

POLYMYOSITIS

A MEDICAL DICTIONARY, BIBLIOGRAPHY,
AND ANNOTATED RESEARCH GUIDE TO
INTERNET REFERENCES



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

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The collective knowledge generated from academic and applied research summarized in various references has been critical in the creation of this book which is best viewed as a comprehensive compilation and collection of information prepared by various official agencies which produce publications on polymyositis. Books in this series 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 book. 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 Freeman for her excellent editorial support.

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FORWARD

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."¹ Furthermore, because of the rapid increase in Internet-based information, many hours can be wasted searching, selecting, and printing. Since only the smallest fraction of information dealing with polymyositis is indexed in search engines, such as **www.google.com** or others, a non-systematic approach to Internet research can be not only time consuming, but also incomplete. This book was created for medical professionals, students, and members of the general public who want to know as much as possible about polymyositis, using the most advanced research tools available and spending the least amount of time doing so.

In addition to offering a structured and comprehensive bibliography, the pages that follow will tell you where and how to find reliable information covering virtually all topics related to polymyositis, from the essentials to the most advanced areas of research. Public, academic, government, and peer-reviewed research studies are emphasized. Various abstracts are reproduced to give you some of the latest official information available to date on polymyositis. Abundant guidance is given on how to obtain free-of-charge primary research results via the Internet. **While this book focuses on the field of medicine, when some sources provide access to non-medical information relating to polymyositis, these are noted in the text.**

E-book and electronic versions of this book are fully interactive with each of the Internet sites mentioned (clicking on a hyperlink automatically opens your browser to the site indicated). If you are using the hard copy version of this book, you can access a cited Web site by typing the provided Web address directly into your Internet browser. You may find it useful to refer to synonyms or related terms when accessing these Internet databases. **NOTE:** At the time of publication, the Web addresses were functional. However, some links may fail due to URL address changes, which is a common occurrence on the Internet.

For readers unfamiliar with the Internet, detailed instructions are offered on how to access electronic resources. For readers unfamiliar with medical terminology, a comprehensive glossary is provided. For readers without access to Internet resources, a directory of medical libraries, that have or can locate references cited here, is given. We hope these resources will prove useful to the widest possible audience seeking information on polymyositis.

The Editors

¹ From the NIH, National Cancer Institute (NCI): <http://www.cancer.gov/cancerinfo/ten-things-to-know>.

CHAPTER 1. STUDIES ON POLYMYOSITIS

Overview

In this chapter, we will show you how to locate peer-reviewed references and studies on polymyositis.

The Combined Health Information Database

The Combined Health Information Database summarizes studies across numerous federal agencies. To limit your investigation to research studies and polymyositis, 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 “polymyositis” (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 what you can expect from this type of search:

- **Managing Polymyositis**

Source: Advance for Speech-Language Pathologists [and] Audiologists. 8(8): 13-15. February 23, 1998.

Contact: Available from Merion Publications, Inc. 650 Park Avenue, Box 61556, King of Prussia, PA 19406-0956. (800) 355-1088 or (610) 265-7812.

Summary: This article familiarizes speech language pathologists and audiologists with **polymyositis**, a rare illness that debilitates oral motor muscles and leads to swallowing difficulties. Gradual or rapid onset of the disease results in varying degrees of loss of muscle power. Topics include the risk factors for aspiration pneumonia (which is associated with a high mortality level), other complications of **polymyositis** (climbing stairs, fatigue, weight loss, low-grade fever), treatment options (including speech

language therapy, cortisone-related medications, and immune suppression), treating the dysphagia related to **polymyositis**, problems with voice quality related to the disease, and managing the illness on an ongoing basis. The author provides a case study of one woman with the illness and how the speech language pathologist and the patient coped with swallowing problems and a hoarse vocal quality. Some patients require a gastrostomy tube for adequate nutrition, but with timely intervention the dysphagia should not become that severe, and patients typically are discharged with a home exercise program and compensatory strategies. 4 figures.

- **Polymyositis and Dermatomyositis: Short Term and Longterm Outcome, and Predictive Factors of Prognosis**

Source: Journal of Rheumatology. 28(10): 2230-2237. October 2001.

Summary: This journal article provides health professionals with information on a study that assessed short and long term outcome of **polymyositis** (PM) and dermatomyositis (DM) and determined predictive variables of PM/DM course. The medical records of 77 consecutive patients with PM or DM were reviewed. The criteria for PM and DM diagnosis were based upon Bohan and Peter criteria. Prognostic factors were determined at the time of PM or DM diagnosis. The study found that all patients were initially given high dose steroid therapy, which resulted in clinical improvement in 61 percent of the cases at 3 month followup. Patients with PM/DM were further treated with immunosuppressive agents. Twenty three patients received methotrexate (MTX) for a median duration of 10 months; this treatment resulted in improvement of PM/DM in 70 percent of the cases. Fourteen patients received azathioprine for a median duration of 6 months, resulting in improvement of PM/DM in 57 percent of the cases. Two patients with PM/DM refractory to either MTX or azathioprine alone were successfully given therapy of MTX and azathioprine combined. Twelve patients received cyclophosphamide for a median duration of 5.5 months, permitting resolution of clinical signs in three of them. Three patients with PM/DM refractory to other cytotoxic drugs received cyclosporine, resulting in clinical improvement in two of them. Finally, 24 patients were given intravenous immunoglobulin G monthly for a median duration of 6 months, resulting in clinical improvement in 92 percent of the cases. Thirty one patients achieved remission of PM/DM, whereas 33 improved and 13 worsened their clinical status. Short term recurrences of PM/DM occurred in 36 patients, and long term recurrences occurred in 9 patients. PM and DM were associated with both decreased functional status and quality of life at long term followup. For example, only 52 percent of the patients considered to be in remission experienced a return to previous normal activities, and 42 percent of the other patients with nonremitting PM/DM still had a marked reduction of activities as shown by the disability scale of the Health Assessment Questionnaire. Overall mortality was as high as 22 percent, and the main causes of death were cancer and lung complications. Factors associated with PM/DM remission were younger age and shorter duration of clinical manifestations prior to therapy initiation. Variables associated with poor outcome or PM/DM were older age, pulmonary and esophageal involvement, and cancer. The article concludes that the study shows both high morbidity and mortality related to PM/DM, emphasizing that management of patients with PM/DM at an early stage is required. Lung complications were one of the main causes of death in the patients studied, indicating that investigating for subclinical esophageal and lung impairment should become an integral part of initial PM/DM evaluation. The presence of poor prognostic factors should prompt both close followup and aggressive therapy in patients with PM/DM. 2 figures, 5 tables, and 32 references. (AA-M).

Federally Funded Research on Polymyositis

The U.S. Government supports a variety of research studies relating to polymyositis. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.² 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.

Search the CRISP Web site at http://crisp.cit.nih.gov/crisp/crisp_query.generate_screen. You will have the option to perform targeted searches by various criteria, including geography, date, and topics related to polymyositis.

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 polymyositis. The following is typical of the type of information found when searching the CRISP database for polymyositis:

- **Project Title: EXPERIMENTAL TRANSMISSION OF HTLV I TO NON HUMAN PRIMATE**

Principal Investigator & Institution: Beilke, Mark A.; Associate Professor; Tulane University of Louisiana New Orleans, La New Orleans, La 70112

Timing: Fiscal Year 2002; Project Start 01-MAY-2002; Project End 30-APR-2003

Summary: This collaborative project established an animal model of HTLV-I associated disease in nonhuman primates with a primary HTLV-I viral isolate, derived from a human patient with HTLV-I associated tropical spastic paraparesis (TSP). Two of three inoculated rhesus macaques became infected and showed signs of disease. One animal presented with a findings identical to that in the original patient, with muscle atrophy, **polymyositis**, and arthritis, (manuscript published). The second animal was dually infected with SIV and developed signs suggestive of smoldering HTLV-I induced leukemia in the presence of SIV immunodeficiency disease. Four of five additional HTLV-I inoculated animals are asymptomatic but show evidence of persistent infection by HTLV-I PCR and increased lymphocytosis. The fifth animal is culture and PCR negative with an associated strong humoral response, as determined by western blot analysis. These results suggest that immune responses are important in controlling HTLV-I virus expression in the macaque model. We want to define the immune mechanism of this control. We have now extended our characterization of immune responses to that of cytotoxic cell mediated response. In collaboration with Dr. Larry Wilson, autologous transformed B cell lines from each animal were generated and are now stably cryopreserved. We have also obtained several HTLV-I gene specific - vaccinia virus constructs. These two reagents are now ready to be used to characterize the presence and nature of cytotoxic T lymphocytes in the control of HTLV-I in vivo. FUNDING Base Grant, Venture Research PUBLICATIONS Beilke M.A., Traina-Dorge VL, England JD, Blanchard J (1996) **Polymyositis**, Arthritis, and Uveitis in a macaque experimentally infected with HTLV-I. *Arth. & Rheum.* 39(4):610-615.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

² Healthcare projects are funded by the National Institutes of Health (NIH), Substance Abuse and Mental Health Services (SAMHSA), Health Resources and Services Administration (HRSA), Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDCP), Agency for Healthcare Research and Quality (AHRQ), and Office of Assistant Secretary of Health (OASH).

- **Project Title: JO-1-SPECIFIC T CELL RESPONSES IN POLYMYOSITIS**

Principal Investigator & Institution: Ascherman, Dana P.; Medicine; University of Pittsburgh at Pittsburgh 350 Thackeray Hall Pittsburgh, Pa 15260

Timing: Fiscal Year 2003; Project Start 11-JUN-2003; Project End 31-MAY-2008

Summary: (provided by applicant): **Polymyositis** represents an autoimmune disease in which muscle is inappropriately targeted for T cell-mediated destruction. Because the antigenic trigger(s) remain unknown, current therapies are non-specific and rely on global immunosuppression. Distinct clinical subsets of **polymyositis** exist that are defined by antibodies directed against specific nuclear and cytoplasmic antigens including Jo-1 (histidyl-tRNA synthetase). Based on a range of genetic, serologic, and histomorphologic data, the underlying hypothesis of this proposal is that antigen-specific T cell responses directed against Jo-1 promote anti-Jo-1 antibody formation as well as T cell-mediated cytolysis/dysfunction of muscle cells in Jo-1+ **polymyositis**. , The initial phase of this study will define the in vitro T cell proliferative and cytokine responses to Jo-1. Subsequent experiments will involve cloning of Jo-1-specific T cells derived from the peripheral blood of patients with Jo-1 + **polymyositis** and healthy controls. TCR sequencing as well as epitope mapping studies using both Jo-1 fragments and linear peptides will then permit further characterization of the Jo-1-specific T cell repertoire and facilitate comparison of Jo-1-specific T cells derived from **polymyositis** patients and healthy controls. Localization of these Jo-1-specific T cell subsets to lymphocytic infiltrates of diseased muscle in vivo will be investigated through RT-PCR and immunohistochemistry techniques. Cloning of muscle-infiltrating lymphocytes will provide a pool of antigen-specific cells to be analyzed for responses to Jo-1 as well as other putative autoantigens derived from muscle protein extracts. Assessment of myocyte destruction after the application of Jo-1-specific T cells to autologous myotube cultures in vitro will further define the role of such T cells in Jo-1+ **polymyositis**. These studies are intended to also provide insight concerning the relative roles of altered T cell repertoire and antigen presentation in the expression of Jo-1+ **polymyositis**.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: MYOPATHY IN HIV 1 INFECTION--PREVALENCE, IMMUNOGENETICS AND THERAPY**

Principal Investigator & Institution: Reveille, John D.; Professor; University of Texas Hlth Sci Ctr Houston Box 20036 Houston, Tx 77225

Timing: Fiscal Year 2002; Project Start 01-MAR-2002; Project End 28-FEB-2003

Summary: This abstract is not available.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: NUCLEAR PATHWAY FOR MESSENGER RNA DEGRADATION IN YEAST**

Principal Investigator & Institution: Butler, James S.; Associate Professor; Microbiology and Immunology; University of Rochester Orpa - Rc Box 270140 Rochester, Ny 14627

Timing: Fiscal Year 2002; Project Start 01-AUG-1999; Project End 31-JUL-2004

Summary: The biogenesis of mature eukaryotic RNA molecules requires posttranscriptional processing reactions that produce stable and functional mRNAs, rRNAs, snRNAs and tRNAs. Each of these RNA processing reactions provide targets for the regulation of gene expression, and thereby help to guide the proliferation and development of cells. Research into these RNA processing pathways has revealed steps

within each that are used to regulate the rates of mature RNA production, yet little is known about how these RNA processing pathways are co-regulated to produce balanced levels of mature RNAs in response to changes in the cell's intracellular and extracellular environment. This proposal focuses on the roles of nuclear proteins implicated in the regulation of poly (A)+ mRNA and rRNA levels in *S. cerevisiae*. The yeast protein Rrp6p is a nuclear riboexonuclease homologous to an autoantigen produced in patients suffering from **Polymyositis Scleroderma Overlap Syndrome (PM-Sc1)**, as well as to the Werner's and Bloom's syndrome proteins implicated in premature aging. Mutations in Rrp6p cause defects in rRNA processing and ribosome biogenesis. Rrp6p also plays a role in a nuclear mRNA degradation pathway, since loss of its function stabilizes an intermediate in the mRNA polyadenylation pathway. The experiments proposed here seek to determine the biochemical mechanism and physiological function of Rrp6p. The relationship of Rrp6p to other proteins will be determined using affinity purification and genetic techniques. Other proteins, whose connection to Rrp6p stems from our studies, include core components of an RNA processing complex called exosome, a subunit of RNA polymerase III and a riboexonuclease implicated in rRNA processing and mRNA nucleocytoplasmic transport. Rrp6p will be studied as a pure protein and complexed with its interacting partners. These studies will be carried out to determine which domains of Rrp6p are required for its ability to bind and hydrolyze RNAs, as well as which domains are required to interact with other proteins. The substrate specificity of Rrp6p will also be analyzed to determine what features of its RNA substrates are required for recognition by the enzyme and what features of the enzyme and its substrates are necessary for its ability to distinguish between mRNAs and rRNAs. These studies will illuminate the enzymatic properties of Rrp6p, as well as its role in nuclear mRNA degradation and rRNA processing. Moreover, the results of these experiments should provide basic knowledge regarding the functions of the PM-Sc1 autoantigens and the Bloom's and Werner's syndrome proteins, thereby contributing to an understanding of the processes leading to autoimmune disease and aging.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

