: This brochure briefly discusses the symptoms, diagnosis, and treatment of fibromyalgia (fibrositis) syndrome. The brochure provides an overview of the history of fibromyalgia, the nature of pain and locations of characteristic tender points, pain management, physiotherapy treatment, prognosis, and the role of Canada's Arthritis Society in promoting research, patient care, and education about arthritis. The addresses of national and local offices of the Arthritis Society are listed.

- **Fibromyalgia Syndrome (Fibrositis)**

Source: Columbus, OH: Fibromyalgia Association of Central Ohio. 1992. 22 p.

Contact: Available from Fibromyalgia Association of Central Ohio. P.O. Box 21988, Columbus, OH 43221-0988. (614) 457-4222; FAX (614) 457-2729. Price: \$4.00.

Summary: This booklet explains the signs and symptoms of fibromyalgia syndrome, the diagnosis and treatment and how patients can move forward with their lives. Written in non- technical terms, this booklet is intended for people with fibromyalgia syndrome, as well as their family and friends.

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 “fibromyalgia” or synonyms. The following was recently posted:

- **Fibromyalgia.**

Source: Washington State Medical Association/Washington State Department of Labor and Industries.; 1999; 5 pages

http://www.guideline.gov/FRAMESETS/guideline_fs.asp?guideline=001132&sSearch_string=fibromyalgia

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:

- **Fibromyalgia Research: Challenges and Opportunities**

Summary: This article discusses research studies in fibromyalgia, the breakthroughs that have been made so far towards finding a cure and efforts to manage the disease in the interim.

Source: National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health

<http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=6199>

- **Questions and Answers About Fibromyalgia**

Summary: This consumer health information fact sheet answers basic questions about fibromyalgia -- what is it; how is it diagnosed; and what are the treatment options.

Source: National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health

<http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=3776>

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 fibromyalgia. 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>.

NORD (The National Organization of Rare Disorders, Inc.)

NORD provides an invaluable service to the public by publishing, for a nominal fee, short yet comprehensive guidelines on over 1,000 diseases. NORD primarily focuses on rare diseases that might not be covered by the previously listed sources. NORD’s Web address is www.rarediseases.org. To see if a recent fact sheet has been published on fibromyalgia, simply go to the following hyperlink: <http://www.rarediseases.org/cgi-bin/nord/alphalist>. A complete guide on fibromyalgia can be purchased from NORD for a nominal fee.

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:

Aerobic: 1. having molecular oxygen present. 2. growing, living, or occurring in the presence of molecular oxygen. 3. requiring oxygen for respiration. [EU]

Antidepressant: An agent that stimulates the mood of a depressed patient, including tricyclic antidepressants and monoamine oxidase inhibitors. [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]

Benzodiazepines: A two-ring heterocyclic compound consisting of a benzene ring fused to a diazepine ring. Permitted is any degree of hydrogenation, any substituents and any H-isomer. [NIH]

Bruxism: A disorder characterized by grinding and clenching of the teeth. [NIH]

Bursitis: Inflammation of a bursa, occasionally accompanied by a calcific deposit in the underlying supraspinatus tendon; the most common site is the subdeltoid bursa. [EU]

Chronic: Persisting over a long period of time. [EU]

Degenerative: Undergoing degeneration : tending to degenerate; having the character of or involving degeneration; causing or tending to cause degeneration. [EU]

Epidemiological: Relating to, or involving epidemiology. [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]

Hormonal: Pertaining to or of the nature of a hormone. [EU]

Hormones: Chemical substances having a specific regulatory effect on the

activity of a certain organ or organs. The term was originally applied to substances secreted by various endocrine glands and transported in the bloodstream to the target organs. It is sometimes extended to include those substances that are not produced by the endocrine glands but that have similar effects. [NIH]

Inflammation: A pathological process characterized by injury or destruction of tissues caused by a variety of cytologic and chemical reactions. It is usually manifested by typical signs of pain, heat, redness, swelling, and loss of function. [NIH]

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

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

Myositis: Inflammation of a voluntary muscle. [EU]

Necrosis: The sum of the morphological changes indicative of cell death and caused by the progressive degradative action of enzymes; it may affect groups of cells or part of a structure or an organ. [EU]

Neural: 1. pertaining to a nerve or to the nerves. 2. situated in the region of the spinal axis, as the neutral arch. [EU]

Neurotransmitter: Any of a group of substances that are released on excitation from the axon terminal of a presynaptic neuron of the central or peripheral nervous system and travel across the synaptic cleft to either excite or inhibit the target cell. Among the many substances that have the properties of a neurotransmitter are acetylcholine, norepinephrine, epinephrine, dopamine, glycine, γ -aminobutyrate, glutamic acid, substance P, enkephalins, endorphins, and serotonin. [EU]

Rheumatology: A subspecialty of internal medicine concerned with the study of inflammatory or degenerative processes and metabolic derangement of connective tissue structures which pertain to a variety of musculoskeletal disorders, such as arthritis. [NIH]

Stimulant: 1. producing stimulation; especially producing stimulation by causing tension on muscle fibre through the nervous tissue. 2. an agent or remedy that produces stimulation. [EU]

Tendinitis: Inflammation of tendons and of tendon-muscle attachments. [EU]

Tricyclic: Containing three fused rings or closed chains in the molecular structure. [EU]

Vasculitis: Inflammation of a vessel, angiitis. [EU]

CHAPTER 2. SEEKING GUIDANCE

Overview

Some patients are comforted by the knowledge that a number of organizations dedicate their resources to helping people with fibromyalgia. 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.⁸ 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 fibromyalgia. The chapter ends with a discussion on how to find a doctor that is right for you.

Associations and Fibromyalgia

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.⁹ 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

⁸ Churches, synagogues, and other houses of worship might also have groups that can offer you the social support you need.

⁹ This section has been adapted from <http://www.ahcpr.gov/consumer/diagin5.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 Academy of Physical Medicine And Rehabilitation**

Address: American Academy of Physical Medicine And Rehabilitation
One IBM Plaza, Suite 2500, Chicago, IL 60611-3604

Telephone: (312) 464-9700 Toll-free: (800) 616-7246

Fax: (312) 464-0227

Email: None

Web Site: <http://www.aapmr.org/>

Background: The American Academy of Physical Medicine and Rehabilitation (AAPMandR) is a national medical society representing 5,600 physicians who are specialists in the field of physical medicine and rehabilitation. They are called physiatrists. Physiatrists focus on restoring function. They care for patients with acute and chronic pain, and musculoskeletal problems like back and neck pain, tendinitis, pinched nerves and fibromyalgia. They also treat people who have experienced catastrophic events resulting in paraplegia, quadriplegia, or traumatic brain injury as well as individuals who have suffered strokes, orthopedic injuries, or neurologic disorders such as multiple sclerosis, polio, or ALS. The Academy represents more than 87 percent of U.S. physiatrists and international colleagues from 37 countries. AAPMandR serves its member physicians to maximize patient function and quality of life by advancing excellence in physiatric practice.

- **American Autoimmune Related Diseases Association, Inc**

Address: American Autoimmune Related Diseases Association, Inc.
Michigan National Bank Building, 15475 Gratiot Avenue, Detroit, MI
48205

Telephone: (313) 371-8600 Toll-free: (800) 598- 4668

Fax: (313) 371-6002

Email: aarda@aol.com

Web Site: <http://www.aarda.org/>

Background: The American Autoimmune Related Diseases Association, Inc. (AARDA) is a national not-for-profit voluntary health agency dedicated to bringing a national focus to autoimmunity, a major cause of serious chronic diseases. The Association was founded for the purposes of supporting research to find a cure for autoimmune diseases and providing services to affected individuals. In addition, the Association's goals include increasing the public's awareness that autoimmunity is the cause of more than 80 serious chronic diseases; bringing national focus and collaborative effort among state and national voluntary health groups that represent autoimmune diseases; and serving as a national advocate for individuals and families affected by the physical, emotional, and financial effects of autoimmune disease. The American Autoimmune Related Diseases Association produces educational and support materials including fact sheets, brochures, pamphlets, and a newsletter entitled 'In Focus.'

Relevant area(s) of interest: Fibromyalgia, Lupus, Polymyalgia Rheumatica

- **American Chronic Pain Association**

Address: American Chronic Pain Association P.O. Box 850, Rocklin, CA 95677

Telephone: (916) 632-0922

Fax: (916) 632-3208

Email: ACPA@Pacbell.net

Web Site: <http://www.theacpa.org>

Background: The American Chronic Pain Association is a nonprofit self-help organization that provides assistance and hope to individuals with chronic pain. Established in 1980, the American Chronic Pain Association operates support groups throughout the United States and offers its members positive and constructive methods for dealing with chronic pain. Groups usually consist of approximately 10 members who learn useful techniques for pain management through discussion, mutual support, and informational exchanges. Educational materials produced by the American Chronic Pain Association include 'Help and Hope' pamphlets and brochures, guidelines for the selection of a pain unit, the 'American Chronic Pain Association Member Workbook,' tapes, and the 'American Chronic Pain Association Chronicle.'

Relevant area(s) of interest: Fibromyalgia

- **Back Pain Association of America, Inc**

Address: Back Pain Association of America, Inc. P.O. Box 135, Pasadena, MD 21123-0135

Telephone: (410) 255-3633 Toll-free: (800) 321-1433

Fax: (410) 255- 7338

Email: backpainassoc@MSN.COM

Background: The Back Pain Association of America, Inc. (BPAA) is a national nonprofit organization dedicated to providing information and support to people who are affected by back and neck pain, their family members, friends, and health care professionals. Established in 1991 and consisting of nearly 4,000 members, BPAA offers programs and information to help affected individuals learn more about their spinal disorders and ways to cope with them. The organization also has a program to help individuals prevent back injuries. BPAA publishes a self-titled quarterly newsletter that helps readers stay informed of updated information and new forms of treatment. The organization's 'Friends Across America' networking program enables affected individuals to exchange information and support via telephone. BPAA also has a physician referral service as well as an information service for physicians who treat back and neck pain. In addition, the Association also promotes research and offers a variety of fact sheets including 'The Relationship Between Nerve Damage and Leg Pain,' 'Urinary Problems and Diseases of the Spine,' 'Arachnoiditis, Questions and Answers,' and 'A Guide to Abdominal and Stretching Exercises.'

Relevant area(s) of interest: Fibromyalgia, Osteoarthritis, Reiter's Syndrome

- **Fibromyalgia Alliance of America, Inc**

Address: Fibromyalgia Alliance of America, Inc. P.O. Box 21990, Columbus, OH 43221-0990

Telephone: (614) 457-4222 Toll-free: (888) 717-6711

Fax: (614) 457- 2729

Email: Masaathoff@aol.com or FMSinfo@aol.com

Background: The Fibromyalgia Alliance of America, Inc. is a professional self-help not-for-profit organization dedicated to improving the lives of people affected by Fibromyalgia. Established in 1986, the Alliance provides state-of-the-art knowledge concerning Fibromyalgia to the medical community; supports research into the causes of Fibromyalgia and effective treatments for Fibromyalgia; educates the public and

private sector about Fibromyalgia; and provides information and support to affected individuals, their families, and others. The Fibromyalgia Alliance produces educational and support materials including a quarterly newsletter, brochures, pamphlets, audio and video tapes, and books on Fibromyalgia and chronic illness. The Alliance also sponsors national patient conferences.

Relevant area(s) of interest: Fibromyalgia

- **Fibromyalgia Association of Central Ohio**

Address: Fibromyalgia Association of Central Ohio. P.O. Box 21988, Columbus, OH 43221-0988. (614) 457-4222; FAX (614) 457-2729.

Telephone: (416) 979-7228 Toll-free: (800) 321-1433

Background: This resource sheet and order form gives brief descriptions and ordering information for seven videotapes of presentations given at the 1994 National Fibromyalgia Syndrome (FMS) Seminar. The videotapes, also available as audiotapes, describe various topics related to fibromyalgia.

Relevant area(s) of interest: Fibromyalgia

- **Fibromyalgia Association UK**

Address: Fibromyalgia Association UK PO Box 206, Stourbridge, West Midlands, DY9 8YL, United Kingdom

Telephone: 01384- 820052 Toll-free: (800) 321-1433

Fax: 01384-869467

Email: fms@cableinet.co.uk

Web Site: <http://www.community-care.org.uk/charity/fmauk.html>

Background: The Fibromyalgia Association UK is an international voluntary organization in the United Kingdom dedicated to providing information, support, and resources to individuals affected by fibromyalgia, a chronic condition characterized by musculoskeletal pain, stiffness, and spasm and associated sleep disturbances. The exact cause of fibromyalgia is unknown. However, the condition appears to develop after certain infections or injuries, for example, or may occur due to or in association with other underlying conditions or disorders, such as rheumatoid arthritis. The Fibromyalgia Association UK provides understandable information on fibromyalgia and promotes networking opportunities that enable affected individuals and family members to exchange mutual support and information. The Association also has a web site on the Internet that discusses the organization's history and

mission, provides information on fibromyalgia, and offers linkage to additional support groups, newsgroups, FAQs ('frequently asked questions') on the condition, and related web sites.

Relevant area(s) of interest: Fibromyalgia

- **National Chronic Fatigue and Fibromyalgia Association**

Address: National Chronic Fatigue and Fibromyalgia Association P.O. Box 18426, Kansas City, MO 64133

Telephone: (816) 313-2000

Fax: (816) 524-6782

Email: KEAL55A@prodigy.com

Background: The National Chronic Fatigue Syndrome and Fibromyalgia Association is a voluntary health organization that was incorporated in 1988. The Association was formed to educate and inform the public about the nature and impact of Chronic Fatigue Syndrome and related disorders. In 1993, Fibromyalgia was added to the organization's educational efforts. The primary focus of The National Chronic Fatigue Syndrome and Fibromyalgia Association is to offer scientifically accurate information to people with Chronic Fatigue Syndrome and Fibromyalgia. Brochures, booklets, and videos are available from the organization. A periodic newsletter and fact sheet are also produced and distributed by the organization.

Relevant area(s) of interest: Fibromyalgia

- **North American Chronic Pain Association of Canada**

Address: North American Chronic Pain Association of Canada 150 Central Park Drive, Unit 105, Brampton, Ontario, L6T 2T9, Canada

Telephone: 905 793-5230 Toll-free: (800) 616-7246

Fax: (905) 793-8781

Email: nacpac@sympatico.ca

Web Site: <http://www3.sympatico.ca/nacpac>

Background: The North American Chronic Pain Association of Canada (NACPAC) is a nonprofit self-help organization dedicated to providing assistance and hope to individuals with chronic pain. NACPAC defines chronic pain as any frequent or continuous pain that has lasted more than a few months. This includes, but is not limited to, lower back pain, fibromyalgia, arthritis, headaches and migraines, and neck and shoulder pain. NACPAC was established in 1986 and currently consists of

approximately 1,000 members. NACPAC brings together affected individuals through mutual support groups operating throughout Canada. Where no group exists, NACPAC provides materials and guidance on how to establish a support group. Members are encouraged by their peers to share ways of coping with chronic pain and to live full, productive lives. Group leaders are individuals who have themselves learned to function well despite their pain. NACPAC also empowers people to make informed choices; supports education and research in the field of chronic pain; and networks with organizations of similar purpose. The Association provides education about pain related problems through a series of brochures, pamphlets, and a quarterly newsletter entitled 'NACPAC Track.' In addition, speakers, videotapes, and books are available to assist members to learn about their pain problems in layperson's language. NACPAC also provides referrals to other organizations and maintains a web site at <http://www3.sympatico.ca/nacpac>.

Relevant area(s) of interest: Fibromyalgia

- **Ontario Fibromyalgia Association**

Address: Ontario Fibromyalgia Association 393 University Avenue, Suite 1700, Toronto, Ontario, M5G 1E6, Canada

Telephone: (416) 979-7228 Toll-free: (800) 321-1433

Fax: (416) 979-8366

Email: info@on.arthritis.ca

Web Site: <http://www.arthritis.ca>

Background: The Ontario Fibromyalgia Association, one of five specific disease associations of The Arthritis Society of Canada, is a not-for-profit organization dedicated to promoting and supporting research on fibromyalgia and providing information and support to affected individuals, family members, and health care professionals. Fibromyalgia is a chronic disorder characterized by pain throughout much of the body. Established in 1986, the Ontario Fibromyalgia Association has several chapters and offers more than 40 support groups in Ontario for affected individuals, family members, and friends. The Association also promotes patient advocacy and offers a variety of materials to affected individuals, family members, health care professionals, and the general public. These materials include a quarterly newsletter entitled 'Tender Points,' reports, guides, booklets, brochures, pamphlets, videos, and assistive devices.

Relevant area(s) of interest: Fibromyalgia

- **Ontario Fibromyalgia Association (OFA)**

Address: Ontario Fibromyalgia Association (OFA). 250 Bloor Street East, Suite 901, Toronto, Ontario M4W 3P2, CANADA. (416) 967-1414 or (800) 361-1112; FAX (416) 967-7171.

Telephone: (312) 464-9700 Toll-free: (800) 616-7246

Background: This resource sheet lists and briefly describes publications and assistive devices for people with fibromyalgia. The publications include newsletters, guides, pamphlets, and books to help individuals understand and cope with the fibromyalgia. The assistive devices include neck and back supports, heating pads, cold packs, abdominal supports, and massage units. The brochure also describes a video about coping with fibromyalgia and two exercise videos. Price and ordering information is included for some of the items.

Relevant area(s) of interest: Fibromyalgia

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 fibromyalgia. 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 "fibromyalgia" (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 “fibromyalgia”. 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 “fibromyalgia” (or synonyms) into the “For these words:” box, you will only receive results on organizations dealing with fibromyalgia. 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 “fibromyalgia” (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 sites may be of particular interest:

- **Immune Support**

<http://www.immunesupport.com/supportgroups/>

- **The River**
<http://www.theriver.com/Public/cfids/usspt.htm>
- **FibroHugs**
<http://www.fibrohugs.com>

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 fibromyalgia 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:¹⁰

- 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.
- 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

¹⁰ This section is adapted from the AHRQ: www.ahrq.gov/consumer/qntascii/qntdr.htm.

as specialists. The AMBS Web site is located at <http://www.abms.org/newsearch.asp>.¹¹ 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.

Selecting Your Doctor¹²

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 fibromyalgia?
- 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 fibromyalgia?

¹¹ 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.

¹² This section has been adapted from the AHRQ: www.ahrq.gov/consumer/qntascii/qntdr.htm.

- 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 Doctor¹³

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.
- 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.

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

- 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:¹⁴

- 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:

Autoimmunity: Process whereby the immune system reacts against the body's own tissues. Autoimmunity may produce or be caused by

¹⁴ You can access this information at:
<http://www.nlm.nih.gov/medlineplus/healthsystem.html>.

autoimmune diseases. [NIH]

Neurologic: Pertaining to neurology or to the nervous system. [EU]

Osteoarthritis: Noninflammatory degenerative joint disease occurring chiefly in older persons, characterized by degeneration of the articular cartilage, hypertrophy of bone at the margins, and changes in the synovial membrane. It is accompanied by pain and stiffness, particularly after prolonged activity. [EU]

Paraplegia: Paralysis of the legs and lower part of the body. [EU]

Quadriplegia: Severe or complete loss of motor function in all four limbs which may result from brain diseases; spinal cord diseases; peripheral nervous system diseases; neuromuscular diseases; or rarely muscular diseases. The locked-in syndrome is characterized by quadriplegia in combination with cranial muscle paralysis. Consciousness is spared and the only retained voluntary motor activity may be limited eye movements. This condition is usually caused by a lesion in the upper brain stem which injures the descending cortico-spinal and cortico-bulbar tracts.

Sclerosis: A induration, or hardening; especially hardening of a part from inflammation and in diseases of the interstitial substance. The term is used chiefly for such a hardening of the nervous system due to hyperplasia of the connective tissue or to designate hardening of the blood vessels. [EU]

CHAPTER 3. CLINICAL TRIALS AND FIBROMYALGIA

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 fibromyalgia.

What Is a Clinical Trial?¹⁵

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 fibromyalgia is to try it on patients in a clinical trial.

¹⁵ 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 fibromyalgia.
- **Phase III.** Finally, researchers conduct Phase III trials to find out how new treatments for fibromyalgia 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 fibromyalgia 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 fibromyalgia. 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 fibromyalgia 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 fibromyalgia 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 fibromyalgia. 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 Fibromyalgia

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 fibromyalgia.¹⁶ 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.

- **Assessing Fibromyalgia Treatments**

Condition(s): Fibromyalgia

Study Status: This study is currently recruiting patients.

Sponsor(s): National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Purpose - Excerpt: This study will compare the effectiveness of combination therapy with the drugs amitriptyline and fluoxetine (AM+FL) and amitriptyline (AM) alone in the treatment of people with fibromyalgia. Doctors will treat each study participant with both AM + FL and AM alone for 6 weeks at a time. The study uses a method that combines results from treatment of individual patients to assess overall treatment effectiveness and help individual patients and their physicians with their treatment decisions. This study will also help compare the results of community-based studies (studies involving private doctors) and studies based at clinical research centers.

Phase(s): Phase IV

¹⁶ These are listed at www.ClinicalTrials.gov.

Study Type: Interventional

Contact(s): see Web site below

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00000428;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Behavioral Insomnia Therapy for Fibromyalgia**

Condition(s): Fibromyalgia; Insomnia

Study Status: This study is currently recruiting patients.

Sponsor(s): National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Purpose - Excerpt: This study tests the effectiveness of a nondrug treatment for the insomnia that often occurs in people with fibromyalgia. The treatment is a type of psychotherapy called cognitive-behavioral therapy. Cognitive-behavioral therapy combines cognitive therapy, which can modify or eliminate thought patterns contributing to the person's symptoms, and behavioral therapy, which aims to help the person change his or her behavior.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Jack D Edinger, Ph.D. 919-286-0411 jack.edinger@duke.edu; North Carolina; Duke University Medical Center, Durham, North Carolina, 27710, United States; Recruiting; William K Wohlgemuth, Ph.D. 919-684-4368. Study chairs or principal investigators: Jack D. Edinger, Ph.D., Principal Investigator; VA Medical Center-Brooklyn

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00000397;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Eligibility Screening for National Institute of Dental and Craniofacial Research Studies**

Condition(s): Fibromyalgia

Study Status: This study is currently recruiting patients.

Sponsor(s): National Institute of Dental and Craniofacial Research (NIDCR)

Purpose - Excerpt: This screening protocol is designed to evaluate patients for participation in clinical studies in the Gene Therapy and Therapeutics Branch (GTTB) of the National Institute of Dental and

Craniofacial Research. To participate, patients must meet the specific requirements of at least one of the available research studies; this protocol serves as a first step for admitting patients to an appropriate program. People with diagnosed or undiagnosed conditions may participate in this screening protocol. They will undergo procedures that may include questionnaires, a physical examination, routine laboratory tests, and diagnostic imaging or radiological studies. Eligibility screening will be limited to three visits within 12 months of entry into the protocol. If an appropriate study is not found by the end of this time, the candidate's participation in the screening program will terminate. No experimental treatments are offered under the screening protocol. Patients who are found eligible for a current GTTB study will be notified of their options and invited to enroll.

Study Type: Observational

Contact(s): Maryland; National Institute of Dental And Craniofacial Research (NIDCR), 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/show/NCT00001983;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Tailored Treatments of Fibromyalgia**

Condition(s): Fibromyalgia

Study Status: This study is currently recruiting patients.

Sponsor(s): National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Purpose - Excerpt: This study will evaluate the effects of matching treatments to people with fibromyalgia syndrome (FMS) on the basis of their psychosocial and behavioral characteristics. We will look at how patients respond to a rehabilitation program that includes physical therapy and information about fibromyalgia. We will combine this program with psychological treatments that are either matched or mismatched to the way patients cope with and adapt to symptoms of FMS. The second aim of our study is to better understand how different FMS symptoms may vary together and how these symptoms change as a result of treatment in a person's natural environment. People with FMS and healthy people of the same ages will record their moods, thoughts, symptoms, activities, and fatigue levels three times a day for 2 weeks. Participants will use palm-top computers to record these "real-time"

assessments. This approach will permit people to rate how they feel at a particular time rather than looking back in time.

Phase(s): Phase II; Phase III

Study Type: Interventional

Contact(s): Dennis C. Turk, Ph.D. 206-221-5146
 fibroctr@u.washington.edu; Washington; University of Washington,
 Seattle, Washington, 98195, United States; Recruiting; Fibromyalgia
 Research Center Personnel 206-221-5146 fibroctr@u.washington.edu.
 Study chairs or principal investigators: Dennis C. Turk, Ph.D, Principal
 Investigator; University of Washington

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00000422;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Acupuncture in Fibromyalgia**

Condition(s): Fibromyalgia; Pain

Study Status: This study is no longer recruiting patients.

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

Purpose - Excerpt: Fibromyalgia is the second most common rheumatic disorder, affecting approximately 8-10 million persons in the U.S., and is characterized by widespread musculoskeletal pain and soft tissue tenderness upon examination. This study focuses on the use of acupuncture as a mode of therapy for fibromyalgia. The issues under examination are: 1) the optimal duration of treatment, 2) the independent and synergistic effects of needle placement and needle stimulation, and 3) appropriate control strategies. The proposal utilizes a randomized, blinded, sham-controlled design to achieve these aims. Subjects are randomly assigned to one of four groups: 1) active site with stimulation, 2) active site, without stimulation, 3) sham site with stimulation, and 4) sham site, without stimulation. All subjects will receive acupuncture at escalating frequency, beginning at once per week and ending at 3 times per week. This "forced titration" design allows for the detection of inter-subject differences in responsiveness to acupuncture, as well as the factors which may predict responsiveness (or lack thereof). Secondary goals of the study are to collect data on the mechanism, safety, and cost-effectiveness of acupuncture in fibromyalgia, and to determine the optimal outcome measures, for a full scale research clinical trial.

Phase(s): Phase III

Study Type: Interventional

Contact(s): Jo Anne Stanback 1-202-784-0042 JMS28@georgetown.edu; District of Columbia; Georgetown University, Washington, District of Columbia, 20007, United States. Study chairs or principal investigators: Dr. Daniel J. Clauw, Principal Investigator; Georgetown University

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00010504;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Efficacy of Acupuncture in the Treatment of Fibromyalgia**

Condition(s): Fibromyalgia

Study Status: This study is no longer recruiting patients.

Sponsor(s): National Center for Complementary and Alternative Medicine (NCCAM); National Heart, Lung, and Blood Institute (NHLBI)

Purpose - Excerpt: Fibromyalgia (FM), one of the most common rheumatic conditions, is a condition of unknown etiology characterized by widespread muscle pain and stiffness. Treatment is generally unsatisfactory and most randomized, controlled treatment trials have been unable to demonstrate a sustained effective intervention. A single, brief trial of electroacupuncture demonstrated remarkable improvement among patients with FM, although lasting effects were not evaluated. Nonetheless, the recently published National Institutes of Health Consensus Development Statement on Acupuncture says "musculoskeletal conditions such as fibromyalgia, myofascial pain ...are conditions for which acupuncture may be beneficial". Thus, 96 patients will be recruited from a referral clinic for fatigue for a 12 week (24 treatments) trial. These patients will be randomized into 3 control groups and 1 "true" acupuncture group. The control groups will consist of a group receiving acupuncture treatment for an unrelated condition (morning sickness), a group receiving needle insertion at non-channel, non-point locations, and a "true" placebo group. This latter group will have acupuncture needle guides tapped on the skin, then needles tapped. Thus, the specific aims of this study are to 1) evaluate the short and long term efficacy and side effects of a 12 week randomized, controlled trial of bi-weekly acupuncture in the treatment of FM; 2) establish the most useful and scientifically sound control group for studies of acupuncture using FM as a model for conditions characterized by chronic pain; 3) use both subjective and objective measures of overall health and pain to determine the optimal time length of treatment; and 4) examine the concordance of allopathic and acupuncture-based measures of outcome. For the purposes of this study, subjects will be asked to complete a unique set of study measures at enrollment, at 4, 8, and 12 weeks, and

then again at 1 and 6 months post-treatment. Our primary outcomes will be patient global assessment, subjective pain, and mean number of tender points. Secondary outcomes will be pain threshold, analgesic use, physician global assessment, functional status, sleep, psychological distress, and fatigue. Thus, this trial will have both immediate and longer term implications for the scientific study of acupuncture as well as the clinical care of the estimated 5 million patients with FM in the US. From a methodological point of view, the proposed trial will establish the most appropriate methods for choosing a control group should larger trials be conducted, suggest the optimum duration of treatment, and evaluate the utility of diverse allopathic and alternative outcome measures. Of equal importance, however, this research will test and potentially establish the effectiveness of acupuncture.

Phase(s): Phase I

Study Type: Interventional

Contact(s): Debra S. Buchwald, MD 1-206-731-8218
dedra@u.washington.edu; Washington; Harborview Medical Center,
Seattle, Washington, 98104, United States. Study chairs or principal
investigators: Debra S. Buchwald, MD, Principal Investigator;
Harborview Medical Center

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00010764;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Fibromyalgia: A Randomized Controlled Trial of a Mind/Body Intervention**

Condition(s): Fibromyalgia

Study Status: This study is no longer recruiting patients.

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

Purpose - Excerpt: The goal of this proposal is to evaluate the efficacy of a multiple component mind-body (MCMB) therapy for fibromyalgia, both in short and long term outcomes. Preliminary work suggests that FM patients do benefit from MCMB therapy (Singh et al 1998; Creamer et al 1998). This two-arm clinical trial will randomize 110 patients to either a 12 week MCMB intervention or a 12 week education/attention intervention. The primary aims of this study are 1) to determine if a 12 week MCMB intervention improves short term (i.e. at 12 weeks) outcomes in FM patients compared to an education/attention control group; and 2) to determine if a 12 week MCMB intervention improves

long term (i.e. at 24 weeks) outcomes in FM patients compared to an education/attention control group. A secondary aim of this project involves determining if there are patient characteristics (i.e. disease severity and duration, demographics, psychological factors) associated with improvements in short or long term outcomes as well as responses to the MCMB intervention. The primary outcome measure will include physical functioning and pain as measured by the Fibromyalgia Impact Questionnaire.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Brian Berman 1-410-448-6871. Study chairs or principal investigators: Dr. Brian Berman, Principal Investigator; Univ. of Maryland/Complementary Medicine Program

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00010777;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Behavioral Treatment of Fibromyalgia**

Condition(s): Fibromyalgia

Study Status: This study is completed.

Sponsor(s): National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Purpose - Excerpt: Fibromyalgia (FM) is one of the most common rheumatic diseases (conditions or disorders that cause pain or stiffness in the joints, muscles, or bones). It affects 6 million Americans and up to 20 percent of patients seen by doctors who specialize in treating rheumatic diseases. This study will evaluate the effects of two of the most promising nondrug treatments for FM: coping skills training and physical exercise training. We will randomly assign each of 180 patients diagnosed with FM to one of four groups: coping skills training (CST), physical exercise training alone, CST plus physical exercise training, or a waiting list (nontreatment group). We will look at the separate and combined effects of CST and physical exercise training and evaluate how changes in aerobic fitness, self-effectiveness (a person's belief in his or her ability to reach a goal, such as managing one's own disease), and negative pain-related thoughts relate to improvements in pain and disability.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Christopher France, Ph.D. 740-593-1064; Ohio; Ohio University, Athens, Ohio, 45701, United States; Christopher France, Ph.D.

740-593-4557; Ohio State University, Columbus, Ohio, 43221, United States; Charles Emery, Ph.D. 614-293-9444; Jana Drew, Ph.D.. Study chairs or principal investigators: Christopher France, Ph.D., Principal Investigator; Ohio University

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00000398;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Compare the medical conditions of Gulf War Veterans to non-deployed veterans.**

Condition(s): Chronic Fatigue Syndrome; Fibromyalgia; Post-Traumatic Stress Disorder; neurologic abnormalities; general health status

Study Status: This study is completed.

Sponsor(s): Department of Veterans Affairs; Department of Veterans Affairs Cooperative Studies Program

Purpose - Excerpt: Primary Hypothesis: Gulf War veterans will have an equal prevalence or mean level of the following medical and psychological conditions frequently reported in the literature compared to a control group of nondeployed veterans: (1) chronic fatigue syndrome, (2) fibromyalgia, (3) post-traumatic stress disorder, (4) neurologic abnormalities, including peripheral neuropathy and cognitive dysfunction, and (5) general health status.

Study Type: Observational

Contact(s): see Web site below

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00032461;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Exercise and Behavioral Therapy Trial (EBT).**

Condition(s): Persian Gulf Syndrome

Study Status: This study is completed.

Sponsor(s): Department of Veterans Affairs; Department of Veterans Affairs Cooperative Studies Program; Department of Defense

Purpose - Excerpt: This trial is a study of Gulf War era veterans who have unexplained chronic medical symptoms such as pain, fatigue, and/or cognitive difficulties. The treatments to be studied, cognitive behavior therapy (CBT) and aerobic exercise, have been shown to be effective in alleviating symptoms in individuals with other similar types of illnesses, such as chronic fatigue syndrome and fibromyalgia. This is a Phase 3, 2X2

factorial designed study. All study participants are assigned to one of four treatment groups - CBT and aerobic exercise, aerobic exercise alone, CBT alone or usual and customary care. This study durations is 28 months; 1092 participants were enrolled and will be followed in clinic at 3, 6 and 12 months after enrollment.

Phase(s): Phase III

Study Type: Interventional

Contact(s): see Web site below

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00007748;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

- **Support, Health, and Fibromyalgia**

Condition(s): Fibromyalgia; Quality of Life

Study Status: This study is completed.

Sponsor(s): National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Purpose - Excerpt: This study tests the effects of social support and education on the health and well-being of people with fibromyalgia (FMS). We recruited 600 adults with a confirmed diagnosis of FMS from a large health maintenance organization. We randomly assigned the study participants to one of three groups. People in the social support group met with others who suffer from FMS for 2 hours every week for 10 weeks, and then monthly for an additional 10 months. The social support and education group also had 10 2-hour weekly meetings followed by 10 monthly meetings with others who suffer from FMS. Members of this group learned about the disease and ways they can manage it themselves. The third group participated only in the five assessment periods. The study lasted 4 years.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Thereasa A. Cronan 619-594-6915

tcronan@sunstroke.sdsu.edu; California; San Diego State University, San Diego, California, 92120, United States. Study chairs or principal investigators: Thereasa A. Cronan, Principal Investigator; San Diego State University

Web Site:

<http://clinicaltrials.gov/ct/gui/show/NCT00000423;jsessionid=D592C4E42439E260A9A6D5C0A7725169>

Benefits and Risks¹⁷

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 fibromyalgia. 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 fibromyalgia. 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

¹⁷ 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 Should You Ask before Deciding to Join a Clinical 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 fibromyalgia? 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 “fibromyalgia” (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 trials on arthritis, musculoskeletal and skin diseases, visit newly revised site of the National Institute of Arthritis and Musculoskeletal and Skin Diseases of the National Institutes of Health:
<http://www.niams.nih.gov/hi/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:

Amitriptyline: Tricyclic antidepressant with anticholinergic and sedative properties. It appears to prevent the re-uptake of norepinephrine and serotonin at nerve terminals, thus potentiating the action of these neurotransmitters. Amitriptyline also appears to antagonize cholinergic and alpha-1 adrenergic responses to bioactive amines. [NIH]

Analgesic: An agent that alleviates pain without causing loss of consciousness. [EU]

Electroacupuncture: A form of acupuncture using low frequency electrically stimulated needles to produce analgesia and anesthesia and to treat disease. [NIH]

Fluoxetine: The first highly specific serotonin uptake inhibitor. It is used as an antidepressant and often has a more acceptable side-effects profile than traditional antidepressants. [NIH]

Insomnia: Inability to sleep; abnormal wakefulness. [EU]

Neuropathy: A general term denoting functional disturbances and/or pathological changes in the peripheral nervous system. The etiology may be known (e.g. arsenical n., diabetic n., ischemic n., traumatic n.) or unknown. Encephalopathy and myelopathy are corresponding terms relating to involvement of the brain and spinal cord, respectively. The term is also used to designate noninflammatory lesions in the peripheral nervous system, in contrast to inflammatory lesions (neuritis). [EU]

Prevalence: The total number of cases of a given disease in a specified population at a designated time. It is differentiated from incidence, which refers to the number of new cases in the population at a given time. [NIH]

Psychotherapy: A generic term for the treatment of mental illness or emotional disturbances primarily by verbal or nonverbal communication. [NIH]

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

PART II: ADDITIONAL RESOURCES AND ADVANCED MATERIAL

ABOUT PART II

In Part II, we introduce you to additional resources and advanced research on fibromyalgia. 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 fibromyalgia. In Part II, as in Part I, our objective is not to interpret the latest advances on fibromyalgia 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 fibromyalgia is suggested.

CHAPTER 4. STUDIES ON FIBROMYALGIA

Overview

Every year, academic studies are published on fibromyalgia 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 fibromyalgia. 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 fibromyalgia 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 fibromyalgia, 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 "fibromyalgia" (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:

- **Follicular Phase Hypothalamic-Pituitary-Gonadal Axis Function in Women With Fibromyalgia and Chronic Fatigue Syndrome**

Source: Journal of Rheumatology. 27(6): 1526-1530. June 2000.

Summary: This journal article provides health professionals with information on a study that tested the hypothesis that women with fibromyalgia (FM) and chronic fatigue syndrome (CFS) manifest abnormalities of the hypothalamic-pituitary-gonadal (HPG) hormonal axis. The study population consisted of 9 premenopausal women with FM, with or without comorbid CFS, and 8 with CFS only. Healthy matched controls were also recruited. The secretory characteristics of estradiol, progesterone, follicle stimulating hormone (FSH), and luteinizing hormone (LH) in the women with FM and CFS were compared to the healthy controls. Blood was collected from an indwelling intravenous catheter every 10 minutes over a 12 hour period. LH was assayed from every sample. Pulses of LH were identified by a pulse detection program. FSH and progesterone were assayed from a pool of hourly samples for the 12 hour period, and estradiol was assayed from samples pooled over four 3 hour time periods. The study found that there were no significant differences in FSH, progesterone, or estradiol levels in patients versus controls. Similarly, no significant differences were found between the patients and the controls for any of the measures of LH. The article concludes that there is no indication of abnormal gonadotropin secretion or gonadal steroid levels in this small, but systematic, study of HPG axis function in patients with FM and CFS. 1 figure, 2 tables, and 23 references. (AA-M).

- **Fibromyalgia in Men: Comparison of Clinical Features With Women**

Source: Journal of Rheumatology. 27(2): 485-490. February 2000.

Summary: This journal article provides health professionals with information on a study that investigated possible differences between male and female patients with fibromyalgia (FM) syndrome in their clinical manifestations. The study population consisted of 469 women

and 67 men with FM who were consecutively seen by referral at an Illinois university rheumatology clinic and 36 healthy men without significant pain seen in the same clinic. Data on demographic and clinical features were gathered by standard protocol. Tender point (TP) examination was performed by the same physician. The study found that several features were significantly milder or less common among men than women, including number of TPs, TP score, hurt all over, fatigue, morning fatigue, and irritable bowel syndrome (IBS). The total number of symptoms was also fewer among men and approached significance by parametric test, but reached significance by nonparametric analysis. All clinical and psychological symptoms, as well as TP, were significantly more common or greater in male patients with FM than healthy male controls, with the exception of IBS. Patient assessed global severity of illness, Health Assessment Questionnaire disability score, and pain severity were similar in both sexes. 6 tables and 35 references. (AA-M).

- **Information for Patients Living With Fibromyalgia**

Source: American Family Physician. 62(7): 1587. October 1, 2000.

Contact: American Academy of Family Physicians. 11400 Tomahawk Creek Parkway, Leawood, KS 66211-2672. (800) 274-2237 or (913) 906-6000. E-mail: fp@aafp.org. Website: www.aafp.org.

Summary: This journal article uses a question and answer format to provide people who have fibromyalgia with information on its etiology, diagnosis, and treatment. This common condition causes pain in the muscles, joints, ligaments, and tendons. Although the cause of fibromyalgia is unknown, theories focus on not sleeping well and not exercising. Diagnosis is based on symptoms and physical examination. Treatment is aimed at relieving symptoms. Therapeutic options include taking medications to aid in sleep and relieve pain, eating well, exercising, and joining a support group. The article includes sources of additional information.

- **Trauma and Fibromyalgia: Is There an Association and What Does It Mean?**

Source: Seminars in Arthritis and Rheumatism. 29(4): 200-216. February 2000.

Summary: This journal article provides health professionals with information on the role of trauma in fibromyalgia (FM) by reviewing current research literature, including Medline from 1979 to the present. The strongest evidence supporting an association between trauma and FM is a recently published Israeli study in which adults with neck

injuries had greater than 10 fold increased risk of developing FM within 1 year of their injury compared with adults with lower extremity fractures. Several other studies provide a hypothetical construct for such an association. These include studies on postinjury sleep abnormalities, local injury sites as a source of chronic distant regional pain, and the concept of neuroplasticity. There are, however, several primary arguments against such an association, including the following: FM may not be a distinct clinical entity; FM may be a psychological, rather than physical, disease; the evidence supporting any association is limited and not definitive; the Israeli study, itself, has some methodological limitations; and other factors may be more important than the injurious event in determining chronic symptoms after an acute injury. The article concludes that, although there is some evidence supporting an association between trauma and FM, the evidence is not definitive. Further prospective studies are needed to confirm this association and to identify whether trauma has a causal role. The establishment of such an association likely would be a major step in understanding the biopsychosocial mechanisms by which FM develops. 3 tables and 205 references. (AA-M).