- **Project Title: RHEUMATIC DISEASE SERA: PROBES OF DISEASE MECHANISM**

Principal Investigator & Institution: Casciola-Rosen, Livia A.; Dermatology; Johns Hopkins University 3400 N Charles St Baltimore, Md 21218

Timing: Fiscal Year 2002; Project Start 30-SEP-1997; Project End 30-JUN-2007

Summary: (provided by applicant): The broad, long-term objectives of this proposal are to define pathogenic mechanisms in human autoimmune myopathies, with a view to defining pathways of therapeutic relevance in this group of diseases. Several recent studies have identified the cytotoxic lymphocyte granule pathway as a pathway of potential importance in autoimmune myositis. In **polymyositis**, cytotoxic lymphocyte granules are frequently polarized towards muscle cells, indicating that these lymphocytes are in the active process of degranulation. Furthermore, all autoantigens targeted in **polymyositis** and dermatomyositis are unified by their susceptibility to efficient cleavage by granzyme B (GrB), generating unique fragments not generated during other forms of cell death. We hypothesize that the cytotoxic lymphocyte granule pathway plays a dual role in inducing muscle cell death and in generating the unique forms of autoantigens, which drive the autoimmune response in autoimmune myositis. The specific aims of the proposal are to (1) Define the mechanisms whereby cytotoxic lymphocytes induce muscle cell dysfunction and death in muscle cells in vitro. This will be accomplished by elucidating the effector pathways downstream of GrB in muscle

cells in vitro, and by defining the mechanisms responsible for the prominent inhibition of caspases observed in myoblasts; (2) Define the pathways of muscle cell damage in vivo in affected tissues from patients with autoimmune myositis. The activity of the pathways downstream of GrB demonstrated to be of functional relevance in Aim 1 will be directly interrogated using a set of novel reagents that specifically report on the state and activity of GrB, caspases, calpains, nNOS, and muscle structural and regulatory proteins; (3) Elucidate the role of GrB-mediated cleavage and muscle cell differentiation state on the immunogenicity of muscle antigens in an animal model. These studies will address the role of cleavage by GrB in generating the specific immune response to the myositis-specific autoantigen EF-1 α and define whether the myoblast is the preferential initiator of autoantibody responses to muscle-specific autoantigens. Taken together, these studies will enhance our understanding of the effector mechanisms that participate in the pathogenesis of autoimmune myositis.

Website: http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen

E-Journals: PubMed Central³

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).⁴ Access to this growing archive of e-journals is free and unrestricted.⁵ To search, go to <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Pmc>, and type “polymyositis” (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for polymyositis in the PubMed Central database:

- **A mammalian tRNA^{His}-containing antigen is recognized by the polymyositis-specific antibody anti-Jo-1.** by Rosa MD, Hendrick JP Jr, Lerner MR, Steitz JA, Reichlin M.; 1983 Feb 11;
<http://www.pubmedcentral.gov/picrender.fcgi?tool=pmcentrez&action=stream&blobtype=pdf&artid=325757>
- **Clonal tracking of autoaggressive T cells in polymyositis by combining laser microdissection, single-cell PCR, and CDR3-spectratype analysis.** by Hofbauer M, Wiesener S, Babbe H, Roers A, Wekerle H, Dornmair K, Hohlfeld R, Goebels N.; 2003 Apr 1;
<http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=153053>
- **Isolation and characterization of cDNA encoding the 80-kDa subunit protein of the human autoantigen Ku (p70/p80) recognized by autoantibodies from patients with scleroderma-polymyositis overlap syndrome.** by Mimori T, Ohosone Y, Hama N, Suwa A, Akizuki M, Homma M, Griffith AJ, Hardin JA.; 1990 Mar;
<http://www.pubmedcentral.gov/picrender.fcgi?tool=pmcentrez&action=stream&blobtype=pdf&artid=53566>

³ Adapted from the National Library of Medicine: <http://www.pubmedcentral.nih.gov/about/intro.html>.

⁴ 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.

⁵ The value of PubMed Central, in addition to its role as an archive, lies in 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.

- **The development of fatal myocarditis and polymyositis in mice heterozygous for IFN-[gamma] and lacking the SOCS-1 gene.** by Metcalf D, Di Rago L, Mifsud S, Hartley L, Alexander WS.; 2000 Aug 1;
<http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&artid=16841>
- **Viral persistence during the developmental phase of Coxsackievirus B1-induced murine polymyositis.** by Tam PE, Schmidt AM, Ytterberg SR, Messner RP.; 1991 Dec;
<http://www.pubmedcentral.gov/picrender.fcgi?tool=pmcentrez&action=stream&blobtype=pdf&artid=250734>
- **Wide Cross-Species Aminoacyl-tRNA Synthetase Replacement in vivo: Yeast Cytoplasmic Alanine Enzyme Replaced by Human Polymyositis Serum Antigen.** by Ripmaster TL, Shiba K, Schimmel P.; 1995 May 23;
<http://www.pubmedcentral.gov/articlerender.fcgi?tool=pmcentrez&rendertype=abstract&artid=41821>

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.⁶ 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 use. If the publisher has a Web site that offers full text of its journals, PubMed will provide links to that site, as well as to sites offering other related data. User registration, a subscription fee, or some other type of fee may be required to access the full text of articles in some journals.

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

- **A case of eosinophilic polymyositis complicated by myasthenia gravis.**
Author(s): Ikeda Y, Tanaka M, Mizushima K, Okamoto K.
Source: Muscle & Nerve. 1998 October; 21(10): 1356-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9736073
- **A case of generalized morphea and polymyositis accompanied by sick sinus syndrome.**
Author(s): Nagai Y, Ishikawa O.
Source: The Journal of Dermatology. 2001 October; 28(10): 576-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11732729

⁶ 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.

- **A case of limb-girdle muscular dystrophy with serum anti-nuclear antibody which led to a mistaken diagnosis of polymyositis.**
 Author(s): Funauchi M, Nozaki Y, Yoo BS, Kinoshita K, Kanamaru A.
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- **A case of polymyositis associated with hepatitis B infection.**
 Author(s): Nojima T, Hirakata M, Sato S, Fujii T, Suwa A, Mimori T, Ikeda Y.
 Source: Clin Exp Rheumatol. 2000 January-February; 18(1): 86-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10728451
- **A case of polymyositis with anti-histidyl-t-RNA synthetase (Jo-1) antibody syndrome following extensive vinyl chloride exposure.**
 Author(s): Serratrice J, Granel B, Pache X, Disdier P, De Roux-Serratrice C, Pellissier JF, Weiller PJ.
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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11642524
- **A case of polymyositis with dilated cardiomyopathy associated with interferon alpha treatment for hepatitis B.**
 Author(s): Lee SW, Kim KC, Oh DH, Jung SS, Yoo DH, Kim SY, Choe G, Kim TH.
 Source: Journal of Korean Medical Science. 2002 February; 17(1): 141-3.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11850606
- **A juvenile case of overlap syndrome of systemic lupus erythematosus and polymyositis, later accompanied by systemic sclerosis with the development of anti-Scl 70 and anti-Ku antibodies.**
 Author(s): Nitta Y, Muramatsu M.
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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11085667
- **A localised morphoea/idiopathic polymyositis overlap.**
 Author(s): al Attia HM, Ezzeddin H, Khader T, Aref MA.
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http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8793268
- **A patient with Graves' disease, myasthenia gravis, and polymyositis.**
 Author(s): Kobayashi T, Asakawa H, Komoike Y, Nakano Y, Tamaki Y, Monden M.
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 Author(s): Adams EM, Pucino F, Yarboro C, Hicks JE, Thornton B, McGarvey C, Sonies BC, Bartlett ML, Villalba ML, Fleisher T, Plotz PH.
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 Source: The Journal of Rheumatology. 1998 February; 25(2): 395-6.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9489847
- **Simultaneous presence of neutrophil alveolitis and Ki-67 positivity of alveolar macrophages in dermato-/polymyositis and systemic sclerosis.**
 Author(s): Kumanovics G, Magyarlaci T, Komocsi A, Szekeres G, Czirkak L.
 Source: Rheumatology International. 2003 January; 23(1): 6-10. Epub 2002 September 11.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12548435
- **S-protein is expressed in necrotic fibers in Duchenne muscular dystrophy and polymyositis.**
 Author(s): Louboutin JP, Navenot JM, Rouger K, Blanchard D.
 Source: Muscle & Nerve. 2003 May; 27(5): 575-81.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12707977
- **Successful combination therapy of cyclosporine and methotrexate for refractory polymyositis with anti-Jo-1 antibody: a case report.**
 Author(s): Chang HK, Lee DH.
 Source: Journal of Korean Medical Science. 2003 February; 18(1): 131-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12589104
- **Successful treatment of dermatomyositis and polymyositis with anti-tumor-necrosis-factor-alpha: preliminary observations.**
 Author(s): Hengstman GJ, van den Hoogen FH, Barrera P, Netea MG, Pieterse A, van de Putte LB, van Engelen BG.
 Source: European Neurology. 2003; 50(1): 10-5.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12824706

- **Survival of patients with polymyositis/dermatomyositis and pulmonary involvement.**
Author(s): Miro O, Laguno M, Grau JM.
Source: The Journal of Rheumatology. 1999 August; 26(8): 1852-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=10451094
- **Symptomatic macroglossia and tongue myositis in polymyositis: treatment with corticosteroids and intravenous immunoglobulin.**
Author(s): Chauvet E, Sailler L, Carreiro M, Paoli JR, Arrue P, Astudillo L, Oksmann F, Delisle MB, Arlet P.
Source: Arthritis and Rheumatism. 2002 October; 46(10): 2762-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=12384936
- **T cell lymphocytosis associated with polymyositis, myasthenia gravis and thymoma.**
Author(s): Otton SH, Standen GR, Ormerod IE.
Source: Clinical and Laboratory Haematology. 2000 October; 22(5): 307-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=11122275
- **Tacrolimus in refractory polymyositis with interstitial lung disease.**
Author(s): Oddis CV, Sciurba FC, Elmagd KA, Starzl TE.
Source: Lancet. 1999 May 22; 353(9166): 1762-3.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=10347992
- **Tanimoto's classification and diagnostic criteria for polymyositis and dermatomyositis do not recognize the variant of amyopathic dermatomyositis.**
Author(s): Zuber M.
Source: The Journal of Rheumatology. 1996 January; 23(1): 191.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=8838534
- **T-cell infiltration in polymyositis is characterized by coexpression of cytotoxic and T-cell-activating cytokine transcripts.**
Author(s): Andreetta F, Bernasconi P, Torchiana E, Baggi F, Cornelio F, Mantegazza R.
Source: Annals of the New York Academy of Sciences. 1995 July 7; 756: 418-20.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=7645862
- **T-cell receptor-CDR3 sequences of polymyositis muscle-infiltrating T-lymphocytes indicate a conventional antigen as target.**
Author(s): Bernasconi P, Torchiana E, Baggi F, Andreetta F, Cornelio F, Mantegazza R.
Source: Annals of the New York Academy of Sciences. 1995 July 7; 756: 414-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstr&list_uids=7645861

- **The effect of physical exercise following acute disease exacerbation in patients with dermatomyositis.**
 Author(s): Varju C, Petho E, Kutas R, Czirjak L.
 Source: Clinical Rehabilitation. 2003 February; 17(1): 83-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12617382
- **The expression of adhesion molecules in muscle biopsies: the LFA-1/VLA-4 ratio in polymyositis.**
 Author(s): Lindvall B, Dahlbom K, Henriksson KG, Srinivas U, Ernerudh J.
 Source: Acta Neurologica Scandinavica. 2003 February; 107(2): 134-41.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12580864
- **The immune development in a child born to a cyclosporin A-treated woman with systemic lupus erythematosus/polymyositis.**
 Author(s): Airo P, Antonioli CM, Motta M, Faden D, Chirico G, Cattaneo R, Tincani A.
 Source: Lupus. 2002; 11(7): 454-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12195788
- **The immunopathologic and inflammatory differences between dermatomyositis, polymyositis and sporadic inclusion body myositis.**
 Author(s): Dalakas MC, Sivakumar K.
 Source: Current Opinion in Neurology. 1996 June; 9(3): 235-9. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8839618
- **The lung in polymyositis.**
 Author(s): Schwarz MI.
 Source: Clinics in Chest Medicine. 1998 December; 19(4): 701-12, Viii. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9917961
- **The main HTLV-I-harboring cells in the muscles of viral carriers with polymyositis are not macrophages but CD4+ lymphocytes.**
 Author(s): Higuchi I, Hashimoto K, Matsuoka E, Rosales R, Nakagawa M, Arimura K, Izumo S, Osame M.
 Source: Acta Neuropathologica. 1996 October; 92(4): 358-61.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8891067
- **The polymyositis-scleroderma autoantigen interacts with the helix-loop-helix proteins E12 and E47.**
 Author(s): Kho CJ, Huggins GS, Endege WO, Patterson C, Jain MK, Lee ME, Haber E.
 Source: The Journal of Biological Chemistry. 1997 May 16; 272(20): 13426-31.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9148967

- **The relative prevalence of dermatomyositis and polymyositis in Europe exhibits a latitudinal gradient.**
 Author(s): Hengstman GJ, van Venrooij WJ, Vencovsky J, Moutsopoulos HM, van Engelen BG.
 Source: Annals of the Rheumatic Diseases. 2000 February; 59(2): 141-2.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10666171
- **The role of Jo-1 in the immunopathogenesis of polymyositis: current hypotheses.**
 Author(s): Ascherman DP.
 Source: Curr Rheumatol Rep. 2003 December; 5(6): 425-30. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14609486
- **The role of lymphotoxin in pathogenesis of polymyositis.**
 Author(s): Liang Y, Inukai A, Kuru S, Kato T, Doyu M, Sobue G.
 Source: Acta Neuropathologica. 2000 November; 100(5): 521-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11045674
- **The safety of a resistive home exercise program in patients with recent onset active polymyositis or dermatomyositis.**
 Author(s): Alexanderson H, Stenstrom CH, Jenner G, Lundberg I.
 Source: Scandinavian Journal of Rheumatology. 2000; 29(5): 295-301.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11093595
- **The three groups of polymyositis.**
 Author(s): Serratrice G.
 Source: Rev Rhum Engl Ed. 1996 December; 63(11): 797-800. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9010966
- **The use of technetium-99m-labeled white blood cell scan in the management of a case of group A streptococcus necrotizing fasciitis with polymyositis.**
 Author(s): Lee BE, Robinson JL.
 Source: Clinical Infectious Diseases : an Official Publication of the Infectious Diseases Society of America. 1999 January; 28(1): 153-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10028096
- **Thymoma-associated dermatomyositis and polymyositis.**
 Author(s): Nagasawa K.
 Source: Intern Med. 1999 February; 38(2): 81-2. Review. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10225660

- **Tiopronin-induced biopsy-proven polymyositis.**
 Author(s): Durieux S, Claudepierre P, Authier FJ, Larget-Piet B, Chevalier X.
 Source: Clin Exp Rheumatol. 1995 November-December; 13(6): 794. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8835257
- **Tiopronin-induced polymyositis.**
 Author(s): Tavernier C, Huguenin MC, Maillefert JF.
 Source: Rev Rhum Engl Ed. 1995 December; 62(11): 808. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8869227
- **T-lymphocyte immunophenotyping in polymyositis and dermatomyositis.**
 Author(s): Iannone F, Cauli A, Yanni G, Kingsley GH, Isenberg DA, Corrigall V, Panayi GS.
 Source: British Journal of Rheumatology. 1996 September; 35(9): 839-45.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8810666
- **Toxoplasmic myocarditis and polymyositis in patients with acute acquired toxoplasmosis diagnosed during life.**
 Author(s): Montoya JG, Jordan R, Lingamneni S, Berry GJ, Remington JS.
 Source: Clinical Infectious Diseases : an Official Publication of the Infectious Diseases Society of America. 1997 April; 24(4): 676-83.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9145743
- **Toxoplasmic polymyositis revisited: case report and review of literature.**
 Author(s): Cuturic M, Hayat GR, Vogler CA, Velasques A.
 Source: Neuromuscular Disorders : Nmd. 1997 September; 7(6-7): 390-6.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9327404
- **Transforming growth factor-beta 1 in polymyositis and dermatomyositis correlates with fibrosis but not with mononuclear cell infiltrate.**
 Author(s): Confalonieri P, Bernasconi P, Cornelio F, Mantegazza R.
 Source: Journal of Neuropathology and Experimental Neurology. 1997 May; 56(5): 479-84.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9143260
- **Treatment of dermatomyositis and polymyositis.**
 Author(s): Choy EH, Isenberg DA.
 Source: Rheumatology (Oxford, England). 2002 January; 41(1): 7-13. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11792873

- **Tuberculosis of skeletal muscle in a case of polymyositis.**
 Author(s): Huang KL, Chang DM, Lu JJ.
 Source: Scandinavian Journal of Rheumatology. 1999; 28(6): 380-2.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10665746
- **Tumor necrosis factor-alpha expression in muscles of polymyositis and dermatomyositis.**
 Author(s): Kuru S, Inukai A, Liang Y, Doyu M, Takano A, Sobue G.
 Source: Acta Neuropathologica. 2000 May; 99(5): 585-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10805105
- **Two patients with polymyositis or dermatomyositis complicated with massive pleural effusion.**
 Author(s): Miyata M, Fukaya E, Takagi T, Watanabe K, Saito H, Ito M, Yoshioka R, Kazuta Y, Yusa Y, Irisawa A, Sato Y, Nishimaki T, Kumakawa H, Kasukawa R.
 Source: Intern Med. 1998 December; 37(12): 1058-63.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9932642
- **Typical nemaline bodies presenting in a patient with polymyositis.**
 Author(s): Sun AP, Ohtsuki Y, Yano T, Matsumoto M, Takeuchi T, Furihata M, Arahori M, Sonobe H.
 Source: Medical Electron Microscopy : Official Journal of the Clinical Electron Microscopy Society of Japan. 2002 September; 35(3): 167-72.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12353138
- **Unicorns, dragons, polymyositis, and other mythological beasts.**
 Author(s): Amato AA, Griggs RC.
 Source: Neurology. 2003 August 12; 61(3): 288-9.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12913184
- **Update on therapy for refractory dermatomyositis and polymyositis.**
 Author(s): Villalba L, Adams EM.
 Source: Current Opinion in Rheumatology. 1996 November; 8(6): 544-51. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9018458
- **Urinary levels of creatine and other metabolites in the assessment of polymyositis and dermatomyositis.**
 Author(s): Chung YL, Wassif WS, Bell JD, Hurley M, Scott DL.
 Source: Rheumatology (Oxford, England). 2003 February; 42(2): 298-303.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12595626

- **Vanderbilt morning report. Idiopathic polymyositis as the initial manifestation of lupus erythematosus.**
Author(s): Loss C, Aronoff D.
Source: Tenn Med. 2000 August; 93(8): 300-1. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10943149
- **Whole-body MR imaging in the diagnosis of polymyositis.**
Author(s): O'Connell MJ, Powell T, Brennan D, Lynch T, McCarthy CJ, Eustace SJ.
Source: Ajr. American Journal of Roentgenology. 2002 October; 179(4): 967-71.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12239048

CHAPTER 2. NUTRITION AND POLYMYOSITIS

Overview

In this chapter, we will show you how to find studies dedicated specifically to nutrition and polymyositis.

Finding Nutrition Studies on Polymyositis

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; 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). 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.⁷ The IBIDS includes references and citations to both human and animal research studies.

As a service of the ODS, access to the IBIDS database is available free of charge at the following Web address: <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.

Now that you have selected a database, click on the "Advanced" tab. An advanced search allows you to retrieve up to 100 fully explained references in a comprehensive format. Type "polymyositis" (or synonyms) into the search box, and click "Go." To narrow the search, you can also select the "Title" field.

⁷ 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.

The following information is typical of that found when using the "Full IBIDS Database" to search for "polymyositis" (or a synonym):

- **Adverse impact of interstitial pulmonary fibrosis on prognosis in polymyositis and dermatomyositis.**
 Author(s): State University of New York Health Science Center, Brooklyn, NY.
 Source: Arsur, E L Greenberg, A S Semin-Arthritis-Rheum. 1988 August; 18(1): 29-37 0049-0172
- **Dermatomyositis and polymyositis update on current controversies.**
 Source: Callen, J P Australas-J-Dermatol. 1987 August; 28(2): 62-7 0004-8380
- **Drug induced polymyositis secondary to leuprolide acetate (Lupron) therapy for prostate carcinoma.**
 Author(s): Department of Medicine, University of Wisconsin Hospital and Clinics, Madison 53792.
 Source: Crayton, H Bohlmann, T Sufit, R Graziano, F M Clin-Exp-Rheumatol. 1991 Sep-October; 9(5): 525-8 0392-856X
- **History and classification of polymyositis and dermatomyositis.**
 Author(s): Department of Internal Medicine/Rheumatology, UCLA Medical Center.
 Source: Bohan, A Clin-Dermatol. 1988 Apr-June; 6(2): 3-8 0738-081X
- **Hypercapnic respiratory failure due to L-tryptophan-induced eosinophilic polymyositis.**
 Author(s): Division of Pulmonary and Critical Care Medicine, Henry Ford Hospital, Detroit 48212.
 Source: Ivey, M Eichenhorn, M S Glasberg, M R Hyzy, R C Chest. 1991 March; 99(3): 756-7 0012-3692
- **Infantile polymyositis: a case report.**
 Author(s): Department of Neurology, Tokyo Metropolitan Kiyose Children's Hospital, Japan.
 Source: Nagai, T Hasegawa, T Saito, M Hayashi, S Nonaka, I Brain-Devolume 1992 May; 14(3): 167-9 0387-7604
- **Overlap syndrome of progressive systemic sclerosis and polymyositis: report of 40 cases.**
 Author(s): PUMC Hospital, CAMS, Beijing.
 Source: Yuan, X Chen, M Chin-Med-Sci-J. 1991 June; 6(2): 107-9 1001-9294
- **Penicillamine induced polymyositis and dermatomyositis.**
 Author(s): Department of Clinical Immunology, Royal Perth Hospital, Western Australia.
 Source: Carroll, G J Will, R K Peter, J B Garlepp, M J Dawkins, R L J-Rheumatol. 1987 October; 14(5): 995-1001 0315-162X
- **Penicillamine-induced polymyositis with complete heart block.**
 Author(s): University Department of Cardiology, Skejby Hospital, Aarhus, Denmark.
 Source: Christensen, P D Sorensen, K E Eur-Heart-J. 1989 November; 10(11): 1041-4 0195-668X
- **Polymyositis after propylthiouracil treatment for hyperthyroidism.**
 Author(s): Duke University Medical Center, Durham, North Carolina 27710.
 Source: Shergy, W J Caldwell, D S Ann-Rheum-Dis. 1988 April; 47(4): 340-3 0003-4967

- **Polymyositis associated with primary biliary cirrhosis.**
 Author(s): Division of Gastroenterology, University of Kentucky Medical Center, Lexington 40536-0084, USA.
 Source: Simpson, W G Nickl, N J J-Ky-Med-Assoc. 1995 March; 93(3): 93-4 0023-0294
- **Polymyositis developing after prolonged injections of pentazocine.**
 Author(s): Department of Internal Medicine, Seoul National University College of Medicine, Korea.
 Source: Kim, H A Song, Y W J-Rheumatol. 1996 September; 23(9): 1644-6 0315-162X
- **Polymyositis with hypokalemia: correction with potassium replacement in the absence of steroids.**
 Author(s): Department of Medicine, University of Kansas Medical Center, Kansas City 66103.
 Source: Becker, N J Hinman, M Giles, M N Kepes, J J Abdou, N I J-Rheumatol. 1987 October; 14(5): 1042-4 0315-162X
- **Polymyositis, arthritis, and proteinuria in a patient with adult celiac disease.**
 Author(s): Department of Internal Medicine, Kaplan Hospital, Rehovot, Israel.
 Source: Evron, E Abarbanel, J M Branski, D Sthoeger, Z M J-Rheumatol. 1996 April; 23(4): 782-3 0315-162X
- **Polymyositis: a case history approach to the differential diagnosis and treatment.**
 Author(s): Division of Rheumatology, Mayo Clinic, Rochester, MN 55905.
 Source: Bunch, T W Mayo-Clin-Proc. 1990 November; 65(11): 1480-97 0025-6196
- **Polymyositis-dermatomyositis and non-Hodgkin's lymphoma.**
 Author(s): First Department of Internal Medicine, Nippon Medical School, Tokyo, Japan.
 Source: Endo, T Kawaguchi, N Yashima, M Tei, H Hayakawa, H Intern-Med. 1993 June; 32(6): 487-9 0918-2918
- **Relationships between clinical features and distribution of mononuclear cells in muscle of patients with polymyositis.**
 Author(s): Department of Medicine, VA Medical Center, Indianapolis, IN 46202.
 Source: Kalovidouris, A E Stoesz, E Muller, J Kimes, T Brandt, K D J-Rheumatol. 1988 September; 15(9): 1401-6 0315-162X
- **Secondary Hodgkin's disease in polymyositis and type 1 diabetes mellitus after a long-term immunosuppressive treatment.**
 Author(s): IInd Department of Medicine, University Hospital, Olomouc, Czechoslovakia.
 Source: Pumplrla, J Galuszkova, D Duskova, J Krc, I Acta-Univ-Palacki-Olomuc-Fac-Med. 1992; 13387-9 0301-2514
- **Temporal alterations of immunohistochemical findings in polymyositis.**
 Author(s): Department of Neurology, Hokkaido University School of Medicine, Sapporo.
 Source: Tajima, Y Moriwaka, F Tashiro, K Intern-Med. 1994 May; 33(5): 263-70 0918-2918
- **The therapy of polymyositis.**
 Source: Bunch, T W Mt-Sinai-J-Med. 1988 November; 55(6): 483-6 0027-2507
- **Therapeutic options in dermatomyositis/polymyositis.**
 Author(s): Department of Dermatology, University of Texas Medical School at Houston 37232-5227.
 Source: Boyd, A S Neldner, K H Int-J-Dermatol. 1994 April; 33(4): 240-50 0011-9059

- **Treatment of polymyositis and dermatomyositis.**
Author(s): West Middlesex University Hospital, Isleworth.
Source: Kaye, S A Isenberg, D A Br-J-Hosp-Med. 1994 November 2-15; 52(9): 463-8 0007-1064
- **Wide cross-species aminoacyl-tRNA synthetase replacement in vivo: yeast cytoplasmic alanine enzyme replaced by human polymyositis serum antigen.**
Source: Ripmaster, T.L. Shiba, K. Schimmel, P. Proc-Natl-Acad-Sci-U-S-A. Washington, D.C. : National Academy of Sciences,. May 23, 1995. volume 92 (11) page 4932-4936. 0027-8424

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.healthnotes.com/>
- 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>**

CHAPTER 3. CLINICAL TRIALS AND POLYMYOSITIS

Overview

In this chapter, we will show you how to keep informed of the latest clinical trials concerning polymyositis.