- **Autonomic Nervous System Dysfunction May Explain the Multisystem Features of Fibromyalgia**

Source: Seminars in Arthritis and Rheumatism. 29(4): 197-199. February 2000.

Summary: This editorial provides health professionals with information on the possible role of autonomic nervous system (ANS) dysfunction in the multisystem features of fibromyalgia (FM). The ANS is a network that works below the level of consciousness to maintain homeostasis. This network regulates the function of different organs and glands through antagonistic sympathetic or parasympathetic stimulation. Heart rate variability (HRV) analysis is a new tool used to evaluate the performance of the ANS. The editorial reviews several studies on HRV in FM patients. One study found that FM patients had a deranged sympathetic response to an active orthostatic stress. Another study found that FM patients had a decreased 24 hour HRV when compared with healthy controls, suggesting a decreased parasympathetic activity over the sinus node. A third study confirmed that sympathetic hyperactivity is frequent in FM. These studies strongly support the notion that ANS dysfunction is frequent in FM. Thus, an unrelenting sympathetic hyperactivity with concurrent hyporeactivity can theoretically explain the multisystem manifestations of FM. 17 references.

- **Strategies To Control Chronic Musculoskeletal Pain: Part 1, Work-Up and Nondrug Therapy**

Source: *Consultant*. 39(9): 2561-2564,2567-2571. September 1999.

Summary: This journal article, the first of a two part series on the management of chronic pain, provides health professionals with information on a cost-effective work up and nondrug interventions. Although the general principles for managing chronic, nonmalignant musculoskeletal pain can be applied to many conditions, the article focuses on osteoarthritis, low back pain, and fibromyalgia. Initially, the physician should obtain a full description of the source, duration, character, and distribution of the pain; exacerbating factors; and activities that ease it. Simple verbal scales and visual aids may be used to quantify pain. A global assessment and an evaluation of functional status may be the best means of determining pain level. A costly workup is rarely required initially for patients who have chronic musculoskeletal pain; however, a comprehensive history and physical examination may reveal findings that warrant additional studies, such as computed tomography and magnetic resonance imaging. The goals of pain management are to restore function with minimal adverse effects and to reduce pain. Psychoeducational interventions, including patient education, cognitive behavioral therapy programs, and family and social support, have an integral role in management. Many physical interventions are effective when used alone, but the greatest benefit is usually derived from combining modalities, such as superficial heat or cold plus exercise. For patients who have fibromyalgia, aerobic exercise appears to increase the time spent in deep sleep and is a key component of treatment. For most patients who have low back pain, moderate therapeutic strengthening and conditioning exercises that maintain the balance between back and stomach muscles are helpful. The management of arthritis pain should begin with and include nonpharmacologic measures. 2 figures, 5 tables, and 35 references. (AA-M).

- **Use of Complementary and Alternative Treatments by Individuals With Fibromyalgia Syndrome**

Source: *Journal of the American Academy of Nurse Practitioners*. 12(8): 311-316. August 2000.

Summary: This journal article provides nurse practitioners with information on a study that investigated the use of complementary and alternative medicine (CAM) treatments for people who have fibromyalgia syndrome (FMS). Although muscle pain is the primary complaint of patients who have FMS, there are many associated symptoms that cause them to seek health care. Some people try CAM

treatments when conventional medicine does not provide symptom relief. The study gathered descriptive information regarding the use of CAM treatments by people with FMS and the perceived effectiveness of those treatments. The study also gathered qualitative data from patients with FMS regarding what they felt was effective in managing their disease on a daily basis. A questionnaire was developed to collect information on CAM treatments and their effectiveness. Sixty people visited a web page and completed and submitted the online questionnaire about FMS. The most frequently tried intervention was literature, which includes accessing books, videos, and newsletters to gain knowledge about FMS. Heat therapy and walking were the second most tried CAM treatments, followed by vitamins, stretching, and massage therapy. Literature, aromatherapy, support groups, heat therapy, and massage therapy were rated the most effective. The most common means of coping with FMS was availability and use of medications for pain and sleep. Other important coping mechanisms were support from groups, family, friends, and counselors, as well as the ability of the person with FMS to learn his or her body's signals. 3 figures, 3 tables, and 11 references. (AA-M).

- **Pain of Fibromyalgia, The**

Source: Today's Dietitian. 2(7): 20-23. July 2000.

Summary: This journal article provides dietitians with information on fibromyalgia syndrome (FMS). The diagnosis of FMS requires that at least 11 of 18 tender points located in the neck, shoulders, hip, elbows, and knees cause pain and that generalized pain has lasted for at least 3 months. People who have FMS also experience consistent sleep pattern disruptions. Women are affected more often than men. Investigations are moving away from an etiology based on muscle or joint disruptions toward a neurological or endocrinological basis. Common therapies for FMS include self-care approaches, and drug therapies targeted at specific symptoms. The most promising drug treatments involve drug combinations such as fluoxetine in the morning and amitriptyline in the evening. Another combination uses alprazolam and ibuprofen to reduce tender point sensitivity. Dietetic practitioners can often help patients who are considering self medications in the form of vitamins, minerals, botanicals, and supplemental preparations. Supplements or herbs that may be of interest to patients with FMS include SAME, magnesium supplements, ginger, and St. John's wort. Nutrition therapists can also help patients maximize restorative sleep by reviewing nutritional habits and lifestyle factors likely to interrupt sleep. Therapists can help patients evaluate sources of muscle tension or repetitive motion that might

exacerbate pain. In addition, dietetic practitioners can address real health factors rather than perceived risk by focusing nutrition therapy sessions on nutrition and lifestyle rather than weight.

- **Fibromyalgia Syndrome in Children and Adolescents**

Source: *Journal of Musculoskeletal Medicine*. 17(3): 142-146,148-150, 156-158. March 2000.

Summary: This journal article provides health professionals with information on epidemiology, etiology, clinical presentation, differential diagnosis, and management of fibromyalgia syndrome in children and adolescents. Juvenile primary fibromyalgia syndrome (JPFS) involves a triad of diffuse or widespread chronic pain, fatigue, and sleep disturbance that occurs in children and adolescents. The cause of JPFS is unknown, and the true prevalence of the condition is unknown as well. Most children are 11 to 13 years old at the time JPFS is diagnosed but have had symptoms for months or years. Girls and young women appear to be affected more often than boys. There may be a tendency for fibromyalgia syndrome (FMS) and JPFS to occur in families. The pain of JPFS is generally more diffuse than that of other conditions that cause discomfort during childhood. Morning stiffness and gelling are quite common. Other symptoms are a subjective feeling of swelling, headache, paresthesias, and irritable bowel syndrome. Patients with JPFS often suffer from depression, which may be primary or secondary. The differential diagnosis is complicated because many patients who have systemic lupus erythematosus or juvenile rheumatoid arthritis also suffer from secondary fibromyalgia. The differential diagnosis also includes mechanical or traumatic conditions, infection, and malignancy. The treatment approach for children who have JPFS is generally similar to that for adults with FMS, except that the child's age, development stage, and social settings are taken into account. Management includes emotional support; encouragement to return to school and other normal activities; exercise; pharmacotherapy with nonsteroidal antiinflammatory drugs, tricyclic antidepressants, serotonin reuptake inhibitors, and analgesics; cognitive behavioral therapy; and support groups. In some cases, formal psychotherapy is necessary. 2 figures, 4 tables, and 28 references. (AA-M).

- **Treating Fibromyalgia**

Source: *American Family Physician*. 62(7): 1575-1582. October 1, 2000.

Contact: American Academy of Family Physicians. 11400 Tomahawk Creek Parkway, Leawood, KS 66211-2672. (800) 274-2237 or (913) 906-6000. E-mail: fp@aafp.org. Website: www.aafp.org.

Summary: This journal article provides health professionals with information on the pathophysiology, diagnosis, and treatment of fibromyalgia. This common chronic rheumatologic condition is characterized by spontaneous, widespread soft tissue pain, sleep disturbance, fatigue, and extensively distributed areas of tenderness known as tender points. Although the etiology of fibromyalgia remains unclear, characteristic alterations in the pattern of sleep and changes in neuroendocrine transmitters such as serotonin, substance P, growth hormone, and cortisol suggest that dysregulation of the autonomic and neuroendocrine system appears to be the basis of the syndrome. The diagnosis depends on findings from the history and physical examination rather than on diagnostic testing. Physical examination will reveal areas of pain on palpation but without the classic inflammatory signs of redness, swelling, and heat in the joints and soft tissue. Although tender points are found in many different locations, the American College of Rheumatology (ACR) has selected 18 sites that are most characteristic for fibromyalgia. To have a definitive diagnosis, a patient must have tenderness on palpation at 11 of the 18 sites and a history consistent with established criteria. The differential diagnosis of fibromyalgia includes hypothyroidism, drug induced myopathies, polymyalgia rheumatica, and other rheumatologic syndromes such as myofascial pain syndrome. Treatment is largely empiric, although experience and small clinical studies have proved the efficacy of low dose antidepressant therapy and exercise. Other less well studied measures, such as acupuncture, chronic opioid analgesic therapy, cognitive behavior training, hypnosis, growth hormone therapy, chiropractic treatment, and support groups, also appear to be helpful. Management relies heavily on the physician's supportive counseling skills and willingness to try novel strategies in refractory cases. 1 figure, 2 tables, and 26 references. (AA-M).

- **Fibromyalgia, Chronic Fatigue Syndrome, and Myofascial Pain Syndrome**

Source: *Current Opinion in Orthopedics*. 11(3): 215-224. June 2000.

Summary: This journal article provides health professionals with information on the prevalence, symptoms, etiology, diagnosis, and treatment of fibromyalgia, chronic fatigue syndrome, and myofascial pain syndrome. The prevalence of fibromyalgia varies, depending on the population under investigation. Fibromyalgia and widespread pain were common in Gulf War veterans with unexplained illness referred to a rheumatology clinic. Increased tenderness was demonstrated in the postmenstrual phase of the cycle compared with the intermenstrual phase in normally cycling women but not in users of oral contraceptives.

Patients with fibromyalgia had high levels of symptoms that have been used to define syndromes associated with silicone implants. Tender points were noted to be a common transient finding associated with acute infectious mononucleosis, but fibromyalgia was an unusual long-term outcome. The common association of fibromyalgia with other rheumatic and systemic illnesses has been further explored. A preliminary study shows a possible linkage of fibromyalgia to the human leukocyte antigen (HLA) region. Patients with fibromyalgia were found to have an impaired ability to activate the hypothalamic pituitary portion of the hypothalamic pituitary adrenal axis as well as the sympathoadrenal system, leading to reduced corticotropin and epinephrine response to hypoglycemia. Much interest has been expressed in the literature on the possible role of autonomic dysfunction in the development or exacerbation of fatigue and other symptoms in chronic fatigue syndrome. Mycoplasma genus and Mycoplasma fermentans were detected by polymerase chain reaction in patients with chronic fatigue syndrome. Evidence indicates that myofascial temporomandibular disorder does not run in families. Published randomized controlled trials provide good evidence for the effectiveness of cognitive behavioral therapy and behavior therapy for chronic pain in adults. Data indicate a favorable outcome for fibromyalgia and chronic fatigue syndrome in children and adolescents. 84 references. (AA-M).

Federally-Funded Research on Fibromyalgia

The U.S. Government supports a variety of research studies relating to fibromyalgia and associated conditions. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.¹⁸ 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 CRISP Web 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 fibromyalgia 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

¹⁸ 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).

fibromyalgia 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 fibromyalgia:

- **Project Title: Assessment of Psychological Distress in Fibromyalgia**

Principal Investigator & Institution: Winfield, John B.; Professor; University of North Carolina Chapel Hill Box 2688, 910 Raleigh Rd Chapel Hill, Nc 27515

Timing: Fiscal Year 2000; Project Start 1-JUL-1982; Project End 0-JUN-2002

Summary: The bases for the decreased pain threshold and pain tolerance that is characteristic of people with fibromyalgia remain to be clarified. In addition to biological variables, such as gender, central sensitization, "wind-up" (abnormal temporal summation of pain), and central dysregulation of several axes of the stress response, cognitive, behavioral, emotional, environmental, and cultural variables appear to contribute importantly to the chronic pain experience and associated symptomatology in this disorder. A common denominator linking both biological and psychosocial contributors in this regard may be psychologic distress. The applicant's preliminary data are consistent with the hypothesis that psychological distress lowers pain threshold and, therefore, contributes to widespread allodynia and hyperalgesia in fibromyalgia. The immediate objective of this proposal is to use established databases from a cohort of patients with fibromyalgia and other rheumatologic conditions to define some of the individual differences that underlie the development and perpetuation of chronic widespread pain. This will be accomplished through the following Specific Aims: Aim 1, to determine the association of psychological distress with pain threshold and tolerance using thermal and ischemic pain techniques; Aim 2, to determine whether helplessness, optimism, and pessimism are associated with defined patterns of self-reported pain, pressure pain threshold and distress in patients with fibromyalgia and other rheumatologic disorders; and Aim 3, to determine whether our preliminary data showing an inverse relationship of distress and pressure pain threshold in fibromyalgia and other rheumatic disease patients receiving care in an academic medical center also obtain for patients in the community. Aim 3 will allow us to determine the generalizability of our preliminary data through comparisons of the UNC Arthritis Clinic Database, which consists of information on consecutive patients obtained from completion of a self-report questionnaire, Activities and Lifestyle

Index and pressure pain threshold by algometry at 4 fibromyalgia tender points and the NC Rheumatologists Database also based on the Activities and Lifestyle Index completed by patients of rheumatologists in private practice in North Carolina; in addition, cross-sectional - data concerning the relationship of psychological distress and pressure pain threshold by algometry will be obtained in a subset of patients with fibromyalgia and other diagnoses under the care of NC rheumatologists.

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

- **Project Title: Cognitive and Neurochemical Function in Fibromyalgia**

Principal Investigator & Institution: Park, Denise C.; Professor; University of Michigan at Ann Arbor Ann Arbor, Mi 48109

Timing: Fiscal Year 2000

Summary: Fibromyalgia (FM) is a rheumatic disorder characterized by the presence of widespread musculoskeletal pain and the presence of tender points. Other symptoms, including fatigue, sleep disturbance, and neuropsychological complaints, contribute significantly to the morbidity associated with FM. One of the most prominent complaints in patients with FM is impaired cognitive ability. The notion that cognitive deficits are fundamental to FM is impaired cognitive ability. The notion that cognitive deficits are fundamental to FM has some credibility, as there is growing evidence that there are subtle but important cognitive deficits associated with Chronic Fatigue Syndrome (CFS), a related disorder, that cannot be explained by psychiatric symptoms. It is possible that cognitive defects in FM patients could result from single or multiple central nervous system perturbations associated with FM. In the present proposal, we will correlate cognitive function of FM patients with measures of neuroendocrine function. A basic thesis advanced is that FM patients may have both cognitive and neuroendocrine function similar to that of controls subjects who are 20 to 30 years older. Indeed, cognitive testing in patients with CFS reveals changes similar to those seen in subjects of advanced chronological age. In two experiments, FM patients will be compared to age-and education- matched controls, as well as to education-matched older adults. Neuroendocrine function will be measured as well, as will depression, pain, fatigue, and beliefs about memory function. This approach permits us to determine whether there are differences in cognitive function of fibromyalgia patients from others, and whether cognitive aging is a good model for understanding the cognitive effects of FM. In addition and perhaps more importantly, the integration of a cognitive approach with a neuroendocrine approach will allow us to determine what mechanisms account for the cognitive differences--neurochemical, psychiatric, or experience pain and fatigue.

Knowing the mechanisms underlying observed cognitive deficits, rather than merely demonstrating that there are deficits, has important implications for treatment of the disorder as well as for understanding its etiology.

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

- **Project Title: Controlled Family Study in Patients with Fibromyalgia**

Principal Investigator & Institution: Arnold, Lesley M.; Associate Professor; Psychiatry; University of Cincinnati 2624 Clifton Ave Cincinnati, Oh 45221

Timing: Fiscal Year 2000; Project Start 1-JUL-1999; Project End 0-JUN-2002

Summary: Fibromyalgia, a chronic musculoskeletal pain disorder of unknown etiology, is a significant public health problem. Evidence from studies of phenomenology, comorbidity, family history, and pharmacologic treatment response suggest that fibromyalgia may be associated with major mood disorder, and possibly to a proposed group of conditions known as affective spectrum disorders. Prior psychiatric research has demonstrated that major mood disorder is highly familial. Family history studies provide a method by which to assess how medical disorders co-aggregate in families and, therefore may share a common risk factor or pathophysiologic mechanism. To date, few studies have explored the morbid risk of major mood disorder (and other proposed affective spectrum disorders) in probands with fibromyalgia and their first-degree relatives. All of these studies have used the family history method, which entails interviewing probands regarding their knowledge of psychiatric illness in relatives. Although most of these studies have provided important preliminary data suggesting an association between fibromyalgia and major mood disorder, this method has been demonstrated to be less sensitive in detecting illness in relatives than direct interview (the family interview method). In order to provide further evidence of a relationship between fibromyalgia and major mood disorder, we propose to study the prevalence of psychiatric and rheumatologic disorders in probands with fibromyalgia and their first-degree relatives as compared to probands with rheumatoid arthritis and their relatives using the family interview method. In addition to assessing the degree of co-aggregation of these disorders within families, we will also study the occurrence of other conditions within the proposed group of affective spectrum disorders in relation to fibromyalgia, and the association between the severity of fibromyalgia symptoms and the presence of major mood disorder within families.

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

- **Project Title: Effectiveness of Static Magnetic Fields in Fibromyalgia**

Principal Investigator & Institution: Boyden, Kathleen M.; Nursing; University of Virginia Charlottesville Box 400195 Charlottesville, Va 22904

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

Summary: Fibromyalgia affects up to an estimate 10 percent of the population, primarily women. The syndrome is characterized as both a musculoskeletal and a subtle neurological disorder, and is associated with widespread muscle pain and tender points, along with fatigue, muscle weakness, and stiffness. Conventional medical approaches have limited success in treating fibromyalgia, leading patients to seek complementary therapies, including the use of magnetic therapies, in the hope of finding more effective pain relief. However, the efficacy and safety of magnetic therapy has not been definitively established through rigorously controlled trials. This double-blind randomized placebo-controlled study is the second in a series investigating the efficacy of static magnetic field (SMF) therapies in alleviating symptoms associated with fibromyalgia. Chronic conditions are frequently associated with poor quality of life; and fibromyalgia is associated with even poorer quality of life than a variety of other chronic conditions such as rheumatoid arthritis, osteoarthritis, permanent ostomies, chronic obstructive pulmonary disease, and insulin dependent diabetes. Successful management of pain, the primary symptom of fibromyalgia, may result in improved quality of life. The study tests the primary hypotheses that locally applied quadripolar SMF devices, which have been shown to suppress the firing of action potentials of sensory neurons, will provide pain reduction and other therapeutic benefits. It is further proposed that treatment with SMF devices will lead to improved functional status and improved quality of life. The specific aims of the research are to compare the effects of quadripolar SMF devices externally applied to tender points and the effects of magnetic placebo devices. The proposed study will include a 6-month treatment period and a 9 month follow-up assessment to determine long-term effectiveness.

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- **Project Title: Fibromyalgia--Central Factors in Its Etiopathogenesis**

Principal Investigator & Institution: Bradley, Laurence A.; University of Alabama at Birmingham Uab Station Birmingham, Al 35294

Timing: Fiscal Year 2000

Summary: The major aim of this study is to examine laboratory measures of pain sensitivity, cerebral spinal fluid (CSF) levels of substance P, and

brain regional cerebral blood flow (rCBF) in 3 groups of subjects. These groups are (a) rheumatology clinic patients with fibromyalgia; (b) community residents with fibromyalgia who have not consulted a physician about their painful symptoms; and (c) healthy controls. Most of our findings have been consistent with our hypotheses. That is, both the patients and community residents with fibromyalgia differ from health controls in pain sensitivity, CSF levels of substance P, and in resting state levels of brain rCBF. Moreover, there are few differences between patients and community residents with fibromyalgia on these variables despite the fact that patients show significantly higher levels of psychological distress. Thus, differences in pain sensitivity and pain-related physiologic variables between persons with fibromyalgia and healthy individuals are not due primarily to psychological distress.

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- **Project Title: Guided Imagery: a Nursing Intervention for Fibromyalgia**

Principal Investigator & Institution: Menzies, Victoria S.; None; University of Virginia Charlottesville Box 400195 Charlottesville, Va 22904

Timing: Fiscal Year 2001; Project Start 5-SEP-2001

Summary: (provided by applicant) Fibromyalgia affects up to an estimated 11 percent of the population, primarily women. The syndrome is characterized as both a musculoskeletal and a subtle neurological disorder, and is associated with widespread muscle pain and tender points, along with fatigue, muscle weakness, and stiffness. Conventional medical approaches have limited success in treating fibromyalgia, leading patients to seek complementary modalities, including the use of cognitive behavioral approaches such as relaxation and imagery, in the hope of finding more effective symptom management. The purpose of the proposed study will be to investigate the effects of guided imagery on selected outcomes in persons with fibromyalgia. The primary aim will be to investigate the effects of an eight-week intervention of guided imagery on self-efficacy and functional status. Two secondary aims will include: (1) to examine the relationship between absorption, a personality trait, and guided imagery effectiveness to identify patients who may benefit most from this modality; and (2) to explore the dose-response effect of imagery use (number of practices) on outcomes. The proposed project is a quasi-experimental study that will use a repeated measures single group design to examine the effectiveness of guided imagery, as an adjunctive modality, to enhance self-efficacy and function a status in persons diagnosed with fibromyalgia. If it can be demonstrated that self-efficacy can be increased and functional status can be improved in this population

using a guided imagery intervention, then a future randomized controlled study will explore the effectiveness of guided imagery, as an adjunctive modality, on these outcomes.

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

- **Project Title: Mechanism of Pain in Patients with Fibromyalgia Syndrome**

Principal Investigator & Institution: Staud, Roland M.; Associate Professor; Medicine; University of Florida Gainesville, FL 32611

Timing: Fiscal Year 2000; Project Start 0-JUN-1999; Project End 1-MAY-2002

Summary: Fibromyalgia Syndrome (FMS) is characterized by chronic widespread pain associated with allodynia. Our preliminary experiments with FMS subjects have indicated abnormalities of second pain in these patients which are related to central N-methyl-D-aspartate (NMDA) receptor processing. Our basic hypothesis is that abnormal central pain processing of second pain in FMS subjects is one of the fundamental abnormalities in this syndrome. Second pain results from impulse conduction in peripheral C (unmyelinated) afferent axons and is particularly sensitive to inhibition by opioid compounds. Second pain also increases in intensity when stimuli are applied more often than once every three seconds and this summation has been hypothesized to result from a central NMDA receptor mechanism. First pain is related to stimulation of A-Delta (myelinated) nociceptors and has been utilized almost exclusively to evaluate pain sensitivity. In order to compare directly abnormal processing of A-Delta and C-Fiber input in FMS subjects, we will utilize forms of brief experimental pain stimuli that can reliably evoke perceptions of first and second pain when applied to the hand or foot of human subjects. We will test the hypothesis that oral doses of dextromethorphan, a common cough suppressant and NMDA receptor antagonist, will selectively reduce temporal summation of second pain for normal male and female subjects. The purpose of another experiment is to examine the effects of graded doses of naloxone and fentanyl on first and second pain and temporal summation of second pain for normal male and female subjects. This analysis is designed to answer questions about opioid mechanisms of pain reduction and about the possible existence of a tonic endogenous pain modulatory system. These psychophysical tests of NMDA receptor mechanisms, opioid responsiveness, and level of tonic pain inhibitory mechanisms will then be compared across pain-free control subjects and fibromyalgia patients in order to ascertain the extent to which abnormalities of these mechanisms contribute to these pain states. Potential sex differences in

pain sensitivity and effects of pharmacological manipulations will be evaluated in normal subjects and pain patients, with attention to the impact of psychosocial variables. Also, relevant to the greater risk factor for females to present with fibromyalgia, ovarian hormone states will be monitored in female subjects. Because fibromyalgia is a generalized muscular pain disorder which characteristically worsens with physical activity, the effects of exercise on different forms of pain sensitivity will be compared for fibromyalgia patients and matched normal controls.

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

- **Project Title: Noradrenergic Dysfunction--a Model of Fibromyalgia Pain**

Principal Investigator & Institution: Jasmin, Luc; Neurological Surgery; University of California San Francisco 500 Parnassus Ave San Francisco, Ca 94122

Timing: Fiscal Year 2000; Project Start 1-JUL-1999; Project End 0-JUN-2002

Summary: The goal of this project is to develop a rat model of fibromyalgia pain which could provide the basis for future research into this complex disease. The difficulty in finding an etiology for this painful condition is in part because fibromyalgia is not a discrete or unique disease, but patients also display a number of different symptoms in addition to the widespread tenderness, including fatigue, sleep disturbances, headaches, gastrointestinal symptoms, etc. As such, fibromyalgia overlaps conditions such as Chronic Fatigue Syndrome, Irritable Bowel Syndrome, tension and migraine headaches. These conditions share several features, including a female predominance, initiation or exacerbation in response to several different types of "stressors", and response to similar types of pharmacologic and non-pharmacologic modalities (e.g. tricyclic drugs, aerobic exercise). A dysfunction of the noradrenergic system, the basis for the proposed model, presents a unifying explanation for many seemingly disparate findings in fibromyalgia by accounting for the neuroendocrine and autonomic abnormalities, in addition to the chronic pain. Our guiding hypothesis is that in fibromyalgia, chronically decreased noradrenergic input to the spinal cord facilitates substance P release and subsequent hyperalgesia (decreased threshold for pain). This hypothesis is based on both clinical evidence of decreased noradrenaline and increased substance P in the spinal cord of fibromyalgia patients, as well as evidence from basic research demonstrating that acute decreases in spinal noradrenaline allow for greater release of substance P and sustained hyperalgesic effects of this neurotransmitter. These alterations

in turn result in greater expression and redistribution of the substance P receptor in the spinal cord, contributing to the chronicity of the hyperalgesia. In the female rat, we will apply a novel technique of selective immunolesion of brainstem noradrenergic input to nociceptive areas of the spinal cord. The first aim will test the hypothesis that lowered nociceptive thresholds in rats with decreased spinal noradrenaline depend on substance P neurotransmission. This hypothesis will be tested by determining the contribution of spinal SP neurotransmission in alterations of nociceptive behavioral and neuronal responses to noxious and innocuous stimuli. The second aim will test the hypothesis that chronically decreased spinal noradrenaline chronically increases basal levels, and facilitates evoked release of substance P, by measuring levels of substance P in the CSF, primary afferent neurons, and spinal cord, both basal and following noxious and innocuous stimulation. In the third aim, we will test the hypothesis that decreased spinal noradrenaline facilitates stimulus-induced increased expression and redistribution of the substance P receptor (NK1 receptor) in the spinal cord by measuring basal and noxious stimulus-induced alterations in the expression of this receptor.

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- **Project Title: Outcomes in Young Women with Fibromyalgia**

Principal Investigator & Institution: Burckhardt, Carol S.; Professor; Primary Health Care; Oregon Health & Science University 3181 Sw Sam Jackson Park Rd Portland, or 97201

Timing: Fiscal Year 2000; Project Start 1-MAY-1999; Project End 0-APR-2002

Summary: The prospect of becoming unable to function in a satisfying manner as a result of fibromyalgia is of great concern to newly diagnosed woman as well as health care providers, policy makers, and payers. The goal of this pilot project is to gain information that can be used to support the development of new and innovative early intervention strategies to prevent long-term negative outcomes and promote the health and quality of life of young women with fibromyalgia. Perspectives from newly diagnosed young women in two countries with different approaches to social welfare (United States and Sweden) will be described. The specific aims are to: (1) describe the perceived difficulties and limitations encountered by young women with fibromyalgia; and, (2) develop a model that can be used to assist health care providers in planning early intervention treatment strategies that minimize dysfunction and maximize health status and quality of life. The study will use a descriptive, correlational design in which data will be collected 3 times at

6-month intervals from 100 newly diagnosed women between the ages of 18 and 39 recruited from two specialty care settings. Data concerning symptoms, physical and psychological function, work status, leisure activity, medical regimens, self-management activities, social support demographic risk factors, health status and quality of life will be obtained through semi-structured interviews, standardized questionnaires, and physical fitness testing.

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

- **Project Title: Pilot Study of Acupuncture in Fibromyalgia**

Principal Investigator & Institution: Cupps, Thomas R.; Medicine; Georgetown University 37Th and O Sts Nw Washington, Dc 20057

Timing: Fiscal Year 2000; Project Start 0-SEP-1999; Project End 1-JUL-2003

Summary: Fibromyalgia is the second most common rheumatic disorder, affecting approximately 8 - 10 million persons in the U.S. This condition is characterized by the presence of widespread musculoskeletal pain, and of soft tissue tenderness on examination. Although there are several therapeutic modalities that have been demonstrated to be somewhat effective in relieving the symptoms of fibromyalgia, despite these treatments most persons with this illness continue to be quite debilitated. Acupuncture, although considered an alternative therapy in the West, has been demonstrated to be effective in treating several conditions, and a growing data base suggests that acupuncture may be a particularly effective and safe intervention for a variety of pain syndromes. Since the cardinal manifestation of fibromyalgia is pain, and current treatments are frequently ineffective, fibromyalgia is an ideal disorder to examine for efficacy with this treatment modality. Although there have been anecdotal reports of the efficacy of fibromyalgia, there has only been one randomized controlled trial, and there are numerous methodological problems with this study that limit the interpretation of these data. This pilot study will examine numerous issues regarding the use of acupuncture as a therapeutic modality in fibromyalgia, so that a full scale randomized controlled trial (RCT) could be performed in this condition. The issues which will be examined include: 1) the optimal duration and frequency of treatment, 2) the independent and synergistic effects of needle placement and needle stimulation on efficacy, and 3) appropriate control strategies. The present proposal utilizes a randomized, blinded, sham-controlled design that incorporates several unique aspects to accomplish these aims. A 2 X 2 factorial design will be used examine the individual and synergistic effects of both needle placement and of needle stimulation on the efficacy of acupuncture. The four arms of the trial will include: 1) active site, with stimulation, 2) active site, without

stimulation, 3) sham site, with stimulation, and 4) sham site, without stimulation. In each of the four arms of the trial, subjects will receive acupuncture in escalating frequency, beginning at once weekly and culminating in three times weekly. This "forced-titration" design is commonly used in the preliminary phases of drug (development, to examine the optimal dose of a medication for each person in a trial. In this manner, we will be able to determine the "dose-effect" for the analgesic effect of acupuncture in each person, and in each group. This design allows the detection of inter-patient differences in responsiveness to acupuncture, as well as the factors which may predict responsiveness (or a lack thereof). Secondary goals of the study are to collect pilot data on the mechanism, safety, and cost-effectiveness of acupuncture in fibromyalgia, and to determine the optimal outcome measures, for a full-scale RCT.

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

- **Project Title: Regulation of Adrenal Function in Fibromyalgia**

Principal Investigator & Institution: Adler, Gail K.; Assistant Professor; Brigham and Women's Hospital 75 Francis St Boston, Ma 02115

Timing: Fiscal Year 2000; Project Start 5-SEP-1994; Project End 1-JUL-2002

Summary: (Adapted From Applicant's Abstract) This competitive renewal project proposes to extend studies of the hypothalamic-pituitary-adrenal axis in fibromyalgia syndrome previously undertaken by the PI. Her initial data suggested reduced adrenocorticotropin (ACTH) and epinephrine responses to graded hypoglycemic challenge, and blunting of the normal diurnal cortisol rhythm in patients with fibromyalgia when compared to normal controls. The PI postulates that the decreased ACTH response to hypoglycemic challenge is the result of impaired CRH release, this also results in decreased sympathoadrenal response to hypoglycemia. The PI further proposes that the diurnal cortisol rhythm in patients with fibromyalgia is abnormal due to a shift in the circadian phase. In Specific Aim 1, the PI and her colleagues propose to assess hypothalamic CRH-pituitary ACTH activity at baseline and in response to three stimuli: hypoglycemia, metapyrone-induced glucocorticoid administration, and an immune stimulus with tetanus toxoid vaccine. In Specific Aim 2, sympathoadrenal responses to hypoglycemia, the cold pressor test, metapyrone vs. placebo will be compared in patients with fibromyalgia and controls. In Specific Aim 3, the circadian phase (measured by core body temperature and melatonin levels) will be compared in women with fibromyalgia and healthy controls. Additional studies of the relationship between disrupted sleep pattern and night-

time secretion of ACTH and cortisol and cytokines are planned if the circadian phase is not shifted.

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- **Project Title: Biobehavioral Etiology of Chronic Temporomandibular**

Principal Investigator & Institution: Friction, James R.; Professor; Diagnostic/Surgical Scis; University of Minnesota Twin Cities Twin Cities Minneapolis, Mn 55455

Timing: Fiscal Year 2000; Project Start 1-SEP-1997; Project End 0-JUN-2002

Summary: This research proposal is designed to determine which central and peripheral factors are involved in the etiology of chronic dysfunctional TMS. This study is a prospective observational cohort study in which baseline jaw dysfunction, oral habits, depression, and fibromyalgia are the primary risk factors to be evaluated for their prognostic importance in the development of chronic dysfunctional pain in temporomandibular disorders. The study design is a 3-year cohort study of 500 non-chronic TMD pain patients who will be followed at 18 and 36 months to determine which subjects develop chronic pain and the influence that these factors have in predicting development. These patients will meet Research Diagnostic Criteria (RDC) axis II Chronic Pain Grading system I or II and have a physical diagnosis of myofascial pain and/or temporomandibular joint (TMJ) disc displacement. Examination data will include the standardized exam of the RDC/TMD axis I, Craniomandibular Index, an occlusal index, and a tender point exam to screen for possible fibromyalgia. Questionnaires will include RDC/TMD axis I and II, coping strategies questionnaire, a self report fibromyalgia screening form, and IMPATH.

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

- **Project Title: Neuroendocrinology of Masticatory Muscle Disorders**

Principal Investigator & Institution: Young, Elizabeth Ann.; Professor; Psychiatry; University of Michigan at Ann Arbor Ann Arbor, Mi 48109

Timing: Fiscal Year 2000; Project Start 5-SEP-1996; Project End 4-JUL-2002

Summary: The temporomandibular disorders (TMDs) are a complex group of conditions involving masticatory muscles and/or temporomandibular joints and characterized by chronic facial pain. The etiology and pathogenesis of TMDs are multifactorial, including a strong association with depression and the occurrence of environmental stressors, with a strong predominance of women with these disorders (75-84%). It is known that dysregulation of the hypothalamic-pituitary-

adrenal (HPA) axis, the main stress hormone axis, occurs in both depression and stress-related disorders. Recent evidence also demonstrates HPA dysregulation in other conditions related to TMDs: in particular, in fibromyalgia. This is a condition of generalized myalgia with a great deal of clinical overlap with masticatory muscle disorders (MMDs), a major sub-group of TMDs. Fibromyalgia also shows a similar high female predominance and is associated with high rates of depression and stress. Furthermore, there is evidence of important gender differences in HPA axis function resulting in an increased stress responsiveness and susceptibility to HPA dysregulation in women, thus providing an explanation for the high female predominance of fibromyalgia, depression and MMD. This study will examine the comorbidity of MMD and disorders associated with HPA stress axis dysregulation including fibromyalgia and stress-related psychiatric disorders, including depression, and test the hypothesis that women with MMD have an underlying HPA axis abnormality similar to that which occurs in fibromyalgia, namely HPA axis hypofunction, which is the underlying pathophysiological basis of both disorders. HPA function will be studied in women with MMD, (with and without comorbid fibromyalgia and depression) compared to normal controls, in terms of circadian and pulsatile patterns of basal cortisol secretion, using an intensive 24-hour plasma cortisol sampling paradigm. Women will be studied during both follicular and luteal phases of the menstrual cycle to test the hypothesis that there will be menstrual cycle-phase related fluctuations in symptoms and HPA axis function. These multidisciplinary studies will provide an understanding of the pathophysiological basis of the relationship of MMD to seemingly disparate conditions such as fibromyalgia and depressive disorders, as well as the higher prevalence in women, leading to a more rational basis for diagnosis and treatment of MMD.

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

E-Journals: PubMed Central¹⁹

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).²⁰ Access

¹⁹ Adapted from the National Library of Medicine:
<http://www.pubmedcentral.nih.gov/about/intro.html>.

²⁰ 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.

to this growing archive of e-journals is free and unrestricted.²¹ To search, go to <http://www.pubmedcentral.nih.gov/index.html#search>, and type “fibromyalgia” (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for fibromyalgia in the PubMed Central database:

- **Diagnosis of fibromyalgia** by Ronald Bayne; 2001 June 12
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=81142&rendertype=external>
- **Factors explaining variance in perceived pain in women with fibromyalgia** by Eva Albertsen Malt, Snorri Olafsson, Anders Lund, and Holger Ursin; 2002
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=113754>
- **Fibromyalgia syndrome improved using a mostly raw vegetarian diet: An observational study** by Michael S. Donaldson, Neal Speight, and Stephen Loomis; 2001
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=57816>
- **Norepinephrine-evoked pain in fibromyalgia. A randomized pilot study ISCRTN70707830** by Manuel Martinez-Lavin, Marcela Vidal, Rosa-Elda Barbosa, Carlos Pineda, Jose-Miguel Casanova, and Arnulfo Nava; 2002
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=65524>

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.²² 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

²¹ 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.

²² 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.

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 fibromyalgia, simply go to the PubMed Web site at www.ncbi.nlm.nih.gov/pubmed. Type "fibromyalgia" (or synonyms) into the search box, and click "Go." The following is the type of output you can expect from PubMed for "fibromyalgia" (hyperlinks lead to article summaries):

- **Fibromyalgia syndrome.**
 Author(s): Smith WA.
 Source: Nurs Clin North Am. 1998 December; 33(4): 653-69. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9769357&dopt=Abstract

- **Fibromyalgia syndrome. An emerging but controversial condition.**
 Author(s): Goldenberg DL.
 Source: Jama : the Journal of the American Medical Association. 1987 May 22-29; 257(20): 2782-7. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3553636&dopt=Abstract

- **Fibromyalgia syndrome: a new paradigm for differential diagnosis and treatment.**
 Author(s): Brady DM, Schneider MJ.
 Source: Journal of Manipulative and Physiological Therapeutics. 2001 October; 24(8): 529-41. Review. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11677554&dopt=Abstract

- **Fibromyalgia syndrome: an overview.**
 Author(s): Krsnich-Shriwise S.
 Source: Physical Therapy. 1997 January; 77(1): 68-75. Review. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8996465&dopt=Abstract

- **'Fibromyalgia'--"what have we created?" (Wolfe 1993)**
 Author(s): Gunn CC.
 Source: Pain. 1995 March; 60(3): 349-50. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7596632&dopt=Abstract

- **Fibromyalgia, chronic fatigue syndrome, and myofascial pain syndrome.**
Author(s): Buskila D.
Source: Current Opinion in Rheumatology. 2001 March; 13(2): 117-27. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11224736&dopt=Abstract
- **Fibromyalgia, chronic fatigue syndrome, and myofascial pain.**
Author(s): Bennett R.
Source: Current Opinion in Rheumatology. 1998 March; 10(2): 95-103. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9567202&dopt=Abstract
- **Fibromyalgia, chronic fatigue, and myofascial pain syndromes.**
Author(s): Goldenberg DL.
Source: Current Opinion in Rheumatology. 1992 April; 4(2): 247-57. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1581154&dopt=Abstract
- **Fibromyalgia.**
Author(s): Brown CR.
Source: Pract Periodontics Aesthet Dent. 1997 October; 9(8): 878, 883. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9573842&dopt=Abstract
- **Fibromyalgia. What is it and how do we treat it?**
Author(s): Littlejohn G.
Source: Aust Fam Physician. 2001 April; 30(4): 327-33.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11355218&dopt=Abstract
- **Fibromyalgia: is recovery impeded by the internet?**
Author(s): Armstrong R.
Source: Archives of Internal Medicine. 2000 April 10; 160(7): 1039-40. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10761971&dopt=Abstract

- **Fibromyalgia: whither treatment?**
 Author(s): Wolfe F.
 Source: J Rheumatol. 1988 July; 15(7): 1047-9. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3172111&dopt=Abstract
- **Fibromyalgia-symptom or diagnosis: a definition of the position.**
 Author(s): Pongratz DE, Sievers M.
 Source: Scand J Rheumatol Suppl. 2000; 113: 3-7. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11028823&dopt=Abstract
- **Fibromyalgia--the effect of relaxation and hydrogalvanic bath therapy on the subjective pain experience.**
 Author(s): Gunther V, Mur E, Kinigadner U, Miller C.
 Source: Clinical Rheumatology. 1994 December; 13(4): 573-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7697957&dopt=Abstract
- **Fibrositis, fibromyalgia, and musculoskeletal disease: the current status of the fibrositis syndrome.**
 Author(s): Wolfe F.
 Source: Archives of Physical Medicine and Rehabilitation. 1988 July; 69(7): 527-31. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3291821&dopt=Abstract
- **Fibrositis/fibromyalgia: a form of myofascial trigger points?**
 Author(s): Simons DG.
 Source: The American Journal of Medicine. 1986 September 29; 81(3A): 93-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3464215&dopt=Abstract
- **Function of the hypothalamic adrenal axis in patients with fibromyalgia syndrome undergoing mud-pack treatment.**
 Author(s): Bellometti S, Galzigna L.
 Source: Int J Clin Pharmacol Res. 1999; 19(1): 27-33.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10450540&dopt=Abstract

- **Functional anatomy of hypnotic analgesia: a PET study of patients with fibromyalgia.**
Author(s): Wik G, Fischer H, Bragee B, Finer B, Fredrikson M.
Source: European Journal of Pain (London, England). 1999 March; 3(1): 7-12.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10700332&dopt=Abstract
- **Hair calcium and magnesium levels in patients with fibromyalgia: a case center study.**
Author(s): Ng SY.
Source: Journal of Manipulative and Physiological Therapeutics. 1999 November-December; 22(9): 586-93.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10626702&dopt=Abstract
- **How effective are complementary/alternative medicine (CAM) therapies for fibromyalgia?**
Author(s): Ebell MH, Beck E.
Source: The Journal of Family Practice. 2001 May; 50(5): 400-1. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11350702&dopt=Abstract
- **How should we manage fibromyalgia?**
Author(s): Lloyd R.
Source: Annals of the Rheumatic Diseases. 2000 June; 59(6): 490. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10834869&dopt=Abstract
- **Image analysis quantification of substance P immunoreactivity in the trapezius muscle of patients with fibromyalgia and myofascial pain syndrome.**
Author(s): De Stefano R, Selvi E, Villanova M, Frati E, Manganelli S, Franceschini E, Biasi G, Marcolongo R.
Source: J Rheumatol. 2000 December; 27(12): 2906-10.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11128684&dopt=Abstract
- **Lack of control group deemed problematic in fibromyalgia pilot study.**
Author(s): Safran S.