Recent Trials on Polymyositis

The following is a list of recent trials dedicated to polymyositis.⁸ Further information on a trial is available at the Web site indicated.

- **Infliximab (Remicade(r) (Registered Trademark)) to Treat Dermatomyositis and Polymyositis**

Condition(s): Dermatomyositis; Polymyositis

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 examine whether infliximab (Remicade(r) (Registered Trademark)) is safe and effective for the treatment of dermatomyositis and polymyositis. Infliximab blocks the effect of a protein called tumor necrosis factor (TNF), which is associated with harmful inflammation in many diseases. Patients 18 years of age and older with active dermatomyositis or polymyositis that does not respond adequately to treatment with methotrexate and corticosteroids may be eligible for this study. Candidates will be screened with a medical history, physical examination, blood and urine tests, chest x-ray, pulmonary function test, skin test for tuberculosis, HIV test, electromyography (described below), manual muscle testing, and functional assessments. Magnetic resonance imaging (described below) will be done to assess the degree and location of inflammation in the involved limbs. An electrocardiogram and echocardiogram will be done if recent ones are not available. Patients who qualify for the study will be asked to undergo two muscle biopsies (surgical removal and analysis of small pieces of muscle tissue), one before initiation of treatment and another on the 16th week. Participants will be randomly assigned to receive either 3 mg/kg body

⁸ These are listed at www.ClinicalTrials.gov.

weight of infliximab or a placebo (inactive substance) by infusion through a vein over 2 hours. The infusions will be given at the beginning of the treatment period (week 0) and at weeks 2, 6 and 14. At week 16, strength will be assessed by manual muscle testing. Patients who improved with treatment will continue with the same infusion dose on weeks 18, 22, 30, and 38. Those who do not improve will be assigned by random allocation to receive either 5 mg/kg body weight or 10/mg/kg body weight of infliximab on weeks 18, 22, 30 and 38. Those who did not improve who were previously on the placebo infusion will receive an extra dose of either 5 mg/kg or 10 mg/kg body weight of infliximab on week 16, while those patients who were previously on 3 mg/kg body weight of infliximab who failed to meet the improvement criteria will receive an infusion containing no medication on week 16. Patients will be admitted to the hospital for infusions at weeks 0, 14 and 38; the rest will be given on an outpatient basis. After the 38th week, all infusions will be stopped and patients will be assessed on the 40th week. Participants will undergo some or all of the following tests and evaluations during treatment: - Blood tests every week to look for antibodies seen with muscle inflammation. Some of the blood samples will be stored for later testing, including genetic studies to find genetic differences related to inflammation. - Skin test for tuberculosis - Chest x-rays at the beginning of the study (if a recent one is not available) and again at weeks 16 and 40 to look for active infection, detect signs of past exposure or infection with diseases such as tuberculosis, and assess the presence of lung disease that might be related to the myositis. - MRI (usually of the legs) at the beginning of the study and again at weeks 16 and 40 to measure disease activity and extent of muscle involvement. This will also give an idea of the response to treatment. This test uses a magnetic field and radio waves to produce images of body tissues. During the procedure the patient lies on a bed surrounded by a metal cylinder (the scanner). - Muscle biopsy at the beginning of the study to diagnose muscle inflammation and again at week 16 to evaluate the response to treatment. - Electromyography if the patient has not had an EMG previously. For this test, small needles are inserted into the muscle to assess the electrical activity of the muscle - HIV test Patients whose disease worsen with treatment or who develop serious drug-related side effects will be taken off the study and referred back to their primary care physician for further therapy. Patients who improve will be referred back to their primary physician at the end of the study for possible continued treatment. Participants will be asked to return for follow-up visits every 6 weeks for a total of 30 weeks to monitor long-term effects of the drug

Phase(s): Phase II

Study Type: Interventional

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00033891>

- **Myositis in Children**

Condition(s): Dermatomyositis; Polymyositis; Idiopathic Inflammatory Myopathy; Healthy

Study Status: This study is currently recruiting patients.

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

Purpose - Excerpt: This study will evaluate subjects with childhood-onset myositis to learn more about their cause and the immune system changes and medical problems associated with them. Myositis is an inflammatory muscle disease that can damage muscles and other organs, resulting in significant disability. Children under 18 years of

age with **polymyositis** or dermatomyositis or a related condition, or adults with onset of these diseases during childhood may be evaluated under this study. Healthy children will also be enrolled as "controls," for comparison of test results. All patients will undergo a 1-day evaluation with a complete history (including completing some questionnaires) and physical examination, review of medical records, and blood and urine tests. Patients may then choose to participate in an additional 3- to 5-day evaluation, which will include some or all of the following diagnostic, treatment or research procedures: 1. Standardized muscle strength testing, range of motion of joints and walking (gait) analysis by a physiotherapist; completion of a questionnaire regarding ability to perform daily tasks 2. Skin assessment, possibly including photographs of lesions and a skin biopsy (removal of a small skin sample under local anesthetic) 3. Magnetic resonance imaging (scans that use magnetic fields to visualize tissues) of leg muscles 4. Swallowing studies, including a physical examination and questionnaire on swallowing ability, studies of tongue strength, and ultrasound imaging during swallowing, and possibly, a modified barium swallow 5. Voice and speech assessment, possibly including computerized voice analysis and laryngoscopy-analysis of the larynx (voice box) using a small rigid scope with a camera placed in the mouth to view and record vocal cord function 6. Pulmonary function tests (measurement of air moved into and out of the lungs, using a breathing machine) to evaluate lung function and, possibly, chest X-ray 7. Electrocardiogram (measurement of the electrical activity of the heart) and, possibly, echocardiogram (ultrasound imaging of the heart) 8. Endocrine evaluation 9. Eye examination, in patients with vision loss or other eye symptoms 10. Nutrition assessment to evaluate muscle mass and muscle wasting, including tape measurements or bioelectric impedance testing, a painless procedure in which wires are attached to the extremities with a sticky paste. 11. Exercise bicycle testing in children 8 to 18 years of age (exercising for up to 12 minutes while heart rate, blood pressure, electrocardiogram, and oxygen uptake are monitored). 12. Electromyography (record of the electrical activity of muscles) 13. Muscle biopsy (removal of a small piece of muscle tissue for microscopic examination) All patients may have only a one-time evaluation or may return for two or three follow-up evaluations (either the 1-day or 3- to 5-day evaluation) over a 1-year period. Healthy children will undergo a medical history and brief physical examination; blood and urine tests; speech and swallowing studies including questionnaires and physical examination, tongue strength, and ultrasound study; and bioelectric impedance testing. Children 8 to 18 years old may also have exercise testing.

Study Type: Observational

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00017914>

- **Study and Treatment of Inflammatory Muscle Diseases**

Condition(s): Autoimmune Disease; Dermatomyositis; Inclusion Body Myositis; Myositis; Polymyositis

Study Status: This study is currently recruiting patients.

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

Purpose - Excerpt: This study of inflammatory muscle diseases-polymyositis and dermatomyositis and related disorders-will examine what causes these diseases and describe the clinical features (signs and symptoms) associated with them. Inflammation and degeneration of skeletal muscles in these disorders leads to weakness and muscle

wasting. The skin, lungs and other organs may also be involved. Patients 16 years of age and older with **polymyositis**, dermatomyositis, or a related disorder may be eligible for this study. Participants will undergo a complete history and physical examination, including routine blood and urine tests. Additional procedures for diagnosis, treatment or research may include: 1. Blood sample for genetic studies. 2. Muscle biopsy-removal of a tissue sample for microscopic examination. Under local anesthetic, a 1/2- to 1-inch long incision is made in the thigh or upper arm, and a small piece of muscle is removed. 3. Electromyography-measurement of the electrical activity of a muscle. A needle is inserted through the skin into a muscle to record its electrical activity. 4. Magnetic resonance imaging-visualization of organs or tissues, using a magnetic field and radio waves. The patient lies on a table inside a narrow cylinder (the MRI scanner) with a strong magnetic field for the scanning. 5. Manual muscle strength testing by a physiotherapist. 6. Swallowing studies using ultrasound (imaging using sound waves) and X-rays (barium swallow) to evaluate swallowing and speaking abilities. 7. Questionnaires on swallowing ability and ability to perform daily living activities. 8. Pulmonary function tests-measurement of movement of air in and out of the lungs. The patient breathes into a machine to evaluate lung function. 9. Chest X-rays to evaluate lung function. 10. Electrocardiogram and, if necessary, Holter monitoring (measurement of the electrical activity of the heart) and echocardiogram (ultrasound imaging of the heart) to evaluate heart function. 11. Apheresis-collection of white blood cells for research. Whole blood is collected through a needle placed in an arm vein. The blood circulates through a machine that separates it into its components. The white cells are removed and the rest of the blood is returned to the body through the same needle or through a second one placed in the other arm. 12. MR guided muscle biopsy-measurement of glycogen in muscle tissue using magnetic resonance imaging. Certain patients may undergo this experimental procedure to compare MRI findings with those of muscle biopsy. The affected muscles are identified using MRI and the biopsy incision is made. MRI is then used to guide the biopsy needle to the muscle and a small piece is removed. Patients who are eligible for experimental treatment studies will be offered the opportunity to join them. Others will be advised of treatment recommendations.

Study Type: Observational

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00001265>

- **Ultrasound Evaluation of Tongue Movements in Speech and Swallowing**

Condition(s): Otorhinolaryngologic Disease; Otorhinolaryngologic Neoplasm; Pharyngeal Neoplasm; Polymyositis; Speech Disorder

Study Status: This study is currently recruiting patients.

Sponsor(s): Warren G Magnuson Clinical Center (CC)

Purpose - Excerpt: This study will assess the use of ultrasound-a test that uses sound waves to produce images-as a diagnostic tool for evaluating speech and swallowing. The following categories of individuals may be eligible for this study: 1) healthy volunteers between 20 and 85 years old with normal speech and hearing, 2) patients 6 to 85 years old with developmental neurological deficits in speech or swallowing, and 3) patients with tumors of the oral cavity, pharynx or larynx being treated at the Greater Baltimore Medical Center. Participants will undergo a 30-minute speech and oral motion evaluation, in which they imitate sounds, words and oral movements while a speech pathologist evaluates their lip, tongue and palate movements. They may also be asked to drink a small amount of water for examination of swallowing function. For the

ultrasound examination, a 3/4-inch transducer (device for transmitting and receiving sound waves) is placed under the participant's chin. While the transducer is in place, the subject 1) repeats sounds and a series of syllables in several sequences, 2) swallows three times with and without a small amount of water, and 3) swallows 3 teaspoons of non-fat pudding. The ultrasound images are recorded on tape for later analysis.

Study Type: Observational

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00001167>

- **Genetic and Family Studies of Inherited Muscle Diseases**

Condition(s): Dermatomyositis; Glycogen Storage Disease Type II; Glycogen Storage Disease Type VII; Myositis; Polymyositis

Study Status: This study is completed.

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

Purpose - Excerpt: The purposes of this study are to identify gene mutations in patients with the muscle diseases phosphofructokinase (PFK) deficiency, acid maltase deficiency (GAA deficiency) and to learn more about how these diseases develop. PFK deficiency is a mild, exercise-related illness. The childhood form of GAA deficiency (Pompe disease) affects the heart and liver and is rapidly fatal. The adult form begins in midlife and involves degeneration of skeletal muscles, leading to weakness and muscle wasting. The following groups of individuals may be eligible for this study: Group A: Patients with PFK deficiency, acid maltase deficiency, and relatives who also are affected. Participants in this group will undergo a brief medical and family history, blood sample collection, and possibly a physical examination, review of medical records, and interview with the patient's physician. Group B: Unaffected family members of patients in group A, including both blood relatives and spouses. People in this group may be asked to provide a history and genetic information. A review of medical records, interview with the individual's physician, and blood sample may also be requested. Group C: Control subjects. This group will provide a small blood sample or buccal mucosal sample (tissue sample collected by brushing the inside of the cheek). The samples will be coded and the investigators will not know the participants' identities. DNA from these samples will be analyzed for frequency of gene mutations. Genetic counseling will be arranged for patients, as appropriate.

Study Type: Observational

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00001331>

- **Intravenousimmunoglobulin (IVIg) for the Treatment of Inflammatory Myopathies**

Condition(s): Dermatomyositis; Inclusion Body Myositis; Polymyositis

Study Status: This study is completed.

Sponsor(s): National Institute of Neurological Disorders and Stroke (NINDS)

Purpose - Excerpt: Inflammatory myopathies are a group of muscle diseases characterized by muscle weakness, high levels of muscle enzymes in the blood, and inflammation of the tissue surrounding muscle fibers (endomysium). The diseases making up the inflammatory myopathies are grouped into three subsets: I)

Polymyositis (PM) II) Dermatomyositis (DM) III) Inclusion Body Myositis (IBM) Inflammatory myopathies are thought to be autoimmune processes and are treated with steroids and immunosuppressive drugs. However, many patients who initially respond to these treatments develop resistance to the therapy or experience side effects causing the treatments to be stopped. Researchers believe that intravenous immunoglobulin (IVIg) may provide patients with PM, DM, and IBM a safer and more effective alternative to standard therapies for the diseases. IVIg is a drug that has been used successfully to treat other immune-related diseases of the nervous system. The study will take 60 patients and divide them into two groups. Group one will receive 2 injections of IVIg once a month for three months. Group two will receive 2 injections of placebo "inactive injection of sterile water" once a month for three months. Following the three months of treatment, group one will begin taking the placebo and group two will begin taking IVIg for an additional 3 months. The drug will be considered effective if patients receiving it experience a significant improvement (>15%) in muscle strength.

Phase(s): Phase II

Study Type: Interventional

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00001261>

- **Methimazole to Treat Polymyositis and Dermatomyositis**

Condition(s): Dermatomyositis; Polymyositis

Study Status: This study is completed.

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

Purpose - Excerpt: This study will test the safety and effectiveness of the drug methimazole in treating **polymyositis** and dermatomyositis-inflammatory muscle diseases causing weakness and muscle wasting. Although it is not known what causes of these diseases, abnormal immune function is thought to be involved. Recent studies indicate that methimazole, which has been used for many years to treat thyroid disease, may alter immune activity by affecting the interaction between white blood cells called lymphocytes and certain molecules on cell surfaces. This study will examine the effects of methimazole on immune activity and muscle strength in patients with inflammatory muscle diseases and evaluate the drug side effects. Patients with **polymyositis** and dermatomyositis who have normal thyroid function may be eligible for this study [age requirement?]. Candidates will undergo a history and physical examination; blood and urine tests; chest X-ray; muscle strength testing, daily living skills questionnaire, and speech and swallowing evaluation; magnetic resonance imaging of muscles; and muscle biopsy (removal of a small piece of muscle tissue under local anesthetic). When indicated, some candidates may also have cancer screening tests (for example, mammogram, Pap smear), a lung function test to measure breathing capacity, or an electromyogram, in which small needles are inserted into a muscle to measure the electrical activity. Participants will take 30 mg of methimazole by mouth twice a day for 6 months. They will have blood tests weekly for the first 2 weeks and then every other week for the rest of the study to measure blood counts and liver and thyroid function. Blood will also be drawn for white blood cell studies during the screening evaluation, at the beginning of therapy, 6 to 12 weeks after therapy starts, at the end of the 6-month treatment period, and 1 and 3 months after therapy ends. Muscle enzyme and urine tests will be done once a month. During drug treatment, patients will have periodic

physical examinations and blood and muscle function tests to evaluate the response to therapy.

Phase(s): Phase II

Study Type: Interventional

Contact(s): see Web site below

Web Site: <http://clinicaltrials.gov/ct/show/NCT00001421>

Keeping Current on Clinical Trials

The U.S. National Institutes of Health, through the National Library of Medicine, has developed ClinicalTrials.gov to provide 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 the Web site at <http://www.clinicaltrials.gov/> and search by “polymyositis” (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 cancer trials, visit the National Cancer Institute: <http://cancertrials.nci.nih.gov/>
- For eye-related trials, visit and search the Web page of the National Eye Institute: <http://www.nei.nih.gov/neitrials/index.htm>
- For heart, lung and blood trials, visit the Web page of the National Heart, Lung and Blood Institute: <http://www.nhlbi.nih.gov/studies/index.htm>
- For trials on aging, visit and search the Web site of the National Institute on Aging: <http://www.grc.nia.nih.gov/studies/index.htm>
- For rare diseases, visit and search the Web site sponsored by the Office of Rare Diseases: http://ord.aspensys.com/asp/resources/rsch_trials.asp
- For alcoholism, visit the National Institute on Alcohol Abuse and Alcoholism: http://www.niaaa.nih.gov/intramural/Web_dicbr_hp/particip.htm
- For trials on infectious, immune, and allergic diseases, visit the site of the National Institute of Allergy and Infectious Diseases: <http://www.niaid.nih.gov/clintrials/>
- 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>

- For hearing-related trials, visit the National Institute on Deafness and Other Communication Disorders: <http://www.nidcd.nih.gov/health/clinical/index.htm>
- For trials on diseases of the digestive system and kidneys, and diabetes, visit the National Institute of Diabetes and Digestive and Kidney Diseases: <http://www.niddk.nih.gov/patient/patient.htm>
- For drug abuse trials, visit and search the Web site sponsored by the National Institute on Drug Abuse: <http://www.nida.nih.gov/CTN/Index.htm>
- For trials on mental disorders, visit and search the Web site of the National Institute of Mental Health: <http://www.nimh.nih.gov/studies/index.cfm>
- For trials on neurological disorders and stroke, visit and search the Web site sponsored by the National Institute of Neurological Disorders and Stroke of the NIH: http://www.ninds.nih.gov/funding/funding_opportunities.htm#Clinical_Trials

CHAPTER 4. PATENTS ON POLYMYOSITIS

Overview

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.⁹ 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 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. 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. **IMPORTANT NOTE:** When following the search strategy described below, you may discover non-medical patents that use the generic term "polymyositis" (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on polymyositis, we have not necessarily excluded non-medical patents in this bibliography.

Patents on Polymyositis

By performing a patent search focusing on polymyositis, 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

⁹Adapted from the United States Patent and Trademark Office:
<http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm>.

example of the type of information that you can expect to obtain from a patent search on polymyositis:

- **Antigens associated with polymyositis and with dermatomyositis**

Inventor(s): Ge; Qun (Oklahoma City, OK), Targoff; Ira N. (Oklahoma City, OK)

Assignee(s): Board of Regents of the University of Oklahoma (norman, Ok), Oklahoma Medical Research Foundation (oklahoma City, Ok)

Patent Number: 6,610,823

Date filed: September 9, 1992

Abstract: Isolated DNA molecules encoding at least one epitope of the Mi-2 antigen and at least one epitope of the PM-Scl antigen are provided. The DNA may be used as probes to obtain related DNA. Proteins expressed from the DNA may be used in assays for the diagnosis of dermatomyositis and **polymyositis**, particularly polymyositis-scleroderma overlap disorders. The expressed proteins may also be used for purification of the associated autoantigens.

Excerpt(s): This relates to human antigens that can be used for the diagnosis of myositis and myositis-overlap syndromes that have an autoimmune pathogenesis and more particularly relates to the Mi-2 and PM-Scl antigens. Autoimmune disorders arise when the immune system reacts against its own tissues. Autoimmune diseases are often classified on the basis of whether a single organ or tissue is involved or whether multiple organs or tissues are involved. Generalized or systemic autoimmune diseases, such as systemic lupus erythematosus (SLE), characterized by the involvement of multiple organs and tissues, are often associated with the presence of autoantibodies to fundamental cellular components. Other autoimmune diseases are characterized by autoantibodies to antigens associated with a single organ or tissue. Systemic autoimmune diseases are typically characterized by the presence of autoantibodies. Some of the autoantibodies associated with the particular disease may be disease specific and others may be common to many autoimmune diseases. For example, SLE, which is a prototypical immune disorder, is characterized by the presence of autoantibodies that are detectable in other autoimmune disease, such as anti-single-strand DNA antibodies, anti-histones antibodies, and anti-ribonuclear particle (RNP) antibodies, and also by the presence of autoantibodies that are SLE-specific, such as the anti-double-stranded DNA antibodies. Other systemic autoimmune disorders, such as rheumatoid arthritis and idiopathic inflammatory myopathies, are also characterized by the presence of autoantibodies in the sera of patients that react with fundamental nuclear and cytoplasmic intracellular components. As with SLE, some of these autoantibodies are associated with other autoimmune disorders and some are specifically associated with autoimmune myositis.

Web site: http://www.delphion.com/details?pn=US06610823__

- **Methods and polycyclic aromatic compound containing compositions for treating T-cell-mediated diseases**

Inventor(s): Lavie; Gad (Tenafly, NJ), Meruelo; Daniel (Scarborough, NY)

Assignee(s): New York University (new York, Ny)

Patent Number: 5,514,714

Date filed: March 30, 1993

Abstract: T cell-mediated diseases in mammals are treated using compositions comprising a polycyclic aromatic compound, preferably hypericin or pseudohypericin, and related compounds, including isomers, analogs, derivatives, salts, or ion pairs of hypericin or pseudohypericin. The above composition may be administered in combination with an immunosuppressive agent. Pharmaceutical compositions useful for treating a T cell-mediated disease comprise the above polycyclic aromatic compound, alone or in combination with an immunosuppressive agent. The compositions and methods are useful in treating diseases which include multiple sclerosis, myasthenia gravis, scleroderma, **polymyositis**, graft-versus-host disease, graft rejection, Graves disease, Addison's disease, autoimmune uveoretinitis, autoimmune thyroiditis, pemphigus vulgaris and rheumatoid arthritis. Psoriasis and systemic lupus erythematosus. Also provided are methods for diminishing the expression of CD4 Molecules on the surface of a T lymphocyte, and for inducing multidrug resistance in a cell, comprising incubating the cell with an effective concentration of a polycyclic aromatic compound.

Excerpt(s): This invention pertains to the administration of polycyclic aromatic compounds for the treatment of T cell-mediated diseases in mammals and compositions useful for treating T cell-mediated diseases. T cell-mediated diseases have been characterized by the induction of cytotoxic T-lymphocytes expressing the CD8 antigen on their cell surface and/or helper T cells expressing the CD4 antigen on their cell surface. These diseases, non-limiting examples being graft-versus-host disease graft rejection, and autoimmune disorders, such as multiple sclerosis, rheumatoid arthritis, Graves diseases Addison's diseases **polymyositis**, insulin dependent diabetes, primary biliary cirrhosis, systemic Lupus erythematosus, psoriasis, scleroderma, represent a large number of host immune system disorders. Graft-versus-host disease may occur when cells of the immune system such as stem cells or lymphocytes are transplanted into an allogeneic host, such as one genetically different at the major histocompatibility complex, which encodes cell surface antigens that give rise to strong immunological reactions. Transplants of cells of the immune system are made for treating certain forms of leukemia, aplastic anemia, and various immunodeficiency diseases. In order to prevent rejection of the foreign cells, the host is typically immunosuppressed, as with irradiation and/or immunosuppressive drugs. The transplanted immunocompetent cells recognize the host as foreign and mount an immune response directed against the host. In humans, the clinical manifestations of this graft-versus-host disease include fever, rash, anorexia, nausea, vomiting and watery or bloody diarrhea, weight loss and death.

Web site: http://www.delphion.com/details?pn=US05514714__

- **Treatment of arthritis disorders, rheumatoid arthritis and manifestations associated with rheumatoid disorders**

Inventor(s): Murray; James (Dorfet, GB), Snorrason; Ernir (Stigahlid 80, 105 Reykjavik, IS)

Assignee(s): Snorrason; Ernir (reykjavik, Is)

Patent Number: 6,358,941

Date filed: May 3, 1999

Abstract: The present invention relates to the use of pharmaceutically acceptable cholinesterase inhibitors for the preparation of a pharmaceutical composition for the treatment or prophylaxis of arthritic disorders, including osteoarthritis, rheumatoid arthritis and other rheumatoid diseases such as Juvenile Arthritis, Systemic Lupus Erythematosus, Sjogren's Syndrome, Progressive Systemic Sclerosis, **Polymyositis**, Dermatomyositis, Ankylosing Spondylitis, Reiter's Syndrome, Psoriatic Arthritis, Relapsing Polychondritis, Relapsing Panniculitis, Crohn's Disease, Ulcerative Colitis, Heredity Complement Deficiencies, Collagen Vascular Diseases, Felty's Syndrome, rheumatological manifestations associated with bacterial and viral endocarditis or myocarditis and other rheumatological manifestations such as anaemia of chronic disorders. The invention also relates to a novel method of treatment or prophylaxis of such diseases and manifestations. Preferably, the cholinesterase inhibitors are selected from a group of nicotinic acetylcholinesterase inhibitors such as galantamine (the name of this drug was previously spelled galanthamine).