Source: *Alternative Therapies in Health and Medicine*. 1998 September; 4(5): 114, 116. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9737036&dopt=Abstract

- **Lipid profile in patients with fibromyalgia and myofascial pain syndromes.**

Author(s): Ozgocmen S, Ardicoglu O.

Source: *Yonsei Medical Journal*. 2000 October; 41(5): 541-5.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11079612&dopt=Abstract

- **Localized fibromyalgia in a child.**

Author(s): Bassan H, Niv D, Jourgenon U, Wientroub S, Spirer Z.

Source: *Paediatric Anaesthesia*. 1995; 5(4): 263-5.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7489459&dopt=Abstract

- **Management of fibromyalgia.**

Author(s): Leventhal LJ.

Source: *Annals of Internal Medicine*. 1999 December 7; 131(11): 850-8. Review. No Abstract Available.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10610631&dopt=Abstract

- **Management of fibromyalgia: what are the best treatment choices?**

Author(s): Forseth K KO, Gran JT.

Source: *Drugs*. 2002; 62(4): 577-92. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11893227&dopt=Abstract

- **Mind-body therapies for the treatment of fibromyalgia. A systematic review.**

Author(s): Hadhazy VA, Ezzo J, Creamer P, Berman BM.

Source: *J Rheumatol*. 2000 December; 27(12): 2911-8. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11128685&dopt=Abstract

- **Multidisciplinary approach to fibromyalgia. A pilot study.**

Author(s): Mengshoel AM, Forseth KO, Haugen M, Walle-Hansen R, Forre O.

Source: *Clinical Rheumatology*. 1995 March; 14(2): 165-70.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7789057&dopt=Abstract

- **Muscle tissue oxygen pressure in primary fibromyalgia.**
Author(s): Lund N, Bengtsson A, Thorborg P.
Source: *Scandinavian Journal of Rheumatology*. 1986; 15(2): 165-73.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3462905&dopt=Abstract
- **Myofascial pain syndrome and fibromyalgia.**
Author(s): Goldman LB, Rosenberg NL.
Source: *Seminars in Neurology*. 1991 September; 11(3): 274-80. Review.
No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1947490&dopt=Abstract
- **Myofascial pain syndrome and its suggested role in the pathogenesis and treatment of fibromyalgia syndrome.**
Author(s): Meyer HP.
Source: *Current Pain and Headache Reports*. 2002 August; 6(4): 274-83.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12095462&dopt=Abstract
- **Nonmedicinal treatments in primary fibromyalgia.**
Author(s): McCain GA.
Source: *Rheumatic Diseases Clinics of North America*. 1989 February; 15(1): 73-90. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2644680&dopt=Abstract
- **Nonphysician practitioner treatments and fibromyalgia syndrome.**
Author(s): Fitzcharles MA, Esdaile JM.
Source: *J Rheumatol*. 1997 May; 24(5): 937-40.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9150085&dopt=Abstract
- **Nutritional supplementation with *Chlorella pyrenoidosa* for patients with fibromyalgia syndrome: a pilot study.**
Author(s): Merchant RE, Carmack CA, Wise CM.

Source: *Phytotherapy Research* : Ptr. 2000 May; 14(3): 167-73.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10815009&dopt=Abstract

- **Osteopathic manipulative treatment in conjunction with medication relieves pain associated with fibromyalgia syndrome: results of a randomized clinical pilot project.**

Author(s): Gamber RG, Shores JH, Russo DP, Jimenez C, Rubin BR.

Source: *J Am Osteopath Assoc*. 2002 June; 102(6): 321-5.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12090649&dopt=Abstract

- **Pain clinic #14. Fibromyalgia and myofascial pain: either, neither, or both?**

Author(s): Rogers EJ, Rogers R.

Source: *Orthop Rev*. 1989 November; 18(11): 1217-24.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2510117&dopt=Abstract

- **Pain coping mechanisms in fibromyalgia: relationship to pain and functional outcomes.**

Author(s): Nicassio PM, Schoenfeld-Smith K, Radojevic V, Schuman C.

Source: *J Rheumatol*. 1995 August; 22(8): 1552-8.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7473482&dopt=Abstract

- **Pain treatment of fibromyalgia by acupuncture.**

Author(s): Sprott H, Franke S, Kluge H, Hein G.

Source: *Rheumatology International*. 1998; 18(1): 35-6.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9672997&dopt=Abstract

- **Pathophysiological mechanisms of fibromyalgia.**

Author(s): Zimmermann M.

Source: *The Clinical Journal of Pain*. 1991; 7 Suppl 1: S8-15. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1810527&dopt=Abstract

- **Patient utilities in fibromyalgia and the association with other outcome measures.**

Author(s): Bakker C, Rutten M, van Santen-Hoeufft M, Bolwijn P, van Doorslaer E, Bennett K, van der Linden S.

Source: J Rheumatol. 1995 August; 22(8): 1536-43.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7473480&dopt=Abstract

- **Phenobarbital-induced fibromyalgia as the cause of bilateral shoulder pain.**

Author(s): Goldman SI, Krings MS.

Source: J Am Osteopath Assoc. 1995 August; 95(8): 487-90.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7673010&dopt=Abstract

- **Physical and other non-pharmacological interventions for fibromyalgia.**

Author(s): Sim J, Adams N.

Source: Bailliere's Best Practice & Research. Clinical Rheumatology. 1999 September; 13(3): 507-23. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10562382&dopt=Abstract

- **Physical medicine and rehabilitation approaches to the management of myofascial pain and fibromyalgia syndromes.**

Author(s): Rosen NB.

Source: Baillieres Clin Rheumatol. 1994 November; 8(4): 881-916. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7850885&dopt=Abstract

- **Physical therapy in the treatment of fibromyalgia.**

Author(s): Offenbacher M, Stucki G.

Source: Scand J Rheumatol Suppl. 2000; 113: 78-85. Review.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11028838&dopt=Abstract

- **Post-traumatic fibromyalgia. A long-term follow-up.**

Author(s): Waylonis GW, Perkins RH.

Source: American Journal of Physical Medicine & Rehabilitation / Association of Academic Physiatrists. 1994 November-December; 73(6): 403-12.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7993614&dopt=Abstract

- Primary fibromyalgia syndrome and myofascial pain syndrome: clinical features and muscle pathology.**
 Author(s): Yunus MB, Kalyan-Raman UP, Kalyan-Raman K.
 Source: Archives of Physical Medicine and Rehabilitation. 1988 June; 69(6): 451-4. Review.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3288173&dopt=Abstract
- Primary fibromyalgia.**
 Author(s): Coulehan JL.
 Source: American Family Physician. 1985 September; 32(3): 170-7. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3898793&dopt=Abstract
- Primary fibromyalgia. A clinical and laboratory study of 55 patients.**
 Author(s): Bengtsson A, Henriksson KG, Jorfeldt L, Kagedal B, Lennmarken C, Lindstrom F.
 Source: Scandinavian Journal of Rheumatology. 1986; 15(3): 340-7.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3467425&dopt=Abstract

Vocabulary Builder

Acetaminophen: Analgesic antipyretic derivative of acetanilide. It has weak anti-inflammatory properties and is used as a common analgesic, but may cause liver, blood cell, and kidney damage. [NIH]

ACTH: Adrenocorticotropic hormone. [EU]

Adjuvant: A substance which aids another, such as an auxiliary remedy; in immunology, nonspecific stimulator (e.g., BCG vaccine) of the immune response. [EU]

Anaesthesia: Loss of feeling or sensation. Although the term is used for loss of tactile sensibility, or of any of the other senses, it is applied especially to loss of the sensation of pain, as it is induced to permit performance of surgery or other painful procedures. [EU]

Analgesics: Compounds capable of relieving pain without the loss of consciousness or without producing anesthesia. [NIH]

Anatomical: Pertaining to anatomy, or to the structure of the organism. [EU]

Androgens: A class of sex hormones associated with the development and

maintenance of the secondary male sex characteristics, sperm induction, and sexual differentiation. In addition to increasing virility and libido, they also increase nitrogen and water retention and stimulate skeletal growth. [NIH]

Antigen: Any substance which is capable, under appropriate conditions, of inducing a specific immune response and of reacting with the products of that response, that is, with specific antibody or specifically sensitized T-lymphocytes, or both. Antigens may be soluble substances, such as toxins and foreign proteins, or particulate, such as bacteria and tissue cells; however, only the portion of the protein or polysaccharide molecule known as the antigenic determinant (q.v.) combines with antibody or a specific receptor on a lymphocyte. Abbreviated Ag. [EU]

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

Axons: Nerve fibers that are capable of rapidly conducting impulses away from the neuron cell body. [NIH]

Bilateral: Having two sides, or pertaining to both sides. [EU]

Catheter: A tubular, flexible, surgical instrument for withdrawing fluids from (or introducing fluids into) a cavity of the body, especially one for introduction into the bladder through the urethra for the withdraw of urine. [EU]

Causal: Pertaining to a cause; directed against a cause. [EU]

Chlorella: Nonmotile unicellular green algae potentially valuable as a source of high-grade protein and B-complex vitamins. [NIH]

Coenzyme: An organic nonprotein molecule, frequently a phosphorylated derivative of a water-soluble vitamin, that binds with the protein molecule (apoenzyme) to form the active enzyme (holoenzyme). [EU]

Colitis: Inflammation of the colon. [EU]

Comorbidity: The presence of co-existing or additional diseases with reference to an initial diagnosis or with reference to the index condition that is the subject of study. Comorbidity may affect the ability of affected individuals to function and also their survival; it may be used as a prognostic indicator for length of hospital stay, cost factors, and outcome or survival. [NIH]

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

Conduction: The transfer of sound waves, heat, nervous impulses, or electricity. [EU]

Consciousness: Sense of awareness of self and of the environment. [NIH]

Contraceptive: An agent that diminishes the likelihood of or prevents conception. [EU]

Cytokines: Non-antibody proteins secreted by inflammatory leukocytes and

some non-leukocytic cells, that act as intercellular mediators. They differ from classical hormones in that they are produced by a number of tissue or cell types rather than by specialized glands. They generally act locally in a paracrine or autocrine rather than endocrine manner. [NIH]

Diurnal: Occurring during the day. [EU]

Eczema: A pruritic papulovesicular dermatitis occurring as a reaction to many endogenous and exogenous agents, characterized in the acute stage by erythema, edema associated with a serous exudate between the cells of the epidermis (spongiosis) and an inflammatory infiltrate in the dermis, oozing and vesiculation, and crusting and scaling; and in the more chronic stages by lichenification or thickening or both, signs of excoriations, and hyperpigmentation or hypopigmentation or both. Atopic dermatitis is the most common type of dermatitis. Called also eczematous dermatitis. [EU]

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

Estradiol: The most potent mammalian estrogenic hormone. It is produced in the ovary, placenta, testis, and possibly the adrenal cortex. [NIH]

Estrogens: A class of sex hormones associated with the development and maintenance of secondary female sex characteristics and control of the cyclical changes in the reproductive cycle. They are also required for pregnancy maintenance and have an anabolic effect on protein metabolism and water retention. [NIH]

Extremity: A limb; an arm or leg (membrum); sometimes applied specifically to a hand or foot. [EU]

FSH: A gonadotropic hormone found in the pituitary tissues of mammals. It regulates the metabolic activity of ovarian granulosa cells and testicular Sertoli cells, induces maturation of Graafian follicles in the ovary, and promotes the development of the germinal cells in the testis. [NIH]

Gastrointestinal: Pertaining to or communicating with the stomach and intestine, as a gastrointestinal fistula. [EU]

Gonadal: Pertaining to a gonad. [EU]

Homeostasis: A tendency to stability in the normal body states (internal environment) of the organism. It is achieved by a system of control mechanisms activated by negative feedback; e.g. a high level of carbon dioxide in extracellular fluid triggers increased pulmonary ventilation,

which in turn causes a decrease in carbon dioxide concentration. [EU]

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

Hypertension: Persistently high arterial blood pressure. Various criteria for its threshold have been suggested, ranging from 140 mm. Hg systolic and 90 mm. Hg diastolic to as high as 200 mm. Hg systolic and 110 mm. Hg diastolic. Hypertension may have no known cause (essential or idiopathic h.) or be associated with other primary diseases (secondary h.). [EU]

Hypnotic: A drug that acts to induce sleep. [EU]

Hypothyroidism: Deficiency of thyroid activity. In adults, it is most common in women and is characterized by decrease in basal metabolic rate, tiredness and lethargy, sensitivity to cold, and menstrual disturbances. If untreated, it progresses to full-blown myxoedema. In infants, severe hypothyroidism leads to cretinism. In juveniles, the manifestations are intermediate, with less severe mental and developmental retardation and only mild symptoms of the adult form. When due to pituitary deficiency of thyrotropin secretion it is called secondary hypothyroidism. [EU]

Ibuprofen: A nonsteroidal anti-inflammatory agent with analgesic properties used in the therapy of rheumatism and arthritis. [NIH]

Insulin: A protein hormone secreted by beta cells of the pancreas. Insulin plays a major role in the regulation of glucose metabolism, generally promoting the cellular utilization of glucose. It is also an important regulator of protein and lipid metabolism. Insulin is used as a drug to control insulin-dependent diabetes mellitus. [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]

Ligament: A band of fibrous tissue that connects bones or cartilages, serving to support and strengthen joints. [EU]

Magnetoencephalography: The measurement of magnetic fields over the head generated by electric currents in the brain. As in any electrical conductor, electric fields in the brain are accompanied by orthogonal magnetic fields. The measurement of these fields provides information about the localization of brain activity which is complementary to that provided by electroencephalography. Magnetoencephalography may be used alone or together with electroencephalography, for measurement of spontaneous or evoked activity, and for research or clinical purposes. [NIH]

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

Masticatory: 1. subserving or pertaining to mastication; affecting the muscles of mastication. 2. a remedy to be chewed but not swallowed. [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]

Mononucleosis: The presence of an abnormally large number of mononuclear leucocytes (monocytes) in the blood. The term is often used alone to refer to infectious mononucleosis. [EU]

Mycoplasma: A genus of gram-negative, facultatively anaerobic bacteria bounded by a plasma membrane only. Its organisms are parasites and pathogens, found on the mucous membranes of humans, animals, and birds. [NIH]

Naloxone: A specific opiate antagonist that has no agonist activity. It is a competitive antagonist at mu, delta, and kappa opioid receptors. [NIH]

Neuroendocrinology: The study of the anatomical and functional relationships between the nervous system and the endocrine system. [NIH]

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

Neuronal: Pertaining to a neuron or neurons (= conducting cells of the nervous system). [EU]

Neurons: The basic cellular units of nervous tissue. Each neuron consists of a body, an axon, and dendrites. Their purpose is to receive, conduct, and transmit impulses in the nervous system. [NIH]

Nociceptors: Peripheral receptors for pain. Nociceptors include receptors which are sensitive to painful mechanical stimuli, extreme heat or cold, and chemical stimuli. All nociceptors are free nerve endings. [NIH]

Orthopedics: A surgical specialty which utilizes medical, surgical, and physical methods to treat and correct deformities, diseases, and injuries to the skeletal system, its articulations, and associated structures. [NIH]

Orthostatic: Pertaining to or caused by standing erect. [EU]

Paediatric: Of or relating to the care and medical treatment of children; belonging to or concerned with paediatrics. [EU]

Palpation: Application of fingers with light pressure to the surface of the body to determine consistence of parts beneath in physical diagnosis; includes palpation for determining the outlines of organs. [NIH]

Periodontics: A dental specialty concerned with the histology, physiology, and pathology of the tissues that support, attach, and surround the teeth, and of the treatment and prevention of disease affecting these tissues. [NIH]

Pharmacologic: Pertaining to pharmacology or to the properties and

reactions of drugs. [EU]

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

Prolactin: Pituitary lactogenic hormone. A polypeptide hormone with a molecular weight of about 23,000. It is essential in the induction of lactation in mammals at parturition and is synergistic with estrogen. The hormone also brings about the release of progesterone from lutein cells, which renders the uterine mucosa suited for the embedding of the ovum should fertilization occur. [NIH]

Psychiatry: The medical science that deals with the origin, diagnosis, prevention, and treatment of mental disorders. [NIH]

Psychology: The science dealing with the study of mental processes and behavior in man and animals. [NIH]

Pulmonary: Pertaining to the lungs. [EU]

Pulse: The rhythmical expansion and contraction of an artery produced by waves of pressure caused by the ejection of blood from the left ventricle of the heart as it contracts. [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]

Refractory: Not readily yielding to treatment. [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]

Sensitization: 1. administration of antigen to induce a primary immune response; priming; immunization. 2. exposure to allergen that results in the development of hypersensitivity. 3. the coating of erythrocytes with antibody so that they are subject to lysis by complement in the presence of homologous antigen, the first stage of a complement fixation test. [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]

Spondylitis: Inflammation of the vertebrae. [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]

Symptomatology: 1. that branch of medicine with treats of symptoms; the systematic discussion of symptoms. 2. the combined symptoms of a disease. [EU]

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]

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]

Tonic: 1. producing and restoring the normal tone. 2. characterized by continuous tension. 3. a term formerly used for a class of medicinal preparations believed to have the power of restoring normal tone to tissue. [EU]

Topical: Pertaining to a particular surface area, as a topical anti-infective applied to a certain area of the skin and affecting only the area to which it is applied. [EU]

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

CHAPTER 5. PATENTS ON FIBROMYALGIA

Overview

You can learn about innovations relating to fibromyalgia 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.²³ 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 fibromyalgia 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 fibromyalgia. 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.

²³Adapted from The U. S. Patent and Trademark Office:
<http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm>.

Patents on Fibromyalgia

By performing a patent search focusing on fibromyalgia, 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 fibromyalgia:

- **Treatment of fibromyalgia with ubiquinone 10 and succinic acid**

Inventor(s): Sneed; Paul A. (Route 3, Box 08 C5, Cisco, TX 76437)

Assignee(s): none reported

Patent Number: 6,348,506

Date filed: February 9, 2001

Abstract: A method is described for using a combination of ubiquinone 10 and succinic acid in the treatment of human patients afflicted with fibromyalgia to alleviate one or more symptoms associated with that disease state. Fibromyalgia positive patients treated buccally, sublingually or by oral ingestion administration of ubiquinone 10 and succinic acid enjoy a reduction in clinical symptoms of the disease.

Excerpt(s): The present invention relates to a composition and method for treatment of patients afflicted with fibromyalgia. More particularly, this invention is directed to a composition and method for relieving symptoms associated with fibromyalgia in human patients by administering a combination of ubiquinone 10 and succinic acid. ... Fibromyalgia is a common disabling disorder characterized by chronic musculoskeletal aches and pain, stiffness, and sleep abnormalities including diminished stage four sleep. Examination of affected patients reveals increased tenderness at muscle and tendon insertion sites, known as "tender points." Fibromyalgia patients experience severe morning stiffness and a generalized decreased of overall physical function, and they are often prone to headaches, memory and concentration problems, dizziness, numbness and tingling, and crampy abdominal or pelvic pain. Fibromyalgia affects 2-4% of the population and is most frequently found in women between 20 and 50 years old, although it can also affect men, the elderly and minors. ... Diagnosis of fibromyalgia is often overlooked

due to the general nature of the symptoms and the lack of diagnostic lab or x-ray abnormalities. The disorder is often concomitant with, masked by or confused with other diseases such as rheumatoid arthritis, chronic fatigue syndrome or irritable bowel syndrome. However, chronic fatigue syndrome (CFS) can be distinguished from fibromyalgia because patients with CFS are likely to have symptoms of viral illnesses such as fever, sore throat, and lymph node pain. A physician can positively diagnose fibromyalgia syndrome by finding the symptoms of musculoskeletal pain throughout the body and pain at more than 11 of 18 symmetrically distributed characteristic "tender points" when a finger pressure of about 4 kg is applied to the area, which test is known as the "tender point index," or when tender points are detected with dolorimetry.

Web site: http://www.delphion.com/details?pn=US06348506__

- **Use of dopamine D2/D3 receptor agonists to treat fibromyalgia**

Inventor(s): Holman; Andrew J. (19658 Marine View Dr. SW., Seattle, WA 98166)

Assignee(s): none reported

Patent Number: 6,300,365

Date filed: May 7, 2001

Abstract: The present invention is directed to methods for the treatment of human patients afflicted with fibromyalgia using a non-ergot dopamine receptor D2/D3 agonist. In particular, patients are treated with a therapeutically effective amount of tetrahydro-benzthiazole or 3(H)-indolone compounds that are dopamine agonists. More specifically, the compounds 2-amino-6-n-propylamino-4,5,6,7-tetrahydrobenzo-thiazole or 4-[2-(dipropylamino)-ethyl]-1,3-dihydro-2H-indol-2-one are administered to fibromyalgia patients to reduce the musculoskeletal pain symptoms associated with fibromyalgia.

Excerpt(s): The present invention relates to methods for the treatment of fibromyalgia using non-ergot dopamine D.sub.2 /D.sub.3 agonists. More specifically, tetrahydro-benzthiazoles, in particular, 2-amino-6-n-propylamino-4,5,6,7-tetrahydrobenzo-thiazole or the (-)-enantiomers thereof, and certain 3(H)-indolone derivatives, in particular, 4-[2-(dipropylamino)-ethyl]-1,3-dihydro-2H-indol-2-one, and the pharmacologically acceptable salts thereof, alone or in association with a pharmaceutically acceptable carrier, can be used to treat fibromyalgia patients. ... Fibromyalgia is a common disabling disorder characterized by chronic musculoskeletal aches and pain, stiffness, general fatigue, and sleep abnormalities including diminished stage four sleep. Fibromyalgia

is a chronic, painful disorder commonly seen in rheumatology practice and is often viewed as a musculoskeletal pain process. Fibromyalgia is characterized as a reproducible, neurosensory processing abnormality associated with fatigue, and generalized muscular spasm, which most rheumatologists suspect is related to stage IV sleep deprivation. Examination of affected patients reveals increased tenderness at muscle and tendon insertion sites, known as "tender points". Fibromyalgia patients experience severe morning stiffness and a generalized decreased of overall physical function, and they are often prone to headaches, memory and concentration problems, dizziness, numbness and tingling, and crampy abdominal or pelvic pain. Fibromyalgia affects 2-4% of the population and is most frequently found in women between 20 and 50 years old, though it can also affect men, the elderly and minors. ... Diagnosis of fibromyalgia is often overlooked due to the general nature of the symptoms and the lack of diagnostic lab or x-ray abnormalities. The disorder is often concomitant with, masked by or confused with other diseases such as rheumatoid arthritis, chronic fatigue syndrome or irritable bowl syndrome. A physician can positively diagnose fibromyalgia syndrome by finding the symptoms of generalized musculoskeletal pain and pain at more than 11 of 18 defined characteristic "tender points" when finger pressure of about 4 kg is applied to the area. The total pain score for all 18 tender points is referred to as the "tender point index" of that patient. The efficacy of a particular fibromyalgia therapy is demonstrated by a observation of a statistically significant improvement in a patient's tender point index.

Web site: http://www.delphion.com/details?pn=US06300365__

- **Treatment of fibromyalgia with low doses of interferon**

Inventor(s): Richards; Alan B. (Amarillo, TX), Sherwood; Edward (Lago Vista, TX)

Assignee(s): Amarillo Biosciences, Inc. (Amarillo, TX)

Patent Number: 6,036,949

Date filed: March 5, 1998

Abstract: A method is described for using interferon in the treatment of human patients afflicted with fibromyalgia to alleviate one or more symptoms associated with that disease state. Fibromyalgia positive patients treated buccally, sublingually or by oral ingestion administration of low doses of interferon enjoy a reduction in clinical symptoms of the disease.

Excerpt(s): The present invention relates to a composition and method for treatment of patients afflicted with fibromyalgia. More particularly, this invention is directed to a composition and method for relieving symptoms associated with chronic fibromyalgia in human patients by administering low doses of interferon. ... Fibromyalgia is a common disabling disorder characterized by chronic musculoskeletal aches and pain, stiffness, general fatigue, and sleep abnormalities including diminished stage four sleep. Examination of affected patients reveals increased tenderness at muscle and tendon insertion sites, known as "tender points". Fibromyalgia patients experience severe morning stiffness and a generalized decreased of overall physical function, and they are often prone to headaches, memory and concentration problems, dizziness, numbness and tingling, and crampy abdominal or pelvic pain. Fibromyalgia affects 2-4% of the population and is most frequently found in women between 20 and 50 years old, though it can also affect men, the elderly and minors. ... Diagnosis of fibromyalgia is often overlooked due to the general nature of the symptoms and the lack of diagnostic lab or x-ray abnormalities. The disorder is often concomitant with, masked by or confused with other diseases such as rheumatoid arthritis, chronic fatigue syndrome or irritable bowel syndrome. A physician can positively diagnosis fibromyalgia syndrome by finding the symptoms of generalized musculoskeletal pain and pain at more than 11 of 18 defined characteristic "tender points" when finger pressure of about 4 kg is applied to the area, which test is known as the "tender point index".

Web site: http://www.delphion.com/details?pn=US06036949__

- **Method for treatment of fibromyalgia and chronic fatigue syndrome**

Inventor(s): Scharf; Martin B. (Cincinnati, OH)

Assignee(s): Orphan Medical, Inc. (Minnetonka, MN)

Patent Number: 5,990,162

Date filed: August 29, 1997

Abstract: A method is provided to treat a human afflicted with chronic fatigue syndrome or fibromyalgia syndrome by the administration of certain butyrate derivatives.

Excerpt(s): An estimated 6 million Americans suffer the often baffling symptoms of fibromyalgia or chronic fatigue syndrome. Patients with fibromyalgia, also referred to as fibromyalgia syndrome, FMS or fibrositis syndrome, report widespread musculoskeletal pain, chronic fatigue, and non-restorative sleep, and show specific regions of localized tenderness in the absence of demonstrable anatomic or biochemical pathology.

Typically, they describe light and/or restless sleep. They awaken feeling unrefreshed with pain, stiffness, physical exhaustion, and lethargy. See, H. D. Moldofsky et al., *J. Musculoskel. Pain*, 1, 49 (1993). In a series of studies, Moldofsky's group has shown that aspects of the patients' sleep pathology are related to their pain and mood symptoms. That is, patients with fibrositis syndrome show an alpha (7.5 to 11 Hz) electroencephalographic (EEG), non-rapid-eye-movement (NREM) sleep anomaly correlated with musculoskeletal pain and altered mood. Moldofsky has interpreted this alpha EEG NREM sleep anomaly to be an indicator of an arousal disorder within sleep associated with the subjective experience of non-restorative sleep. See H. D. Moldofsky et al., *Psychosom. Med.*, 37, 341 (1975). ... Fibromyalgia patients frequently report symptoms similar to those of patients with post-infectious neuromyasthenia, also referred to as chronic fatigue syndrome (CFS). Chronic fatigue syndrome, or CFS, is a debilitating disorder characterized by profound tiredness or fatigue. Patients with CFS may become exhausted with only light physical exertion. They often must function at a level of activity substantially lower than their capacity before the onset of illness. In addition to these key defining characteristics, patients generally report various nonspecific symptoms, including weakness, muscle aches and pains, excessive sleep, malaise, fever, sore throat, tender lymph nodes, impaired memory and/or mental concentration, insomnia, and depression. CFS can persist for years. Compared with fibromyalgia patients, chronic fatigue patients have similarly disordered sleep, localized tenderness, and complaints of diffuse pain and fatigue. ... During the course of open label investigation of the effects of sodium oxybate (GHB) in narcoleptic patients (IND 21,654) GHB was administered to three patients with the concurrent diagnoses of narcolepsy and fibromyalgia (2 patients) or chronic fatigue syndrome (1 patient). In each case the narcoleptic auxiliary symptoms improved as expected. Moreover, the symptoms of their secondary diagnoses also improved dramatically, possibly in association with the GHB-induced changes in slow wave sleep (stage 3 & 4). Therefore, the effects of sodium oxybate (GHB) were evaluated on the sleep patterns and clinical symptoms of non-narcoleptic patients with previously diagnosed fibromyalgia and/or chronic fatigue syndrome.

Web site: http://www.delphion.com/details?pn=US05990162__

- **Use of serotonin antagonists for treating fibromyalgia**

Inventor(s): Muller; Wolfgang (Binningen, CH), Stratz; Thomas (Bad Sackingen, DE)

Assignee(s): Novartis AG (Basel, CH)

Patent Number: 5,985,866

Date filed: May 18, 1998

Abstract: 5-HT.sub.3 antagonists are useful in the treatment of fibromyalgia.

Excerpt(s): It has now surprisingly been found that the compounds of the invention exert a marked improvement in patients suffering from fibromyalgia, which affects the major symptoms including pain as well as the functional and vegetative disorders and lasts beyond the time of treatment. ... Fibromyalgia (also known as fibrositis or generalized tendomyopathy) is a very common disease which is characterized by pains and stiffness in the various regions of the locomotory apparatus, particularly in the region of the tendon insertions and tendon sheaths, which are very sensitive to pressure, furthermore by functional and vegetative disorders as well as psychopathological findings such as depressive conditions and neuroses. ... The treatment of fibromyalgia is very problematic and unsatisfactory. An effective therapy of the disease is not available yet. Attempts to attenuate the pain symptoms using analgesics and non-steroidal anti-inflammatories were unsuccessful. Muscle relaxants showed limited activity at very high dosages which induced considerable side effects and had to be stopped. Antidepressive drugs such as amitriptyline were also proposed and showed some activity in a sub-group of patients, which however decreased rapidly.

Web site: http://www.delphion.com/details?pn=US05985866__

- **Use of androgen therapy in fibromyalgia and chronic fatigue syndrome**

Inventor(s): White; Hillary D. (South Pomfret, VT)

Assignee(s): Trustees of Dartmouth College (Hanover, NH)

Patent Number: 5,935,949

Date filed: March 10, 1999

Abstract: A method of using androgen therapy to alleviate symptoms associated with chronic fatigue syndrome and fibromyalgia syndrome is provided.

Excerpt(s): It has now been found that androgen therapy is useful in alleviating the symptoms associated with chronic fatigue syndrome and fibromyalgia syndrome. ... An object of the present invention is to provide a method of alleviating symptoms of chronic fatigue syndrome and fibromyalgia in women which comprises administering to women suffering from chronic fatigue syndrome or fibromyalgia an effective amount of an androgen or combination of androgens. ... Fibromyalgia (also referred to as fibrositis) is one of the most common rheumatic syndromes in ambulatory general medicine affecting 3-10% of the general population. Most patients with Fibromyalgia Syndrome (FMS) are women, and of these patients, approximately 50-75% are women in their peri-postmenopausal years, aged 40-60. Approximately 2-5% of peri/post menopausal women are affected by FMS, with some estimates ranging from 0.5 to 20%. This disease is characterized by chronic widespread musculoskeletal pain syndrome with multiple tender points, fatigue, headaches, lack of restorative sleep and numbness. Fibromyalgia shares many features with chronic fatigue syndrome including an increased frequency in peri/post menopausal woman, absence of objective findings and absence of diagnostic laboratory tests. Further, these conditions have overlapping clinical features including chronic fatigue, headaches and lack of restorative sleep with musculoskeletal pain predominating in fibromyalgia and apparent susceptibility to infection predominating in chronic fatigue syndrome.

Web site: http://www.delphion.com/details?pn=US05935949__

- **Method for treating chronic fatigue syndrome and fibromyalgia with buprenorphine**

Inventor(s): Cole; William L. (1015 Canter Rd., Atlanta, GA 30324)

Assignee(s): none reported

Patent Number: 5,900,420

Date filed: June 18, 1998

Abstract: The present invention encompasses methods for treating chronic fatigue syndrome and fibromyalgia by administering buprenorphine or a salt thereof. The compound may optionally be administered in a pharmaceutical composition. Preferred compositions for delivery of the buprenorphine are sublingual lozenges and transdermal gel.

Excerpt(s): The present invention relates to the use of buprenorphine for the treatment of chronic fatigue syndrome, also referred to as chronic fatigue immune deficiency syndrome, and fibromyalgia. In addition, the

present invention relates to two preferred delivery systems for the treatment of chronic fatigue syndrome with buprenorphine. More specifically, the first system of delivery of buprenorphine is via a sublingual lozenge. The second system involves a transdermal gel system, whereby a specific quantity of a gel containing the buprenorphine is applied to any vascular area of the body. ... Fibromyalgia (FMS) is a chronic rheumatic condition characterized by systemic body pain and uncontrollable fatigue. Many other symptoms are associated with fibromyalgia, such as irritable bowel, headaches, sleep disorders, and poor circulation. ... Chronic fatigue syndrome and fibromyalgia remain serious problems for the general population which are not only difficult to diagnose and have no known effective treatment. Although many medications are commonly used to treat these conditions, there are no known medications which permanently resolve the symptoms of either chronic fatigue syndrome or fibromyalgia. In addition, many of the currently used medications produce side effects ranging from mild side effects, e.g., drowsiness, dizziness, and nausea to serious side effects, e.g., addiction and liver damage.

Web site: http://www.delphion.com/details?pn=US05900420__

- **Treatment of fibromyalgia and related disorders**

Inventor(s): Arffmann; Kathleen (New York City, NY), Andrus; G. Merrill (Orem, UT)

Assignee(s): Designed Nutritional Products, Inc. (Vineyard, UT)

Patent Number: 5,895,787

Date filed: October 8, 1997

Abstract: A method of treating fibromyalgia-like complaints (i.e., fibromyalgia, chronic fatigue syndrome and irritable bowel syndrome) in a patient, the method comprising: administering to the patient an 1H-indole-3-methanol compound (e.g., 1H-indole-3-methanol, ascorbigen, bis(3-indolyl) methane, indolo[3,2-b(carbazole)], 2-(indol-3-ylmethyl)-3,3'-diindolylmethane, 5,6,11,12,17,18-hexahydrocyclohepta[1,2-b:4,5-b';7,8-b''triindole, 1H-indol-3-yl methoxy methane, ethoxy 1H-indol-3-yl ethoxy methane, other ethers of 1H-indole-3-methanol) in a medically acceptable manner in a pharmaceutically effective amount on a regular basis. It has been found that the administration of such indoles, particularly, 1H-indole-3-methanol, greatly mitigates the most severe symptoms of fibromyalgia. Patients with fibromyalgia have reported a decrease in pain, less fatigue, improved sleep patterns, and an improved sense of well being resulting from the oral administration of

pharmaceutically effective amounts of an 1H-indole-3-methanol compound each day.

Excerpt(s): This invention generally relates to the use of various naturally occurring compounds to treat a disease, and, more particularly, to the use of the natural product indole-3-methanol and related compounds to alleviate the symptoms of fibromyalgia and related disorders. ... Fibromyalgia generally is understood as a condition including widespread chronic muscle pain, fatigue, and abnormal sleep patterns. See, e.g., Wolfe et al., "The Fibromyalgia Syndrome: A Consensus Report on Fibromyalgia and Disability", *The Journal of Rheumatology*, 23(3):534-539 (1996). It afflicts perhaps 2% of the population of the United States. Fibromyalgia varies in its effects on those who suffer from it, but in severe cases, it is completely debilitating. Fibromyalgia is closely related to chronic fatigue and irritable bowel syndromes, and some believe that these are all just different facets of the same underlying disorder. Women are 10 to 20 times more likely to get fibromyalgia than men. ... Fibromyalgia signs and symptoms include: widespread pain (97.6% of the patients), tenderness in >11/18 "tender points" (90.1%), fatigue (81.4%), morning stiffness (77.0%), sleep disturbance (74.6%), paresthesias (62.8%), headache (52.8%), anxiety (47.8%), dysmenorrhea (40.6%), sicca symptoms (35.8%), depression (31.5%), irritable bowel syndrome (29.6%), urinary urgency (26.3%), and Raynaud's phenomenon (16.7%).

Web site: http://www.delphion.com/details?pn=US05895787__

- **Method for detecting antipolymer antibodies and diagnosing silicone related disease (SRD) fibromyalgia and chronic fatigue syndrome (CFS)**

Inventor(s): Garry; Robert F. (New Orleans, LA), Tenenbaum; Scott A. (New Orleans, LA), Plymale; Douglas R. (New Orleans, LA)

Assignee(s): The Administrators of the Tulane Educational Fund (New Orleans, LA)

Patent Number: 5,834,215

Date filed: October 20, 1995

Abstract: The present invention provides for a method of detecting antipolymer antibodies, and a method for detecting silicone related disease, fibromyalgia, and chronic fatigue syndrome.

Excerpt(s): Various immunoassay techniques typically used in characterizing autoimmune responses, which are known to be extremely sensitive and specific, were used to identify antipolymer antibodies in

over 50% of tested individuals diagnosed with silicone related disease and over 80% of tested individuals diagnosed with fibromyalgia and chronic fatigue syndrome. The detection of antipolymer antibodies provide the first definitive evidence that silicone breast implants are capable of producing an immunological response that is diagnostically testable, and the first evidence that an immunological response to fibromyalgia and chronic fatigue can be tested by an objective method. ... The diagnosis of fibromyalgia and chronic fatigue syndrome are currently based on subjective clinical observations comparing the symptomology of a patient with the symptomology formulated by the American College of Rheumatology for fibromyalgia, and Centers for Disease Control and Prevention for Chronic Fatigue Syndrome. Currently no known objective laboratory test exist to identify fibromyalgia or chronic fatigue patients. ... It is also a principal object of the invention to provide an objective test for identifying silicone related disease, fibromyalgia, and chronic fatigue syndrome, through the detection of antipolymer antibodies in the test sera.

Web site: http://www.delphion.com/details?pn=US05834215__

- **Method of treating fibromyalgia with relaxin**

Inventor(s): Yue; Samuel K. (4928 Hoppy La., Edina, MN 55435)

Assignee(s): none reported

Patent Number: 5,707,642

Date filed: February 11, 1997

Abstract: A method of treating involuntary muscle dysfunctions includes administering a therapeutically effective amount of relaxin to a patient. Involuntary muscle dysfunctions amenable to treatment with relaxin include fibromyalgia, myofascial pain syndrome, chronic fatigue syndrome, dystonia, pelvic floor dysfunction, irritable bowel syndrome, and others.

Excerpt(s): Involuntary muscle dysfunction plagues a large portion of the chronic pain and chronic fatigue patient population. Two prominent conditions involving involuntary muscle dysfunction include fibromyalgia and myofascial pain syndrome, amongst others. ... Fibromyalgia is identified by the main symptoms of generalized chronic pain occurring mainly in the muscles and hyperalgesia, i.e. multiple tender points spread out over the body. The full range of symptoms include generalized pain, hyperalgesia, sleep disturbance, fatigue, muscle stiffness, hyperesthesias, tension-type headaches, decreased muscle endurance and muscle weakness. Fibromyalgia has also been associated

with irritable bowel syndrome, chronic fatigue syndrome, temporomandibular dysfunction syndrome, migraines, primary dysmenhorrea (painful menstruation) and others conditions including Raynaud's phenomenon. See Yunnus, *Fibromyalgia Syndrome: Clinical Features and Spectrum*, *The Fibromyalgic Syndrome: Current Research and Future Directions in Epidemiology, Pathogenesis, and Treatment*, 1994, pp. 5-21. See also Wolfe, *When to Diagnose Fibromyalgia*, *Rheumatic Disease Clinics Of North America*, Vol. 20, Number 2, May 1994. See Henriksson, *Pathogenesis of Fibromyalgia*, *Journal of Musculoskeletal Pain*, 1993, Vol. 1, pp. 3-16. ... Fibromyalgia is the second or third most common disorder seen in community practice. The economic effects of fibromyalgia are substantial. In one study, it was reported that only 60% of fibromyalgia patients were employed, 30% of patients changed jobs because of fibromyalgia, 10% of patients considered themselves disabled, and 6% received disability payments. See Rothschild et al, *Retrospective Assessment of Fibromyalgia Therapeutics*, *Comprehensive Therapy* 1994, Vol. 20, pp 545-549.

Web site: http://www.delphion.com/details?pn=US05707642__

- **Therapeutic treatment of fibromyalgia**

Inventor(s): Bennett; Robert M. (Portland, OR)

Assignee(s): Research Corporation Technologies, Inc. (Tucson, AZ)

Patent Number: 5,378,686

Date filed: September 21, 1992

Abstract: Disclosed is a therapeutic regime for treating patients with fibromyalgia (FM) and other syndromes characterized by non-restorative sleep and musculoskeletal pain. Supplemental growth hormone (GH) is administered and somatomedin-C (SMC) levels monitored until SMC levels reach optimal levels and musculoskeletal pain and fatiguability symptoms subside.

Excerpt(s): The present invention relates to the discovery of a link between sleep anomaly-induced suboptimal secretion of growth hormone and the treatment of syndromes such as fibromyalgia which are manifested by non-restorative sleep and muscle pain. ... Over the past decade there has been a growing realization that the fibromyalgia syndrome represents a very common cause of widespread musculoskeletal pain and fatiguability (A-C). According to a recent position paper by the American College of Rheumatology, fibromyalgia is now the second most common cause for rheumatology referrals after rheumatoid arthritis (D). ... The pain experienced by fibromyalgia

patients arises from their muscles and is activated by even minimal exertion. It has been hypothesized that the muscle pain in fibromyalgia patients is akin to the universal experience of post-exertional muscle pain (E, F)--a phenomenon which is well-known to be due to muscle microtrauma (G-J). It would appear that in fibromyalgia patients, muscle microtrauma occurs at very low levels of exertion and is much slower to heal than in normal individuals. The resulting functional disability often causes a significant curtailment in the quality of life as regards both vocational and avocational activities.

Web site: http://www.delphion.com/details?pn=US05378686__

- **Treatment of fibromyalgia**

Inventor(s): Sorensen; Stephen M. (Cincinnati, OH)

Assignee(s): Merrell Dow Pharmaceuticals Inc. (Cincinnati, OH)

Patent Number: 4,877,798

Date filed: October 18, 1988

Abstract: The present invention relates to a method for relieving or alleviating the symptomatology associated with fibromyalgia comprising administering to a patient a compound as described by Formula I.

Excerpt(s): The present invention relates to a method for the treatment of fibromyalgia. ... Fibromyalgia is a chronic disease afflicting up to 6 million persons in the United States. Patients suffering from this disease are afflicted with numerous symptoms such as, for example, widespread generalized musculoskeletal pains, aching, fatigue, morning stiffness, and a sleep disturbance which can be characterized as an inadequacy of stage 4 sleep. Often, patients are afflicted with these symptoms for years. ... Thus, it would be a valuable contribution to the art to develop a method for alleviating or relieving the symptomatology associated with fibromyalgia.

Web site: http://www.delphion.com/details?pn=US04877798__

Patent Applications on Fibromyalgia

As of December 2000, U.S. patent applications are open to public viewing.²⁴ Applications are patent requests which have yet to be granted (the process to

²⁴ This has been a common practice outside the United States prior to December 2000.

achieve a patent can take several years). The following patent applications have been filed since December 2000 relating to fibromyalgia:

- **Flupirtine in the treatment of fibromyalgia and related conditions**

Inventor(s): Stoll, Andrew L. ; (Lincoln, MA)

Correspondence: Pillsbury Winthrop LLP; 1600 Tysons Boulevard;
McLean; VA; 22102; US

Patent Application Number: 20020018809

Date filed: March 24, 2000

Abstract: The present invention is directed to a method for treating the symptoms associated with fibromyalgia and related conditions by administering flupirtine.

Excerpt(s): The present invention is directed to medical treatments for fibromyalgia and related conditions. Specifically, the invention is directed to the administration of the drug flupirtine as a means for alleviating the symptoms associated with these disorders. ... Fibromyalgia is a chronic condition characterized by pain in muscles, fascia and joints. Other symptoms typically include sleep disturbances, chronic fatigue and major depression. The etiology and pathophysiology of fibromyalgia are unknown, but it is clear that the central nervous system is involved. Patients may obtain a degree of relief from analgesic drugs, antidepressants and adjunctive treatments such as moderate exercise, proper diet and stress reduction techniques. Table 1 summarizes the studies that have been carried out in an effort to find an effective drug treatment. ... Despite the efforts that have been made, there is still no treatment that is effective in the majority of patients with fibromyalgia. Thus, there is a clear need for new therapies designed to alleviate the suffering of patients with this, and closely related, conditions.

Web site: <http://appft1.uspto.gov/netathtml/PTO/search-bool.html>

- **Compounds for treating fibromyalgia and chronic fatigue syndrome**

Inventor(s): McCall, Robert B. ; (Kalamazoo, MI), Marshall, Robert Clyde ; (Mattawan, MI), Robertson, David W. ; (Galesburg, MI), Ashley, Thomas M. ; (Portage, MI)

Correspondence: Austin W. Zhang; Pharmacia & Upjohn Company;
Global Intellectual Property; 301 Henrietta Street; Kalamazoo; MI; 49001;
US

Patent Application Number: 20020004510

Date filed: April 17, 2001

Abstract: The present invention provides for methods for the treatment of fibromyalgia syndrome or chronic fatigue syndrome by the administration of heterocyclic amine-type compounds, substituted phenylazacycloalkane-type compounds, or cabergoline-type compounds, or a salt of any said compound.

Excerpt(s): The present invention relates to the use of neuromuscular agents, and the pharmacologically acceptable salts thereof, for the treatment of nervous system disorders, and more particularly to the use of compounds of U.S. Pat. Nos. 5,273,975, 5,436,240, 5,594,024, 5,462,947, and 4,526,892 for the treatment of symptoms of fibromyalgia syndrome and chronic fatigue syndrome. ... Fibromyalgia syndrome (FMS), also referred to as fibromyalgia, fibromyositis, fibrositis, or myofascial pain syndrome, is a rheumatic condition generally characterized by widespread pain in fibrous tissues, muscles, tendons, and other connective tissues, fatigue, headaches, lack of restorative sleep, and numbness. Thus, FMS shares many clinical features with CFS. Similar to CFS, there are no specific diagnostic tests for FMS. ... Accordingly, there is clearly a need for better treatments for chronic fatigue syndrome and fibromyalgia. Now, the present invention reveals several compounds that can be formulated into useful therapeutic treatments for these conditions.

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

- **Treatment of fibromyalgia with ubiquinone 10 and succinic acid**

Inventor(s): Sneed, Paul A. ; (Cisco, TX)

Correspondence: Barnes & Thornburg; 11 South Meridian; Indianapolis; IN; 46204

Patent Application Number: 20010034372

Date filed: February 9, 2001

Abstract: A method is described for using a combination of ubiquinone 10 and succinic acid in the treatment of human patients afflicted with fibromyalgia to alleviate one or more symptoms associated with that disease state. Fibromyalgia positive patients treated buccally, sublingually or by oral ingestion administration of ubiquinone 10 and succinic acid enjoy a reduction in clinical symptoms of the disease.

Excerpt(s): The present invention relates to a composition and method for treatment of patients afflicted with fibromyalgia. More particularly, this invention is directed to a composition and method for relieving symptoms associated with fibromyalgia in human patients by administering a combination of ubiquinone 10 and succinic acid. ...

Fibromyalgia is a common disabling disorder characterized by chronic musculoskeletal aches and pain, stiffness, general fatigue, and sleep abnormalities including diminished stage four sleep. Examination of affected patients reveals increased tenderness at muscle and tendon insertion sites, known as "tender points." Fibromyalgia patients experience severe morning stiffness and a generalized decreased of overall physical function, and they are often prone to headaches, memory and concentration problems, dizziness, numbness and tingling, and crampy abdominal or pelvic pain. Fibromyalgia affects 2-4% of the population and is most frequently found in women between 20 and 50 years old, although it can also affect men, the elderly and minors. ... Diagnosis of fibromyalgia is often overlooked due to the general nature of the symptoms and the lack of diagnostic lab or x-ray abnormalities. The disorder is often concomitant with, masked by or confused with other diseases such as rheumatoid arthritis, chronic fatigue syndrome or irritable bowel syndrome. However, chronic fatigue syndrome (CFS) can be distinguished from fibromyalgia because patients with CFS are likely to have symptoms of viral illnesses such as fever, sore throat, and lymph node pain. A physician can positively diagnose fibromyalgia syndrome by finding the symptoms of musculoskeletal pain throughout the body and pain at more than 11 of 18 symmetrically distributed characteristic "tender points" when a finger pressure of about 4 kg is applied to the area, which test is known as the "tender point index," or when tender points are detected with dolorimetry.

Web site: <http://appft1.uspto.gov/netathtml/PTO/search-bool.html>

Keeping Current

In order to stay informed about patents and patent applications dealing with fibromyalgia, 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 "fibromyalgia" (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 fibromyalgia. You can also use this procedure to view pending patent applications concerning fibromyalgia. Simply go back to the following Web address: <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

Biochemical: Relating to biochemistry; characterized by, produced by, or involving chemical reactions in living organisms. [EU]

Buprenorphine: A derivative of the opioid alkaloid thebaine that is a more potent and longer lasting analgesic than morphine. It appears to act as a partial agonist at mu and kappa opioid receptors and as an antagonist at delta receptors. The lack of delta-agonist activity has been suggested to account for the observation that buprenorphine tolerance may not develop with chronic use. [NIH]

Deprivation: Loss or absence of parts, organs, powers, or things that are needed. [EU]

Dizziness: An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness. [NIH]

Dysmenorrhea: Painful menstruation. [NIH]

Dystonia: Disordered tonicity of muscle. [EU]

Immunoassay: Immunochemical assay or detection of a substance by serologic or immunologic methods. Usually the substance being studied serves as antigen both in antibody production and in measurement of antibody by the test substance. [NIH]

Ingestion: The act of taking food, medicines, etc., into the body, by mouth. [EU]

Lethargy: Abnormal drowsiness or stupor; a condition of indifference. [EU]

Malaise: A vague feeling of bodily discomfort. [EU]

Menstruation: The cyclic, physiologic discharge through the vagina of blood and mucosal tissues from the nonpregnant uterus; it is under hormonal control and normally recurs, usually at approximately four-week intervals, in the absence of pregnancy during the reproductive period (puberty through menopause) of the female of the human and a few species of primates. It is the culmination of the menstrual cycle. [EU]

Methanol: A colorless, flammable liquid used in the manufacture of formaldehyde and acetic acid, in chemical synthesis, antifreeze, and as a solvent. Ingestion of methanol is toxic and may cause blindness. [NIH]

Nausea: An unpleasant sensation, vaguely referred to the epigastrium and abdomen, and often culminating in vomiting. [EU]

Neuromuscular: Pertaining to muscles and nerves. [EU]

Pelvic: Pertaining to the pelvis. [EU]

Plague: An acute infectious disease caused by yersinia pestis that affects humans, wild rodents, and their ectoparasites. This condition persists due to its firm entrenchment in sylvatic rodent-flea ecosystems throughout the world. Bubonic plague is the most common form. [NIH]

Postmenopausal: Occurring after the menopause. [EU]

Transdermal: Entering through the dermis, or skin, as in administration of a drug applied to the skin in ointment or patch form. [EU]

Ubiquinone: A lipid-soluble benzoquinone which is involved in electron transport in mitochondrial preparations. The compound occurs in the majority of aerobic organisms, from bacteria to higher plants and animals. [NIH]

Vegetative: 1. concerned with growth and with nutrition. 2. functioning involuntarily or unconsciously, as the vegetative nervous system. 3. resting; denoting the portion of a cell cycle during which the cell is not involved in replication. 4. of, pertaining to, or characteristic of plants. [EU]

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

CHAPTER 6. BOOKS ON FIBROMYALGIA

Overview

This chapter provides bibliographic book references relating to fibromyalgia. You have many options to locate books on fibromyalgia. 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 fibromyalgia 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 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 "fibromyalgia" (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 fibromyalgia:

- **Arthritis Helpbook: A Tested Self-Management Program for Coping With Arthritis and Fibromyalgia. Fifth Edition. [Como convivir con su artritis: una guía para una vida activa y saludable]**

Source: Cambridge, MA: Perseus Books. 2000. 380 p.

Contact: Available from Perseus Books. Group Customer Service Department, 5500 Central Avenue, Boulder, CO 80301. (800) 386-5656. Fax (303) 449-3356. Email: westview.orders@perseusbooks.com. Website: www.perseusbooks.com. ISBN 073820224X. Price: \$18.00 plus shipping. Spanish version available from Bull Publishing. P.O. Box 208, Palo Alto, CA 94302-0208. (800) 676-2855. Fax (650) 327-3300. Price: \$16.95 plus shipping; bulk discounts available.

Summary: This book for individuals with arthritis and fibromyalgia presents a successful program for coping with these conditions. Chapters define arthritis; describe rheumatoid arthritis, osteoarthritis, and fibromyalgia and explain how to treat them; outline ways of preventing and dealing with osteoporosis; discuss various types of painful localized conditions; and explain how to become an arthritis self manager. Chapters also identify popular techniques for minimizing arthritis pain, present guidelines for developing a physical fitness program, describe flexibility and strengthening exercises and aerobic activities, offer suggestions for dealing with everyday problems, and provide help for dealing with depression and fatigue. Other topics include coping with emotional and interpersonal issues, establishing good nutrition habits, and using available medical resources. An appendix lists the international locations of the Arthritis Foundation and the Arthritis Society. 47 references, 11 tables, and numerous illustrations.

- **Fibromyalgia Help Book. Practical Guide to Living Better With Fibromyalgia**

Source: St. Paul, MN: Smith House Press. 1996. 253 p.

Contact: Available from Smith House Press, P.O. Box 17948, St. Paul, MN 55117. (888) 220-5402. (888) 220-5401 (fax). Price: \$18.95 in the U.S., \$26.95 in Canada.

Summary: This book for health professionals and individuals with fibromyalgia serves as a guide for effectively managing the syndrome. It discusses the etiology of the condition and the symptoms that characterize the disorder. The book explains how the diagnosis of fibromyalgia is made and how to overcome the obstacles posed by the syndrome. Specifically, guidelines are offered for building an effective patient-physician relationship; developing an exercise program; getting a good night's sleep; making lifestyle adjustments; dealing with

employment issues; coping with concentration problems; and managing widespread pain, fatigue, stress, and flare-ups. It describes the biomedical mechanisms that are associated with fibromyalgia and identifies the approaches being taken to study these mechanisms. In addition, the book lists resources and offers information on starting a support group. 50 references and 16 figures.

- **Post-traumatic Fibromyalgia. A Medical Perspective**

Source: Columbus, OH: Anadem Publishing. 1996. 135 p.

Contact: Available from Anadem Publishing, 3620 North High Street, Columbus, OH 43214. (614) 262-2539. (800) 633-0055. (614) 262-6630 (fax).

Summary: This book for individuals with fibromyalgia seeks to enhance awareness of posttraumatic fibromyalgia from a medical perspective. Chapters define fibromyalgia, describe types of fibromyalgia, address the issue of whether there is a controversy regarding the existence of fibromyalgia, present an overview of posttraumatic fibromyalgia, discuss whiplash injury, review the components of the medical history in posttraumatic fibromyalgia, provide common physical examination findings, identify tests useful in diagnosing posttraumatic fibromyalgia, and discuss the diagnosis of posttraumatic fibromyalgia. Additional chapters focus on the mechanisms of posttraumatic fibromyalgia, the treatment of this condition, the prognosis for individuals with posttraumatic fibromyalgia, and the categories of special situations in posttraumatic fibromyalgia. Final chapters explain who is a fibromyalgia expert, summarize common questions asked of a medical witness in litigation concerning posttraumatic fibromyalgia, and consider the future of fibromyalgia. 3 figures and 6 tables.

- **Essential Arthritis Cookbook: Kitchen Basics for People with Arthritis, Fibromyalgia and Other Chronic Pain and Fatigue**

Source: Mankato, MN: Appletree Press, Inc. 1995. 286 p.

Contact: Available from Appletree Press, Inc. 151 Good Counsel Drive, Suite 125, Mankato, MN 56001. (800) 322-5679 or (507) 345-4848. Fax (507) 345-3002. Price: \$24.95 plus shipping and handling. ISBN 0962047163.

Summary: This cookbook for people with arthritis, fibromyalgia, and other chronic pain and fatigue explains how nutrition affects arthritis and other musculoskeletal diseases and uses this information to provide guidelines and recipes for good health. Chapters cover topics such as the relationship between diet and arthritis; the impact of diet on the reduction of pain, swelling, and stiffness; and the effect of various arthritis medications on vitamin and mineral levels in the body. Other

chapters offer suggestions for developing an energy-saving plan, making cooking more relaxing, protecting joints from damaging forces, selecting appropriate tools, and planning meals. In addition, the book provides more than 120 recipes in the categories of appetizers, soups, salads, main dishes, vegetables, side dishes, breads, and desserts. The recipes are easy to prepare and require few ingredients and minimal cleanup. Appendixes offer suggestions for making eating easier for people whose illness or condition has made eating difficult, and provide advice for using convenience foods. 14 figures. 25 tables. 7 references.

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 fibromyalgia (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **Alternative Medicine Guide to Chronic Fatigue, Fibromyalgia and Environmental Illness** by Burton Goldberg, Editors of Alternative Medicine Digest (1998); ISBN: 1887299114;
<http://www.amazon.com/exec/obidos/ASIN/1887299114/icongroupinterna>
- **Betrayal by the Brain: The Neurologic Basis of Chronic Fatigue Syndrome, Fibromyalgia Syndrome, and Related Neural Network Disorders** by Jay A. Goldstein (1996); ISBN: 1560249811;
<http://www.amazon.com/exec/obidos/ASIN/1560249811/icongroupinterna>
- **Clinical Overview and Pathogenesis of the Fibromyalgia Syndrome, Myofascial Pain Syndrome, and Other Pain Syndromes** by I. Jon Russell (Editor) (1996); ISBN: 1560248335;
<http://www.amazon.com/exec/obidos/ASIN/1560248335/icongroupinterna>
- **Coping With Fibromyalgia (Red Book)** by Beth Ediger (1993); ISBN: 0969578504;
<http://www.amazon.com/exec/obidos/ASIN/0969578504/icongroupinterna>

- **Fibromyalgia and Muscle Pain: What Causes It, How It Feels and What to Do About It** by Leon Chaitow (1996); ISBN: 0722530986;
<http://www.amazon.com/exec/obidos/ASIN/0722530986/icongroupinterna>
- **Fibromyalgia Supporter** by Mark J. Pellegrino (1997); ISBN: 1890018112;
<http://www.amazon.com/exec/obidos/ASIN/1890018112/icongroupinterna>
- **Fibromyalgia Syndrome Getting Healthy** by Jeanne L. Melvin (1996); ISBN: 1569000417;
<http://www.amazon.com/exec/obidos/ASIN/1569000417/icongroupinterna>
- **Fibromyalgia Syndrome: A Practitioner's Guide to Treatment** by Leon Chaitow (1999); ISBN: 0443062277;
<http://www.amazon.com/exec/obidos/ASIN/0443062277/icongroupinterna>
- **Fibromyalgia, Chronic Fatigue Syndrome, and Repetitive Strain Injury: Current Concepts in Diagnosis, Management, Disability, and Health Economics** by Andrew Chalmers (Editor), et al (1995); ISBN: 1560247444;
<http://www.amazon.com/exec/obidos/ASIN/1560247444/icongroupinterna>
- **Fibromyalgia: Exploring the Possibilities, Vol. 1: Sumatriptan: Exploring the Possibilities** by Barbara A. Gibson (1994); ISBN: 0963897012;
<http://www.amazon.com/exec/obidos/ASIN/0963897012/icongroupinterna>
- **Fibromyalgia: Managing the Pain** by Mark J. Pellegrino (1997); ISBN: 1890018104;
<http://www.amazon.com/exec/obidos/ASIN/1890018104/icongroupinterna>
- **From Fatigued to Fantastic!: A Manual for Moving Beyond Chronic Fatigue & Fibromyalgia** by Jacob Teitelbaum (1996); ISBN: 0963759973;
<http://www.amazon.com/exec/obidos/ASIN/0963759973/icongroupinterna>
- **Laugh at Your Muscles II: A Second Light Look at Fibromyalgia** by Mark J. Pellegrino, Barbara Dawkins (1997); ISBN: 1890018155;
<http://www.amazon.com/exec/obidos/ASIN/1890018155/icongroupinterna>
- **Laugh at Your Muscles: A Light Look at Fibromyalgia** by Mark J. Pellegrino (1995); ISBN: 0964689146;

<http://www.amazon.com/exec/obidos/ASIN/0964689146/icongroupinterna>

- **Malic Acid and Magnesium for Fibromyalgia and Chronic Pain Syndrome** by Billie Jay Sahley (1994); ISBN: 0962591459;
<http://www.amazon.com/exec/obidos/ASIN/0962591459/icongroupinterna>
- **Managing Fibromyalgia: A Six-Week Course on Self Care** by Barbara Penner (1997); ISBN: 0964484838;
<http://www.amazon.com/exec/obidos/ASIN/0964484838/icongroupinterna>
- **Muscle Pain Syndromes and Fibromyalgia: Pressure Algometry for Quantification of Diagnosis and Treatment Outcome (Journal of Musculoskeletal Pain, V.** by Andrew A. Fischer (Editor), B.C. World Congress on Pain 1996 Vancouver (1998); ISBN: 0789005107;
<http://www.amazon.com/exec/obidos/ASIN/0789005107/icongroupinterna>
- **Musculoskeletal Pain, Myofascial Pain Syndrome, & the Fibromyalgia Syndrome: Proceedings from the Second World Congress on Myofascial Pain & Fibromyal** by Soren Jacobsen (Designer), et al (1993); ISBN: 1560245085;
<http://www.amazon.com/exec/obidos/ASIN/1560245085/icongroupinterna>
- **Musculoskeletal Pain, Myofascial Pain Syndrome, and the Fibromyalgia Syndrome** by Soren, Md Jacobsen, Bente, M.D. Danneskiold-Samsøe (1993); ISBN: 1560244852;
<http://www.amazon.com/exec/obidos/ASIN/1560244852/icongroupinterna>
- **Myopain '95: Abstracts from the 3rd World Congress on Myofascial Pain and Fibromyalgia San Antonio, Texas, USA July 30-August 3, 1995 (Journal of mus** by I. Jon Russell (Editor) (1995); ISBN: 0789000008;
<http://www.amazon.com/exec/obidos/ASIN/0789000008/icongroupinterna>
- **Myopain '98: Abstracts from the 4th World Congress on Myofascial Pain and Fibromyalgia, Silvi Marina, (Te) Italy, August 24-August 27, 1998 (Journal)** by Leonardo Vecchiet, Maria Adele Giamberardino (1998); ISBN: 0789005492;
<http://www.amazon.com/exec/obidos/ASIN/0789005492/icongroupinterna>
- **Reversing Fibromyalgia: How to Treat and Overcome Fibromyalgia and Other Arthritis-Related Diseases** by Joe M. Elrod (1997); ISBN:

1580540058;

<http://www.amazon.com/exec/obidos/ASIN/1580540058/icongroupinterna>

- **Supplements for Fibromyalgia** by Joe M., Ph.D. Elrod (1998); ISBN: 1580540341;
<http://www.amazon.com/exec/obidos/ASIN/1580540341/icongroupinterna>
- **Taking Control of Tmj: Your Total Wellness Program for Recovering from Tempromandibular Joint Pain, Whiplash, Fibromyalgia, and Related Disorders** by Robert O. Uppgaard DDS, Robert O. Uppgaard (1999); ISBN: 1572241268;
<http://www.amazon.com/exec/obidos/ASIN/1572241268/icongroupinterna>
- **The Fibromyalgia Advocate** by Devin J. Starlanyl, Hal Blatman (Foreword) (1998); ISBN: 1572241217;
<http://www.amazon.com/exec/obidos/ASIN/1572241217/icongroupinterna>
- **The Fibromyalgia Chef: How to Beat the Fifty Conditions That Affect People Over Fifty** by Jack J. Kleid, Mark J. Pellegrino (1997); ISBN: 1890018163;
<http://www.amazon.com/exec/obidos/ASIN/1890018163/icongroupinterna>
- **The Fibromyalgia Handbook** by Barbara A. Gibson (1995); ISBN: 0963897020;
<http://www.amazon.com/exec/obidos/ASIN/0963897020/icongroupinterna>
- **The Fibromyalgia Handbook** by Harris H. McIlwain, Debra Fulghum Bruce (1999); ISBN: 0805061150;
<http://www.amazon.com/exec/obidos/ASIN/0805061150/icongroupinterna>
- **The Fibromyalgia Help Book: Practical Guide to Living Better With Fibromyalgia** by Jenny Fransen, I. Jon Russell (1997); ISBN: 0961522143;
<http://www.amazon.com/exec/obidos/ASIN/0961522143/icongroupinterna>
- **The Fibromyalgia Relief Book: 213 Ideas for Improving Your Quality of Life** by Miryam Ehrlich Williamson, et al (1998); ISBN: 0802775535;
<http://www.amazon.com/exec/obidos/ASIN/0802775535/icongroupinterna>
- **The Fibromyalgia Syndrome: Current Research and Future Directions in Epidemiology, Pathogenesis, and Treatment** by Stanley R. Pillemer

(Editor) (1994); ISBN: 1560247142;

<http://www.amazon.com/exec/obidos/ASIN/1560247142/icongroupinterna>

- **Understanding Post-Traumatic Fibromyalgia** by Mark J. Pellegrino (1996); ISBN: 0964689189;
<http://www.amazon.com/exec/obidos/ASIN/0964689189/icongroupinterna>
- **We Laughed, We Cried: Life With Fibromyalgia** by Kit Gardiser (Editor), Kathleen Kerry (Editor) (1995); ISBN: 0963000217;
<http://www.amazon.com/exec/obidos/ASIN/0963000217/icongroupinterna>
- **When Muscle Pain Won't Go Away: The Relief Handbook for Fibromyalgia and Chronic Muscle Pain** by Gayle Backstrom, Bernard R. Rubin (1998); ISBN: 0878339981;
<http://www.amazon.com/exec/obidos/ASIN/0878339981/icongroupinterna>
- **Your Personal Guide to Living Well With Fibromyalgia** (1997); ISBN: 1563523825;
<http://www.amazon.com/exec/obidos/ASIN/1563523825/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 "fibromyalgia" (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:²⁵

²⁵ 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>.

- **Autogenic training: a mind-body approach to the treatment of fibromyalgia and chronic pain syndrome.** Author: Micah R. Sadigh; Year: 2001; New York: Haworth Medical Press, c2001; ISBN: 0789012553 (hard: alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789012553/icongroupinterna>
- **Betrayal by the brain: the neurologic basis of chronic fatigue syndrome, fibromyalgia syndrome, and related neural network disorders.** Author: Jay A. Goldstein; Year: 1996; New York: Haworth Medical Press, c1996; ISBN: 1560249773 (hard cover: alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/1560249773/icongroupinterna>
- **CFIDS, fibromyalgia, and the virus-allergy link: new therapy for chronic functional illnesses.** Author: R.B. Duncan; Year: 2001; New York: Haworth Medical Press, c2001; ISBN: 0789010720 (hard: alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789010720/icongroupinterna>
- **Clinical overview and pathogenesis of the fibromyalgia syndrome, myofascial pain syndrome, and other pain syndromes.** Author: I. Jon Russell, editor; Year: 1996; New York: Haworth Medical Press, c1996; ISBN: 1560248335 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/1560248335/icongroupinterna>
- **Clinician's guide to controversial illnesses: chronic fatigue syndrome, fibromyalgia, and multiple chemical sensitivities.** Author: Renée R. Taylor, Fred Friedberg, and Leonard A. Jason; Year: 2001; Sarasota, Fla.: Professional Resource Press, c2001; ISBN: 156887068X
<http://www.amazon.com/exec/obidos/ASIN/156887068X/icongroupinterna>
- **Concise encyclopedia of fibromyalgia and myofascial pain.** Author: Roberto Patarca-Montero; Year: 2001; New York: Haworth Medical Press, c2001; ISBN: 0789015277 (hard: alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789015277/icongroupinterna>
- **Fibromyalgia & chronic myofascial pain syndrome: a survival manual.** Author: Devin Starlanyl, Mary Ellen Copeland; Year: 1996; Oakland, CA: New Harbinger Publications, c1996; ISBN: 1572240466 (pbk.)
<http://www.amazon.com/exec/obidos/ASIN/1572240466/icongroupinterna>

- **Fibromyalgia: the controversy continues.** Author: Kathleen R. Zeller; Year: 1993; [Dallas?: University of Texas Southwestern Medical Center, 1993]
- **Fibromyalgia syndrome: current research and future directions in epidemiology, pathogenesis, and treatment.** Author: Stanley R. Pillemer, guest editor; Year: 1994; New York: Haworth Medical Press, [1994]; ISBN: 1560247142 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/1560247142/icongroupinterna>
- **Fibromyalgia syndrome: proceedings: the Palm Springs Fibromyalgia Syndrome Symposium, Palm Springs, CA, March 18-20, 1988.** Author: Palm Springs Fibromyalgia Syndrome Symposium (1988); Year: 1989; Toronto, Ont.; Buffalo, N.Y.: Journal of Rheumatology Pub. Co., [1989]
- **Fibromyalgia, chronic fatigue syndrome, and repetitive strain injury: current concepts in diagnosis, management, disability, and health economics.** Author: Andrew Chalmers ... [et al.], editors; Year: 1995; New York: Haworth Medical Press, c1995; ISBN: 1560247444
<http://www.amazon.com/exec/obidos/ASIN/1560247444/icongroupinterna>
- **Muscle pain syndromes and fibromyalgia: pressure algometry for quantification of diagnosis and treatment outcome.** Author: Andrew A. Fischer, guest editor; Year: 1998; New York: Haworth Medical Press, c1998; ISBN: 0789005107 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789005107/icongroupinterna>
- **Muscle pain, myofascial pain, and fibromyalgia: recent advances.** Author: Leonardo Vecchiet, Maria Adele Giamberardino, editors; Year: 1999; New York: Haworth Medical Press, c1999; ISBN: 0789007959 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789007959/icongroupinterna>
- **Musculoskeletal pain, myofascial pain syndrome, and the fibromyalgia syndrome: proceedings from the Second World Congress on Myofascial Pain and Fibromyalgia.** Author: Søren Jacobsen, Bente Danneskiold-Samsøe, Birger Lund, guest editors; Year: 1993; New York: Haworth Medical Press, c1993; ISBN: 1560244852 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/1560244852/icongroupinterna>
- **Myofascial pain and fibromyalgia: trigger point management.** Author: [edited by] Edward S. Rachlin; Year: 1994; St. Louis: Mosby, c1994; ISBN: 0801668174

<http://www.amazon.com/exec/obidos/ASIN/0801668174/icongroupinterna>

- **Myofascial pain and fibromyalgia.** Author: editors, James R. Friction, Essam A. Awad; Year: 1990; New York: Raven Press, c1990; ISBN: 0881676144
<http://www.amazon.com/exec/obidos/ASIN/0881676144/icongroupinterna>
- **Myopain '98: abstracts from the 4th World Congress on Myofascial Pain and Fibromyalgia, Silvi Marina (TE), Italy, August 24-August 27, 1998.** Author: Leonardo Vecchiet, Maria Adele Giamberardino, supplement editors; Year: 1998; New York: Haworth Press, 1998; ISBN: 0789005492
<http://www.amazon.com/exec/obidos/ASIN/0789005492/icongroupinterna>
- **Neuroscience and endocrinology of fibromyalgia.** Author: Stanley R. Pillemer, editor; Year: 1998; New York: Haworth Medical Press, 1998; ISBN: 0789006839 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0789006839/icongroupinterna>
- **Progress in fibromyalgia and myofascial pain.** Author: edited by H. Verøy, H. Merskey; Year: 1993; Amsterdam; New York: Elsevier, 1993; ISBN: 0444895361 (alk. paper)
<http://www.amazon.com/exec/obidos/ASIN/0444895361/icongroupinterna>
- **Study to the presence of antipolymer antibodies in a group of Dutch women with a silicone breast implant.** Author: W.H. de Jong ... [et al.]; Year: 1999; Bilthoven: National Institute of Public Health and the Environment, [1999]

Chapters on Fibromyalgia

Frequently, fibromyalgia will be discussed within a book, perhaps within a specific chapter. In order to find chapters that are specifically dealing with fibromyalgia, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and fibromyalgia 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 "fibromyalgia" (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 fibromyalgia:

- **Soft Tissue Rheumatism**

Source: in Maddison, P.J.; et al., Eds. Oxford Textbook of Rheumatology. Volume 2. New York, NY: Oxford University Press, Inc. 1993. p. 940-958.

Contact: Available from Oxford University Press, Inc., New York, NY.

Summary: This chapter for health professionals discusses soft tissue rheumatism. A classification that divides the conditions into generalized and localized soft tissue lesions is presented. The economic effects of soft tissue rheumatism are considered. Data on the epidemiology of soft tissue rheumatism are provided. The structure of tendons and ligaments is described, tendon lesions are identified, and pathological studies on tendon healing are reviewed. The clinical features and treatment of repetitive strain syndrome are discussed. The features, diagnosis, and treatment of fibromyalgia are examined. The characteristics and treatment of hypermobility syndrome and various shoulder, elbow, wrist, hand, hip, knee, heel, and foot disorders are described. General comments about the management of patients with soft tissue rheumatism are also presented. 26 references, 1 figure, and 13 tables.

- **Definition and Methodological Issues**

Source: in Manu, P. Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice. Binghamton, NY: Haworth Medical Press. 2000. p. 123-124.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the first of six short chapters that focus on IBS, the author provides a definition of the disorder and an introduction to the methodological issues that arise in its treatment. IBS is diagnosed by the Rome group criteria, requiring the presence of at least three months of recurrent or continuous abdominal pain or discomfort that is either relieved with defecation (bowel movement) or associated with a change in frequency or consistency of stool. In addition, the patient must have at

least two of the following five symptoms: altered stool frequency (how often the patient has a bowel movement), altered stool consistency, altered stool passage, passage of mucus, and feeling of abdominal distention. Physical examination, endoscopy (colonoscopy or sigmoidoscopy), contrast radiologic studies (X rays), and stool analysis are useful only to exclude organic pathology (another disease or disorder causing the patient's symptoms). The methodological issues raised by controlled treatment trials in IBS include the difficulty of measuring effectiveness in the absence of a way to objectively measure symptom improvement. There presently exists an array of arbitrary rating scales that have attempted to quantify the effect of treatment. An overall measure carefully weighing the contribution of the changes induced by therapy in the major symptoms of the syndrome is advisable, but difficult to create and validate. The author recommends that studies undertaken to assess the impact of drug therapy on IBS be of sufficient duration (at least 8 to 12 weeks) and include a large sample size.

- **Effective Therapies**

Source: in Manu, P. *Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice*. Binghamton, NY: Haworth Medical Press. 2000. p. 125-130.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the second of six short chapters that focus on IBS, the author introduces and reviews the effective therapies for the condition. The author focuses on the tricyclic antidepressants, notably amitriptyline, trimipramine, and desipramine. The author discusses some of the basic research on each drug's use in patients with IBS. Amitriptyline improved the symptoms of 79 percent of the patients studied. The improvement reached a highly significant level when baseline symptoms were compared to the status immediately following the administration of the tricyclic drug. Amitriptyline induced improvement was more frequently observed among patients whose IBS was of moderate severity and among those whose baseline evaluation indicated high depression and anxiety scores. Compared with placebo,

treatment with trimipramine significantly reduced the severity of vomiting, sleeplessness, and depression, as well as the presence of mucus in stool. However, for the other six target symptoms, including the main complaint of abdominal pain, the frequency and severity was reduced to a similar degree in both the placebo and trimipramine groups. Closely related to trimipramine, desipramine resulted in improvement in 54 percent of the patients in one study reported. The diarrhea predominant cases were more likely to respond to desipramine (68 percent) than the constipation predominant subgroup (22 percent).

- **Controversial Therapies**

Source: in Manu, P. *Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice*. Binghamton, NY: Haworth Medical Press. 2000. p. 131-152.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the third of six short chapters that focus on IBS, the author introduces and reviews controversial drug therapies used for the condition. The author focuses on bulking agents, including ispaghula husk, psyllium, and calcium polycarbophil; smooth muscle relaxants, including dicyclomine hydrochloride, mebeverine, trimebutine, and octylonium bromide; calcium channel blocking agents, including diltiazem, pinaverium, and cisapride (recently found to be associated with heart rhythm abnormalities). The author discusses some of the basic research on each drug's use in patients with IBS. Treatment with ispaghula was no better than placebo with regard to the principal symptoms of abdominal pain, abdominal distention, and the presence of frequent bowel movements; subjective improvement was noted by the patients, however. An eight week study of treatment with psyllium noted an improvement in the severity of abdominal pain and the number of normal stools in both treatment groups (drug and placebo groups) as compared with baseline; there was no difference between placebo and psyllium in the proportion of patients who considered themselves 'much better' after treatment. In the study of calcium polycarbophil, there were no statistically significant differences between the active agent and

placebo as measured by global scores, by the specific symptom scores for abdominal pain, abdominal distention, nausea, and stool consistency, or by the proportion of patients who favored one of the treatments over the other. In studies of dicyclomine, 94 percent of patients treated with the drug improved (compared with 54 percent of those who took placebo). Mebeverine, widely used in the United Kingdom to treat IBS, fared no better than placebo for symptom relief. Treatment with 200 mg of trimebutine three times daily was considered superior to placebo, based primarily on patient preference for the drug; however, side effects at clinical dosage levels remain problematic. Octylonium bromide resulted in a slight statistical advantage over placebo (65 percent improvement compared with 50 percent improvement, respectively). Diltiazem appeared to be slightly more effective than placebo when it was the first treatment used in the crossover sequence of the trial, but the overall outcome after nine weeks indicated no meaningful advantage. Of the two calcium channel blocking agents tested in clinical trials, pinaverium but not diltiazem appears to offer short term benefit.

- **Ineffective Therapies**

Source: in Manu, P. *Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice*. Binghamton, NY: Haworth Medical Press. 2000. p. 153-167.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the fourth of six short chapters that focus on IBS, the author introduces and reviews the ineffective therapies presently in use for the condition. The author focuses on dietary fiber, lactase, and ondansetron. The author's evidence based analysis of a number of studies demonstrates that research performed in the past two decades has established with a high degree of certainty that the administration of dietary fiber is not useful for treating IBS. Lactose (milk sugar) maldigestion can be identified in close to one third of patients diagnosed with IBS, and the symptoms of lactose intolerance or maldigestion are so close to those for IBS as to prevent the clinical identification of this subgroup. Treatment with lactase provided no statistical improvement

over placebo. The author reports on a study of ondansetron, in which the drug treatment did not decrease significantly the severity of abdominal pain or the total number of symptoms experienced during the trial. Stool consistency increased after ondansetron therapy. In another study, ondansetron was similar to placebo with regard to its effect on abdominal pain, abdominal distention, backache, urinary symptoms, and depression and anxiety. The only symptoms improved by ondansetron in this population with IBS were postprandial (after a meal) discomfort, belching, and heartburn.

- **Unreplicated Trials**

Source: in Manu, P. *Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice*. Binghamton, NY: Haworth Medical Press. 2000. p. 169-174.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the fifth of six short chapters that focuses on IBS, the author introduces and reviews unreplicated research trials on therapies for the condition. These trials include *Streptococcus faecium*, not substantially better than placebo for any of the symptoms evaluated; fedotozine (a drug used to block colonic pain), with which a high dose (30 mg daily) was better than placebo with regard to the severity of abdominal pain and abdominal distention; Chinese herbal medicine, which offered encouraging results (44 percent with treatment improved, compared to 22 percent taking placebo) that need replicating; and Indian herbal medicine, which was no better than placebo with respect to the proportions of patients reporting improvement in the severity of abdominal pain, constipation, gaseousness, and altered bowel habits (diarrhea and constipation). The Indian herbal mixture was effective in reducing the severity of diarrhea and that of symptoms of anxiety and depression, but this limited benefit does not support widespread use of Indian herbal medicine as a therapeutic modality for patients with IBS.

- **Evidence-Based Therapy of Irritable Bowel Syndrome**

Source: in Manu, P. *Pharmacotherapy of Common Functional Syndromes: Evidence-Based Guidelines for Primary Care Practice*. Binghamton, NY: Haworth Medical Press. 2000. p. 175-177.