Excerpt(s): The present invention relates to the use of pharmaceutically acceptable cholinesterase inhibitors of the preparation of a pharmaceutical composition for the treatment or prophylaxis of arthritic disorders, including osteoarthritis, rheumatoid arthritis and other rheumatoid diseases such as Juvenile Arthritis, Systemic Lupus Erythematosus, Sjogren's Syndrome, Progressive Systemic Sclerosis, **Polymyositis**, Dermatomyositis, Ankylosing Spondylitis, Reiter's Syndrome, Psoriatic Arthritis, Relapsing Polychondritis, Relapsing Panniculitis, Crohn's Disease, Ulcerative Colitis, Hereditary Complement Deficiencies, Collagen Vascular Diseases, Felty's Syndrome, rheumatological manifestations associated with bacterial and viral endocarditis or myocarditis and other rheumatological manifestations such as anaemia of chronic disorders. The invention also relates to a novel method of treatment or prophylaxis of such diseases and manifestations. Preferably, the cholinesterase inhibitors are selected from a group of nicotinic acetylcholinesterase inhibitors such as galantamine (The name of this drug was previously spelled galanthamine). In the present description and claims, the term "rheumatoid" covers any of a variety of disorders marked by degeneration or metabolic derangement of the connective tissue structures of the body, especially the joints and related structures, including muscles, bursae (synovial membranes), tendons and fibrous tissue. They are attended by pain, stiffness, or limitation of motion of these parts. Rheumatoid Arthritis is a chronic, recurrent systemic inflammatory disease primarily of the joints, usually polyarticular, marked by inflammatory changes in the synovial membranes and articular structures and by atrophy and rarefaction of the bones. In late stages deformity and ankylosis develop. Extra-articular manifestations include vasculitis, atrophy of the skin and muscle, subcutaneous nodules, lymphadenopathy, splenomegaly, leukopaenia and often chronic anaemia.

Web site: http://www.delphion.com/details?pn=US06358941__

Patent Applications on Polymyositis

As of December 2000, U.S. patent applications are open to public viewing.¹⁰ Applications are patent requests which have yet to be granted. (The process to achieve a patent can take several years.) The following patent applications have been filed since December 2000 relating to polymyositis:

- **PICORNAVIRUSES, VACCINES AND DIAGNOSTIC KITS**

Inventor(s): NIKLASSON, BO; (STOCKHOLM, SE)

Correspondence: James F. Haley, JR., ESQ.; C/o Fish & Neave; 1251 Avenue OF The Americas - 50th Floor; New York; NY; 10020; US

Patent Application Number: 20030044960

Date filed: March 11, 1999

Abstract: A new group of picornaviruses is disclosed. The picornaviruses of the invention comprise in the non-coding region of their viral genome a nucleotide sequence which corresponds to cDNA sequence (I) or homologous sequences having at least 75% homology to the SEQ ID NO:1, and they cause mammalian disease. Further aspects of the invention comprise a protein corresponding to a protein of the picornaviruses, antiserum or antibody directed against a protein of the picornaviruses, antigen comprising a protein of the picornaviruses, diagnostic kits, vaccines, use of the picornaviruses in medicaments, particularly for the treatment or prevention of Myocarditis, Cardiomyopathy, Guillain Barr Syndrome, and Diabetes Mellitus, Multiple Sclerosis, Chronic Fatigue Syndrome, Myasthenia Gravis, Amyotrophic Lateral Sclerosis, Dermatomyositis, **Polymyositis**, Spontaneous Abortion, and Sudden Infant Death Syndrome, and methods of treatment of diseases caused by the picornaviruses. 1 SEQ ID NO: 1 (Ljungan 87-012) AGTCTAGTCT TATCTTGTAT GTGTCCTGCA CTGAACTTGT 50 TTCTGTCTCT GGAGTGCTCT ACACTTCAGT AGGGGCTGTA CCCGGGCGGT 100 CCCACTCTTC ACAGGAATCT GCACAGGTGG CTTTCACCTC TGGACAGTGC 150 (I) ATTCCACACC CGTCCACGG TAGAAGATGA TGTGTGTCTT TGCTTG TGAA 200 AAGCTTGTGA AAATCGTGTG TAGGCGTAGC GGCTACTTGA GTGCCAGCGG 250 ATTACCCCTA GTGGTAACAC TAGC

Excerpt(s): The present invention relates to new picornaviruses, proteins expressed by the viruses, antisera and antibodies directed against said viruses, antigens comprising structural proteins of said viruses, diagnostic kits, vaccines, use of said viruses, antisera or antibodies and antigens in medicaments, and methods of treating or preventing diseases caused by said viruses, such as Myocarditis, Cardiomyopathy, Guillain Barr Syndrome, and Diabetes Mellitus, Multiple Sclerosis, Chronic Fatigue Syndrome, Myasthenia Gravis, Amyotrophic Lateral Sclerosis, Dermatomyositis, **Polymyositis**, Spontaneous Abortion, and Sudden Infant Death Syndrome. Recently, a sudden death syndrome among Swedish orienteers has been observed. Of approximately 200 elite orienteers six died in myocarditis during 1989-1992 (1). Orienteering, aiming to find the fastest/shortest way between several checkpoints and often in forested areas, is exceptional with respect to environmental exposure. Thus it has been speculated, that the sudden deaths syndrome among orienteers is caused by a vector borne (rodent or arthropod) infectious agent. It has now been shown in an epidemiological study that the incidence of deaths in myocarditis in northern Sweden tracked the 3-4 year population

¹⁰ This has been a common practice outside the United States prior to December 2000.

fluctuations (cycles) of bank voles (*Clethrionomys glareolus*) with one year time lag. Previously, it has been shown that cardioviruses, with rodents as their natural reservoir, can cause Guillain Barr Syndrome (GBS) in man, Diabetes Mellitus (DM) in mice and myocarditis in several species including non-human primates.

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

Keeping Current

In order to stay informed about patents and patent applications dealing with polymyositis, you can access the U.S. Patent Office archive via the Internet at the following Web address: **<http://www.uspto.gov/patft/index.html>**. You will see two broad options: (1) Issued Patent, and (2) Published Applications. To see a list of issued patents, perform the following steps: Under "Issued Patents," click "Quick Search." Then, type "polymyositis" (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 polymyositis.

You can also use this procedure to view pending patent applications concerning polymyositis. Simply go back to **<http://www.uspto.gov/patft/index.html>**. Select "Quick Search" under "Published Applications." Then proceed with the steps listed above.

CHAPTER 5. BOOKS ON POLYMYOSITIS

Overview

This chapter provides bibliographic book references relating to polymyositis. In addition to online booksellers such as **www.amazon.com** and **www.bn.com**, excellent sources for book titles on polymyositis include the Combined Health Information Database and the National Library of Medicine. Your local medical library also may have these titles available for loan.

Book Summaries: Federal Agencies

The Combined Health Information Database collects various book abstracts from a variety of healthcare institutions and federal agencies. To access these summaries, go directly to the following hyperlink: <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 "polymyositis" (or synonyms) into the "For these words:" box. You should check back periodically with this database which is updated every three months. The following is a typical result when searching for books on polymyositis:

- **Kidney in Collagen-Vascular Diseases**

Source: New York, NY: Raven Press, Ltd. 1993. 258 p.

Contact: Available from Raven Press. 1185 Avenue of the Americas, Dept. 5B, New York, NY 10036. (800) 777-2836 or (212) 930-9500. Fax (212) 869-3495. PRICE: \$107.50 plus \$4.95 shipping and handling (as of 1995). ISBN: 0781700213.

Summary: This book brings together current thinking about the effects of various collagen-vascular diseases on the kidney and the diagnostic and therapeutic procedures currently available. These diseases comprise a heterogeneous group of acute and chronic inflammatory, degenerative, and sclerosing processes in the connective tissues and the walls of blood vessels. Eleven chapters cover experimental animal models of systemic lupus erythematosus (SLE); immunology and pathogenesis; lupus-like syndrome; SLE in humans; scleroderma (systemic sclerosis); rheumatoid arthritis and ankylosing spondylitis; mixed connective tissue disease; Sjogren's syndrome; systemic vasculitis;

and other collagen diseases, including relapsing polychondritis, acute rheumatic fever, and polymyositis/dermatomyositis. Each chapter includes numerous references and a subject index concludes the volume.

- **Oxford Textbook of Rheumatology: Volume 2**

Source: New York, NY: Oxford University Press, Inc. 1993. 712 p.

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

Summary: This book for health professionals, which is the second volume of a two-volume set, focuses on various aspects of rheumatic diseases. The first section examines the scope of rheumatic disease. Data on the epidemiology of rheumatic diseases are presented. The nosology of chronic inflammatory diseases is discussed. Features of various rheumatic conditions are detailed, including those of infectious arthritis, rheumatoid arthritis, spondylarthropathies, childhood arthropathies, systemic lupus erythematosus, systemic sclerosis, **polymyositis**, dermatomyositis, Sjogren's syndrome, primary vasculitides, overlap syndromes, miscellaneous inflammatory conditions, soft tissue rheumatism, osteoarthritis, crystal arthropathies, bone and cartilage diseases, spine disorders, and miscellaneous abnormalities of connective tissue structure and function. The second section addresses the issue of rehabilitation, focusing on surgical and nonsurgical approaches to rehabilitation. Numerous references, numerous figures, and numerous tables.

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®). **IMPORTANT NOTE:** Online booksellers typically produce search results for medical and non-medical books. When searching for "polymyositis" at online booksellers' Web sites, you may discover non-medical books that use the generic term "polymyositis" (or a synonym) in their titles. The following is indicative of the results you might find when searching for "polymyositis" (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **Collagen-vascular diseases; systemic lupus erythematosus, acute dermatomyositis-polymyositis, progressive systemic sclerosis, polyarteritis nodosa** by John Harold Talbott; ISBN: 0808908480;
<http://www.amazon.com/exec/obidos/ASIN/0808908480/icongroupinterna>
- **Connective Tissue Diseases: Holistic Therapy Options--Sjogren's Syndrome; Systemic Sclerosis - Scleroderma; Systemic Lupus Erythematosus; Discoid Lupus Erythematosus; Secondary and Primary Raynaud's phenomenon; Raynaud's Disease; Polymyositis & Dermatomyositis** by Hannelore Helbing-Sheafe; ISBN: 1591099803;
<http://www.amazon.com/exec/obidos/ASIN/1591099803/icongroupinterna>
- **Dermatomyositis & polymyositis**; ISBN: 0842271740;
<http://www.amazon.com/exec/obidos/ASIN/0842271740/icongroupinterna>
- **Polymyositis and Dermatomyositis** by Marinos Dalakas; ISBN: 0409951919;
<http://www.amazon.com/exec/obidos/ASIN/0409951919/icongroupinterna>

- **The Official Patient's Sourcebook on Polymyositis: A Revised and Updated Directory for the Internet Age** by Health Publica Icon Health Publications; ISBN: 0597841160; <http://www.amazon.com/exec/obidos/ASIN/0597841160/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 "polymyositis" (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:¹¹

- **Gastrointestinal lesions in polymyositis; a pathologic study.** Author: Godfrey, Thomas Edwin, 1933-; Year: 1961

Chapters on Polymyositis

In order to find chapters that specifically relate to polymyositis, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and polymyositis using the "Detailed Search" option. Go 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." Type "polymyositis" (or synonyms) into the "For these words:" box. The following is a typical result when searching for book chapters on polymyositis:

- **Polymyositis and Dermatomyositis in Adults**

Source: in Maddison, P.J.; et al., Eds. Oxford Textbook of Rheumatology. Volume 2. New York, NY: Oxford University Press, Inc. 1993. p. 794-821.

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

Summary: This chapter for health professionals presents an overview of **polymyositis** (PM) and dermatomyositis (DM) in adults. Data on the epidemiology of these forms of idiopathic inflammatory myopathy are provided. The role of viruses and genetic factors in the etiology of PM and DM is discussed. Animal models are highlighted. The pathogenesis of PM and DM is described, focusing on cellular and humoral immunity. Pathological muscle and skin cell findings in patients with these diseases are presented. The clinical manifestations of PM and DM are discussed, focusing on muscle weakness and rash. Pulmonary, cardiac, and gastrointestinal manifestations associated with these diseases are highlighted. Laboratory abnormalities observed in patients with PM and

¹¹ In addition to LOCATORplus, in collaboration with authors and publishers, the National Center for Biotechnology Information (NCBI) is currently 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>.

DM are presented. The use of electromyography, muscle biopsy, and magnetic resonance imaging in establishing a diagnosis of PM and DM is discussed. Other diseases that need to be considered in the differential diagnosis of PM and DM are identified. Guidelines for the use of drugs to treat PM and DM are offered. The prognosis for patients with PM and DM is considered. 110 references, 11 figures, and 14 tables.