Contact: Available from Haworth Medical Press, an imprint of Haworth Press, Inc. 10 Alice Street, Binghamton, New York 13904-1580. (800) HAWORTH or (800) 429-6784. Outside United States and Canada (607) 722-5857. Fax (800) 895-0582. E-mail: getinfo@haworthpressinc.com. Website: www.haworthpressinc.com. Price: \$69.95 plus shipping and handling. ISBN: 0789005883.

Summary: This chapter is from a book that evaluates drug therapies for each of the four major functional disorders: chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome (IBS), and premenstrual syndrome. In this chapter, the final of six short chapters that focus on IBS, the author reviews evidence based therapy for IBS. The author contradicts present thinking that drug therapy for IBS should focus on the most disturbing symptoms, using loperamide for diarrhea, fiber for constipation, and anticholinergic agents for pain. The author, instead, contends that research studies do not provide support for the effectiveness of these drug approaches. Because evidence indicates that tricyclic antidepressants are effective for the totality of this illness, the author contends that these drugs should constitute the first line treatment in all cases in which the severity of the syndrome warrants intervention, provided that there are no contraindications to the use of these agents and that the potential for drug interactions has been considered. Monotherapy with amitriptyline or desipramine should be initiated with a starting dose of 10 mg administered once a day in patients with the diarrhea predominant variant of the syndrome. Adjunctive therapy with a bulking agent may lead to a decrease in the overall severity of the syndrome in all patients and ease the bowel habit and stool passage in those with the constipation predominant variant of the syndrome.

- **Main Symptoms of Irritable Bowel Syndrome**

Source: in Magee, E. *Tell Me What to Eat If I Have Irritable Bowel Syndrome*. Franklin Lakes, NJ: Career Press, Inc. 2000. p. 24-29.

Contact: Available from Career Press, Inc. 3 Tice Road, P.O. Box 687, Franklin Lakes, NJ 07417. (800) 227-3371. Website: www.careerpress.com or www.newpagebooks.com. Price: \$10.99 plus shipping and handling.

Summary: This chapter is from a book that offers eating and nutrition guidelines for people who have been diagnosed with irritable bowel syndrome (IBS). People with IBS have bowels that tend to overreact in

certain situations. Whatever affects the bowels of the population at large, such as diet, hormones, or stress, affects those of people with IBS even more, resulting in the symptoms of the disorder. This chapter describes the main symptoms of IBS, which include abdominal pain, irregular pattern of defecation at least 25 percent of the time, constipation, diarrhea, mucus in the stool, abdominal bloating or swelling, the feeling of incomplete emptying rectum, and gas attacks (flatulence). The author notes that, for many women, IBS symptoms seem to worsen during their periods (menstruation). Therefore, right before and during one's period, it is especially important to avoid trigger foods or stressors that seem to bring on or aggravate bowel symptoms. The chapter concludes with a brief discussion of common IBS symptoms that occur in other parts of the body. These can include heartburn, sleep disturbances, fatigue, bladder or urinary problems, non cardiac chest pain, nausea or bloating, pain in the upper abdomen, migraine headaches, painful intercourse, and fibromyalgia.

- **How Do I Know I Have an Irritable Bowel?**

Source: in Burstall, D.; Vallis, T.M.; Turnbull, G.K. I.B.S. Relief: A Doctor, a Dietitian, and a Psychologist Provide a Team Approach to Managing Irritable Bowel Syndrome. Somerset, NJ: John Wiley and Sons, Inc. 1998. p. 11-20.

Contact: Available from John Wiley and Sons, Inc. Distribution Center, 1 Wiley Drive, Somerset, NJ 08875-1272. (800) 225-5945 or (732) 469-4400. Fax (732) 302-2300. E-mail: bookinfo@wiley.com. Website: www.wiley.com. Price: \$13.95 plus shipping and handling. ISBN: 0471347418.

Summary: This chapter on identifying irritable bowel syndrome (IBS) is from a book that offers a multidisciplinary (medical, nutritional, and psychological) approach to managing IBS. The book is designed as a workbook for people with IBS to learn symptom management skills. In this chapter, the authors review the common symptoms of an irritable bowel, including abdominal pain, irregular patterns of defecation, presence of mucus in the stool, abdominal bloating or swelling, and the sensation of incomplete emptying of the rectum after defecation. The chapter also reviews less common symptoms, including heartburn, fatigue, bladder or urinary problems, menstrual cycle changes, and fibromyalgia. The chapter then helps readers identify the specific symptoms they are experiencing, and their connection to diet, stress, and other factors. The authors introduce the use of a symptom diary and explain how to use it to begin to manage IBS. The authors encourage readers to perceive their heightened sensitivity of the gut as a way to help

them identify when they are experiencing certain situations or life events as being stressful. The chapter concludes with a blank form that readers can use for their symptom diary. 2 figures.

- **Medical Conditions Associated with Interstitial Cystitis**

Source: in Moldwin, R.M. *Interstitial Cystitis Survival Guide: Your Guide to the Latest Treatment Options and Coping Strategies*. Oakland, CA: New Harbinger Publications, Inc. 2000. p. 43-80.

Contact: Available from Interstitial Cystitis Association. 51 Monroe Street, Suite 1402, Rockville, MD 20850. (800) HELP-ICA or (301) 610-5300. Fax (301) 610-5308. E-mail: icamail@ichelp.org. Website: www.ichelp.org. Price: \$12.00 plus shipping and handling. ISBN: 1572242108.

Summary: More than 700,000 Americans have interstitial cystitis (IC), a condition that includes symptoms of recurring bladder pain and discomfort on urination. This chapter on medical conditions associated with IC is from a self care book designed to empower readers by simplifying the diagnostic and treatment process for IC. The primary object of the book is to build a framework for delivering proper care to the IC patient. IC is a disease recognized by its symptoms; there are no specific blood or urine tests that firmly tell a clinician whether IC is present or not. The author discusses other medical conditions that may coexist with IC, including allergies, irritable bowel syndrome (IBS), pelvic floor dysfunction, skin sensitivity, vulvodynia (pain in the vulva and vaginal area), fibromyalgia, migraine headaches, and asthma. In most instances, problems such as allergies, migraines, asthma, and sensitive skin tended to exist prior to the symptoms of IC. Conversely, fibromyalgia and chronic fatigue syndrome tended to occur after the onset of IC. Some of the problems can be terribly incapacitating and their symptoms may even predominate over those of the bladder problem. These other diseases can also play a role in worsening the symptoms of IC. Treatment of these disorders is therefore just as important as treatment for IC; the author details the treatment options for vulvodynia, pelvic floor dysfunction, urethral syndrome, fibromyalgia, and urinary tract infection. The chapter concludes with a discussion of managing IC during pregnancy. 1 figure. 1 table.

- **Management of Masticatory Myalgia and Arthralgia**

Source: in Lund, J.P., et al., eds. *Orofacial Pain: From Basic Science to Clinical Management*. Chicago, IL: Quintessence Publishing Co, Inc. 2001. p. 235-248.

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: \$38.00 plus shipping and handling. ISBN: 0867153814.

Summary: Myalgia and arthralgia refer to muscle and joint pain, respectively. When involving the masticatory muscles, the temporomandibular joint structures, or both, they are collectively called temporomandibular disorders (TMD). This chapter on the management of masticatory (chewing) myalgia and arthralgia is from a textbook that focuses on the topics that would be found in an undergraduate curriculum for dentistry. Most of the chapters in the book were first presented as papers at a symposium for teachers of orofacial pain held in Vancouver, Canada, in March 1999 in conjunction with the American and Canadian Associations of Dental Schools and the International Association for Dental Research. In this chapter, the authors discuss differential diagnosis, including that of masticatory myalgia which should include postexercise myalgia, myofascial pain, fibromyalgia, tension type headache, myositis, muscle contracture, muscle spasm, dyskinesias and dystonias; and that of temporomandibular joint arthralgia, which includes TMJ disc displacement, TMJ subluxation or dislocation, osteoarthritis, TMJ synovitis or capsulitis, rheumatic diseases, fracture and contusion, ankylosis, and tumors or growths. The authors then focus on management strategies, including pharmacotherapy (drugs), physical medicine, intraoral splints, behavioral management including self management, and surgery. The chapter concludes with a brief section discussing referrals to other specialists. 2 tables. 21 references.

- **Section One: General Orthopaedics**

Source: in Greene, W.B., Ed. Essentials of Musculoskeletal Care. 2nd ed. Rosemont, IL: American Academy of Orthopaedic Surgeons (AAOS). 2001. p. 1-102.

Contact: Available from American Academy of Orthopaedic Surgeons (AAOS). 6300 North River Road, Rosemont, IL 60018-4262. (800) 626-6726 (toll-free) or (847) 823-7186. Fax (800) 823-8025 (toll-free) or (847) 823-8025. E-mail: custserv@aaos.org. Website: www.aaos.org. Price: \$105.00 for nonmembers; \$90.00 AAOS members; \$80.00 for residents; plus shipping and handling. ISBN 0892032170.

Summary: This section of a book on musculoskeletal care provides health professionals with an overview of general orthopedics. The section presents information on the principles of evaluating and examining a patient presenting with musculoskeletal problems, focusing on

inspection, palpation, range of motion, muscle testing, and motor and sensory evaluation. This is followed by a description of types of lower extremity amputations and a discussion of the use of canes, crutches, and walkers. In addition, the section provides an overview of conditions that affect multiple joints or multiple regions and conditions that have systemic effects, including rheumatoid arthritis, osteoarthritis (OA), septic arthritis, compartment syndrome, crystalline deposition diseases, diffuse idiopathic skeletal hyperostosis, falls and other injuries, fibromyalgia syndrome, fractures, Lyme disease, osteomyelitis, osteoporosis, overuse syndromes, reflex sympathetic dystrophy and complex regional pain syndromes, seronegative spondyloarthropathies, sprains and strains, soft tissue and bone tumors, and venous thrombosis. Information includes synonyms for and red flags associated with each condition; the definition, clinical symptoms, diagnosis, differential diagnosis, adverse outcomes, and treatment of the condition; diagnostic tests; and adverse treatment outcomes. Other topics include corticosteroid injections, imaging principles and techniques, nonorganic symptoms and signs, nonsteroidal antiinflammatory drugs, alternative therapies for OA, rehabilitation principles and therapeutic modalities, splinting techniques, and sports medicine principles. 27 figures and 16 tables.

- **Regional Problems of the Arm and Leg in Children**

Source: in Maddison, P.J.; et al., Eds. Oxford Textbook of Rheumatology. Volume 1. New York, NY: Oxford University Press, Inc. 1993. p. 80-85.

Contact: Available from Oxford University Press, Inc., New York, NY.

Summary: This chapter for health professionals describes regional problems of the arm and leg in children. The causes of regional musculoskeletal pain in children are highlighted. Regional pain syndromes of the shoulder, the elbow, the wrist, and the hand seen in children are identified. Common causes of generalized leg pains in children are discussed, including growing pains, shin splints, stress fractures, and unequal leg length. The features of various childhood disorders of the hip, the knee, the foot, and the ankle are described. In addition, generalized conditions that can present as regional musculoskeletal pain syndromes are discussed, including fibromyalgia. 31 references and 5 tables.

Directories

In addition to the references and resources discussed earlier in this chapter, a number of directories relating to fibromyalgia have been published that consolidate information across various sources. These too might be useful in gaining access to additional guidance on fibromyalgia. The Combined Health Information Database lists the following, which you may wish to consult in your local medical library:²⁶

- **North American Directory of Fibromyalgia Support Services, 1999 ed**

Source: Linden, VA: National Fibromyalgia Partnership. 2001. 114 p.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website:

www.fmpartnership.org. Price: \$16.00 for nonmembers; \$13.00 for members and support group leaders.

Summary: This directory is a working tool for the leadership or staff members of fibromyalgia self-help and support organizations and a resource for patients, medical professionals, health and human services organizations, and the general public. The directory provides concise information about a range of service providers throughout the United States and Canada. Organizations located in the United States are arranged by zip code within each State, and those in Canada are arranged alphabetically within each province. Each organization entry includes the name of the organization and its mailing address, telephone number, and telephone hours. Fax number, email address, and website are also provided if available. In addition, each entry includes a brief description of the organization and its services.

- **Washington Metro Area Resource Packet**

Source: Linden, VA: National Fibromyalgia Partnership. 1999. 18 p.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540)

²⁶ You will need to limit your search to "Directories" and fibromyalgia using the "Detailed Search" option. Go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. To find directories, use the drop boxes at the bottom of the search page where "You may refine your search by". For publication date, select "All Years", select language and the format option "Directory". By making these selections and typing in "fibromyalgia" (or synonyms) into the "For these words:" box, you will only receive results on directories dealing with fibromyalgia. You should check back periodically with this database as it is updated every three months.

622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org. Price: \$3.00.

Summary: This resource packet provides people who have fibromyalgia and reside in the Washington, DC, metropolitan area with public service information. The packet includes a list of independent fibromyalgia support groups currently operating in the area, a list of local medical practitioners familiar with fibromyalgia syndrome categorized by specialty, a list of attorneys familiar with fibromyalgia syndrome categorized by office location, and an index of medical professionals and attorneys listed in the directory. Each support group entry includes the name of the group, its mailing address and telephone number, and the name of a contact person. Fax number, email address, and website are also provided if available. In addition, each entry includes a brief description of the group and its services. Entries for medical professionals provide the name, address, and telephone number of each practitioner. Entries for attorneys provide the name, address, telephone number, and office hours of each attorney, as well as his or her fax number, email address, and website if available. The types of cases handled by each attorney are also identified.

General Home References

In addition to references for fibromyalgia, 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):

- **American College of Physicians Complete Home Medical Guide (with Interactive Human Anatomy CD-ROM)** by David R. Goldmann (Editor), American College of Physicians; Hardcover - 1104 pages, Book & CD-Rom edition (1999), DK Publishing; ISBN: 0789444127;
<http://www.amazon.com/exec/obidos/ASIN/0789444127/icongroupinterna>
- **The American Medical Association Guide to Home Caregiving** by the American Medical Association (Editor); Paperback - 256 pages 1 edition (2001), John Wiley & Sons; ISBN: 0471414093;
<http://www.amazon.com/exec/obidos/ASIN/0471414093/icongroupinterna>
- **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 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>
- **Mayo Clinic Guide to Self-Care: Answers for Everyday Health Problems** by Philip Hagen, M.D. (Editor), et al; Paperback - 279 pages, 2nd edition (December 15, 1999), Kensington Publishing Corp.; ISBN: 0962786578;
<http://www.amazon.com/exec/obidos/ASIN/0962786578/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>

Vocabulary Builder

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

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

Ankylosis: Fixation and immobility of a joint. [NIH]

Anticholinergic: An agent that blocks the parasympathetic nerves. Called also parasympatholytic. [EU]

Arthralgia: Pain in a joint. [EU]

Colonoscopy: Endoscopic examination, therapy or surgery of the luminal surface of the colon. [NIH]

Constipation: Infrequent or difficult evacuation of the faeces. [EU]

Contracture: A condition of fixed high resistance to passive stretch of a muscle, resulting from fibrosis of the tissues supporting the muscles or the joints, or from disorders of the muscle fibres. [EU]

Contusion: A bruise; an injury of a part without a break in the skin. [EU]

Cystitis: Inflammation of the urinary bladder. [EU]

Defecation: The normal process of elimination of fecal material from the rectum. [NIH]

Desipramine: A tricyclic dibenzazepine compound that potentiates neurotransmission. Desipramine selectively blocks reuptake of norepinephrine from the neural synapse, and also appears to impair serotonin transport. This compound also possesses minor anticholinergic

activity, through its affinity to muscarinic receptors. [NIH]

Diarrhea: Passage of excessively liquid or excessively frequent stools. [NIH]

Dicyclomine: A muscarinic antagonist used as an antispasmodic and in urinary incontinence. It has little effect on glandular secretion or the cardiovascular system. It does have some local anesthetic properties and is used in gastrointestinal, biliary, and urinary tract spasms. [NIH]

Diltiazem: A benzothiazepine derivative with vasodilating action due to its antagonism of the actions of the calcium ion in membrane functions. It is also teratogenic. [NIH]

Dislocation: The displacement of any part, more especially of a bone. Called also luxation. [EU]

Distention: The state of being distended or enlarged; the act of distending. [EU]

Dyskinesia: Impairment of the power of voluntary movement, resulting in fragmentary or incomplete movements. [EU]

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

Endoscopy: Visual inspection of any cavity of the body by means of an endoscope. [EU]

Flatulence: The presence of excessive amounts of air or gases in the stomach or intestine, leading to distention of the organs. [EU]

Hyperostosis: Hypertrophy of bone; exostosis. [EU]

Idiopathic: Of the nature of an idiopathy; self-originated; of unknown causation. [EU]

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

Monotherapy: A therapy which uses only one drug. [EU]

Mucus: The free slime of the mucous membranes, composed of secretion of the glands, along with various inorganic salts, desquamated cells, and leucocytes. [EU]

Nervousness: Excessive excitability and irritability, with mental and physical unrest. [EU]

Ondansetron: A competitive serotonin type 3 receptor antagonist. It is effective in the treatment of nausea and vomiting caused by cytotoxic chemotherapy drugs, including cisplatin, and it has reported anxiolytic and neuroleptic properties. [NIH]

Orthopaedic: Pertaining to the correction of deformities of the musculoskeletal system; pertaining to orthopaedics. [EU]

Osteomyelitis: Inflammation of bone caused by a pyogenic organism. It may remain localized or may spread through the bone to involve the marrow, cortex, cancellous tissue, and periosteum. [EU]

Osteoporosis: Reduction in the amount of bone mass, leading to fractures after minimal trauma. [EU]

Septic: Produced by or due to decomposition by microorganisms; putrefactive. [EU]

Sigmoidoscopy: Endoscopic examination, therapy or surgery of the sigmoid flexure. [NIH]

Somatic: 1. pertaining to or characteristic of the soma or body. 2. pertaining to the body wall in contrast to the viscera. [EU]

Streptococcus: A genus of gram-positive, coccoid bacteria whose organisms occur in pairs or chains. No endospores are produced. Many species exist as commensals or parasites on man or animals with some being highly pathogenic. A few species are saprophytes and occur in the natural environment. [NIH]

Sumatriptan: A serotonin agonist that acts selectively at 5HT₁ receptors. It is used in the treatment of migraines. [NIH]

Synovitis: Inflammation of a synovial membrane. It is usually painful, particularly on motion, and is characterized by a fluctuating swelling due to effusion within a synovial sac. Synovitis is qualified as fibrinous, gonorrhoeal, hyperplastic, lipomatous, metritic, puerperal, rheumatic, scarlatinal, syphilitic, tuberculous, urethral, etc. [EU]

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

Trimebutine: Proposed spasmolytic with possible local anesthetic action used in gastrointestinal disorders. [NIH]

Trimipramine: Tricyclic antidepressant similar to imipramine, but with more antihistaminic and sedative properties. [NIH]

Vaginal: 1. of the nature of a sheath; ensheathing. 2. pertaining to the vagina. 3. pertaining to the tunica vaginalis testis. [EU]

CHAPTER 7. MULTIMEDIA ON FIBROMYALGIA

Overview

Information on fibromyalgia 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 fibromyalgia. 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 fibromyalgia is the Combined Health Information Database. You will need to limit your search to “video recording” and “fibromyalgia” 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 “fibromyalgia” (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 fibromyalgia:

- **Chronic Myofascial Pain Syndrome. A Guide to the Trigger Points**

Contact: Available from New Harbinger Publications, Inc., 5674 Shattuck Avenue, Oakland, CA 94609. Price: \$49.95 in the U.S.

Summary: This videorecording for health professionals and individuals with chronic myofascial pain syndrome is a companion to a book on fibromyalgia and chronic myofascial pain syndrome, and it serves as a guide to trigger points. The video begins by demonstrating trigger points and their specific pain patterns, focusing on the head; shoulder and neck; elbow to finger; torso; lower back and pelvis; hip, thigh, and knee; and the lower leg and foot. It identifies perpetuating factors, including Morton's foot, paradoxical breathing, and repetitious exercise. In addition, the video offers guidelines for assessing the severity of one's condition, presents examples of self-care physical therapy techniques, and provides suggestions for designing a treatment program.

Bibliography: Multimedia on Fibromyalgia

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 fibromyalgia (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 fibromyalgia. For more information, follow the hyperlink indicated:

- **Fibromyalgia.** Source: a co-production of Multimedia Communications and Physician Education and Development; Year: 2000; Format: Videorecording; Oakland, CA: Kaiser Foundation Health Plan, c2000
- **Fibromyalgia.** Source: [presented by] Marshfield Clinic, St. Joseph's Hospital, Marshfield Medical Research Foundation; Year: 1993; Format: Videorecording; Marshfield, WI: Video Network, [1993]
- **Practical approach to fibromyalgia.** Source: Peggy Schlesinger; Year: 1996; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, 1996

CHAPTER 8. PERIODICALS AND NEWS ON FIBROMYALGIA

Overview

Keeping up on the news relating to fibromyalgia can be challenging. Subscribing to targeted periodicals can be an effective way to stay abreast of recent developments on fibromyalgia. Periodicals include newsletters, magazines, and academic journals.

In this chapter, we suggest a number of news sources and present various periodicals that cover fibromyalgia beyond and including those which are published by patient associations mentioned earlier. We will first focus on news services, and then on periodicals. News services, press releases, and newsletters generally use more accessible language, so if you do choose to subscribe to one of the more technical periodicals, make sure that it uses language you can easily follow.

News Services & Press Releases

Well before articles show up in newsletters or the popular press, they may appear in the form of a press release or a public relations announcement. One of the simplest ways of tracking press releases on fibromyalgia is to search the news wires. News wires are used by professional journalists, and have existed since the invention of the telegraph. Today, there are several major “wires” that are used by companies, universities, and other organizations to announce new medical breakthroughs. In the following sample of sources, we will briefly describe how to access each service. These services only post recent news intended for public viewing.

PR Newswire

Perhaps the broadest of the wires is PR Newswire Association, Inc. To access this archive, simply go to <http://www.prnewswire.com>. Below the search box, select the option "The last 30 days." In the search box, type "fibromyalgia" or synonyms. The search results are shown by order of relevance. When reading these press releases, do not forget that the sponsor of the release may be a company or organization that is trying to sell a particular product or therapy. Their views, therefore, may be biased.

Reuters

The Reuters' Medical News database can be very useful in exploring news archives relating to fibromyalgia. While some of the listed articles are free to view, others can be purchased for a nominal fee. To access this archive, go to <http://www.reutershealth.com/frame2/arch.html> and search by "fibromyalgia" (or synonyms). The following was recently listed in this archive for fibromyalgia:

- **Behavior therapy boosts functioning in fibromyalgia**
Source: Reuters Health eLine
Date: July 10, 2002
<http://www.reuters.gov/archive/2002/07/10/eline/links/20020710elin008.html>
- **Physiologic factors involved in fibromyalgia, contradicting psychogenic attribution**
Source: Reuters Medical News
Date: June 19, 2002
<http://www.reuters.gov/archive/2002/06/19/professional/links/20020619clin011.html>
- **Brain scans document fibromyalgia pain**
Source: Reuters Health eLine
Date: June 17, 2002
<http://www.reuters.gov/archive/2002/06/17/eline/links/20020617elin006.html>
- **Muscle strengthening program improves disease activity in fibromyalgia**
Source: Reuters Medical News
Date: June 14, 2002
<http://www.reuters.gov/archive/2002/06/14/professional/links/20020614clin001.html>

- **IV lidocaine promising in fibromyalgia**
 Source: Reuters Industry Breifing
 Date: April 25, 2002
<http://www.reuters.gov/archive/2002/04/25/business/links/20020425clin007.html>
- **Prozac may offer short-term fibromyalgia relief**
 Source: Reuters Health eLine
 Date: March 21, 2002
<http://www.reuters.gov/archive/2002/03/21/eline/links/20020321elin011.html>
- **Strength training may ease fibromyalgia symptoms**
 Source: Reuters Health eLine
 Date: February 27, 2002
<http://www.reuters.gov/archive/2002/02/27/eline/links/20020227elin003.html>
- **Cypress starts phase II trial of drug for fibromyalgia syndrome**
 Source: Reuters Industry Breifing
 Date: February 25, 2002
<http://www.reuters.gov/archive/2002/02/25/business/links/20020225drgd004.html>
- **Changes in weather unrelated to fibromyalgia pain**
 Source: Reuters Health eLine
 Date: February 12, 2002
<http://www.reuters.gov/archive/2002/02/12/eline/links/20020212elin006.html>
- **Group therapy may help fibromyalgia patients**
 Source: Reuters Health eLine
 Date: January 25, 2002
<http://www.reuters.gov/archive/2002/01/25/eline/links/20020125elin023.html>
- **Exercise may boost mood in fibromyalgia patients**
 Source: Reuters Health eLine
 Date: January 16, 2002
<http://www.reuters.gov/archive/2002/01/16/eline/links/20020116elin007.html>
- **Brain scans show increased pain sensitivity in fibromyalgia**
 Source: Reuters Medical News
 Date: November 16, 2001
<http://www.reuters.gov/archive/2001/11/16/professional/links/2001116clin020.html>

- **Brain scans show pain sensitivity in fibromyalgia**
Source: Reuters Health eLine
Date: November 15, 2001
<http://www.reuters.gov/archive/2001/11/15/eline/links/20011115elin024.html>
- **Acupuncture may help relieve fibromyalgia symptoms**
Source: Reuters Health eLine
Date: November 12, 2001
<http://www.reuters.gov/archive/2001/11/12/eline/links/20011112elin030.html>
- **Fibromyalgia often seen in patients with transformed migraine**
Source: Reuters Medical News
Date: October 26, 2001
<http://www.reuters.gov/archive/2001/10/26/professional/links/20011026epid004.html>
- **Altering the diet may ease fibromyalgia**
Source: Reuters Health eLine
Date: October 25, 2001
<http://www.reuters.gov/archive/2001/10/25/eline/links/20011025elin001.html>
- **Fibromyalgia improves over time; exercise helps**
Source: Reuters Health eLine
Date: September 17, 2001
<http://www.reuters.gov/archive/2001/09/17/eline/links/20010917elin024.html>
- **Exercise deemed most effective for relieving fibromyalgia**
Source: Reuters Medical News
Date: September 14, 2001
<http://www.reuters.gov/archive/2001/09/14/professional/links/20010914clin015.html>
- **Extracapsular silicone from breast implants might increase risk of fibromyalgia**
Source: Reuters Medical News
Date: June 08, 2001
<http://www.reuters.gov/archive/2001/06/08/professional/links/20010608epid001.html>

- **Extracapsular silicone from breast implants linked to fibromyalgia**
Source: Reuters Medical News
Date: May 01, 2001
<http://www.reuters.gov/archive/2001/05/01/professional/links/20010501clin004.html>
- **Cypress Bioscience, Georgetown University sign fibromyalgia research pact**
Source: Reuters Industry Breifing
Date: April 02, 2001
<http://www.reuters.gov/archive/2001/04/02/business/links/20010402inds001.html>
- **Antidepressants may help fibromyalgia patients**
Source: Reuters Health eLine
Date: March 19, 2001
<http://www.reuters.gov/archive/2001/03/19/eline/links/20010319elin001.html>
- **Meditation may help fibromyalgia patients**
Source: Reuters Health eLine
Date: March 14, 2001
<http://www.reuters.gov/archive/2001/03/14/eline/links/20010314elin032.html>
- **"Mind-body therapies" may have limited role in treatment of fibromyalgia**
Source: Reuters Medical News
Date: January 22, 2001
<http://www.reuters.gov/archive/2001/01/22/professional/links/20010122clin001.html>
- **Exercise benefits fibromyalgia patients**
Source: Reuters Health eLine
Date: December 25, 2000
<http://www.reuters.gov/archive/2000/12/25/eline/links/20001225elin018.html>
- **Fibromyalgia not linked to fatigue in Sjogren's syndrome**
Source: Reuters Medical News
Date: November 14, 2000
<http://www.reuters.gov/archive/2000/11/14/professional/links/20001114epid003.html>

- **Childhood sexual abuse increases women's risk of fibromyalgia**
Source: Reuters Medical News
Date: November 07, 2000
<http://www.reuters.gov/archive/2000/11/07/professional/links/20001107epid007.html>
- **Abused women at risk for fibromyalgia**
Source: Reuters Health eLine
Date: November 06, 2000
<http://www.reuters.gov/archive/2000/11/06/eline/links/20001106elin028.html>
- **Bentley licenses patent for possible chronic fatigue, fibromyalgia treatment**
Source: Reuters Industry Briefing
Date: November 01, 2000
<http://www.reuters.gov/archive/2000/11/01/business/links/20001101inds009.html>
- **Study helps explain fibromyalgia**
Source: Reuters Health eLine
Date: October 31, 2000
<http://www.reuters.gov/archive/2000/10/31/eline/links/20001031elin033.html>
- **Fibromyalgia patients have longer "pain memories"**
Source: Reuters Medical News
Date: October 31, 2000
<http://www.reuters.gov/archive/2000/10/31/professional/links/20001031clin010.html>
- **Joint hypermobility may be misdiagnosed as primary fibromyalgia**
Source: Reuters Medical News
Date: August 17, 2000
<http://www.reuters.gov/archive/2000/08/17/professional/links/20000817clin011.html>
- **Chlorella pyrenoidosa relieves fibromyalgia symptoms**
Source: Reuters Medical News
Date: July 05, 2000
<http://www.reuters.gov/archive/2000/07/05/professional/links/20000705clin011.html>

- **No end to controversy over trauma-induced fibromyalgia**
 Source: Reuters Industry Breifing
 Date: July 04, 2000
<http://www.reuters.gov/archive/2000/07/04/business/links/20000704legl001.html>
- **Gulf war service not associated with SLE, ALS or fibromyalgia**
 Source: Reuters Medical News
 Date: June 12, 2000
<http://www.reuters.gov/archive/2000/06/12/professional/links/20000612epid002.html>
- **Few patients in Belgium attribute chronic fatigue or fibromyalgia to physical causes alone**
 Source: Reuters Medical News
 Date: May 17, 2000
<http://www.reuters.gov/archive/2000/05/17/professional/links/20000517clin009.html>
- **Growth Hormone Deficiency Linked To Fibromyalgia Symptoms**
 Source: Reuters Medical News
 Date: April 15, 1998
<http://www.reuters.gov/archive/1998/04/15/professional/links/19980415clin008.html>
- **Metabolic Abnormalities Of Quadriceps Detected In Fibromyalgia**
 Source: Reuters Medical News
 Date: April 03, 1998
<http://www.reuters.gov/archive/1998/04/03/professional/links/19980403clin005.html>
- **Cognitive Behavioral Therapy A Beneficial Adjunct In Fibromyalgia**
 Source: Reuters Medical News
 Date: March 24, 1998
<http://www.reuters.gov/archive/1998/03/24/professional/links/19980324clin006.html>
- **Fibromyalgia Identified As Risk Factor For Osteoporosis**
 Source: Reuters Medical News
 Date: January 28, 1998
<http://www.reuters.gov/archive/1998/01/28/professional/links/19980128clin011.html>

- **Primary Juvenile Fibromyalgia Not A Psychogenic Condition**
Source: Reuters Medical News
Date: April 23, 1997
<http://www.reuters.gov/archive/1997/04/23/professional/links/19970423clin005.html>
- **Intravenous Lidocaine Temporarily Relieves Fibromyalgia Pain**
Source: Reuters Medical News
Date: February 05, 1997
<http://www.reuters.gov/archive/1997/02/05/professional/links/19970205clin007.html>
- **Brain Chemical Tied To Fibromyalgia**
Source: Reuters Health eLine
Date: October 21, 1996
<http://www.reuters.gov/archive/1996/10/21/eline/links/19961021elin009.html>
- **Fluoxetine and Amitriptyline Effective In Treatment Of Fibromyalgia**
Source: Reuters Medical News
Date: October 10, 1995
<http://www.reuters.gov/archive/1995/10/10/professional/links/19951010clin008.html>

The NIH

Within MEDLINEplus, the NIH has made an agreement with the New York Times Syndicate, the AP News Service, and Reuters to deliver news that can be browsed by the public. Search news releases at http://www.nlm.nih.gov/medlineplus/alphanews_a.html. MEDLINEplus allows you to browse across an alphabetical index. Or you can search by date at <http://www.nlm.nih.gov/medlineplus/newsbydate.html>. Often, news items are indexed by MEDLINEplus within their search engine. The following was recently indexed as relating to fibromyalgia:

- Aerobic Exercise Effective in Treating Fibromyalgia
http://www.nlm.nih.gov/medlineplus/news/fullstory_8685.html

Business Wire

Business Wire is similar to PR Newswire. To access this archive, simply go to <http://www.businesswire.com>. You can scan the news by industry category or company name.

Internet Wire

Internet Wire is more focused on technology than the other wires. To access this site, go to <http://www.internetwire.com> and use the "Search Archive" option. Type in "fibromyalgia" (or synonyms). As this service is oriented to technology, you may wish to search for press releases covering diagnostic procedures or tests that you may have read about.

Search Engines

Free-to-view news can also be found in the news section of your favorite search engines (see the health news page at Yahoo: http://dir.yahoo.com/Health/News_and_Media/, or use this Web site's general news search page <http://news.yahoo.com/>. Type in "fibromyalgia" (or synonyms). If you know the name of a company that is relevant to fibromyalgia, you can go to any stock trading Web site (such as www.etrade.com) and search for the company name there. News items across various news sources are reported on indicated hyperlinks.

BBC

Covering news from a more European perspective, the British Broadcasting Corporation (BBC) allows the public free access to their news archive located at <http://www.bbc.co.uk/>. Search by "fibromyalgia" (or synonyms).

Newsletters on Fibromyalgia

Given their focus on current and relevant developments, newsletters are often more useful to patients than academic articles. You can find newsletters using the Combined Health Information Database (CHID). You will need to use the "Detailed Search" option. To access CHID, go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. Your investigation must limit the search to "Newsletter" and "fibromyalgia." Go to the bottom of the search page where "You may refine your search by." Select the dates and language that you prefer. For the format option, select "Newsletter." By making these selections and typing in "fibromyalgia" or synonyms into the "For these words:" box, you will only receive results on newsletters. The following list was generated using the options described above:

- **OFA Tender Points**

Source: Toronto, Ontario, Canada: Ontario Fibromyalgia Association. 1995. 8 p. (average).

Contact: Available from Ontario Fibromyalgia Association. 250 Bloor Street, E., Suite 901, Toronto, Ontario, M4W 3P2, Canada. (416) 967-1414 or (800) 361-1112; FAX (416) 967-7171. Price: Free with membership.

Summary: This newsletter is a vehicle for members of the Ontario Fibromyalgia Association to share personal stories and information regarding their disorders. It also is an information vehicle for support group meetings and current medical information.

- **Fibromyalgia Network**

Source: Tucson, AZ: Fibromyalgia Network. 1995. 16 p. (average).

Contact: Available from Fibromyalgia Network. P.O. Box 31750 Tucson, AZ 85751-1750. (520) 290-5508 or (800) 853-2929; FAX (520) 290-5550. Price: Free with membership.

Summary: This newsletter is for members of the Fibromyalgia Network. Articles include medical updates on fibromyalgia and chronic fatigue syndrome, Network news, advice on coping, and discussions on other topics of interest such as legislation and health insurance.

- **FMS Ohio Newsletter**

Source: Columbus, OH: Fibromyalgia Association of Central Ohio. 1994. 8 p. (average).

Contact: Available from Fibromyalgia Association of Central Ohio. P.O. Box 21988, Columbus, OH 43221-0988. (614) 457-4222; FAX (614) 457-2729. Price: Free with membership.

Summary: The newsletter is for members of the Fibromyalgia Association of Central Ohio. It features articles from health professionals concerning research and treatment, personal stories, a question and answer section and advice on coping mechanisms.

Newsletter Articles

If you choose not to subscribe to a newsletter, you can nevertheless find references to newsletter articles. We recommend that you use the Combined Health Information Database, while limiting your search criteria to "newsletter articles." Again, you will need to use the "Detailed Search"

option. Go to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. Go to the bottom of the search page where "You may refine your search by." Select the dates and language that you prefer. For the format option, select "Newsletter Article."

By making these selections, and typing in "fibromyalgia" (or synonyms) into the "For these words:" box, you will only receive results on newsletter articles. You should check back periodically with this database as it is updated every 3 months. The following is a typical result when searching for newsletter articles on fibromyalgia:

- **Musculoskeletal Manifestations of Thyroid Disease**

Source: Bulletin on the Rheumatic Diseases. 49(11): 1-4. 2001.

Contact: Available from Arthritis Foundation. 1330 West Peachtree Street, Atlanta, GA 30309. (800) 268-6942 or (404) 872-7100. Fax (404) 872-9559.

Website: www.arthritis.org.

Summary: This newsletter article provides health professionals with information on evaluating and treating the musculoskeletal manifestations of thyroid disease. Thyroid disease can cause musculoskeletal symptoms that mimic known rheumatic syndromes. Hypothyroidism and thyrotoxicosis can affect the musculoskeletal system. The manifestations of congenital hypothyroidism and hypothyroidism occurring in childhood are usually dominated by cognitive deficiencies and developmental delays. In adults, hypothyroidism may result from autoimmune and postablative mechanisms, pituitary failure, or iodine deficiency. Hypothyroid adults usually have manifestations consistent with low basal metabolic rate. An arthropathy may occur, or hypothyroidism may be confused with fibromyalgia. Hypothyroidism is also associated with other musculoskeletal and rheumatic diseases, including polymyositis, carpal tunnel syndrome, avascular necrosis of the hip, polymyalgia rheumatica, giant cell arteritis, rheumatoid arthritis, and systemic lupus erythematosus. Thyrotoxicosis may also have musculoskeletal manifestations, including myopathy, osteoporosis, and shoulder pain. Graves' disease, an autoimmune disease caused by antibodies directed against the TSH receptor in the thyroid, is associated with pretibial myxedema and thyroid acropachy. 2 tables and 35 references.

- **Atlas Vertebral Subluxation Syndrome [and] Its Relationship to Fibromyalgia, The**

Source: Fibromyalgia Frontiers. 9(2): 7-9. 2001.

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article provides health professionals with information on the relationship between Atlas Vertebral Subluxation Syndrome and fibromyalgia. New evidence is pointing to a neurological component to fibromyalgia. The article contends that Atlas Vertebral Subluxation Syndrome is the link between the nervous system and fibromyalgia. When the weight of the head is not perfectly centered on top of the neck, most directly the atlas, the shift of weight can cause body imbalance, a biomechanical distortion through the rest of the spine and skeletal structure. This structural imbalance may result in a spinal cord compression syndrome and create biomechanical, muscular, and neurological changes. The article presents the major mechanisms by which a misalignment of the upper cervical area of the spine can produce nerve interference and possible nerve dysfunction and lists symptoms of Atlas Vertebral Subluxation Syndrome that may parallel those of fibromyalgia. In addition, the article explains how Atlas Vertebral Subluxation Syndrome is diagnosed and comments on treatment outcome. 2 figures and 4 references.

- **Musculoskeletal Aspects of Systemic Lupus Erythematosus (SLE) -Part 2**

Source: Lupus News. 19(4): 10-11. Fall 1999.

Contact: Available from Lupus Foundation of America. 1300 Piccard Drive, Suite 200, Rockville, MD 20850-4303. (800) 558-0121 or (301) 670-9292. Fax (301) 670-9486. Website: www.lupus.org/lupus.

Summary: This newsletter article, the second of two parts, provides health professionals with information on the musculoskeletal aspects of systemic lupus erythematosus (SLE). Besides arthritis, osteonecrosis is the other major skeletal problem in SLE. Osteonecrosis involves the death of bone as a result of loss of blood flow, followed by death of all other cellular elements. The condition has four pathological stages. Imaging studies are used to clinically detect osteonecrosis, and five radiologic stages have been established. Although the cause of osteonecrosis in people who have SLE is unknown, the use of high doses of glucocorticosteroids may have a role in its etiology. Other hypothesized but unproven potential factors include an increased tendency for blood clots, fatty emboli, increased pressure inside the joint capsule, increased bone marrow pressure, and swelling inside the bone cavity. Although any joint may be involved, the femoral head is the most common location for osteonecrosis, making the hip the most commonly involved joint. The most commonly recommended procedure to treat osteonecrosis of the

femoral head is decompression of the femoral head. Joint replacement is also another option. Fibromyalgia and osteoporosis are two conditions that may co-occur with SLE.

- **Fatigue in Systemic Lupus Erythematosus**

Source: Lupus News. 19(2): 4-5. Spring 1999.

Contact: Available from Lupus Foundation of America. 1300 Piccard Drive, Suite 200, Rockville, MD 20850-4303. (800) 558-0121 or (301) 670-9292. Fax (301) 670-9486. Website: www.lupus.org/lupus.

Summary: This newsletter article provides people who have systemic lupus erythematosus (SLE) with information on the causes and treatment of fatigue. Although lupus is associated with fatigue, not all fatigue in people who have SLE is due to the disease. Inflammation can lead to fatigue in an autoimmune disease like lupus. During inflammation, substances called interleukins are released in the body. Interleukins have a significant effect on many functions of the body and mind. For example, they can cause the adrenal glands responsible for cortisone to be less responsive to the stimulation of ACTH and, thus, the release of cortisol could become abnormal. Drugs typically used to treat lupus and lupus complications, including nonsteroidal anti-inflammatory drugs, analgesics, hypnotics, seizure suppressants, and drugs for abdominal pain and spasm, may themselves cause fatigue. Other reasons for fatigue include depression, anxiety, and disease complications. The presence of a coexisting condition called fibromyalgia may also cause fatigue. Fatigue may be lessened by making behavioral adjustments such as starting a regular program of aerobic exercises, taking medication that restores the late stage of sleep, avoiding smoking, and limiting the intake of coffee and alcohol.

- **CNS Myalgia: A New Paradigm for Fibromyalgia**

Source: Fibromyalgia Frontiers. 7(5): 1-3,5. September-October 1999.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article provides health professionals and people who have fibromyalgia with the views of a team of North American researchers who participated in a seminar sponsored by the Fibromyalgia Association of Greater Washington. One member of the team views fibromyalgia (FM) as a largely neurological condition that may first involve an injury to the muscles or soft tissues but is sustained

thereafter by brain defenses that continue to compensate for the insult that has been received. This researcher argues that FM can be more accurately described as central nervous system myalgia. Another researcher has found that patients with FM seem to experience puzzling muscle cocontractions. For example, a simple turn of the head seems to fire muscles at rest in distant parts of the body in an inappropriate manner. This researcher also believes that the generalized body pain indicative of fibromyalgia indicates brain involvement. He has found characteristic spikes in patients with FM similar to those seen in patients with viral infections. Unlike patients with viral infections who return to normal once their virus is resolved, patients with FM seem to get stuck in this brain state. The third member of the team has observed the effects of the Flexyx Neurotherapy System (FNS) on patients with fibromyalgia. The team is currently embarking on a large, double blind, placebo controlled study that will examine the effects of FNS on patients with fibromyalgia.

- **Understanding Fibromyalgia**

Source: Fibromyalgia Frontiers. 6(6): 1-4,7-10. November-December 1998.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article provides people who have fibromyalgia with information on this chronic pain state in which the nerve stimuli causing pain originate mainly in the muscles. In humans, the components of pain are an unconscious reflex avoidance reaction that occurs before the actual awareness of the pain sensation and the actual experience of the pain itself. Pain has both sensory and affective or evaluative components. In people who have chronic pain, the linear relationship between nociception and pain experience is inappropriate or even absent. The phenomenon of windup, in which repeated stimulation of a peripheral nerve results in a progressive buildup of the amplitude of the electrical response recorded in second order dorsal horn neurons, is crucial to understanding chronic pain via the mechanism of central sensitization. Central sensitization is an increased activation of second order neurons in the spinal cord resulting from injury or inflammation induced activation of peripheral nociceptors. Nociceptive specific and wide dynamic range neurons are involved in central sensitization. The central nervous system of people who have ongoing pain or have had previous pain experiences may be permanently altered as a result of changes that can now be understood at the physiological, molecular, and

structural levels. The emotional components of pain include past experiences, genetic factors, general state of health, the presence of depression and other psychological diagnoses, coping mechanisms, and beliefs and fears about the diagnosis. 4 figures and 28 references.

- **Disturbances of Hearing And Balance in Fibromyalgia**

Source: Fibromyalgia Frontiers. 4(2): 1-2, 12-13. Spring 1996.

Contact: Available from Fibromyalgia Association of Greater Washington, Inc. 12210 Fairfax Towne Center, Suite 500, Fairfax, VA 22033. (703) 790-2324.

Summary: This article summarizes disturbances of hearing and balance in fibromyalgia, an enigmatic syndrome of unknown etiology and pathophysiology. Widespread and chronic muscular pain is a cardinal symptom, but fatigue and symptoms of autonomic dysfunction are common, as are other symptoms including sleep disturbances, headache, disturbed memory, difficulties with concentration, vertigo/dizziness, and tinnitus. The author reports on a group of 168 patients with chronic pain (141 women, 27 men). The author performed an otological examination and reports on the patient histories, including questions about vertigo, dizziness, and disturbances of equilibrium and hearing. Balance problems were very common, being present in four-fifths of the patients with fibromyalgia. The author concludes that disequilibrium should be included as an important symptom of fibromyalgia, along with chronic muscular pain and fatigue. 1 figure.

- **Fibromyalgia [and] Chronic Fatigue Syndrome: Related Syndromes?**

Source: FM Aware. 3(2): 15-16. Summer 2000.

Contact: Available from National Fibromyalgia Awareness Campaign. c/o Community Partners, 606 S. Olive Street, Suite 2400, Los Angeles, CA 90014.

Summary: This newsletter article provides people who have fibromyalgia syndrome (FMS) or chronic fatigue syndrome (CFS) with information on the possible relationship between these disorders. Many doctors and researchers are convinced that FMS and CFS are different manifestations of the same underlying disorder. Although both have been acknowledged as real physical diseases, neither one has a known cause or cure. The article presents the features of and diagnostic criteria for these disorders and outlines the similarities and differences between them. One researcher views FMS and CFS as part of a large spectrum of conditions that he calls Dysregulation Spectrum syndrome. Other researchers have shown that FMS and CFS overlap in patients by as much as 75 percent.

Studies have also revealed that many associated disorders and underlying abnormalities are common to both illnesses. More research is needed about both conditions before it can definitively be determined that FMS and CFS are manifestations of a similar disease mechanism.

- **Fibromyalgia Syndrome: Feeling More Pain**

Source: Harvard Health Letter. 24(12): 4-5. October 1999.

Contact: Available from Harvard Health Letter, P.O. Box 380, Department BI, Boston, MA 02117. (800) 829-9045 or (617) 432-1485. E-mail: harvardmed@palmcoastd.com.

Summary: This newsletter article provides people who have fibromyalgia with information on the causes, diagnosis, and treatment of this disorder. Although many people think that fibromyalgia is a muscle disease, researchers say that it is actually a disorder of pain perception caused by changes in the central nervous system itself that lead to heightened pain. The existence of pain and tenderness in 11 of 18 spots in the muscles of the neck, arm, back, hip, leg, and foot help doctors validate a diagnosis based on a history of chronic pain, fatigue, symptoms associated with sleep disturbance, and headaches. Women, especially older women, are much more likely to have fibromyalgia than men. Although a discrete cause for fibromyalgia has not been found, research has shown that people who have fibromyalgia have abnormal levels of various hormones, including low levels of human growth hormone. In addition, the central sensitization theory of chronic pain may also help explain fibromyalgia. Effective treatment begins with giving people who have fibromyalgia a firm diagnosis and making sure they stay active. Tricyclic antidepressants seem to work for some patients, but their effectiveness may wear off. Exercise seems to help patients more than simple stretching and relaxation. Cognitive-behavioral treatment and stress reduction programs may be used to help patients cope with their condition. 1 table.

- **Americans With Disabilities Act [ADA]: What Persons With Fibromyalgia Need To Know**

Source: Fibromyalgia Frontiers. 7(1): 9-13. January-February 1999.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article uses a question and answer format to provide people who have fibromyalgia with information on their basic

rights under the employment provisions of the Americans with Disabilities Act (ADA). This civil rights law passed in 1990 prohibits discrimination against people who have disabilities with regard to employment; state and local government programs, services, and transportation; public accommodations; and telecommunications. The article explains which employers are covered by the ADA, who is protected from employment discrimination under the ADA, and who is a qualified individual with a disability under the ADA. Other topics include what a reasonable accommodation is, who decides what is reasonable, when to disclose information about fibromyalgia to a prospective or current employer, and how to inform an employer about fibromyalgia. The article also provides some examples of reasonable accommodations and presents some sample accommodation scenarios pertinent to people who have chronic pain and fibromyalgia syndrome. The article then answers questions about the legality of being asked by a prospective employer to take a physical examination and of an employer's establishing specific attendance and leave policies. In addition, the article discusses undue hardship, tax deductions or credits for businesses hiring people with disabilities, challenges to an unlawful employment practice, and available resources. 2 tables.

- **Fibromyalgia Syndrome. Coping With Loss**

Source: Observer. 49(1):1,4; Spring 1997.

Contact: Arthritis Foundation, Rocky Mountain Chapter.

Summary: This newsletter article for individuals with fibromyalgia syndrome (FMS) offers suggestions for coping with the feelings of loss they may experience. FMS sufferers need to acknowledge that significant loss accompanies FMS because failure to do so may result in them taxing their physical and emotional resources. Healthy ways to express grief over the losses that FMS brings include participating in self help groups, writing in a journal about feelings of sadness and anger, creating a scrapbook of photographs to honor the memories from an active life, and talking with a physician or qualified mental health professional.

- **Fibromyalgia Syndrome: Approaches to Management**

Source: Bulletin on the Rheumatic Diseases. 45(3):1-4. May 1996.

Contact: Arthritis Foundation, 1314 Spring Street, NW, Atlanta, GA 30309. (404) 872-7100. Fax (404) 872-9559.

Summary: This newsletter article for health professionals discusses therapeutic approaches to controlling the symptoms of fibromyalgia syndrome (FMS). The prominent symptom of FMS is widespread pain in

muscles, ligaments, bursae, and tendons. FMS may coexist with rheumatic and other conditions. No single treatment is effective in controlling the symptoms of FMS. A management approach that includes many different components is described. This approach involves having an accepting attitude toward patients with the disorder, conducting a comprehensive clinical evaluation to establish an accurate diagnosis, educating the patient so that he or she can be actively involved in the process of self care, introducing the patient to a routine progressive exercise program, and using medications. The issue of follow-up visits following the diagnosis is also addressed. 5 references and 1 table.

- **Central Sensitivity Syndromes: A Unified Concept for Fibromyalgia and Other Similar Maladies**

Source: *Fibromyalgia Frontiers*. 9(3): 3-8,33-34. 2001.

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article provides health professionals with information on central sensitivity syndrome (CSS). Fibromyalgia syndrome (FMS) and similar conditions, for example, myofascial pain syndrome, irritable bowel syndrome, chronic fatigue syndrome, headaches, and restless legs syndrome, share several characteristics, including pain, poor sleep, fatigue, hyperalgesia, and an absence of structural tissue pathology. These syndromes are bound by a common pathophysiological mechanism, that is, neurohormonal dysfunctions, which is generally different from those seen in psychiatric diseases. Central nervous system (CNS) sensitivity, either intrinsic or due to CNS neuroplasticity secondary to peripheral stimuli, results in amplified, widespread, and persistent pain. This central sensitivity seems to be the most important aberration among the neuroendocrine dysfunctions. Thus, FMS and other overlapping syndromes as a group have been called CSS. The article reviews the history of the concept of CSS, presents CSS as a conceptual paradigm, and discusses its significance. 1 figure and 72 references. (AA-M).

- **[Fibromyalgia, Myofascial Pain Syndrome, or All of the Above]**

Source: *Fibromyalgia Frontiers*. 7(7): 1-2,4-7. November-December 1999.

Contact: Available from National Fibromyalgia Partnership. 140 Zinn Way, Linden, VA 22642-5609. Toll-free phone (866) 725-4404. Fax (540) 622-2998. E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.

Summary: This newsletter article provides people who have fibromyalgia with information on the working clinical definitions of fibromyalgia syndrome (FMS) and myofascial pain syndrome (MFPS), the differences and similarities between these conditions, and their causes. In patients with FMS, at least 11 of 18 tender points are demonstrated when carefully and reproducibly palpated with consistent pressure. Sleep may be adequate but is nonrestorative. FMS seems to affect the entire body and is not restricted to a specific region. In MFPS, trigger points are found in taut bands within a muscle after careful palpation. When a trigger point is palpated, the patient often notes pain at the tender point site, as well as pain in a reference zone. Important concepts in the proper diagnosis of FMS and MFPS are listening to the patient while taking a complete history and doing an appropriate physical examination. All pharmacologic and nonpharmacologic treatment regimens should be considered for patients with FMS. The clinical aim of treatment in patients who have MFPS is to restore normal resting length, as well as adequate strength and endurance, to affected muscles. This is achieved by inactivating tender points through heat and gentle stretching. Other methods of inactivation include injection, ischemic pressure, or, occasionally, acupuncture. Medications are of relatively limited use in patients who have pure MFPS. The bioimploded posture of many MFPS patients must also be corrected for treatments to be successful in the long term. A better understanding of the sympathetic nervous system will lead to additional knowledge about FMS and MFPS. 2 references.

- **Fibromyalgia, Myofascial Pain Syndrome, or All of the Above**

Source: Fibromyalgia Frontiers. 7(7): 1-2, 4, 7. November-December 1999.

Contact: Available from Fibromyalgia Association of Greater Washington, Inc. 13203 Valley Drive, Woodbridge, VA 22191-1531.

Summary: People with chronic pain frequently see many practitioners in their quest for a diagnosis of their disorders and relief from their symptoms. Too often, the patient is seen by a practitioner who uses the terms fibromyalgia syndrome (FMS) and myofascial pain syndrome (MFPS) interchangeably, demonstrating a lack of understanding of the significant differences in symptoms, signs, treatment, and prognosis between these two conditions. In this newsletter article, the author presents working clinical definitions of these two conditions, followed by a discussion of their differences and similarities. The author notes that a complicating issue is that patients with FMS almost always also have MFPS. The reverse can occur, but is much less common. The most important components of proper diagnosis in these conditions are listening to the patient while taking a complete history and doing an

appropriate physical examination, including an extensive palpation of appropriate muscles (consistent with the patient's complaint). The treatment regimens include medications, exercise, improved sleep, and diagnosis of concomitant diseases. The author also theorizes about the underlying causes of FMS and MFPS.

Academic Periodicals covering Fibromyalgia

Academic periodicals can be a highly technical yet valuable source of information on fibromyalgia. We have compiled the following list of periodicals known to publish articles relating to fibromyalgia and which are currently indexed within the National Library of Medicine's PubMed database (follow hyperlinks to view more information, summaries, etc., for each). In addition to these sources, to keep current on articles written on fibromyalgia published by any of the periodicals listed below, you can simply follow the hyperlink indicated or go to the following Web site: www.ncbi.nlm.nih.gov/pubmed. Type the periodical's name into the search box to find the latest studies published.

If you want complete details about the historical contents of a periodical, you can also visit <http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi>. Here, type in the name of the journal or its abbreviation, and you will receive an index of published articles. At <http://locatorplus.gov/> you can retrieve more indexing information on medical periodicals (e.g. the name of the publisher). Select the button "Search LOCATORplus." Then type in the name of the journal and select the advanced search option "Journal Title Search." The following is a sample of periodicals which publish articles on fibromyalgia:

- **American Family Physician. (Am Fam Physician)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=American+Family+Physician&dispmax=20&dispstart=0>
- **Archives of Internal Medicine. (Arch Intern Med)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Archives+of+Internal+Medicine&dispmax=20&dispstart=0>
- **Arthritis and Rheumatism. (Arthritis Rheum)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Arthritis+and+Rheumatism&dispmax=20&dispstart=0>

- **Bailliere's Best Practice & Research. Clinical Rheumatology. (Baillieres Best Pract Res Clin Rheumatol)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Bailliere's+Best+Practice+&+Research.+Clinical+Rheumatology&dispmax=20&dispstart=0>
- **Bmj (Clinical Research Ed. . (BMJ))**
[http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Bmj+\(Clinical+Research+Ed.+&dispmax=20&dispstart=0](http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Bmj+(Clinical+Research+Ed.+&dispmax=20&dispstart=0)
- **Clinical Rheumatology. (Clin Rheumatol)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Clinical+Rheumatology&dispmax=20&dispstart=0>
- **General Hospital Psychiatry. (Gen Hosp Psychiatry)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=General+Hospital+Psychiatry&dispmax=20&dispstart=0>
- **Journal of Alternative and Complementary Medicine (New York, N. . . (J Altern Complement Med)**
[http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Journal+of+Alternative+and+Complementary+Medicine+\(New+York,+N.+.&dispmax=20&dispstart=0](http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Journal+of+Alternative+and+Complementary+Medicine+(New+York,+N.+.&dispmax=20&dispstart=0)
- **Journal of Clinical Psychology. (J Clin Psychol)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Journal+of+Clinical+Psychology&dispmax=20&dispstart=0>
- **Medical Care. (Med Care)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Medical+Care&dispmax=20&dispstart=0>
- **Physical Therapy. (Phys Ther)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Physical+Therapy&dispmax=20&dispstart=0>
- **Postgraduate Medicine. (Postgrad Med)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Postgraduate+Medicine&dispmax=20&dispstart=0>

- **Scandinavian Journal of Rheumatology. (Scand J Rheumatol)**
<http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0®exp=Scandinavian+Journal+of+Rheumatology&dispmax=20&dispstart=0>

Vocabulary Builder

Arteritis: Inflammation of an artery. [NIH]

Arthropathy: Any joint disease. [EU]

Cervical: Pertaining to the neck, or to the neck of any organ or structure. [EU]

Dorsal: 1. pertaining to the back or to any dorsum. 2. denoting a position more toward the back surface than some other object of reference; same as posterior in human anatomy; superior in the anatomy of quadrupeds. [EU]

Femoral: Pertaining to the femur, or to the thigh. [EU]

Hepatitis: Inflammation of the liver. [EU]

Indicative: That indicates; that points out more or less exactly; that reveals fairly clearly. [EU]

Interleukins: Soluble factors which stimulate growth-related activities of leukocytes as well as other cell types. They enhance cell proliferation and differentiation, DNA synthesis, secretion of other biologically active molecules and responses to immune and inflammatory stimuli. [NIH]

Intrinsic: Situated entirely within or pertaining exclusively to a part. [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]

Lidocaine: A local anesthetic and cardiac depressant used as an antiarrhythmia agent. Its actions are more intense and its effects more prolonged than those of procaine but its duration of action is shorter than that of bupivacaine or prilocaine. [NIH]

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

Myxedema: A condition characterized by a dry, waxy type of swelling with abnormal deposits of mucin in the skin and other tissues. It is produced by a functional insufficiency of the thyroid gland, resulting in deficiency of thyroid hormone. The skin becomes puffy around the eyes and on the cheeks and the face is dull and expressionless with thickened nose and lips. The congenital form of the disease is cretinism. [NIH]

Osteonecrosis: Death of a bone or part of a bone, either atraumatic or posttraumatic. [NIH]

Progressive: Advancing; going forward; going from bad to worse; increasing in scope or severity. [EU]

Psychogenic: Produced or caused by psychic or mental factors rather than organic factors. [EU]

Telecommunications: Transmission of information over distances via electronic means. [NIH]

Thyrotoxicosis: The condition resulting from presentation to the tissues of excessive quantities of the thyroid hormones, whether the excess results from overproduction by the thyroid gland (as in Graves' disease), originated outside the thyroid, or is due to loss of storage function and leakage from the gland. [EU]

Tinnitus: A noise in the ears, as ringing, buzzing, roaring, clicking, etc. Such sounds may at times be heard by others than the patient. [EU]

Toxic: Pertaining to, due to, or of the nature of a poison or toxin; manifesting the symptoms of severe infection. [EU]

Vertigo: An illusion of movement; a sensation as if the external world were revolving around the patient (objective vertigo) or as if he himself were revolving in space (subjective vertigo). The term is sometimes erroneously used to mean any form of dizziness. [EU]

CHAPTER 9. 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 Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS); fact sheets and guidelines available at <http://www.nih.gov/niams/healthinfo/>

NIH Databases

In addition to the various Institutes of Health that publish professional guidelines, the NIH has designed a number of databases for professionals.²⁷ 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:²⁸

- **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 cancer-oriented databases:
http://www.nlm.nih.gov/databases/databases_cancer.html

²⁷ Remember, for the general public, the National Library of Medicine recommends the databases referenced in MEDLINEplus (<http://medlineplus.gov/> or <http://www.nlm.nih.gov/medlineplus/databases.html>).

²⁸ See <http://www.nlm.nih.gov/databases/databases.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
- **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 fibromyalgia, 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 fibromyalgia 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 “fibromyalgia” (or synonyms) into the “For these words:” box above, you will only receive results on fact sheets dealing with fibromyalgia. The following is a sample result:

- **Social Security Information Packet**

Source: Linden, VA: National Fibromyalgia Partnership, Inc. 2001.
[packet of several articles and booklets].

Contact: Available from National Fibromyalgia Partnership, Inc. 140 Zinn Way, Linden, VA 22642-5609. (866) 725-4404 toll-free. Fax (540) 622-2998.
E-mail: mail@fmpartnership.org. Website: www.fmpartnership.org.
Price: \$3.00.

Summary: This information packet, which consists of several brochures, booklets, articles, and a resource list, provides people who have fibromyalgia and related disorders with information on Social Security disability benefits. One brochure answers questions for people who are disabled but have been denied Social Security Disability (SSD) or Supplemental Security Income (SSI) benefits. Another brochure lists Social Security Disabled Worker's Benefits, Social Security Disabled Adult Child's Benefits, SSI benefits for a disabled adult, and SSI benefits for a disabled child; explains the application and appeals process; and comments on legal representation and work incentives. A third brochure discusses the services provided by Disability Representation Associates, a community based, privately owned agency that specializes in representing Social Security disability applicants. One booklet provides a general overview of the SSD insurance program, focusing on applying for and receiving benefits and going back to work. Another booklet provides a general overview of the SSI program, focusing on understanding the rules for SSI and applying for benefits. Articles focus on obtaining disability benefits for fibromyalgia and related conditions, understanding the prospects for winning a Social Security disability claim, helping patients with fibromyalgia obtain Social Security benefits, and improving the current SSD application process. The resource lists identifies books on disability and where they can be obtained.

- **Chronic fatigue and immune dysfunction syndrome physician information packet**

Source: Charlotte, NC: Chronic Fatigue and Immune Dysfunction Syndrome Association. 1992. 14 items.

Contact: Available from Chronic Fatigue and Immune Dysfunction Syndrome Association, P.O. Box 220398, Charlotte, NC 28222.

Summary: This information package includes factual information on chronic fatigue and immune dysfunction syndrome (also known as chronic fatigue syndrome, myalgic encephalomyelitis or M.E., chronic Epstein-Barr virus, and 'yuppie flu'), as well as information on the Chronic Fatigue and Immune Dysfunction Syndrome Association and a

sample issue of its journal, the CFIDS Chronicle. Reprints of three journal articles on the syndrome from other sources are included. The complex illness is characterized by incapacitating fatigue, neurological problems, and a constellation of symptoms that can resemble many disorders, including: mononucleosis, multiple sclerosis, fibromyalgia, AIDS-related complex, Lyme disease, post-polio syndrome, and autoimmune diseases such as lupus.

The NLM Gateway²⁹

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.³⁰ 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.³¹ To use the NLM Gateway, simply go to the search site at <http://gateway.nlm.nih.gov/gw/Cmd>. Type “fibromyalgia” (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.

²⁹ Adapted from NLM: <http://gateway.nlm.nih.gov/gw/Cmd?Overview.x>.

³⁰ 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).

³¹ 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.

Results Summary

Category	Items Found
Journal Articles	345044
Books / Periodicals / Audio Visual	2565
Consumer Health	293
Meeting Abstracts	3093
Other Collections	100
Total	351095

HSTAT³²

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.³³ 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.³⁴ Simply search by "fibromyalgia" (or synonyms) at the following Web site: <http://text.nlm.nih.gov>.

Coffee Break: Tutorials for Biologists³⁵

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

³² Adapted from HSTAT: <http://www.nlm.nih.gov/pubs/factsheets/hstat.html>.

³³ The HSTAT URL is <http://hstat.nlm.nih.gov/>.

³⁴ 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.

³⁵ Adapted from <http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html>.

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.³⁶ Each report is about 400 words and is usually based on a discovery reported in one or more articles from recently published, peer-reviewed literature.³⁷ 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/clinweb/>.
- **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 following 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, to search medical literature, and to explore relevant Web sites; 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>.

³⁶ 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.

³⁷ 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.

Specialized References

The following books are specialized references written for professionals interested in fibromyalgia (sorted alphabetically by title, hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Approach to the Patient with a Musculoskeletal Disorder** by Warren D. Blackburn; Paperback, 2nd edition (August 15, 2002), Professional Communications; ISBN: 188473572X;
<http://www.amazon.com/exec/obidos/ASIN/188473572X/iconegroupinterna>
- **Connective Tissue and Its Heritable Disorders: Molecular, Genetic, and Medical Aspects** by Peter M. Royce (Editor), Beat Steinmann (Editor); Hardcover, 2nd edition (December 15, 2001), John Wiley & Sons; ISBN: 0471251852;
<http://www.amazon.com/exec/obidos/ASIN/0471251852/iconegroupinterna>
- **Current Diagnosis & Treatment in Orthopedics** by Harry B. Skinner; Paperback - 720 pages, 2nd edition (May 26, 2000), McGraw-Hill Professional Publishing; ISBN: 0838503632;
<http://www.amazon.com/exec/obidos/ASIN/0838503632/iconegroupinterna>
- **Current Topics in Musculoskeletal Medicine: A Case Study Approach (Athletic Training Library)** by Mark Decarlo (Editor), Kathy Oneacre, M.A. ATC (Editor); Paperback (March 15, 2001), Slack, Inc.; ISBN: 1556424345;
<http://www.amazon.com/exec/obidos/ASIN/1556424345/iconegroupinterna>
- **Diagnosis and Treatment of Movement Impairment Syndromes** by Shirley Sahrmann; Hardcover - 384 pages, 1st edition (August 20, 2001), Mosby, Inc.; ISBN: 0801672058;
<http://www.amazon.com/exec/obidos/ASIN/0801672058/iconegroupinterna>
- **Diagnosis of Bone and Joint Disorders (5-Volume Set)** by Donald Resnick; Hardcover - 5472 pages, 4th edition (March 8, 2002); W B Saunders Co; ISBN: 0721689213;
<http://www.amazon.com/exec/obidos/ASIN/0721689213/iconegroupinterna>
- **Essentials of Musculoskeletal Care** by Walter B. Greene, MD (Editor), Robert K. Snider; Hardcover, 2nd edition (January 15, 2001), American Academy of Orthopaedic; ISBN: 0892032170;
<http://www.amazon.com/exec/obidos/ASIN/0892032170/iconegroupinterna>
- **Examination & Diagnosis of Musculoskeletal Disorders** by Miranda Castrp; Hardcover, 1st edition (February 15, 2001), Thieme Medical Pub; ISBN: 0865777411;
<http://www.amazon.com/exec/obidos/ASIN/0865777411/iconegroupinterna>

- **Examination and Diagnosis of Musculoskeletal Disorders: Clinical Examination - Imaging Modalities** by William H. M. Castro, et al; Hardcover - 464 pages, 1st edition (January 15, 2001), Thieme Medical Pub; ISBN: 1588900320;
<http://www.amazon.com/exec/obidos/ASIN/1588900320/icongroupinterna>
- **Mechanical Loading of Bones and Joints** by Hideaki Takahashi (Editor); Hardcover - 324 pages, 1st edition (July 15, 1999), Springer Verlag; ISBN: 4431702423;
<http://www.amazon.com/exec/obidos/ASIN/4431702423/icongroupinterna>
- **Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength** by Hazel M. Clarkson; Spiral-bound - 432 pages, 2nd edition (January 15, 2000), Lippincott Williams & Wilkins Publishers; ISBN: 0683303848;
<http://www.amazon.com/exec/obidos/ASIN/0683303848/icongroupinterna>
- **Musculoskeletal Disorders: A Practical Guide for Diagnosis and Rehabilitation** by Ralph M. Buschbacher (Editor); Hardcover, 2nd edition (March 15, 2002), Butterworth-Heinemann; ISBN: 0750673575;
<http://www.amazon.com/exec/obidos/ASIN/0750673575/icongroupinterna>
- **Musculoskeletal Examination** by Jeffrey Gross, et al; Paperback, 2nd edition (March 2002), Blackwell Science Inc; ISBN: 0632045582;
<http://www.amazon.com/exec/obidos/ASIN/0632045582/icongroupinterna>
- **Orthopedic Biomechanics** by Paul Brinckmann, et al; Hardcover (March 2002), Thieme Medical Pub; ISBN: 1588900800;
<http://www.amazon.com/exec/obidos/ASIN/1588900800/icongroupinterna>
- **Orthopaedic Pathology** by Vincent J. Vigorita, Bernard Ghelman; Hardcover - 718 pages (February 15, 1999), Lippincott Williams & Wilkins Publishers; ISBN: 078170040X;
<http://www.amazon.com/exec/obidos/ASIN/078170040X/icongroupinterna>
- **Pathology of Skeletal Muscle** by Stirling Carpenter, George Karpati; Hardcover, 2nd edition (January 15, 2001), Oxford University Press; ISBN: 0195063643;
<http://www.amazon.com/exec/obidos/ASIN/0195063643/icongroupinterna>
- **Skeletal Trauma: Basic Science, Management, and Reconstruction** by Bruce D. Browner (Editor); Hardcover, 3rd edition (August 2002), W B Saunders Co; ISBN: 0721694810;
<http://www.amazon.com/exec/obidos/ASIN/0721694810/icongroupinterna>

CHAPTER 10. DISSERTATIONS ON FIBROMYALGIA

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 fibromyalgia. 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 Fibromyalgia

ProQuest Digital Dissertations is the largest archive of academic dissertations available. From this archive, we have compiled the following list covering dissertations devoted to fibromyalgia. 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 fibromyalgia:

- **A Model of Psychosocial Factors and Pain in Fibromyalgia: an Integrative Approach** by Rudnicki, Susan R.; Phd from Mcp Hahnemann University, 2001, 179 pages
<http://wwwlib.umi.com/dissertations/fullcit/3003529>

- **A Needs Assessment As a Basis for Developing Fibromyalgia Education Programs (health Education)** by Rogers, Janet Lynn, Phd from Southern Illinois University at Carbondale, 1995, 274 pages
<http://wwwlib.umi.com/dissertations/fullcit/9614961>
- **'Falling on Deaf Ears': a Historical Treatment of Fibromyalgia** by Richardson, Barbara; Ms from Florida Atlantic University, 2001, 153 pages
<http://wwwlib.umi.com/dissertations/fullcit/1404361>
- **Heart Rate Variability during Sleep in Fibromyalgia and Insomnia** by Mcmillan, Diana E.; Phd from University of Washington, 2001, 79 pages
<http://wwwlib.umi.com/dissertations/fullcit/3014004>
- **Illness As Transformative Gift in People with Fibromyalgia** by Scammell, Shelley Hendrickson; Psyd from California Institute of Integral Studies, 2001, 256 pages
<http://wwwlib.umi.com/dissertations/fullcit/3004470>
- **Physical Therapists' Perceptions Concerning the Determination of Fibromyalgia Interventions: a Qualitative Study** by Levensgood, Elizabeth Jayne; Ms from Grand Valley State University, 2001, 90 pages
<http://wwwlib.umi.com/dissertations/fullcit/1406375>
- **Psychological Variables in Patients with Primary Fibromyalgia Syndrome** by Uveges, John Michael, Phd from University of Missouri - Columbia, 1987, 91 pages
<http://wwwlib.umi.com/dissertations/fullcit/8818975>
- **Role of Exercise and Education in the Management of Fibromyalgia** by King, Sharla Joan; Phd from University of Alberta (canada), 2001, 240 pages
<http://wwwlib.umi.com/dissertations/fullcit/NQ60314>
- **The Experiences of Older Women with Fibromyalgia in a Mindfulness-based Stress Reduction and Relaxation Program: a Qualitative Study** by Prewitt, Sallie Hanna; Edd from University of Kentucky, 2000, 305 pages
<http://wwwlib.umi.com/dissertations/fullcit/9996048>
- **The Relationship between Family Resilience and the Successful Management of Fibromyalgia** by Preece, John Cameron; Phd from Syracuse University, 2001, 158 pages
<http://wwwlib.umi.com/dissertations/fullcit/3018942>

Keeping Current

As previously mentioned, an effective way to stay current on dissertations dedicated to fibromyalgia 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 fibromyalgia 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 fibromyalgia. 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 fibromyalgia. Research can give you information on the side effects, interactions, and limitations of prescription drugs used in the treatment of fibromyalgia. 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 Basics³⁸

The Agency for Health Care Research and Quality has published extremely useful guidelines on how you can best participate in the medication aspects of fibromyalgia. 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 fibromyalgia 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 fibromyalgia. 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.
- If you can get a refill, and how often.

³⁸ This section is adapted from AHCRQ: <http://www.ahcpr.gov/consumer/ncpiebro.htm>.

- 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 fibromyalgia). 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 fibromyalgia. 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.³⁹

While the FDA database is rather large and difficult to navigate, the Pharmacopeia 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 fibromyalgia. 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 fibromyalgia:

Cyclobenzaprine

- **Systemic - U.S. Brands:** Flexeril
<http://www.nlm.nih.gov/medlineplus/druginfo/cyclobenzaprine/systemic202172.html>

³⁹ Though cumbersome, the FDA database can be freely browsed at the following site: www.fda.gov/cder/da/da.htm.

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 fibromyalgia (including those with contraindications):⁴⁰

- **Cyclobenzaprine HCl**
http://www.reutershealth.com/atoz/html/Cyclobenzaprine_HCl.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 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

⁴⁰ Adapted from *A to Z Drug Facts* by Facts and Comparisons.

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 fibromyalgia--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 fibromyalgia or potentially create deleterious side effects in patients with fibromyalgia. 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 fibromyalgia. 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 fibromyalgia. The FDA warns patients to watch out for⁴¹:

- 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.

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):

- **Complete Guide to Prescription and Nonprescription Drugs 2001** (**Complete Guide to Prescription and Nonprescription Drugs, 2001**) by H. Winter Griffith, Paperback 16th edition (2001), Medical Surveillance; ISBN: 0942447417;
<http://www.amazon.com/exec/obidos/ASIN/039952634X/icongroupinterna>
- **The Essential Guide to Prescription Drugs, 2001** by James J. Rybacki, James W. Long; Paperback - 1274 pages (2001), Harper Resource; ISBN: 0060958162;
<http://www.amazon.com/exec/obidos/ASIN/0060958162/icongroupinterna>

⁴¹ This section has been adapted from
<http://www.fda.gov/opacom/lowlit/medfraud.html>.

- **Handbook of Commonly Prescribed Drugs** by G. John Digregorio, Edward J. Barbieri; Paperback 16th edition (2001), Medical Surveillance; ISBN: 0942447417;
<http://www.amazon.com/exec/obidos/ASIN/0942447417/icongroupinterna>
- **Johns Hopkins Complete Home Encyclopedia of Drugs 2nd ed.** by Simeon Margolis (Ed.), Johns Hopkins; Hardcover - 835 pages (2000), Rebus; ISBN: 0929661583;
<http://www.amazon.com/exec/obidos/ASIN/0929661583/icongroupinterna>
- **Medical Pocket Reference: Drugs 2002** by Springhouse Paperback 1st edition (2001), Lippincott Williams & Wilkins Publishers; ISBN: 1582550964;
<http://www.amazon.com/exec/obidos/ASIN/1582550964/icongroupinterna>
- **PDR** by Medical Economics Staff, Medical Economics Staff Hardcover - 3506 pages 55th edition (2000), Medical Economics Company; ISBN: 1563633752;
<http://www.amazon.com/exec/obidos/ASIN/1563633752/icongroupinterna>
- **Pharmacy Simplified: A Glossary of Terms** by James Grogan; Paperback - 432 pages, 1st edition (2001), Delmar Publishers; ISBN: 0766828581;
<http://www.amazon.com/exec/obidos/ASIN/0766828581/icongroupinterna>
- **Physician Federal Desk Reference** by Christine B. Fraizer; Paperback 2nd edition (2001), Medicode Inc; ISBN: 1563373971;
<http://www.amazon.com/exec/obidos/ASIN/1563373971/icongroupinterna>
- **Physician's Desk Reference Supplements** Paperback - 300 pages, 53 edition (1999), ISBN: 1563632950;
<http://www.amazon.com/exec/obidos/ASIN/1563632950/icongroupinterna>

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 fibromyalgia. Finally, at the conclusion of this chapter, we will provide a list of readings on fibromyalgia 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?⁴²

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 known as “preventive,” which means that the practitioner educates and

⁴² Adapted from the NCCAM: <http://nccam.nih.gov/nccam/fcp/faq/index.html#what-is>.

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?⁴³

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

⁴³ 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.⁴⁴

⁴⁴ 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 Fibromyalgia

Having read the previous discussion, you may be wondering which complementary or alternative treatments might be appropriate for fibromyalgia. 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 "fibromyalgia" (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:

- **Static Magnetic Fields for Treatment of Fibromyalgia: A Randomized Controlled Trial**

Source: *Journal of Alternative and Complementary Medicine: Research on Paradigm, Practice and Policy*. 7(1): 53-64. February 2001.

Summary: This journal article describes a 6-month, randomized controlled trial of static magnetic fields for the treatment of fibromyalgia. The participants were 119 adults who met the 1990 American College of Rheumatology criteria for fibromyalgia and were recruited through clinical referral and media announcements. They were evaluated at a university-based clinic and randomly assigned to one of four groups. Patients in Functional Pad A group used a pad for 6 months that provided whole body exposure to a low, uniform static magnetic field of negative polarity. Those in Functional Pad B group used a pad that exposed them to a low static magnetic field that varied spatially and in polarity. Patients in two sham groups used pads that were identical in appearance and texture to the functional pads but contained inactive magnets; these groups were combined for analysis. Patients in the Usual Care group continued their established treatment regimens. Ninety-four patients completed the study. Results at 6 months demonstrated a significant difference among groups in pain intensity ratings, with Functional Pad A group showing the greatest reduction from baseline. All four groups showed a decline in the number of tender points, and differences among groups were not significant. The Functional Pad groups showed the largest decline in total tender point pain intensity and the greatest improvement in functional status, but differences among groups were not significant. The article has 3 figures, 4 tables, and 36 references.

- **Review of Recent Clinical Trials of the Nutritional Supplement *Chlorella pyrenoidosa* in the Treatment of Fibromyalgia, Hypertension, and Ulcerative Colitis**

Source: *Alternative Therapies in Health and Medicine*. 7(3): 79-91. May-June 2001.

Summary: This journal article reviews recent clinical trials of '*Chlorella pyrenoidosa*' dietary supplements for the treatment of fibromyalgia, hypertension, and ulcerative colitis. '*Chlorella pyrenoidosa*' is a unicellular fresh water green alga rich in proteins, vitamins, minerals, and other substances. Randomized, double-blind, placebo-controlled trials were carried out at Virginia Commonwealth University's Medical College of Virginia. Fifty-five patients with fibromyalgia, 33 with hypertension, and 9 with ulcerative colitis participated. Patients assigned to the active treatment groups consumed 10 g of pure chlorella in tablet

form and 100 ml of a liquid containing a chlorella extract each day for 2 months in the hypertension and ulcerative colitis trials and for 3 months in the fibromyalgia trial. Fibromyalgia patients taking chlorella had greater improvements in pain and function scores than did those taking placebo. In patients with hypertension, dietary supplementation with chlorella (after a 1-month washout of antihypertensive medications) either improved the hypertension or kept it under control, and significantly lowered serum lipid levels. Patients with ulcerative colitis showed significant improvements in symptoms, emotional aspects, and social functions after treatment with chlorella. In the authors' opinion, these results warrant larger, more comprehensive trials of chlorella. The article has 6 tables and 40 references.

- **Combined Ischemic Compression and Spinal Manipulation in the Treatment of Fibromyalgia: A Preliminary Estimate of Dose and Efficacy**

Source: Journal of Manipulative and Physiological Therapeutics. 23(4): 225-230. May 2000.

Summary: This journal article describes a study of chiropractic treatment for fibromyalgia. The purpose was to determine whether a regimen of 30 treatments combining ischemic compression and spinal manipulation effectively reduces the intensity of pain, sleep disturbance, and fatigue associated with fibromyalgia. A second purpose was to study the dose-response relation and identify the baseline characteristics that predict outcome. The participants were 15 women, mean age 51.1 years, with a diagnosis of fibromyalgia and widespread pain of more than 3 months duration. The patients were assessed with self-administered questionnaires at baseline, after 15 and 30 treatments, and 1 month after the course of treatment. Nine patients were classified as responders (at least 50 percent improvement in total pain score). Significant improvements in pain intensity, sleep quality, and fatigue level were observed after 15 and 30 treatments. After 30 treatments, the average improvements were 77.2 percent for pain intensity, 63.5 percent for sleep quality, and 74.8 percent for fatigue level. These gains were maintained 1 month later. Nonresponders tended to be older with more severe and chronic pain and a greater number of tender points, but the differences were not significant. The findings suggest a role for chiropractic in the management of fibromyalgia. The article has 1 figure, 4 tables, and 24 references.

- **Responsiveness of Fibromyalgia Clinical Trial Outcomes Measures**

Source: Journal of Rheumatology. 27(11): 2683-2691. November 2000.