CHAPTER 6. MULTIMEDIA ON POLYMYOSITIS

Overview

In this chapter, we show you how to keep current on multimedia sources of information on polymyositis. 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.

Video Recordings

An excellent source of multimedia information on polymyositis is the Combined Health Information Database. You will need to limit your search to "Videorecording" and "polymyositis" 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.)." Type "polymyositis" (or synonyms) into the "For these words:" box. The following is a typical result when searching for video recordings on polymyositis:

- **Update in Clinical Rheumatology 1992**

Source: Cleveland, OH: Cleveland Clinic Educational Foundation. 1992. (videocassette, exam, proceedings).

Contact: Available from CME Conference Video, Inc. 2000 Crawford Place, Mount Laurel, NJ 08054. (800) 284-8433 or (609) 866-9100. PRICE: \$425.00 plus shipping and handling.

Summary: These materials were produced in conjunction with a symposium designed to familiarize rheumatologists and other health care providers with advancements in the management of rheumatic diseases. Seventeen programs are presented on seven videotapes, covering juvenile rheumatoid arthritis; vasculitis and other connective tissue disorders in children; the rheumatic manifestations of endocrine and metabolic disease; Sjogren's syndrome; the effects of anti-rheumatic drugs on the liver; perplexity in rheumatic disease (case management); entrapment neuropathies; sports medicine for the rheumatologist; chronic fatigue syndrome; the medical management of spinal disease;

anti-phospholipid antibody syndrome; systemic lupus erythematosus and pregnancy; pregnancy in scleroderma, rheumatoid arthritis, and **polymyositis**; and Behcet's syndrome. The section on Behcet's syndrome covers diagnostic criteria, epidemiology, oral aphthous ulcers, genital ulcers, uveitis, synovitis, skin lesions, central nervous system involvement, arteritis, venous occlusions, other lesions, immunopathology, differential diagnosis, and treatment. The section on Sjogren's syndrome (SS) covers diagnostic criteria, prevalence, symptoms and clinical manifestations, the neurologic features of SS, interstitial nephritis, SS-related dysphagia, salivary gland involvement, and treatment issues. The package also includes a detailed syllabus and an examination booklet with which viewers can obtain continuing education credits.

CHAPTER 7. PERIODICALS AND NEWS ON POLYMYOSITIS

Overview

In this chapter, we suggest a number of news sources and present various periodicals that cover polymyositis.

News Services and Press Releases

One of the simplest ways of tracking press releases on polymyositis is to search the news wires. 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

To access the PR Newswire archive, simply go to <http://www.prnewswire.com/>. Select your country. Type “polymyositis” (or synonyms) into the search box. You will automatically receive information on relevant news releases posted within the last 30 days. The search results are shown by order of relevance.

Reuters Health

The Reuters’ Medical News and Health eLine databases can be very useful in exploring news archives relating to polymyositis. While some of the listed articles are free to view, others are available for purchase for a nominal fee. To access this archive, go to <http://www.reutershealth.com/en/index.html> and search by “polymyositis” (or synonyms). The following was recently listed in this archive for polymyositis:

- **Amyloid myopathy may mimic polymyositis**
Source: Reuters Medical News
Date: May 22, 2000

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 the following Web page: <http://www.nlm.nih.gov/medlineplus/newsbydate.html>. Often, news items are indexed by MEDLINEplus within its search engine.

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.

Market Wire

Market Wire is more focused on technology than the other wires. To browse the latest press releases by topic, such as alternative medicine, biotechnology, fitness, healthcare, legal, nutrition, and pharmaceuticals, access Market Wire's Medical/Health channel at http://www.marketwire.com/mw/release_index?channel=MedicalHealth. Or simply go to Market Wire's home page at <http://www.marketwire.com/mw/home>, type "polymyositis" (or synonyms) into the search box, and click on "Search News." As this service is technology oriented, you may wish to use it when searching for press releases covering diagnostic procedures or tests.

Search Engines

Medical news is also available in the news sections of commercial Internet search engines. See the health news page at Yahoo (http://dir.yahoo.com/Health/News_and_Media/), or you can use this Web site's general news search page at <http://news.yahoo.com/>. Type in "polymyositis" (or synonyms). If you know the name of a company that is relevant to polymyositis, you can go to any stock trading Web site (such as <http://www.etrade.com/>) and search for the company name there. News items across various news sources are reported on indicated hyperlinks. Google offers a similar service at <http://news.google.com/>.

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 "polymyositis" (or synonyms).

Newsletters on Polymyositis

Find newsletters on polymyositis using the Combined Health Information Database (CHID). You will need to use the "Detailed Search" option. To access CHID, go to the following

hyperlink: <http://chid.nih.gov/detail/detail.html>. Limit your search to "Newsletter" and "polymyositis." 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." Type "polymyositis" (or synonyms) into the "For these words:" box. The following list was generated using the options described above:

- **Myopathic Diseases**

Source: Bulletin on the Rheumatic Diseases. 51(3): 1-4. 2002.

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 provides health professionals with information on myopathic diseases. Various diseases and conditions affect skeletal muscle and result in symptoms, including weakness, fatigue, and muscle cramping. Myopathies can be classified as idiopathic inflammatory myopathies (IIMs) and metabolic myopathies. IIMs are a heterogeneous group of disorders characterized by symmetric proximal muscle weakness and elevated serum levels of enzymes derived from skeletal muscle. IIMs include **polymyositis** and dermatomyositis in adults, juvenile dermatomyositis, IIM with an associated malignancy, and inclusion body myositis. Metabolic myopathies are the result of known biochemical defects that alter the ability of muscle to maintain adequate levels of adenosine triphosphate. Eleven different diseases caused by an underlying defect in glycogen synthesis, glycogenolysis, or glycolysis have been identified, including McArdle's disease, phosphofructokinase deficiency, and acid maltase deficiency. Various disorders of fatty acid and mitochondrial metabolism can cause myopathy. Other causes of myopathic symptoms include neuropathic infectious agents, neoplasms, and certain drugs. Tests may be needed to diagnose a patient with myopathic symptoms. Tests that measure serum levels of creatine phosphokinase, aldolase, SGOT, SGPT, and LDH may be useful. Electromyography can be used to determine the classification, distribution, and severity of diseases affecting skeletal muscle. Other useful tests include forearm ischemic exercise testing, imaging techniques, and muscle biopsy. Treatment of a myopathic process is dependent on the diagnosis. Glucocorticoids are the standard treatment for the inflammatory myopathies. Other drugs that may be used include methotrexate, azathioprine, cyclosporine, cyclophosphamide, and chlorambucil. 1 table and 16 references.

Newsletter Articles

Use the Combined Health Information Database, and limit your search criteria to "newsletter articles." Again, you will need to use the "Detailed Search" option. Go directly 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." Type "polymyositis" (or synonyms) into the "For these words:" box. You should check back periodically with this database as it is updated every three months. The following is a typical result when searching for newsletter articles on polymyositis:

- **Differences Between Primary and Secondary Sjogren's Syndrome**

Source: Moisture Seekers Newsletter. 16(7): 1, 3. October 1998.

Contact: Available from Sjogren's Syndrome Foundation Inc. 8120 Woodmont Avenue, Suite 530, Bethesda MD 20814-1437. (301) 718-0300 or (800) 475-6473. Fax (301) 718-0322. Website: www.sjogrens.org.

Summary: This article describes the differences between primary and secondary Sjogren's syndrome. The author begins by defining rheumatic diseases as disorders that cause long-term (chronic) inflammation which is principally found in the musculoskeletal system (joints) but also in the muscles, skin, and other structures. In the case of Sjogren's syndrome (SS), the inflammation referred to above affects the so-called exocrine glands. In SS, the exocrine glands affected are the lacrimal and salivary glands, but all the organs in the body may be involved and cause symptoms. The author then lists the rheumatic diseases associated with SS, including rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), **polymyositis**, dermatomyositis, scleroderma, and systemic vasculitis. The author then briefly describes secondary SS and primary SS, then discusses the blood tests used to differentiate between the conditions. Secondary SS means that the patient has SS together with another rheumatic disease. However, the person with primary Sjogren's syndrome frequently has more general symptoms than the patient who also has another disease. People with primary SS often have more symptoms of fatigue, for example. The author concludes that the causal factors for either primary or secondary SS are still relatively unknown.

- **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.

- **Prednisone Pendulum, The**

Source: Lupus News. 20(2): 9. Spring 2000.

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 lupus with information on the psychological effects of prednisone. This drug is one of the most commonly used glucocorticoid medications. Although prednisone has a long history of successfully controlling inflammation, it also has the potential for adverse physiological and psychological effects. Among the psychological effects are mood swings and depression. Sometimes psychological effects are not strong enough to get noticed and attributed to prednisone. Low doses of prednisone, 10 milligrams or less per day, have a low risk of side effects. High doses are usually reserved for severe lupus flares, giant cell arteritis, **polymyositis**, and vasculitis. However, even taking large doses does not always cause major psychological problems because the body is using all the medication to fight the disease. People taking glucocorticoids can reduce the risk of mood swings by taking the medication exactly as prescribed. In addition, they need to talk with their doctor if they experience mood swings.

Academic Periodicals covering Polymyositis

Numerous periodicals are currently indexed within the National Library of Medicine's PubMed database that are known to publish articles relating to polymyositis. In addition to these sources, you can search for articles covering polymyositis that have been published by any of the periodicals listed in previous chapters. To find the latest studies published, go to <http://www.ncbi.nlm.nih.gov/pubmed>, type the name of the periodical into the search box, and click "Go."

If you want complete details about the historical contents of a journal, you can also visit the following Web site: <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."

CHAPTER 8. RESEARCHING MEDICATIONS

Overview

While a number of hard copy or CD-ROM resources are available for researching medications, a more flexible method is to use Internet-based databases. Broadly speaking, there are two sources of information on approved medications: public sources and private sources. We will emphasize free-to-use public sources.

U.S. Pharmacopeia

Because of historical investments by various organizations and the emergence of the Internet, it has become rather simple to learn about the medications recommended for polymyositis. 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 <http://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, located at <http://www.fda.gov/cder/da/da.htm>.

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 Pharmacopeia (USP).

Below, we have compiled a list of medications associated with polymyositis. If you would like more information on a particular medication, the provided hyperlinks will direct you 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 polymyositis:

Azathioprine

- **Systemic - U.S. Brands:** Imuran
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202077.html>

Cyclophosphamide

- **Systemic - U.S. Brands:** Cytosan; Neosar
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202174.html>

Gemfibrozil

- **Systemic - U.S. Brands:** Lopid
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202256.html>

Commercial Databases

In addition to the medications listed in the USP above, a number of commercial sites are available by subscription to physicians and their institutions. Or, you may be able to access these sources from your local medical library.

Mosby's Drug Consult™

Mosby's Drug Consult™ 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. Subscription information is available at the following hyperlink: <http://www.mosbysdrugconsult.com/>.

PDRhealth

The PDRhealth database is a free-to-use, drug information search engine that has been written for the public in layman's terms. It contains FDA-approved drug information adapted from the Physicians' Desk Reference (PDR) database. PDRhealth can be searched by brand name, generic name, or indication. It features multiple drug interactions reports. Search PDRhealth at http://www.pdrhealth.com/drug_info/index.html.

Other Web Sites

Drugs.com (www.drugs.com) reproduces the information in the Pharmacopeia as well as commercial information. You may also want to consider the Web site of the Medical Letter, Inc. (<http://www.medletter.com/>) which allows users to download articles on various drugs and therapeutics for a nominal fee.

If you have any questions about a 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.

APPENDICES

APPENDIX A. PHYSICIAN RESOURCES

Overview

In this chapter, we focus on databases and Internet-based guidelines and information resources created or written for a professional audience.

NIH Guidelines

Commonly referred to as “clinical” or “professional” guidelines, the National Institutes of Health publish physician guidelines for the most common diseases. Publications are available at the following by relevant Institute¹²:

- 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 Cancer Institute (NCI); guidelines available at <http://www.cancer.gov/cancerinfo/list.aspx?viewid=5f35036e-5497-4d86-8c2c-714a9f7c8d25>
- National Eye Institute (NEI); guidelines available at <http://www.nei.nih.gov/order/index.htm>
- National Heart, Lung, and Blood Institute (NHLBI); guidelines available at <http://www.nhlbi.nih.gov/guidelines/index.htm>
- National Human Genome Research Institute (NHGRI); research available at <http://www.genome.gov/page.cfm?pageID=10000375>
- National Institute on Aging (NIA); guidelines available at <http://www.nia.nih.gov/health/>

¹² These publications are typically written by one or more of the various NIH Institutes.