Summary: This journal article examines the responsiveness of various outcome measures to perceived changes in clinical status in patients with fibromyalgia (FM). Data were obtained from a randomized, placebo-controlled trial of magnetic therapy in patients with FM. Fibromyalgia Impact Questionnaire (FIQ) scores, patient ratings of pain intensity, number of tender joints, and total tender point pain intensity scores were the primary outcome measures. Patient global ratings of symptom change were used as the criterion of change for evaluating the responsiveness of the outcome measures. Correlational analysis showed that the outcome measures were moderately responsive to perceived symptomatic changes. For FIQ, pain intensity ratings, and number of tender joints, differences in change scores between globally improved and unchanged groups and between globally improved and worsened groups were significant. For total tender point pain intensity, the globally improved group differed from the worsened group. The FIQ outperformed the other measures in discriminating between patients who reported improvement and those who did not. Summary statistics (effect size, standardized mean response, and Guyatt's statistic) were consistent with the discriminatory analyses, indicating that the measures were sensitive to improvement but relatively unresponsive to decline. The authors recommend including the FIQ as a primary endpoint in FM clinical trials. The article has 31 references.

- **Management of Fibromyalgia**

Source: *Annals of Internal Medicine*. 131(11): 850-858. December 8, 1999.

Summary: This journal article reviews the literature on the management of fibromyalgia. Despite extensive clinical study, there is no distinct consensus on the optimal management of fibromyalgia. The cause of fibromyalgia has not been clearly defined, but recent evidence suggests that alterations in the metabolism and function of the neurotransmitters serotonin, norepinephrine, and substance P may be involved. No pharmacologic agents are indicated specifically for the treatment of fibromyalgia in the United States, and most agents show only limited success. Drugs that affect serotonin or norepinephrine at the receptor site (such as antidepressants or tramadol) seem to generate the most consistent results. Tricyclic antidepressants may diminish the sleep disturbance and pain caused by fibromyalgia, whereas selective serotonin reuptake inhibitors may be more useful for sleep and coexistent depression only. Among the commonly used analgesics, preliminary data suggest that tramadol and tender point injections with lidocaine may be useful. Anti-inflammatory drugs have shown little effectiveness, and oral opioids have not been studied for this condition. Several miscellaneous

agents and nonpharmacologic interventions such as electroacupuncture, biofeedback, and exercise also have shown some success. The authors recommend a multidisciplinary approach that includes both pharmacologic and nonpharmacologic strategies. The article has 1 figure, 2 tables, and 119 references. (AA-M).

- **Use of Ascorbigen in the Treatment of Fibromyalgia Patients: A Preliminary Trial**

Source: *Alternative Medicine Review*. 5(5): 455-462. October 2000.

Summary: This journal article describes a preliminary trial of ascorbigen (the most common of variety of dietary indoles released from homogenized or cooked cruciferous vegetables) for the treatment of fibromyalgia. Twelve female patients with fibromyalgia syndrome (FMS), aged 22 to 52 years, were enrolled in a 1-month, open-label trial. They received 500 mg per day of a blend containing 100 mg ascorbigen and 400 mg broccoli powder. These patients had a mean 20.1 percent decrease in their physical impairment score and a mean 17.8 percent decrease in their total fibromyalgia impact score as measured by the Fibromyalgia Impact Questionnaire. The mean physical impairment score 2 weeks post-treatment showed a significant return to near baseline level. Pre- and post-treatment threshold pain levels at 18 possible tender spots were available for 10 patients, and showed a strong trend toward an increase after treatment. In the authors' opinion, the reduced sensitivity to pain and improvement in quality of life observed in this study appear to be clinically relevant and suggest that a larger, double-blind study is warranted. The article has 4 tables and 18 references. (AA-M).

- **Is Acupuncture Effective in the Treatment of Fibromyalgia?**

Source: *Journal of Family Practice*. 48(3): 213-218. March 1999.

Summary: This journal article reviews the literature to assess the effectiveness of acupuncture in the treatment of fibromyalgia syndrome (FMS), report adverse effects, and generate hypotheses for future investigation. A search of conventional medicine and specialized complementary medicine databases, supplemented with additional sources, was used to identify all randomized or quasirandomized controlled trials, or cohort studies of FMS patients treated with acupuncture. Methodological quality, sample characteristics, type of acupuncture treatment, and outcomes were extracted. Seven studies (three randomized controlled trials and four cohort studies) were included; only one was of high quality. The high-quality study suggests that real acupuncture is more effective than sham acupuncture for relieving pain, increasing pain thresholds, improving global ratings, and

reducing morning stiffness of FMS, but the duration of benefit following the acupuncture treatment is unknown. Some patients report no benefit, and a few report exacerbation of FMS-related pain. Lower quality studies were consistent with the findings. The authors conclude that more high-quality studies are needed to determine the efficacy of acupuncture for FMS and to answer questions about the use of booster doses of acupuncture to maintain benefit, the optimal acupuncture approach, and the combined use of acupuncture and antidepressant medication. The article has 2 tables and 25 references.

- **Fibromyalgia and the Serotonin Pathway**

Source: *Alternative Medicine Review*. 3(5): 367-375. 1998.

Summary: This journal article discusses the role of the serotonin pathway in the pathogenesis of fibromyalgia syndrome (FMS), and the implications for treatment. FMS is a musculoskeletal pain and fatigue disorder manifested by diffuse myalgia, localized areas of tenderness, fatigue, lowered pain thresholds, and nonrestorative sleep. Evidence from multiple sources support the concept of a decreased flux through the serotonin pathway in FMS patients. Serotonin substrate supplementation with L-tryptophan or 5-hydroxytryptophan has been shown to improve symptoms of depression, anxiety, insomnia, and somatic pains in these patients. The identification of low serum tryptophan and serotonin levels may be a simple way to identify patients who will respond to this approach. A complementary approach to the treatment of FMS used by the author includes nutritional supplementation, nutritional and/or pharmacological enhancement of deep-stage sleep, osteopathic treatment of somatic dysfunction, exercise, and serotonin substrate/receptor modulation as appropriate. The article has 2 figures, 3 tables, and 33 references. (AA-M).

- **Fibromyalgia and Chronic Myofascial Pain Syndrome: A Survival Manual**

Source: Oakland, CA: New Harbinger Publications, Inc. 2001. 401 p.

Contact: Available from New Harbinger Publications, Inc. 5674 Shattuck Avenue, Oakland, CA 94609. (800) 748-6273; (510) 652-0215. Price: \$19.95. ISBN: 1572240466.

Summary: This book is a manual for patients with fibromyalgia syndrome (FMS) or myofascial pain syndrome (MPS), two conditions that the authors say are infrequently recognized by conventional physicians. Part 1 defines FMS, the myofascia, myofascial trigger points, and chronic MPS. It describes possible coexisting conditions: carpal-

tunnel syndrome, cerebral palsy, chronic fatigue syndrome, depression, HIV infection, hypoglycemia, hypometabolism, hypermobility syndrome, lupus, mitral valve prolapse, multiple chemical sensitivities, multiple sclerosis, osteoarthritis, Parkinson's Disease, Post-Polio Syndrome, Raynaud's Phenomenon, Reflex Sympathetic Dystrophy Syndrome, rheumatoid arthritis, Temporomandibular Joint Syndrome, and yeast infections. The authors list perpetuating factors that are categorized as behavioral (smoking, muscle abuse, and psychological); biochemical (vitamin inadequacy, impaired muscle metabolism, hypoglycemia, low thyroid, and allergic conditions); and mechanical (body asymmetry, hypermobility, traveling, immobility, computer or typewriter use, and ill-fitting furniture and shoes, and similar conditions). Part 2 covers common questions and answers about symptoms; chronic pain and other states, such as sleep and pregnancy; and mind-control techniques for counteracting physical symptoms; and provides information about healing tools including medications, nutrition, and bodywork. A section on pain management and survival strategies offers tips on coping with family and work situations, getting support, and dealing with the health care system. The book includes a preface; an introduction; illustrations; worksheets; a bibliography; subject and name indexes; and appendices listing resources, additional reading, and health-care item suppliers.

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 fibromyalgia 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 "fibromyalgia" (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 fibromyalgia:

- **A combined ischemic compression and spinal manipulation in the treatment of fibromyalgia: a preliminary estimate of dose and efficacy.**
 Author(s): Hains G, Hains F.
 Source: Journal of Manipulative and Physiological Therapeutics. 2000 May; 23(4): 225-30.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10820294&dopt=Abstract

- **A comparative evaluation of a fibromyalgia rehabilitation program.**
 Author(s): Bailey A, Starr L, Alderson M, Moreland J.
 Source: Arthritis Care and Research : the Official Journal of the Arthritis Health Professions Association. 1999 October; 12(5): 336-40.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11081003&dopt=Abstract
- **A pilot study of cognitive behavioral therapy in fibromyalgia.**
 Author(s): Singh BB, Berman BM, Hadhazy VA, Creamer P.
 Source: Alternative Therapies in Health and Medicine. 1998 March; 4(2): 67-70.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9682514&dopt=Abstract
- **A psychological profile of fibromyalgia patients: a chiropractic case study.**
 Author(s): Jamison JR.
 Source: Journal of Manipulative and Physiological Therapeutics. 1999 September; 22(7): 454-7.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10519562&dopt=Abstract
- **A randomized clinical trial comparing fitness and biofeedback training versus basic treatment in patients with fibromyalgia.**
 Author(s): van SM, Bolwijn P, Verstappen F, Bakker C, Hidding A, Houben H, van D, Landewe R, van D.
 Source: J Rheumatol. 2002 March; 29(3): 575-81.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11908576&dopt=Abstract
- **Abnormal responses to electrocutaneous stimulation in fibromyalgia.**
 Author(s): Arroyo JF, Cohen ML.
 Source: J Rheumatol. 1993 November; 20(11): 1925-31.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7848390&dopt=Abstract
- **Acupuncture in the treatment of fibromyalgia.**
 Author(s): Koenig C, Stevermer J.

Source: The Journal of Family Practice. 1999 July; 48(7): 497. No Abstract Available.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10428243&dopt=Abstract

- **Alpha sleep and information processing, perception of sleep, pain, and arousability in fibromyalgia.**

Author(s): Perlis ML, Giles DE, Bootzin RR, Dikman ZV, Fleming GM, Drummond SP, Rose MW.

Source: The International Journal of Neuroscience. 1997 February; 89(3-4): 265-80.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9134461&dopt=Abstract

- **Altered sympathetic nervous system response in patients with fibromyalgia (fibrositis syndrome).**

Author(s): Vaeroy H, Qiao ZG, Morkrid L, Forre O.

Source: J Rheumatol. 1989 November; 16(11): 1460-5.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2689647&dopt=Abstract

- **An intuitive person-centred perspective on fibromyalgia syndrome and its management.**

Author(s): Masi AT.

Source: Baillieres Clin Rheumatol. 1994 November; 8(4): 957-93. Review. No Abstract Available.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7850888&dopt=Abstract

- **An open, pilot study to evaluate the potential benefits of coenzyme Q10 combined with Ginkgo biloba extract in fibromyalgia syndrome.**

Author(s): Lister RE.

Source: J Int Med Res. 2002 March-April; 30(2): 195-9.

http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12025528&dopt=Abstract

- **Attributions in chronic fatigue syndrome and fibromyalgia syndrome in tertiary care.**

Author(s): Neerinckx E, Van Houdenhove B, Lysens R, Vertommen H, Onghena P.

Source: J Rheumatol. 2000 April; 27(4): 1051-5.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10782836&dopt=Abstract

- **Atypical chest pain as an initial presentation of primary fibromyalgia.**
 Author(s): Pellegrino MJ.
 Source: Archives of Physical Medicine and Rehabilitation. 1990 June; 71(7): 526-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2350226&dopt=Abstract

- **Balneotherapy at the Dead Sea area for patients with psoriatic arthritis and concomitant fibromyalgia.**
 Author(s): Sukenik S, Baradin R, Codish S, Neumann L, Flusser D, Abu-Shakra M, Buskila D.
 Source: Isr Med Assoc J. 2001 February; 3(2): 147-50.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11344827&dopt=Abstract

- **Balneotherapy for fibromyalgia at the Dead Sea.**
 Author(s): Buskila D, Abu-Shakra M, Neumann L, Odes L, Shneider E, Flusser D, Sukenik S.
 Source: Rheumatology International. 2001 April; 20(3): 105-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11354556&dopt=Abstract

- **Biofeedback/relaxation training and exercise interventions for fibromyalgia: a prospective trial.**
 Author(s): Buckelew SP, Conway R, Parker J, Deuser WE, Read J, Witty TE, Hewett JE, Minor M, Johnson JC, Van Male L, McIntosh MJ, Nigh M, Kay DR.
 Source: Arthritis Care and Research : the Official Journal of the Arthritis Health Professions Association. 1998 June; 11(3): 196-209.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9782811&dopt=Abstract

- **Both pain and EEG response to cold pressor stimulation occurs faster in fibromyalgia patients than in control subjects.**
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Author(s): Wallace DJ, Margolin K, Waller P.
Source: *Annals of Internal Medicine*. 1988 June; 108(6): 909. No Abstract Available.
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Author(s): Juhl JH.
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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/>
- Healthnotes: <http://www.thedacare.org/healthnotes/>

- 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>
- WholeHealthMD.com:
<http://www.wholehealthmd.com/reflib/0,1529,,00.html>

The following is a specific Web list relating to fibromyalgia; 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**

- **Chronic Fatigue Syndrome**

- Source: Healthnotes, Inc.; www.healthnotes.com

- Hyperlink:

- http://www.thedacare.org/healthnotes/Concern/Chronic_Fatigue_Syndrome.htm

- **Fibromyalgia**

- Source: Healthnotes, Inc.; www.healthnotes.com

- Hyperlink:

- <http://www.thedacare.org/healthnotes/Concern/Fibromyalgia.htm>

- **Fibromyalgia**

- Source: Integrative Medicine Communications;

- www.onemedicine.com

- Hyperlink:

- <http://www.drkoop.com/InteractiveMedicine/ConsLookups/Uses/fibromyalgia.html>

- **Fibromyalgia**

- Source: Integrative Medicine Communications;

- www.onemedicine.com

- Hyperlink:

- <http://www.drkoop.com/interactivemedicine/ConsConditions/Fibromyalgiacc.html>

Insomnia

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Concern/Insomnia.htm>

Insomnia

Source: Integrative Medicine Communications;

www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsConditions/Insomniacc.html>

Pain

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Concern/Pain.htm>

Prostatitis

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Concern/Prostatitis.htm>

Sleeplessness

Source: Integrative Medicine Communications;

www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsConditions/Insomniacc.html>

Vertigo

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Concern/Vertigo.htm>

- **Alternative Therapy**

Acupuncture

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Therapy/Acupuncture.htm>

Acupuncture

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,663,00.html

Alexander technique

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,665,00.html

Biofeedback

Source: Integrative Medicine Communications;

www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsModalities/Biofeedbackcm.html>

Biofeedback

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,675,00.html

Homeopathy

Source: Integrative Medicine Communications;

www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsModalities/Homeopathycm.html>

Hydrotherapy

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,705,00.html

Hypnotherapy

Source: Integrative Medicine Communications;
www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsModalities/Hypnotherapycm.html>

Hypnotherapy

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,706,00.html

Massage therapy

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,716,00.html

Meditation

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,717,00.html

Myotherapy

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,931,00.html

Polarity therapy

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,727,00.html

Qigong

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,729,00.html

Relaxation Techniques

Source: Integrative Medicine Communications;
www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsModalities/RelaxationTechniquescm.html>

Traditional Chinese medicine

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10085,00.html

Yoga

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,746,00.html

- **Homeopathy**

Actaea racemosa

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Actaea_racemosa.htm

Arnica

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Arnica.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

Cimicifuga

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Cimicifuga.htm

Kalmia latifolia

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Kalmia_latifolia.htm

Ranunculus bulbosus

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Ranunculus_bulbosus.htm

Rhus toxicodendron

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Rhus_toxicodendron.htm

Ruta graveolens

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Homeo_Homeoix/Ruta_graveolens.htm

- **Herbs and Supplements**

5-HTP

Source: Integrative Medicine Communications;
www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsSupplements/5Hydroxytryptophan5HTPcs.html>

5-HTP (5-Hydroxytryptophan)

Source: Prima Communications, Inc.

Hyperlink: <http://www.personalhealthzone.com/pg000158.html>

5-Hydroxytryptophan

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink: <http://www.thedacare.org/healthnotes/Supp/5-HTP.htm>

5-Hydroxytryptophan (5-HTP)

Source: Integrative Medicine Communications;
www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsSupplements/5Hydroxytryptophan5HTPcs.html>

Aloe

Alternative names: Aloe vera L.

Source: Alternative Medicine Foundation, Inc.;
www.amfoundation.org

Hyperlink: <http://www.herbmed.org/>

Amino Acids Overview

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Supp/Amino_Acids.htm

Antioxidants

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10004,00.html

Beta-carotene

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10103,00.html

Cayenne

Alternative names: Capsicum annuum, Capsicum frutescens

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Herb/Cayenne.htm>

Cayenne

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,765,00.html

Coenzyme Q

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,768,00.html

Coenzyme Q10

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Supp/Coenzyme_Q10.htm

DHEA

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10022,00.html

Flavonoids

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,782,00.html

Ginger

Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca

Hyperlink: <http://www.wellnet.ca/herbsg-i.htm>

Ginkgo biloba

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,788,00.html

Grape seed extract

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,793,00.html

Kava

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,798,00.html

Licorice

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,801,00.html

Malic Acid

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

http://www.thedacare.org/healthnotes/Supp/Malic_Acid.htm

Melatonin

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Supp/Melatonin.htm>

Melatonin

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,804,00.html

MSM

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,807,00.html

NADH

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10047,00.html

Peppermint

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,812,00.html

Phosphatidylserine (PS)

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,813,00.html

PMS Herbal combination

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,947,00.html

S-Adenosylmethionine (S-AdoMet)

Source: Integrative Medicine Communications;
www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsSupplements/SAdenosylmethionineSAMecs.html>

SAMe

Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink:

<http://www.thedacare.org/healthnotes/Supp/SAMe.htm>

SAMe

Source: Integrative Medicine Communications;

www.onemedicine.com

Hyperlink:

<http://www.drkoop.com/interactivemedicine/ConsSupplements/SAdenosylmethionineSAMecs.html>

SAMe (S-Adenosylmethionine)

Source: Prima Communications, Inc.

Hyperlink: <http://www.personalhealthzone.com/pg000090.html>

SAMe (S-adenosylmethionine)

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,818,00.html

Siberian ginseng

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,821,00.html

St. John's Wort

Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca

Hyperlink: <http://www.wellnet.ca/herbss-v.htm>

St. John's wort

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,824,00.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):

- **Acupuncture Treatment for Musculoskeletal Pain : A Textbook for Orthopedics and Anesthesia** by Harris Gellman (Editor); Hardcover (May 2001), Harwood Academic Pub; ISBN: 9057025167;
<http://www.amazon.com/exec/obidos/ASIN/9057025167/icongroupinterna>
- **Homeopathy for Musculoskeletal Healing** by Asa Hershoff; Paperback - 300 pages (January 1997), North Atlantic Books; ISBN: 1556432372;
<http://www.amazon.com/exec/obidos/ASIN/1556432372/icongroupinterna>
- **Joint Pains: A Guide to Successful Herbal Remedies** by Penelope Ody; Paperback - 172 pages (April 2002), Souvenir Press Ltd; ISBN: 0285636227;
<http://www.amazon.com/exec/obidos/ASIN/0285636227/icongroupinterna>
- **Kinesiology of the Musculoskeletal System** by Neumann, et al; Hardcover - 624 pages, 1st edition (March 22, 2002), Mosby, Inc.; ISBN: 0815163495;
<http://www.amazon.com/exec/obidos/ASIN/0815163495/icongroupinterna>
- **Applied Kinesiology: A Training Manual and Reference Book of Basic Principles and Practices** by Robert Frost, George J. Goodheart; Paperback - 300 pages, 1st edition (March 21, 2002), Publishers Group West; ISBN: 1556433743;
<http://www.amazon.com/exec/obidos/ASIN/1556433743/icongroupinterna>
- **Musculoskeletal Disorders : Healing Methods from Chinese Medicine, Orthopaedic Medicine and Osteopathy** by Alon Marcus; Hardcover - 650 pages (January 1999), North Atlantic Books; ISBN: 1556432828;
<http://www.amazon.com/exec/obidos/ASIN/1556432828/icongroupinterna>
- **The Posture Prescription : A Doctor's Rx for Eliminating Back, Muscle, and Joint Pain, Achieving Optimum Strength and Mobility, Living a Life of Fitne** by Arthur White, MD, et al; Paperback - 256 pages, 1st edition (January 8, 2002), Three Rivers Pr; ISBN: 0609806319;
<http://www.amazon.com/exec/obidos/ASIN/0609806319/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

Vocabulary Builder

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

Antihypertensive: An agent that reduces high blood pressure. [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]

Capsicum: A genus of Solanaceous shrubs that yield capsaicin. Several varieties have sweet or pungent edible fruits that are used as vegetables when fresh and spices when the pods are dried. [NIH]

Carotene: The general name for a group of pigments found in green, yellow, and leafy vegetables, and yellow fruits. The pigments are fat-soluble, unsaturated aliphatic hydrocarbons functioning as provitamins and are converted to vitamin A through enzymatic processes in the intestinal wall. [NIH]

Criterion: A standard by which something may be judged. [EU]

Ginseng: An araliaceous genus of plants that contains a number of pharmacologically active agents used as stimulants, sedatives, and tonics, especially in traditional medicine. [NIH]

Kava: Dried rhizome and roots of *Piper methysticum*, a shrub native to Oceania and known for its anti-anxiety and sedative properties. Heavy usage results in some adverse effects. It contains alkaloids, lactones, kawain, methysticin, mucilage, starch, and yangonin. Kava is also the name of the pungent beverage prepared from the plant's roots. [NIH]

Prolapse: 1. the falling down, or sinking, of a part or viscus; proidentia. 2. to undergo such displacement. [EU]

Prostatitis: Inflammation of the prostate. [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]

Serum: The clear portion of any body fluid; the clear fluid moistening serous membranes. 2. blood serum; the clear liquid that separates from blood on clotting. 3. immune serum; blood serum from an immunized animal used for passive immunization; an antiserum; antitoxin, or antivenin. [EU]

Substrate: A substance upon which an enzyme acts. [EU]

Symptomatic: 1. pertaining to or of the nature of a symptom. 2. indicative (of a particular disease or disorder). 3. exhibiting the symptoms of a particular disease but having a different cause. 4. directed at the allaying of symptoms, as symptomatic treatment. [EU]

Tramadol: A narcotic analgesic proposed for severe pain. It may be habituating. [NIH]

Tryptophan: An essential amino acid that is necessary for normal growth in infants and for nitrogen balance in adults. It is a precursor serotonin and niacin. [NIH]

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 fibromyalgia. 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 fibromyalgia may be given different recommendations. Some recommendations may be directly related to fibromyalgia, 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 fibromyalgia. We will then show you how to find studies dedicated specifically to nutrition and fibromyalgia.

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 B¹**, 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 B²**, 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 B³**, 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 B⁶**, 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 B¹²** is vital for a healthy nervous system and for the growth of red blood cells in bone marrow; food sources for vitamin B¹² 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:⁴⁵

- **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.

⁴⁵ Adapted from the FDA: <http://www.fda.gov/fdac/special/foodlabel/dvs.html>.

- **RDIs (Reference Daily Intakes):** A set of dietary references based on the Recommended Dietary Allowances for essential vitamins and minerals 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?⁴⁶

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.”⁴⁷ According to the ODS, dietary supplements can have an important impact on the prevention and management of disease and on the maintenance of health.⁴⁸ The ODS notes that considerable research on the effects of dietary supplements has been conducted in Asia and Europe where

⁴⁶ This discussion has been adapted from the NIH:
<http://ods.od.nih.gov/whatare/whatare.html>.

⁴⁷ 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.

⁴⁸ 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.”

the use of plant products, in particular, has a long tradition. However, the overwhelming majority of supplements have not been studied scientifically. 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 Fibromyalgia

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.⁴⁹ 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

⁴⁹ 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.

periodically as this database is frequently updated. More studies can be found by searching the Full IBIDS Database. Healthcare professionals and 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 “fibromyalgia” (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 “fibromyalgia” (or a synonym):

- **A comparison between low-dose (1 microg), standard-dose (250 microg) ACTH stimulation tests and insulin tolerance test in the evaluation of hypothalamo-pituitary-adrenal axis in primary fibromyalgia syndrome.**
 Author(s): Department of Physical Medicine and Rehabilitation, Erciyes University Medical School Kayseri, Turkey.
 Source: Kirnap, M Colak, R Eser, C Ozsoy, O Tutus, A Kelestimur, F Clin-Endocrinol-(Oxf). 2001 October; 55(4): 455-9 0300-0664
- **A placebo controlled crossover trial of subcutaneous salmon calcitonin in the treatment of patients with fibromyalgia.**
 Author(s): Department of Medicine, Laval University, Quebec, Ste-Foy, Canada.
 Source: Bessette, L Carette, S Fossel, A H Lew, R A Scand-J-Rheumatol. 1998; 27(2): 112-6 0300-9742
- **A review of recent clinical trials of the nutritional supplement Chlorella pyrenoidosa in the treatment of fibromyalgia, hypertension, and ulcerative colitis.**
 Author(s): Virginia Commonwealth University, Medical College of Virginia, Richmond, VA 23298-0709, USA. rmerchan@hsc.vcu.edu
 Source: Merchant, R E Andre, C A Altern-Ther-Health-Med. 2001 May-June; 7(3): 79-91 1078-6791
- **Altered interleukin-2 secretion in patients with primary fibromyalgia syndrome.**
 Author(s): Department of Internal Medicine B, Carmel Medical Center, Haifa, Israel.
 Source: Hader, N Rimon, D Kinarty, A Lahat, N Arthritis-Rheum. 1991 July; 34(7): 866-72 0004-3591
- **Alternative medicine use in fibromyalgia syndrome.**
 Source: Piro Boisset, M Esdaile, J M Fitzcharles, M A Arthritis-Care-Res. 1996 February; 9(1): 13-7 0893-7524

- **Chronic fatigue syndrome and fibromyalgia. Dilemmas in diagnosis and clinical management.**
Author(s): Lilly Research Laboratories, Indianapolis, Indiana, USA.
Source: Demitrack, M A Psychiatr-Clin-North-Am. 1998 September; 21(3): 671-92, viii 0193-953X
- **Complementary medicine treatments for fibromyalgia syndrome.**
Author(s): University of Maryland School of Medicine, James L. Kernan Hospital, Baltimore 21207-6697, USA.
Source: Berman, B M Swyers, J P Baillieres-Best-Pract-Res-Clin-Rheumatol. 1999 September; 13(3): 487-92 1521-6942
- **Counter irritation test in primary fibromyalgia.**
Author(s): URA CNRS 1455, Faculte de medecine secteur Nord, Marseille, France.
Source: Guieu, R Serratrice, G Pouget, J Clin-Rheumatol. 1994 December; 13(4): 605-10 0770-3198
- **Cytokines play an aetiopathogenetic role in fibromyalgia: a hypothesis and pilot study.**
Author(s): Department of Medicine/Division of Rheumatology, Cedars-Sinai Medical Center/UCLA School of Medicine, Los Angeles, CA, USA.
Source: Wallace, D J Linker Israeli, M Hallegua, D Silverman, S Silver, D Weisman, M H Rheumatology-(Oxford). 2001 July; 40(7): 743-9 1462-0324
- **Disordered growth hormone secretion in fibromyalgia: a review of recent findings and a hypothesized etiology.**
Author(s): Dept. Medicine (L329A), Oregon Health Sciences University, Portland 97201, USA.
Source: Bennett, R M Z-Rheumatol. 1998; 57 Suppl 272-6 0340-1855
- **Double-blind study of 5-hydroxytryptophan versus placebo in the treatment of primary fibromyalgia syndrome.**
Author(s): Rheumatology Unit, L. Sacco Hospital, Milan, Italy.
Source: Caruso, I Sarzi Puttini, P Cazzola, M Azzolini, V J-Int-Med-Res. 1990 May-June; 18(3): 201-9 0300-0605
- **Double-blind, placebo-controlled cross-over study of intravenous S-adenosyl-L-methionine in patients with fibromyalgia.**
Author(s): Department of Rheumatology, Frederiksberg Hospital, Copenhagen, Denmark.
Source: Volkmann, H Norregaard, J Jacobsen, S Danneskiold Samsøe, B Knoke, G Nehrlich, D Scand-J-Rheumatol. 1997; 26(3): 206-11 0300-9742
- **Evaluation of S-adenosylmethionine in primary fibromyalgia. A double-blind crossover study.**
Author(s): Institute of Medical Pathology I, University of Pisa, Italy.

Source: Tavoni, A Vitali, C Bombardieri, S Pasero, G Am-J-Med. 1987 November 20; 83(5A): 107-10 0002-9343

- **Factors predisposing to the resort of complementary therapies in patients with fibromyalgia.**
Author(s): Clinical Pharmacology Unit (Rheumatism Research), University of Leeds, United Kingdom.
Source: Dimmock, S Troughton, P R Bird, H A Clin-Rheumatol. 1996 September; 15(5): 478-82 0770-3198
- **Fibromyalgia in hyperkalemic periodic paralysis.**
Author(s): Department of Internal Medicine/Rheumatology, Sahlgren University Hospital/Ostra, Goteborg, Sweden.
Source: Gotze, F R Thid, S Kyllerman, M Scand-J-Rheumatol. 1998; 27(5): 383-4 0300-9742
- **Fibromyalgia, psychiatric disorders, and assessment of the longterm outcome of eosinophilia-myalgia syndrome.**
Author(s): Biological Psychiatry Laboratory, McLean Hospital, Belmont, MA 02178, USA.
Source: Hudson, J I Pope, H G Carter, W P Daniels, S R J-Rheumatol-Suppl. 1996 October; 4637-42; discussion 42-3 0380-0903
- **Fibromyalgia: a risk factor for osteoporosis.**
Author(s): Osteoporosis Prevention and Treatment Center, Santa Monica, California 90404, USA.
Source: Swezey, R L Adams, J J-Rheumatol. 1999 December; 26(12): 2642-4 0315-162X
- **Fibromyalgia--are there different mechanisms in the processing of pain? A double blind crossover comparison of analgesic drugs.**
Author(s): Department of Anaesthesiology, University Hospital, Linkoping, Sweden.
Source: Sorensen, J Bengtsson, A Ahlner, J Henriksson, K G Ekselius, L Bengtsson, M J-Rheumatol. 1997 August; 24(8): 1615-21 0315-162X
- **Food supplements in the treatment of primary fibromyalgia: a double-blind, crossover trial of anthocyanidins and placebo.**
Source: Edwards, A.M. Blackburn, L. Christie, S. Townsend, S. David, J. J-nutr-environ-med. Abingdon, U.K. : Carfax Publishing Company. Sept 2000. volume 10 (3) page 189-199. 1359-0847

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 fibromyalgia; 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 B1**

- Source: Healthnotes, Inc.; www.healthnotes.com

- Hyperlink:

- http://www.thedacare.org/healthnotes/Supp/Vitamin_B1.htm

- **Vitamin B1**

- Source: Prima Communications, Inc.

- Hyperlink: <http://www.personalhealthzone.com/pg000241.html>

- **Vitamin E**

- Source: Healthnotes, Inc.; www.healthnotes.com

- Hyperlink:

- http://www.thedacare.org/healthnotes/Supp/Vitamin_E.htm

- **Minerals**

- **Carnitine**

- Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

- Hyperlink:

- http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10012,00.html

- **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/ConsSupplements/Magnesiumcs.html>

Magnesium

Source: Prima Communications, Inc.

Hyperlink: <http://www.personalhealthzone.com/pg000202.html>

Magnesium

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,890,00.html

Zinc

Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:

http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10071,00.html

Vocabulary Builder

The following vocabulary builder defines words used in the references in this chapter that have not been defined in previous chapters:

Bacteria: Unicellular prokaryotic microorganisms which generally possess rigid cell walls, multiply by cell division, and exhibit three principal forms: round or coccal, rodlike or bacillary, and spiral or spirochetal. [NIH]

Calcitonin: A peptide hormone that lowers calcium concentration in the blood. In humans, it is released by thyroid cells and acts to decrease the formation and absorptive activity of osteoclasts. Its role in regulating plasma calcium is much greater in children and in certain diseases than in normal adults. [NIH]

Capsules: Hard or soft soluble containers used for the oral administration of medicine. [NIH]

Carbohydrate: An aldehyde or ketone derivative of a polyhydric alcohol, particularly of the pentahydric and hexahydric alcohols. They are so named

because the hydrogen and oxygen are usually in the proportion to form water, $(CH_2O)_n$. The most important carbohydrates are the starches, sugars, celluloses, and gums. They are classified into mono-, di-, tri-, poly- and heterosaccharides. [EU]

Carnitine: Constituent of striated muscle and liver. It is used therapeutically to stimulate gastric and pancreatic secretions and in the treatment of hyperlipoproteinemias. [NIH]

Cholesterol: The principal sterol of all higher animals, distributed in body tissues, especially the brain and spinal cord, and in animal fats and oils. [NIH]

Eosinophilia: The formation and accumulation of an abnormally large number of eosinophils in the blood. [EU]

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]

Paralysis: Loss or impairment of motor function in a part due to lesion of the neural or muscular mechanism; also by analogy, impairment of sensory function (sensory paralysis). In addition to the types named below, paralysis is further distinguished as traumatic, syphilitic, toxic, etc., according to its cause; or as obturator, ulnar, etc., according to the nerve part, or muscle specially affected. [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]

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.⁵⁰

⁵⁰ 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):⁵¹

- **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/>

⁵¹ 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://sfguide.ucsf.edu/barnett/PERC/default.asp>
- **California:** Redwood Health Library (Petaluma Health Care District), <http://www.phcd.org/rdwlib.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.lsuhscc.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 Resource 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://nmlm.gov/>
- **National:** NN/LM List of Libraries Serving the Public (National Network of Libraries of Medicine), <http://nmlm.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.html#conshealth.html#
- **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/koopp1.shtml>
- **Pennsylvania:** Learning Resources Center - Medical Library (Susquehanna Health System), <http://www.shscare.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://hwh.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 fibromyalgia 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.⁵²

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 network composition, the procedures that govern access to specialists and emergency services, and care management information.

⁵²Adapted from Consumer Bill of Rights and Responsibilities:
<http://www.hcqualitycommission.gov/press/cbor.html#head1>.

- **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.⁵³

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."⁵⁴ 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.
- Use your health insurance plan's internal complaint and appeal processes to address your concerns.
- Avoid knowingly spreading disease.

⁵³ 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.

⁵⁴ Adapted from <http://www.hcqualitycommission.gov/press/cbor.html#head1>.

- 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.⁵⁵ The U.S. Department of Labor, in particular, recommends ten ways to make your health benefits choices work best for you.⁵⁶

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 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.

⁵⁵ More information about quality across programs is provided at the following AHRQ Web site:

<http://www.ahrq.gov/consumer/qntascii/qnthplan.htm>.

⁵⁶ Adapted from the Department of Labor:

<http://www.dol.gov/dol/pwba/public/pubs/health/top10-text.html>.

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.⁵⁷

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.

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.

⁵⁷ This section has been adapted from the Official U.S. Site for Medicare Information: <http://www.medicare.gov/Basics/Overview.asp>.

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.⁵⁸ NORD

⁵⁸ Adapted from NORD: http://www.rarediseases.org/cgi-bin/nord/progserv#patient?id=rPIzL9oD&mv_pc=30.

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:⁵⁹

- 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>
- Patient's Rights, Confidentiality, Informed Consent, Ombudsman Programs, Privacy and Patient Issues:
<http://www.nlm.nih.gov/medlineplus/patientissues.html>

⁵⁹ You can access this information at:

<http://www.nlm.nih.gov/medlineplus/healthsystem.html>.

APPENDIX F. FIBROMYALGIA RESEARCH: CHALLENGES AND OPPORTUNITIES

Overview

Although the cause of fibromyalgia is unknown, researchers have several theories about what triggers the disease. Some scientists believe that the syndrome may result from an injury or trauma. This injury may affect the central nervous system. Fibromyalgia may be associated with changes in muscle metabolism, such as decreased blood flow, causing fatigue and decreased strength. Others believe the syndrome may be triggered by an infectious agent such as a virus in susceptible people, but no such agent has been identified.

This appendix reproduces a document prepared by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) describing recent research initiatives, challenges and opportunities.⁶⁰

Background on Fibromyalgia

Fibromyalgia is a chronic disorder characterized by widespread musculoskeletal pain, fatigue, and tenderness in localized areas of the neck, spine, shoulders, and hips called "tender points." People with this syndrome may also experience sleep disturbances, morning stiffness, irritable bowel syndrome, anxiety, and other symptoms. Available data suggest that the number of persons aged 18 and older in the United States with fibromyalgia

⁶⁰ Adapted from the NIAMS:
<http://www.niams.nih.gov/hi/topics/fibromyalgia/fibromya.htm>.

is approximately 3.7 million. It primarily occurs in women of childbearing age, but children, the elderly, and men may also be affected.

Fibromyalgia is difficult to diagnose because many of the symptoms mimic those of other diseases. The American College of Rheumatology (ACR) has developed criteria for fibromyalgia that physicians can use in diagnosing the disease. According to ACR criteria, a person is considered to have fibromyalgia if he or she has widespread pain for at least 3 months in combination with tenderness in at least 11 of 18 specific tender point sites.

Treatment of fibromyalgia requires a comprehensive approach. The physician, physical therapist, and others in the medical support system, as well as the patient, may all play an active role in the management of fibromyalgia. Studies have shown that aerobic exercise, such as swimming and walking, improves muscle fitness and reduces muscle pain and tenderness. Heat and massage may also give short-term relief. Antidepressant medications may help elevate mood, improve quality of sleep, and relax muscles. People with fibromyalgia may benefit from a combination of exercise, medication, physical therapy, and relaxation.

Research on Fibromyalgia

Support of fundamental research is extremely important in fibromyalgia as well as in many disorders characterized by pain and sleep abnormalities, and many disciplines of medical research contribute to the knowledge base in understanding these symptoms. Since it is impossible to know with certainty which area will produce the next important discovery, the community of science, of which the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is a part, has to be open to all ideas. Discoveries can come from research funded in a variety of areas. For example, the National Institutes of Health (NIH) supports pain research at different levels--from the gene, molecule, cell, and organ to the human organism itself. NIH spends more than \$75 million on pain research, which is conducted and supported by 15 institutes, centers, and offices. While this figure would not be reported as funding for fibromyalgia research specifically, certain aspects of pain research are applicable to understanding fibromyalgia.

The research on fibromyalgia supported by NIAMS covers a broad spectrum from basic research to clinical studies to behavioral interventions. For example, NIAMS investigators are examining the interactions between the

nervous system and the endocrine (hormonal) system and regulation of adrenal function in fibromyalgia patients. Studies have shown that abnormally low levels of the hormone cortisol may be associated with fibromyalgia. Researchers are studying regulation of the function of the adrenal glands (which make cortisol) in fibromyalgia. People whose bodies make inadequate amounts of cortisol experience many of the same symptoms as people with fibromyalgia. It is hoped that these studies will increase understanding about fibromyalgia and may suggest new ways to treat the disorder.

Basic research studies to advance our understanding of the molecular and genetic basis of sleep and sleep disorders are also included in the NIAMS research portfolio. One specific project on mice focuses on identifying genetic factors that underlie molecular events involved in the regulation of sleep. A wealth of information on the neuroanatomy, neurochemistry, and neurophysiology of sleep provides a firm foundation for a genetic approach to studies of sleep. This project will use genetics to screen for single gene mutations that affect sleep patterns in mice. Understanding this in mice will advance understanding of how this translates to humans. Other basic research studies using animal models are investigating the link between sleep and long-term memory.

Examples of NIAMS-supported clinical research in fibromyalgia include comparing pain mechanisms in this disorder and low back pain; determining if aerobic exercise benefits patients with fibromyalgia through the action of the hypothalamus and pituitary and adrenal glands; and studying neuroendocrine changes in fibromyalgia and irritable bowel syndrome. The Institute is also funding a new clinical trial to determine the effectiveness of combining two antidepressants in treating the disorder.

In addition, NIAMS is currently funding research projects related to the role of behavioral factors in fibromyalgia. Investigators are evaluating the effects of two of the most promising nonpharmacologic interventions for fibromyalgia: cognitive behavioral therapy for pain management and physical exercise training. This study is designed to test the hypothesis that combining cognitive behavioral therapy and physical training will be more effective than cognitive behavioral therapy or exercise alone. If the cognitive and exercise interventions have synergistic effects in fibromyalgia patients, future studies could evaluate this combination in patients with other rheumatic diseases, or in those with stroke or burn injuries who are experiencing pain during exercise/rehabilitation regimens.

Providing social support and education about one's disease or disorder has been shown to be an effective means for improving the health care status of individuals with chronic diseases. Studies are currently underway focusing on patients with fibromyalgia to advance understanding of how social support and education interventions may be helpful to these patients as well.

Why Is Basic Research Important to Understanding Fibromyalgia?

The research mission of NIAMS is broad and diverse. Progress in one area of the Institute provides important clues for research in other areas. Similarly, progress in areas supported by other NIH institutes can and does provide valuable information for diseases within the NIAMS research portfolio. That is why it is essential to support studies across the research spectrum and to encourage cross-fertilization of knowledge from experts in many disciplines. Studies on the neuroendocrine system, pain and sleep disorders, and rheumatic and autoimmune diseases all may lead to a better understanding of fibromyalgia.

Since not all the outcomes can be anticipated, and it is hard to know where scientific advances will come from, NIAMS strives to support and maintain a diverse research portfolio. This is especially important in fibromyalgia, where many areas are being developed simultaneously. Advances against fibromyalgia require both basic and clinical research projects. Because basic research appears so far removed from actual patients coping with the disease, the benefits derived from this type of research may not be so obvious.

For many diseases and conditions, including fibromyalgia, basic research must be done in order to obtain fundamental clues that direct research in humans. Basic research is usually done in systems that are simpler than the human system, so that the experimental variables can be manipulated to observe changes in structure and function. This provides a general understanding of biological events that may affect humans. Simpler organisms used include bacteria, yeast, fruit flies (*Drosophila*), and mice. For example, researchers study the fruit fly because it is more complex than a bacterium, but can easily be maintained in a laboratory. In addition, fruit flies have been studied for many years, and a great deal is known about their genetics, biochemistry, and behavior.

Scientists recently discovered that mutations in the human version of a gene that controls fruit fly growth and development are the likely cause of both the basal cell nevus syndrome, a rare inherited disorder, and sporadic basal cell carcinoma of the skin, the most common human cancer. In terms of fibromyalgia research, studies in fruit flies may tell us which molecules link sleep and consolidation of long-term memory. Understanding this relationship in fruit flies may provide clues and research tools that will enable investigators to learn why people with chronic sleep disturbances experience problems with memory.

Why Is Behavioral Research Important to Understanding Fibromyalgia?

Behavioral and social sciences research is an important area of investigation at NIH and cuts across a wide range of research topics. NIAMS has long supported behavioral research related to many rheumatic and musculoskeletal conditions. Behavioral and social factors are significant contributors to health and illness, frequently interact with biological factors to influence health outcomes, and represent critical avenues for treatment and prevention.

Behavioral and social sciences research encompasses a wide array of disciplines. The field employs a variety of methodological approaches including surveys and questionnaires, interviews, randomized clinical trials, direct observation, physiological manipulation and recording, descriptive methods, laboratory and field experiments, standardized tests, economic analyses, statistical modeling, ethnography, and evaluation. In addition, several key crosscutting themes are characteristic of social and behavioral sciences research. These include an emphasis on theory-driven research; the search for general principles of behavioral and social functioning; the importance ascribed to a developmental, life-span perspective; an emphasis on individual variation and variation across sociodemographic categories such as gender, age, and sociocultural status; and a focus on both the social and biological context of behavior.

Behavioral and social sciences research is important to understanding how to better treat some of the clinically challenging symptoms that are experienced by fibromyalgia patients. Research opportunities include behavioral research on all aspects of fibromyalgia, including the relationships among disturbed sleep, inactivity, pain, and depression that

are often observed in patients with fibromyalgia, and the development of innovative approaches for treatment.

How Are Fibromyalgia Grants Selected for Funding by NIAMS?

NIAMS currently supports research on fibromyalgia through investigator-initiated research projects, Institute-solicited studies (funded in response to a request for applications [RFA]), and Multipurpose Arthritis and Musculoskeletal Diseases Research Centers. In general, most of the research projects funded by NIH are unsolicited investigator-initiated grants. NIAMS has made awards in the area of fibromyalgia for projects resulting from both solicited and unsolicited applications.

Applications submitted to NIH go through a two-step peer review system. The design of this system is such that applications from researchers are reviewed first by study sections for their scientific merit. Applications for research on fibromyalgia may be reviewed by the Chronic Fatigue Syndrome Special Emphasis Panel or by other relevant panels, depending on the expertise required. The second level of review is each Institute's advisory council, which assesses the relevance and priority of proposed projects, and makes recommendations on funding particular meritorious applications.

Primary consideration for funding is scientific merit. This is determined during the review process and is reflective of the soundness and innovativeness of the approach, the qualifications of the investigators, the potential significance of the work, and the overall research environment. This process is used throughout NIH for applications in all diseases and areas of science. The reviewers are asked to evaluate the significance of the research proposal in terms of improving understanding of an area of research or disease, advancing scientific knowledge, learning about the mechanisms that cause symptoms and signs of disease, or developing new treatments or prevention strategies.

Research Initiatives

New Directions in Pain Research--Program Announcement

In September 1998, NIAMS joined 10 other NIH components in issuing a program announcement (PA) entitled "New Directions in Pain Research."

The purpose of the PA is to inform the scientific community of broad, shared interests in pain research across the various components of the NIH, and to stimulate and encourage a wide range of basic, translational, and patient-oriented clinical studies on pain. Applications are encouraged to study pain throughout the life span from the perspectives of molecular genetics; transcriptional controls; signal transduction, including cellular/molecular mechanisms; innovative imaging technologies; plasticity; and hormonal or gender influences. The goal of the PA is to advance the development of novel pain interventions, treatments, and management strategies.

Basic and Clinical Research on Fibromyalgia

In March 1998, NIAMS issued an RFA to promote research studies and exploratory/developmental projects to advance understanding of fibromyalgia and related disorders and provide critical new knowledge needed for the treatment and prevention of the syndrome. Several NIH institutes and offices joined NIAMS in issuing this RFA. These include the National Institute of Dental and Craniofacial Research (NIDCR), which has an interest in pain and the relationship between temporomandibular disorders and fibromyalgia; the National Institute of Neurological Disorders and Stroke (NINDS), which has an interest in pain research; and three offices within the NIH Office of the Director: the National Center for Complementary and Alternative Medicine, the Office of Research on Women's Health, and the Office of Behavioral and Social Sciences Research.

In addition to the announcement being listed in the usual manner on the World Wide Web in the NIH Guide to Grants and Contracts, NIAMS distributed over 1,600 copies of the announcement to individual investigators and organizations to stimulate an interest in fibromyalgia research. NIAMS grantees in fibromyalgia, arthritis, and muscle diseases, as well as in the Centers program, received copies, as did grantees NIH-wide in the fields of chronic pain, chronic fatigue syndrome, sleep, neuroendocrinology, and other related fields. As a result of the RFA, NIAMS and its sister institutes and offices funded 15 new fibromyalgia projects--totaling more than \$3.6 million--in 1999.

Acupuncture Clinical Trials--Program Announcement

In February 1998, the NIH Office of Alternative Medicine (now the National Center for Complementary and Alternative Medicine), along with six NIH institutes, including NIAMS and NINDS, and the Agency for Health Care

Policy and Research, issued a PA entitled "Acupuncture Clinical Trial Pilot Grants." The objective of the PA is to increase the quality of clinical research evaluating the efficacy of acupuncture for the treatment or prevention of disease and accompanying symptoms. Back pain, cancer, fibromyalgia, temporomandibular disorders, HIV/AIDS, and reflex sympathetic dystrophy are among the diseases and conditions identified in the PA.

NIH Pain Research Consortium – Conferences

The NIH-wide Pain Research Consortium encourages information sharing and collaborative research efforts, provides coordination of pain research across all NIH components, and ensures that results of NIH-sponsored pain research are widely communicated. A major goal of the Consortium is to coordinate efforts across the many NIH components to develop a better understanding of what causes pain, so better treatments are available to people with painful disorders such as fibromyalgia. The Consortium sponsored a symposium entitled "New Directions in Pain Research" on November 20-21, 1997, and a second conference entitled "Gender and Pain" on April 7-8, 1998.

Molecular Biology and Genetics of Sleep and Sleep Disorders--Request for Applications

In fiscal year 1997, NIAMS awarded two grants submitted in response to an RFA issued by the National Heart, Lung, and Blood Institute, NIAMS, and several other NIH institutes. The NIAMS grants are basic research studies and focus on rest and long-term memory consolidation in fruit flies and on the genetics of sleep and rest behavior in mice.

The Neuroscience and Endocrinology of Fibromyalgia: A Scientific Workshop

In July 1996, NIAMS and several other NIH organizations sponsored a scientific workshop that explored advances in the neuroscience and endocrinology of fibromyalgia. The workshop focused on chronic pain, neuroendocrinology, and sleep disorders associated with fibromyalgia. What made this workshop so unusual and effective was its design, which brought together researchers in the basic sciences of chronic pain, neuroendocrinology, circadian rhythms, and sleep disorders--all challenges for patients with fibromyalgia. These experts in basic research were joined

by clinicians who treat patients with fibromyalgia and by a significant number of patients themselves. This multidisciplinary workshop helped to identify research needs and opportunities, and the gaps in understanding of this clinically challenging condition. The summary report of the workshop presentations and discussion was published in *Arthritis and Rheumatism*, Vol. 40, No. 11, November 1997. Publication of the summary of the workshop in this peer-reviewed journal provides for wide distribution of the discussion of research opportunities to the scientific community with interest in this disorder. The workshop also led to the March 1998 RFA described previously.

Fibromyalgia Advocate on Institute Advisory Council

A leading advocate for fibromyalgia, Ms. Tamara Liller, President of the Fibromyalgia Association of Greater Washington, Inc., is a member of the National Arthritis and Musculoskeletal and Skin Diseases Advisory Council. The Advisory Council, which includes both scientific and public members, meets three times a year and provides valuable input to the Institute's priority-setting process. The mission of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) is to support research into the causes, treatment, and prevention of arthritis and musculoskeletal and skin diseases, the training of basic and clinical scientists to carry out this research, and the dissemination of information on research progress in these diseases. For more information about NIAMS programs and topics, call the information clearinghouse at (301) 495-4484.

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 Web MD (http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a) and drkoop.com (<http://www.drkoop.com/>). 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 fibromyalgia and keep them on file. The NIH, in particular, suggests that patients with fibromyalgia visit the following Web sites in the ADAM Medical Encyclopedia:

- **Basic Guidelines for Fibromyalgia**

Fibromyalgia

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/000427.htm>

- **Signs & Symptoms for Fibromyalgia**

Anxiety

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm>

Depression

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003213.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>

Joint pain

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003261.htm>

Muscle

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003193.htm>

Muscle pain

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003178.htm>

Sleep disturbances

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003210.htm>

Stress

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm>

Swelling

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003103.htm>

Tiredness

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003088.htm>

Weakness

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003174.htm>

- **Diagnostics and Tests for Fibromyalgia**

Aldolase

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003566.htm>

ANA

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003535.htm>

CBC

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003642.htm>

Complete blood count

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003642.htm>

CPK

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003503.htm>

Creatine phosphokinase

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003503.htm>

Erythrocyte sedimentation rate

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003638.htm>

ESR

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003638.htm>

Rheumatoid factor

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003548.htm>

Sedimentation rate

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003638.htm>

T3

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003687.htm>

T3 resin uptake

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003688.htm>

T4

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003517.htm>

TSH

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/003684.htm>

- **Background Topics for Fibromyalgia**

Aerobic

Web site:

<http://www.nlm.nih.gov/medlineplus/ency/article/002221.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>

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>

FIBROMYALGIA 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]

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

Acetaminophen: Analgesic antipyretic derivative of acetanilide. It has weak anti-inflammatory properties and is used as a common analgesic, but may cause liver, blood cell, and kidney damage. [NIH]

ACTH: Adrenocorticotrophic hormone. [EU]

Adjuvant: A substance which aids another, such as an auxiliary remedy; in immunology, nonspecific stimulator (e.g., BCG vaccine) of the immune response. [EU]

Aerobic: 1. having molecular oxygen present. 2. growing, living, or occurring in the presence of molecular oxygen. 3. requiring oxygen for respiration. [EU]

Amitriptyline: Tricyclic antidepressant with anticholinergic and sedative properties. It appears to prevent the re-uptake of norepinephrine and serotonin at nerve terminals, thus potentiating the action of these neurotransmitters. Amitriptyline also appears to antagonize cholinergic and alpha-1 adrenergic responses to bioactive amines. [NIH]

Anaesthesia: Loss of feeling or sensation. Although the term is used for loss of tactile sensibility, or of any of the other senses, it is applied especially to loss of the sensation of pain, as it is induced to permit performance of surgery or other painful procedures. [EU]

Analgesic: An agent that alleviates pain without causing loss of consciousness. [EU]

Anatomical: Pertaining to anatomy, or to the structure of the organism. [EU]

Androgens: A class of sex hormones associated with the development and maintenance of the secondary male sex characteristics, sperm induction, and sexual differentiation. In addition to increasing virility and libido, they also increase nitrogen and water retention and stimulate skeletal growth. [NIH]

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

Ankylosis: Fixation and immobility of a joint. [NIH]

Anticholinergic: An agent that blocks the parasympathetic nerves. Called also parasympatholytic. [EU]

Antidepressant: An agent that stimulates the mood of a depressed patient, including tricyclic antidepressants and monoamine oxidase inhibitors. [EU]

Antigen: Any substance which is capable, under appropriate conditions, of inducing a specific immune response and of reacting with the products of that response, that is, with specific antibody or specifically sensitized T-lymphocytes, or both. Antigens may be soluble substances, such as toxins and foreign proteins, or particulate, such as bacteria and tissue cells; however, only the portion of the protein or polysaccharide molecule known as the antigenic determinant (q.v.) combines with antibody or a specific receptor on a lymphocyte. Abbreviated Ag. [EU]

Antihypertensive: An agent that reduces high blood pressure. [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]

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]

Arteritis: Inflammation of an artery. [NIH]

Arthralgia: Pain in a joint. [EU]

Arthropathy: Any joint disease. [EU]

Autoimmunity: Process whereby the immune system reacts against the body's own tissues. Autoimmunity may produce or be caused by autoimmune diseases. [NIH]

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

Axons: Nerve fibers that are capable of rapidly conducting impulses away from the neuron cell body. [NIH]

Bacteria: Unicellular prokaryotic microorganisms which generally possess rigid cell walls, multiply by cell division, and exhibit three principal forms: round or coccial, rodlike or bacillary, and spiral or spirochetal. [NIH]

Benzodiazepines: A two-ring heterocyclic compound consisting of a benzene ring fused to a diazepine ring. Permitted is any degree of

hydrogenation, any substituents and any H-isomer. [NIH]

Bilateral: Having two sides, or pertaining to both sides. [EU]

Biochemical: Relating to biochemistry; characterized by, produced by, or involving chemical reactions in living organisms. [EU]

Bruxism: A disorder characterized by grinding and clenching of the teeth. [NIH]

Buprenorphine: A derivative of the opioid alkaloid thebaine that is a more potent and longer lasting analgesic than morphine. It appears to act as a partial agonist at mu and kappa opioid receptors and as an antagonist at delta receptors. The lack of delta-agonist activity has been suggested to account for the observation that buprenorphine tolerance may not develop with chronic use. [NIH]

Bursitis: Inflammation of a bursa, occasionally accompanied by a calcific deposit in the underlying supraspinatus tendon; the most common site is the subdeltoid bursa. [EU]

Calcitonin: A peptide hormone that lowers calcium concentration in the blood. In humans, it is released by thyroid cells and acts to decrease the formation and absorptive activity of osteoclasts. Its role in regulating plasma calcium is much greater in children and in certain diseases than in normal adults. [NIH]

Capsicum: A genus of Solanaceous shrubs that yield capsaicin. Several varieties have sweet or pungent edible fruits that are used as vegetables when fresh and spices when the pods are dried. [NIH]

Capsules: Hard or soft soluble containers used for the oral administration of medicine. [NIH]

Carbohydrate: An aldehyde or ketone derivative of a polyhydric alcohol, particularly of the pentahydric and hexahydric alcohols. They are so named because the hydrogen and oxygen are usually in the proportion to form water, (CH₂O)_n. The most important carbohydrates are the starches, sugars, celluloses, and gums. They are classified into mono-, di-, tri-, poly- and heterosaccharides. [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]

Carnitine: Constituent of striated muscle and liver. It is used therapeutically to stimulate gastric and pancreatic secretions and in the treatment of hyperlipoproteinemias. [NIH]

Carotene: The general name for a group of pigments found in green, yellow, and leafy vegetables, and yellow fruits. The pigments are fat-soluble, unsaturated aliphatic hydrocarbons functioning as provitamins and are

converted to vitamin A through enzymatic processes in the intestinal wall. [NIH]

Catheter: A tubular, flexible, surgical instrument for withdrawing fluids from (or introducing fluids into) a cavity of the body, especially one for introduction into the bladder through the urethra for the withdraw of urine. [EU]

Causal: Pertaining to a cause; directed against a cause. [EU]

Cervical: Pertaining to the neck, or to the neck of any organ or structure. [EU]

Chlorella: Nonmotile unicellular green algae potentially valuable as a source of high-grade protein and B-complex vitamins. [NIH]

Cholesterol: The principal sterol of all higher animals, distributed in body tissues, especially the brain and spinal cord, and in animal fats and oils. [NIH]

Chronic: Persisting over a long period of time. [EU]

Coenzyme: An organic nonprotein molecule, frequently a phosphorylated derivative of a water-soluble vitamin, that binds with the protein molecule (apoenzyme) to form the active enzyme (holoenzyme). [EU]

Colitis: Inflammation of the colon. [EU]

Colonoscopy: Endoscopic examination, therapy or surgery of the luminal surface of the colon. [NIH]

Comorbidity: The presence of co-existing or additional diseases with reference to an initial diagnosis or with reference to the index condition that is the subject of study. Comorbidity may affect the ability of affected individuals to function and also their survival; it may be used as a prognostic indicator for length of hospital stay, cost factors, and outcome or survival. [NIH]

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

Conduction: The transfer of sound waves, heat, nervous impulses, or electricity. [EU]

Consciousness: Sense of awareness of self and of the environment. [NIH]

Constipation: Infrequent or difficult evacuation of the faeces. [EU]

Contraceptive: An agent that diminishes the likelihood of or prevents conception. [EU]

Contracture: A condition of fixed high resistance to passive stretch of a muscle, resulting from fibrosis of the tissues supporting the muscles or the joints, or from disorders of the muscle fibres. [EU]

Contusion: A bruise; an injury of a part without a break in the skin. [EU]

Criterion: A standard by which something may be judged. [EU]

Cystitis: Inflammation of the urinary bladder. [EU]

Cytokines: Non-antibody proteins secreted by inflammatory leukocytes and some non-leukocytic cells, that act as intercellular mediators. They differ from classical hormones in that they are produced by a number of tissue or cell types rather than by specialized glands. They generally act locally in a paracrine or autocrine rather than endocrine manner. [NIH]

Defecation: The normal process of elimination of fecal material from the RECTUM. [NIH]

Degenerative: Undergoing degeneration : tending to degenerate; having the character of or involving degeneration; causing or tending to cause degeneration. [EU]

Deprivation: Loss or absence of parts, organs, powers, or things that are needed. [EU]

Desipramine: A tricyclic dibenzazepine compound that potentiates neurotransmission. Desipramine selectively blocks reuptake of norepinephrine from the neural synapse, and also appears to impair serotonin transport. This compound also possesses minor anticholinergic activity, through its affinity to muscarinic receptors. [NIH]

Diarrhea: Passage of excessively liquid or excessively frequent stools. [NIH]

Dicyclomine: A muscarinic antagonist used as an antispasmodic and in urinary incontinence. It has little effect on glandular secretion or the cardiovascular system. It does have some local anesthetic properties and is used in gastrointestinal, biliary, and urinary tract spasms. [NIH]

Diltiazem: A benzothiazepine derivative with vasodilating action due to its antagonism of the actions of the calcium ion in membrane functions. It is also teratogenic. [NIH]

Dislocation: The displacement of any part, more especially of a bone. Called also luxation. [EU]

Distention: The state of being distended or enlarged; the act of distending. [EU]

Dizziness: An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness. [NIH]

Dorsal: 1. pertaining to the back or to any dorsum. 2. denoting a position more toward the back surface than some other object of reference; same as posterior in human anatomy; superior in the anatomy of quadrupeds. [EU]

Drosophila: A genus of small, two-winged flies containing approximately 900 described species. These organisms are the most extensively studied of all genera from the standpoint of genetics and cytology. [NIH]

Dyskinesia: Impairment of the power of voluntary movement, resulting in fragmentary or incomplete movements. [EU]

Dysmenorrhea: Painful menstruation. [NIH]

Dystonia: Disordered tonicity of muscle. [EU]

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

Eczema: A pruritic papulovesicular dermatitis occurring as a reaction to many endogenous and exogenous agents, characterized in the acute stage by erythema, edema associated with a serous exudate between the cells of the epidermis (spongiosis) and an inflammatory infiltrate in the dermis, oozing and vesiculation, and crusting and scaling; and in the more chronic stages by lichenification or thickening or both, signs of excoriations, and hyperpigmentation or hypopigmentation or both. Atopic dermatitis is the most common type of dermatitis. Called also eczematous dermatitis. [EU]

Electroacupuncture: A form of acupuncture using low frequency electrically stimulated needles to produce analgesia and anesthesia and to treat disease. [NIH]

Empiric: Empirical; depending upon experience or observation alone, without using scientific method or theory. [EU]

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

Endoscopy: Visual inspection of any cavity of the body by means of an endoscope. [EU]

Eosinophilia: The formation and accumulation of an abnormally large number of eosinophils in the blood. [EU]

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]

Estradiol: The most potent mammalian estrogenic hormone. It is produced in the ovary, placenta, testis, and possibly the adrenal cortex. [NIH]

Estrogens: A class of sex hormones associated with the development and maintenance of secondary female sex characteristics and control of the cyclical changes in the reproductive cycle. They are also required for pregnancy maintenance and have an anabolic effect on protein metabolism and water retention. [NIH]

Extremity: A limb; an arm or leg (membrum); sometimes applied specifically to a hand or foot. [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]

Femoral: Pertaining to the femur, or to the thigh. [EU]

Flatulence: The presence of excessive amounts of air or gases in the stomach or intestine, leading to distention of the organs. [EU]

Fluoxetine: The first highly specific serotonin uptake inhibitor. It is used as an antidepressant and often has a more acceptable side-effects profile than traditional antidepressants. [NIH]

FSH: A gonadotropic hormone found in the pituitary tissues of mammals. It regulates the metabolic activity of ovarian granulosa cells and testicular Sertoli cells, induces maturation of Graafian follicles in the ovary, and promotes the development of the germinal cells in the testis. [NIH]

Gastrointestinal: Pertaining to or communicating with the stomach and intestine, as a gastrointestinal fistula. [EU]

Ginseng: An araliaceous genus of plants that contains a number of pharmacologically active agents used as stimulants, sedatives, and tonics, especially in traditional medicine. [NIH]

Gonadal: Pertaining to a gonad. [EU]

Heartburn: Substernal pain or burning sensation, usually associated with regurgitation of gastric juice into the esophagus. [NIH]

Hepatitis: Inflammation of the liver. [EU]

Homeostasis: A tendency to stability in the normal body states (internal environment) of the organism. It is achieved by a system of control mechanisms activated by negative feedback; e.g. a high level of carbon dioxide in extracellular fluid triggers increased pulmonary ventilation, which in turn causes a decrease in carbon dioxide concentration. [EU]

Hormonal: Pertaining to or of the nature of a hormone. [EU]

Hormones: Chemical substances having a specific regulatory effect on the activity of a certain organ or organs. The term was originally applied to substances secreted by various endocrine glands and transported in the bloodstream to the target organs. It is sometimes extended to include those substances that are not produced by the endocrine glands but that have similar effects. [NIH]

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

Hypertension: Persistently high arterial blood pressure. Various criteria for its threshold have been suggested, ranging from 140 mm. Hg systolic and 90 mm. Hg diastolic to as high as 200 mm. Hg systolic and 110 mm. Hg diastolic. Hypertension may have no known cause (essential or idiopathic h.) or be associated with other primary diseases (secondary h.). [EU]

Hypnotic: A drug that acts to induce sleep. [EU]

Hypothalamic: Of or involving the hypothalamus. [EU]

Hypothalamus: Ventral part of the diencephalon extending from the region of the optic chiasm to the caudal border of the mammillary bodies and forming the inferior and lateral walls of the third ventricle. [NIH]

Hypothyroidism: Deficiency of thyroid activity. In adults, it is most common in women and is characterized by decrease in basal metabolic rate, tiredness and lethargy, sensitivity to cold, and menstrual disturbances. If untreated, it progresses to full-blown myxoedema. In infants, severe hypothyroidism leads to cretinism. In juveniles, the manifestations are intermediate, with less severe mental and developmental retardation and only mild symptoms of the adult form. When due to pituitary deficiency of thyrotropin secretion it is called secondary hypothyroidism. [EU]

Ibuprofen: A nonsteroidal anti-inflammatory agent with analgesic properties used in the therapy of rheumatism and arthritis. [NIH]

Idiopathic: Of the nature of an idiopathy; self-originated; of unknown causation. [EU]

Immunoassay: Immunochemical assay or detection of a substance by serologic or immunologic methods. Usually the substance being studied serves as antigen both in antibody production and in measurement of antibody by the test substance. [NIH]

Indicative: That indicates; that points out more or less exactly; that reveals fairly clearly. [EU]

Inflammation: A pathological process characterized by injury or destruction of tissues caused by a variety of cytologic and chemical reactions. It is usually manifested by typical signs of pain, heat, redness, swelling, and loss of function. [NIH]

Ingestion: The act of taking food, medicines, etc., into the body, by mouth. [EU]

Insomnia: Inability to sleep; abnormal wakefulness. [EU]

Insulin: A protein hormone secreted by beta cells of the pancreas. Insulin plays a major role in the regulation of glucose metabolism, generally promoting the cellular utilization of glucose. It is also an important regulator of protein and lipid metabolism. Insulin is used as a drug to control insulin-dependent diabetes mellitus. [NIH]

Interleukins: Soluble factors which stimulate growth-related activities of leukocytes as well as other cell types. They enhance cell proliferation and differentiation, DNA synthesis, secretion of other biologically active molecules and responses to immune and inflammatory stimuli. [NIH]

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

Intrinsic: Situated entirely within or pertaining exclusively to a part. [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]

Kava: Dried rhizome and roots of *Piper methysticum*, a shrub native to Oceania and known for its anti-anxiety and sedative properties. Heavy usage results in some adverse effects. It contains alkaloids, lactones, kavaol, methysticin, mucilage, starch, and yangonin. Kava is also the name of the pungent beverage prepared from the plant's roots. [NIH]

Lethargy: Abnormal drowsiness or stupor; a condition of indifference. [EU]

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]

Lidocaine: A local anesthetic and cardiac depressant used as an antiarrhythmia agent. Its actions are more intense and its effects more prolonged than those of procaine but its duration of action is shorter than that of bupivacaine or prilocaine. [NIH]

Ligament: A band of fibrous tissue that connects bones or cartilages, serving to support and strengthen joints. [EU]

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

Magnetoencephalography: The measurement of magnetic fields over the head generated by electric currents in the brain. As in any electrical conductor, electric fields in the brain are accompanied by orthogonal magnetic fields. The measurement of these fields provides information about the localization of brain activity which is complementary to that provided by electroencephalography. Magnetoencephalography may be used alone or together with electroencephalography, for measurement of spontaneous or evoked activity, and for research or clinical purposes. [NIH]

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

Masticatory: 1. subserving or pertaining to mastication; affecting the muscles of mastication. 2. a remedy to be chewed but not swallowed. [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]

Menstruation: The cyclic, physiologic discharge through the vagina of blood and mucosal tissues from the nonpregnant uterus; it is under hormonal control and normally recurs, usually at approximately four-week intervals, in the absence of pregnancy during the reproductive period (puberty through menopause) of the female of the human and a few species of primates. It is the culmination of the menstrual cycle. [EU]

Methanol: A colorless, flammable liquid used in the manufacture of formaldehyde and acetic acid, in chemical synthesis, antifreeze, and as a solvent. Ingestion of methanol is toxic and may cause blindness. [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]

Mononucleosis: The presence of an abnormally large number of mononuclear leucocytes (monocytes) in the blood. The term is often used alone to refer to infectious mononucleosis. [EU]

Monotherapy: A therapy which uses only one drug. [EU]

Mucus: The free slime of the mucous membranes, composed of secretion of the glands, along with various inorganic salts, desquamated cells, and leucocytes. [EU]

Mycoplasma: A genus of gram-negative, facultatively anaerobic bacteria bounded by a plasma membrane only. Its organisms are parasites and pathogens, found on the mucous membranes of humans, animals, and birds. [NIH]

Myositis: Inflammation of a voluntary muscle. [EU]

Myxedema: A condition characterized by a dry, waxy type of swelling with abnormal deposits of mucin in the skin and other tissues. It is produced by a functional insufficiency of the thyroid gland, resulting in deficiency of thyroid hormone. The skin becomes puffy around the eyes and on the cheeks and the face is dull and expressionless with thickened nose and lips. The congenital form of the disease is cretinism. [NIH]

Naloxone: A specific opiate antagonist that has no agonist activity. It is a competitive antagonist at mu, delta, and kappa opioid receptors. [NIH]

Nausea: An unpleasant sensation, vaguely referred to the epigastrium and abdomen, and often culminating in vomiting. [EU]

Necrosis: The sum of the morphological changes indicative of cell death and caused by the progressive degradative action of enzymes; it may affect groups of cells or part of a structure or an organ. [EU]

Nervousness: Excessive excitability and irritability, with mental and physical unrest. [EU]

Neural: 1. pertaining to a nerve or to the nerves. 2. situated in the region of the spinal axis, as the neutral arch. [EU]

Neuroanatomy: Study of the anatomy of the nervous system as a specialty or discipline. [NIH]

Neuroendocrinology: The study of the anatomical and functional relationships between the nervous system and the endocrine system. [NIH]

Neurologic: Pertaining to neurology or to the nervous system. [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]

Neuronal: Pertaining to a neuron or neurons (= conducting cells of the nervous system). [EU]

Neurons: The basic cellular units of nervous tissue. Each neuron consists of a body, an axon, and dendrites. Their purpose is to receive, conduct, and transmit impulses in the nervous system. [NIH]

Neuropathy: A general term denoting functional disturbances and/or pathological changes in the peripheral nervous system. The etiology may be known e.g. arsenical n., diabetic n., ischemic n., traumatic n.) or unknown. Encephalopathy and myelopathy are corresponding terms relating to involvement of the brain and spinal cord, respectively. The term is also used to designate noninflammatory lesions in the peripheral nervous system, in contrast to inflammatory lesions (neuritis). [EU]

Neurophysiology: The scientific discipline concerned with the physiology of the nervous system. [NIH]

Neurotransmitter: Any of a group of substances that are released on excitation from the axon terminal of a presynaptic neuron of the central or peripheral nervous system and travel across the synaptic cleft to either excite or inhibit the target cell. Among the many substances that have the properties of a neurotransmitter are acetylcholine, norepinephrine, epinephrine, dopamine, glycine, γ -aminobutyrate, glutamic acid, substance P, enkephalins, endorphins, and serotonin. [EU]

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]

Nociceptors: Peripheral receptors for pain. Nociceptors include receptors which are sensitive to painful mechanical stimuli, extreme heat or cold, and chemical stimuli. All nociceptors are free nerve endings. [NIH]

Ondansetron: A competitive serotonin type 3 receptor antagonist. It is

effective in the treatment of nausea and vomiting caused by cytotoxic chemotherapy drugs, including cisplatin, and it has reported anxiolytic and neuroleptic properties. [NIH]

Orthopaedic: Pertaining to the correction of deformities of the musculoskeletal system; pertaining to orthopaedics. [EU]

Orthopedics: A surgical specialty which utilizes medical, surgical, and physical methods to treat and correct deformities, diseases, and injuries to the skeletal system, its articulations, and associated structures. [NIH]

Orthostatic: Pertaining to or caused by standing erect. [EU]

Osteoarthritis: Noninflammatory degenerative joint disease occurring chiefly in older persons, characterized by degeneration of the articular cartilage, hypertrophy of bone at the margins, and changes in the synovial membrane. It is accompanied by pain and stiffness, particularly after prolonged activity. [EU]

Osteomyelitis: Inflammation of bone caused by a pyogenic organism. It may remain localized or may spread through the bone to involve the marrow, cortex, cancellous tissue, and periosteum. [EU]

Osteonecrosis: Death of a bone or part of a bone, either atraumatic or posttraumatic. [NIH]

Osteoporosis: Reduction in the amount of bone mass, leading to fractures after minimal trauma. [EU]

Overdose: 1. to administer an excessive dose. 2. an excessive dose. [EU]

Paediatric: Of or relating to the care and medical treatment of children; belonging to or concerned with paediatrics. [EU]

Palpation: Application of fingers with light pressure to the surface of the body to determine consistence of parts beneath in physical diagnosis; includes palpation for determining the outlines of organs. [NIH]

Paradoxical: Occurring at variance with the normal rule. [EU]

Paralysis: Loss or impairment of motor function in a part due to lesion of the neural or muscular mechanism; also by analogy, impairment of sensory function (sensory paralysis). In addition to the types named below, paralysis is further distinguished as traumatic, syphilitic, toxic, etc., according to its cause; or as obturator, ulnar, etc., according to the nerve part, or muscle specially affected. [EU]

Paraplegia: Paralysis of the legs and lower part of the body. [EU]

Periodontics: A dental specialty concerned with the histology, physiology, and pathology of the tissues that support, attach, and surround the teeth, and of the treatment and prevention of disease affecting these tissues. [NIH]

Pharmacologic: Pertaining to pharmacology or to the properties and

reactions of drugs. [EU]

Plague: An acute infectious disease caused by *Yersinia pestis* that affects humans, wild rodents, and their ectoparasites. This condition persists due to its firm entrenchment in sylvatic rodent-flea ecosystems throughout the world. Bubonic plague is the most common form. [NIH]

Postmenopausal: Occurring after the menopause. [EU]

Postprandial: Occurring after dinner, or after a meal; postcibal. [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]

Prevalence: The total number of cases of a given disease in a specified population at a designated time. It is differentiated from incidence, which refers to the number of new cases in the population at a given time. [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 antiovarian agent when administered on days 5-25 of the menstrual cycle. [NIH]

Progressive: Advancing; going forward; going from bad to worse; increasing in scope or severity. [EU]

Prolactin: Pituitary lactogenic hormone. A polypeptide hormone with a molecular weight of about 23,000. It is essential in the induction of lactation in mammals at parturition and is synergistic with estrogen. The hormone also brings about the release of progesterone from lutein cells, which renders the uterine mucosa suited for the embedding of the ovum should fertilization occur. [NIH]

Prolapse: 1. the falling down, or sinking, of a part or viscus; proidentia. 2. to undergo such displacement. [EU]

Prostatitis: Inflammation of the prostate. [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]

Psychiatry: The medical science that deals with the origin, diagnosis, prevention, and treatment of mental disorders. [NIH]

Psychogenic: Produced or caused by psychic or mental factors rather than organic factors. [EU]

Psychology: The science dealing with the study of mental processes and behavior in man and animals. [NIH]

Psychotherapy: A generic term for the treatment of mental illness or emotional disturbances primarily by verbal or nonverbal communication. [NIH]

Pulmonary: Pertaining to the lungs. [EU]

Pulse: The rhythmical expansion and contraction of an artery produced by waves of pressure caused by the ejection of blood from the left ventricle of the heart as it contracts. [NIH]

Quadriplegia: Severe or complete loss of motor function in all four limbs which may result from brain diseases; spinal cord diseases; peripheral nervous system diseases; neuromuscular diseases; or rarely muscular diseases. The locked-in syndrome is characterized by quadriplegia in combination with cranial muscle paralysis. Consciousness is spared and the only retained voluntary motor activity may be limited eye movements. This condition is usually caused by a lesion in the upper brain stem which injures the descending cortico-spinal and cortico-bulbar tracts.

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]

Reflective: Capable of throwing back light, images, sound waves : reflecting. [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]

Relaxant: 1. lessening or reducing tension. 2. an agent that lessens tension. [EU]

Rheumatoid: Resembling rheumatism. [EU]

Rheumatology: A subspecialty of internal medicine concerned with the study of inflammatory or degenerative processes and metabolic derangement of connective tissue structures which pertain to a variety of musculoskeletal disorders, such as arthritis. [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]

Sclerosis: A induration, or hardening; especially hardening of a part from inflammation and in diseases of the interstitial substance. The term is used chiefly for such a hardening of the nervous system due to hyperplasia of the connective tissue or to designate hardening of the blood vessels. [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]

Sedimentation: The act of causing the deposit of sediment, especially by the use of a centrifugal machine. [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]

Sensitization: 1. administration of antigen to induce a primary immune response; priming; immunization. 2. exposure to allergen that results in the development of hypersensitivity. 3. the coating of erythrocytes with antibody so that they are subject to lysis by complement in the presence of homologous antigen, the first stage of a complement fixation test. [EU]

Septic: Produced by or due to decomposition by microorganisms; putrefactive. [EU]

Serum: The clear portion of any body fluid; the clear fluid moistening serous membranes. 2. blood serum; the clear liquid that separates from blood on clotting. 3. immune serum; blood serum from an immunized animal used for passive immunization; an antiserum; antitoxin, or antivenin. [EU]

Sigmoidoscopy: Endoscopic examination, therapy or surgery of the sigmoid flexure. [NIH]

Somatic: 1. pertaining to or characteristic of the soma or body. 2. pertaining to the body wall in contrast to the viscera. [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]

Spondylitis: Inflammation of the vertebrae. [EU]

Sporadic: Neither endemic nor epidemic; occurring occasionally in a random or isolated manner. [EU]

Stimulant: 1. producing stimulation; especially producing stimulation by causing tension on muscle fibre through the nervous tissue. 2. an agent or remedy that produces stimulation. [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]

Streptococcus: A genus of gram-positive, coccoid bacteria whose organisms occur in pairs or chains. No endospores are produced. Many species exist as commensals or parasites on man or animals with some being highly pathogenic. A few species are saprophytes and occur in the natural environment. [NIH]

Substrate: A substance upon which an enzyme acts. [EU]

Sumatriptan: A serotonin agonist that acts selectively at 5HT₁ receptors. It is used in the treatment of migraines. [NIH]

Symptomatic: 1. pertaining to or of the nature of a symptom. 2. indicative (of a particular disease or disorder). 3. exhibiting the symptoms of a particular disease but having a different cause. 4. directed at the allaying of symptoms, as symptomatic treatment. [EU]

Symptomatology: 1. that branch of medicine which treats of symptoms; the systematic discussion of symptoms. 2. the combined symptoms of a disease. [EU]

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

Synovitis: Inflammation of a synovial membrane. It is usually painful, particularly on motion, and is characterized by a fluctuating swelling due to effusion within a synovial sac. Synovitis is qualified as fibrinous, gonorrhoeal, hyperplastic, lipomatous, metritic, puerperal, rheumatic, scarlatinal, syphilitic, tuberculous, urethral, etc. [EU]

Systemic: Pertaining to or affecting the body as a whole. [EU]

Telecommunications: Transmission of information over distances via electronic means. [NIH]

Tendinitis: Inflammation of tendons and of tendon-muscle attachments. [EU]

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]

Thermal: Pertaining to or characterized by heat. [EU]

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

Thyrotoxicosis: The condition resulting from presentation to the tissues of excessive quantities of the thyroid hormones, whether the excess results

from overproduction by the thyroid gland (as in Graves' disease), originated outside the thyroid, or is due to loss of storage function and leakage from the gland. [EU]

Thyroxine: An amino acid of the thyroid gland which exerts a stimulating effect on thyroid metabolism. [NIH]

Tinnitus: A noise in the ears, as ringing, buzzing, roaring, clicking, etc. Such sounds may at times be heard by others than the patient. [EU]

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]

Tonic: 1. producing and restoring the normal tone. 2. characterized by continuous tension. 3. a term formerly used for a class of medicinal preparations believed to have the power of restoring normal tone to tissue. [EU]

Topical: Pertaining to a particular surface area, as a topical anti-infective applied to a certain area of the skin and affecting only the area to which it is applied. [EU]

Toxic: Pertaining to, due to, or of the nature of a poison or toxin; manifesting the symptoms of severe infection. [EU]

Tramadol: A narcotic analgesic proposed for severe pain. It may be habituating. [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]

Tricyclic: Containing three fused rings or closed chains in the molecular structure. [EU]

Trimebutine: Proposed spasmolytic with possible local anesthetic action used in gastrointestinal disorders. [NIH]

Trimipramine: Tricyclic antidepressant similar to imipramine, but with more antihistaminic and sedative properties. [NIH]

Trustees: Board members of an institution or organization who are entrusted with the administering of funds and the directing of policy. [NIH]

Tryptophan: An essential amino acid that is necessary for normal growth in infants and for nitrogen balance in adults. It is a precursor serotonin and niacin. [NIH]

Ubiquinone: A lipid-soluble benzoquinone which is involved in electron

transport in mitochondrial preparations. The compound occurs in the majority of aerobic organisms, from bacteria to higher plants and animals. [NIH]

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

Vaginal: 1. of the nature of a sheath; ensheathing. 2. pertaining to the vagina. 3. pertaining to the tunica vaginalis testis. [EU]

Vasculitis: Inflammation of a vessel, angiitis. [EU]

Vegetative: 1. concerned with growth and with nutrition. 2. functioning involuntarily or unconsciously, as the vegetative nervous system. 3. resting; denoting the portion of a cell cycle during which the cell is not involved in replication. 4. of, pertaining to, or characteristic of plants. [EU]

Vertigo: An illusion of movement; a sensation as if the external world were revolving around the patient (objective vertigo) or as if he himself were revolving in space (subjective vertigo). The term is sometimes erroneously used to mean any form of dizziness. [EU]

Viral: Pertaining to, caused by, or of the nature of virus. [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 Acronyms & 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:

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- **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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