- National Institute on Alcohol Abuse and Alcoholism (NIAAA); guidelines available at <http://www.niaaa.nih.gov/publications/publications.htm>
- National Institute of Allergy and Infectious Diseases (NIAID); guidelines available at <http://www.niaid.nih.gov/publications/>
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS); fact sheets and guidelines available at <http://www.niams.nih.gov/hi/index.htm>
- National Institute of Child Health and Human Development (NICHD); guidelines available at <http://www.nichd.nih.gov/publications/pubskey.cfm>
- National Institute on Deafness and Other Communication Disorders (NIDCD); fact sheets and guidelines at <http://www.nidcd.nih.gov/health/>
- National Institute of Dental and Craniofacial Research (NIDCR); guidelines available at <http://www.nidr.nih.gov/health/>
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); guidelines available at <http://www.niddk.nih.gov/health/health.htm>
- National Institute on Drug Abuse (NIDA); guidelines available at <http://www.nida.nih.gov/DrugAbuse.html>
- National Institute of Environmental Health Sciences (NIEHS); environmental health information available at <http://www.niehs.nih.gov/external/facts.htm>
- National Institute of Mental Health (NIMH); guidelines available at <http://www.nimh.nih.gov/practitioners/index.cfm>
- National Institute of Neurological Disorders and Stroke (NINDS); neurological disorder information pages available at http://www.ninds.nih.gov/health_and_medical/disorder_index.htm
- National Institute of Nursing Research (NINR); publications on selected illnesses at <http://www.nih.gov/ninr/news-info/publications.html>
- National Institute of Biomedical Imaging and Bioengineering; general information at http://grants.nih.gov/grants/becon/becon_info.htm
- Center for Information Technology (CIT); referrals to other agencies based on keyword searches available at http://kb.nih.gov/www_query_main.asp
- National Center for Complementary and Alternative Medicine (NCCAM); health information available at <http://nccam.nih.gov/health/>
- National Center for Research Resources (NCRR); various information directories available at <http://www.ncrr.nih.gov/publications.asp>
- Office of Rare Diseases; various fact sheets available at http://rarediseases.info.nih.gov/html/resources/rep_pubs.html
- Centers for Disease Control and Prevention; various fact sheets on infectious diseases available at <http://www.cdc.gov/publications.htm>

NIH Databases

In addition to the various Institutes of Health that publish professional guidelines, the NIH has designed a number of databases for professionals.¹³ 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:¹⁴

- **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/aidsinfo.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
- **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

¹³ 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>).

¹⁴ See <http://www.nlm.nih.gov/databases/databases.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

The NLM Gateway¹⁵

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.¹⁶ To use the NLM Gateway, simply go to the search site at <http://gateway.nlm.nih.gov/gw/Cmd>. Type "polymyositis" (or synonyms) into the search box and click "Search." The results will be presented in a tabular form, indicating the number of references in each database category.

Results Summary

Category	Items Found
Journal Articles	6425
Books / Periodicals / Audio Visual	21
Consumer Health	34
Meeting Abstracts	16
Other Collections	28
Total	6524

HSTAT¹⁷

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.¹⁸ These documents include 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.¹⁹ Simply search by "polymyositis" (or synonyms) at the following Web site: <http://text.nlm.nih.gov>.

¹⁵ Adapted from NLM: <http://gateway.nlm.nih.gov/gw/Cmd?Overview.x>.

¹⁶ 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).

¹⁷ Adapted from HSTAT: <http://www.nlm.nih.gov/pubs/factsheets/hstat.html>.

¹⁸ The HSTAT URL is <http://hstat.nlm.nih.gov/>.

¹⁹ 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.

Coffee Break: Tutorials for Biologists²⁰

Coffee Break is 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. Here you will find 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.²¹ 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.²² This site has new articles every few weeks, so it can be considered an online magazine of sorts. It is intended for general background information. You can access the Coffee Break Web site at the following hyperlink: <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 some 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/>.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see <http://www.mwsearch.com/>.

The Genome Project and Polymyositis

In the following section, we will discuss databases and references which relate to the Genome Project and polymyositis.

Online Mendelian Inheritance in Man (OMIM)

The Online Mendelian Inheritance in Man (OMIM) database is a catalog of human genes and genetic disorders authored and edited by Dr. Victor A. McKusick and his colleagues at Johns Hopkins and elsewhere. OMIM was developed for the World Wide Web by the National Center for Biotechnology Information (NCBI).²³ The database contains textual information, pictures, and reference information. It also contains copious links to NCBI's Entrez database of MEDLINE articles and sequence information.

²⁰ Adapted from <http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html>.

²¹ 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.

²² 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.

²³ Adapted from <http://www.ncbi.nlm.nih.gov/>. Established in 1988 as a national resource for molecular biology information, NCBI creates public databases, conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information—all for the better understanding of molecular processes affecting human health and disease.

To search the database, go to <http://www.ncbi.nlm.nih.gov/Omim/searchomim.html>. Type “polymyositis” (or synonyms) into the search box, and click “Submit Search.” If too many results appear, you can narrow the search by adding the word “clinical.” Each report will have additional links to related research and databases. In particular, the option “Database Links” will search across technical databases that offer an abundance of information. The following is an example of the results you can obtain from the OMIM for polymyositis:

- **Polymyositis/scleroderma Autoantigen 1**
Web site: <http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=606180>
- **Polymyositis/scleroderma Autoantigen 2**
Web site: <http://www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=605960>

Genes and Disease (NCBI - Map)

The Genes and Disease database is produced by the National Center for Biotechnology Information of the National Library of Medicine at the National Institutes of Health. This Web site categorizes each disorder by system of the body. Go to <http://www.ncbi.nlm.nih.gov/disease/>, and browse the system pages to have a full view of important conditions linked to human genes. Since this site is regularly updated, you may wish to revisit it from time to time. The following systems and associated disorders are addressed:

- **Cancer:** Uncontrolled cell division.
Examples: Breast and ovarian cancer, Burkitt lymphoma, chronic myeloid leukemia, colon cancer, lung cancer, malignant melanoma, multiple endocrine neoplasia, neurofibromatosis, p53 tumor suppressor, pancreatic cancer, prostate cancer, Ras oncogene, RB: retinoblastoma, von Hippel-Lindau syndrome.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Cancer.html>
- **Immune System:** Fights invaders.
Examples: Asthma, autoimmune polyglandular syndrome, Crohn’s disease, DiGeorge syndrome, familial Mediterranean fever, immunodeficiency with Hyper-IgM, severe combined immunodeficiency.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Immune.html>
- **Metabolism:** Food and energy.
Examples: Adreno-leukodystrophy, atherosclerosis, Best disease, Gaucher disease, glucose galactose malabsorption, gyrate atrophy, juvenile-onset diabetes, obesity, paroxysmal nocturnal hemoglobinuria, phenylketonuria, Refsum disease, Tangier disease, Tay-Sachs disease.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Metabolism.html>
- **Muscle and Bone:** Movement and growth.
Examples: Duchenne muscular dystrophy, Ellis-van Creveld syndrome, Marfan syndrome, myotonic dystrophy, spinal muscular atrophy.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Muscle.html>
- **Nervous System:** Mind and body.
Examples: Alzheimer disease, amyotrophic lateral sclerosis, Angelman syndrome, Charcot-Marie-Tooth disease, epilepsy, essential tremor, fragile X syndrome, Friedreich’s ataxia, Huntington disease, Niemann-Pick disease, Parkinson disease,

Prader-Willi syndrome, Rett syndrome, spinocerebellar atrophy, Williams syndrome.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Brain.html>

- **Signals:** Cellular messages.
Examples: Ataxia telangiectasia, Cockayne syndrome, glaucoma, male-patterned baldness, SRY: sex determination, tuberous sclerosis, Waardenburg syndrome, Werner syndrome.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Signals.html>
- **Transporters:** Pumps and channels.
Examples: Cystic fibrosis, deafness, diastrophic dysplasia, Hemophilia A, long-QT syndrome, Menkes syndrome, Pendred syndrome, polycystic kidney disease, sickle cell anemia, Wilson's disease, Zellweger syndrome.
Web site: <http://www.ncbi.nlm.nih.gov/disease/Transporters.html>

Entrez

Entrez is a search and retrieval system that integrates several linked databases at the National Center for Biotechnology Information (NCBI). These databases include nucleotide sequences, protein sequences, macromolecular structures, whole genomes, and MEDLINE through PubMed. Entrez provides access to the following databases:

- **3D Domains:** Domains from Entrez Structure,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo>
- **Books:** Online books,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=books>
- **Genome:** Complete genome assemblies,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Genome>
- **NCBI's Protein Sequence Information Survey Results:**
Web site: <http://www.ncbi.nlm.nih.gov/About/proteinsurvey/>
- **Nucleotide Sequence Database (Genbank):**
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Nucleotide>
- **OMIM:** Online Mendelian Inheritance in Man,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM>
- **PopSet:** Population study data sets,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Popset>
- **ProbeSet:** Gene Expression Omnibus (GEO),
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo>
- **Protein Sequence Database:**
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Protein>
- **PubMed:** Biomedical literature (PubMed),
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed>
- **Structure:** Three-dimensional macromolecular structures,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Structure>
- **Taxonomy:** Organisms in GenBank,
Web site: <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Taxonomy>

To access the Entrez system at the National Center for Biotechnology Information, go to <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=genome>, and then select the database that you would like to search. The databases available are listed in the drop box next to "Search." Enter "polymyositis" (or synonyms) into the search box and click "Go."

Jablonski's Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes Database²⁴

This online resource has been developed to facilitate the identification and differentiation of syndromic entities. Special attention is given to the type of information that is usually limited or completely omitted in existing reference sources due to space limitations of the printed form.

At http://www.nlm.nih.gov/mesh/jablonski/syndrome_toc/toc_a.html, you can search across syndromes using an alphabetical index. Search by keywords at http://www.nlm.nih.gov/mesh/jablonski/syndrome_db.html.

The Genome Database²⁵

Established at Johns Hopkins University in Baltimore, Maryland in 1990, the Genome Database (GDB) is the official central repository for genomic mapping data resulting from the Human Genome Initiative. In the spring of 1999, the Bioinformatics Supercomputing Centre (BiSC) at the Hospital for Sick Children in Toronto, Ontario assumed the management of GDB. The Human Genome Initiative is a worldwide research effort focusing on structural analysis of human DNA to determine the location and sequence of the estimated 100,000 human genes. In support of this project, GDB stores and curates data generated by researchers worldwide who are engaged in the mapping effort of the Human Genome Project (HGP). GDB's mission is to provide scientists with an encyclopedia of the human genome which is continually revised and updated to reflect the current state of scientific knowledge. Although GDB has historically focused on gene mapping, its focus will broaden as the Genome Project moves from mapping to sequence, and finally, to functional analysis.

To access the GDB, simply go to the following hyperlink: <http://www.gdb.org/>. Search "All Biological Data" by "Keyword." Type "polymyositis" (or synonyms) into the search box, and review the results. If more than one word is used in the search box, then separate each one with the word "and" or "or" (using "or" might be useful when using synonyms).

²⁴ Adapted from the National Library of Medicine:
http://www.nlm.nih.gov/mesh/jablonski/about_syndrome.html.

²⁵ Adapted from the Genome Database: <http://gdbwww.gdb.org/gdb/aboutGDB.html> - mission.

APPENDIX B. PATIENT RESOURCES

Overview

Official agencies, as well as federally funded institutions supported by national grants, frequently publish a variety of guidelines written with the patient in mind. 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. Since new guidelines on polymyositis 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.

Patient Guideline Sources

The remainder of this chapter directs you to sources which either publish or can help you find additional guidelines on topics related to polymyositis. 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.

The National Institutes of Health

The NIH gateway to patients is located at <http://health.nih.gov/>. From this site, you can search across various sources and institutes, a number of which are summarized below.

Topic Pages: MEDLINEplus

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” which list links to available materials relevant to polymyositis. 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. Recently, MEDLINEplus listed the following when searched for “polymyositis”:

Arthritis

<http://www.nlm.nih.gov/medlineplus/arthritis.html>

Lupus

<http://www.nlm.nih.gov/medlineplus/lupus.html>

Muscle Disorders

<http://www.nlm.nih.gov/medlineplus/muscledisorders.html>

Myositis

<http://www.nlm.nih.gov/medlineplus/myositis.html>

Neuromuscular Disorders

<http://www.nlm.nih.gov/medlineplus/neuromusculardisorders.html>

Within the health topic page dedicated to polymyositis, the following was listed:

- General/Overviews

Myositis

Source: American Academy of Orthopaedic Surgeons

http://orthoinfo.aaos.org/fact/thr_report.cfm?thread_id=266&topcategory=about%2520orthopaedics

Myositis FAQ

Source: Myositis Association of America

http://www.myositis.org/about_myositis/faq_general.cfm

- Diagnosis/Symptoms

Creatine Kinase Test

Source: Muscular Dystrophy Association

<http://www.mdausa.org/publications/Quest/q71ss-cktest.html>

- Treatment

How Rheumatologists Use Chemotherapy

Source: Cleveland Clinic Foundation

<http://www.clevelandclinic.org/arthritis/treat/facts/chemo.htm>

Prednisone

<http://www.myasthenia.org/information/prednisone.pdf>

- Nutrition

Polymyositis: Can a Gluten-Free Diet Help?

Source: Mayo Foundation for Medical Education and Research

<http://www.mayoclinic.com/invoke.cfm?id=AN00572>

- Specific Conditions/Aspects

Dermatomyositis

Source: Mayo Foundation for Medical Education and Research

<http://www.mayoclinic.com/invoke.cfm?id=DS00335>

Dermatomyositis

Source: National Institute of Neurological Disorders and Stroke

http://www.ninds.nih.gov/health_and_medical/disorders/dermato_doc.htm

Inclusion Body Myositis

Source: National Institute of Neurological Disorders and Stroke

http://www.ninds.nih.gov/health_and_medical/disorders/inclusion_doc.htm

- Children

Juvenile Dermatomyositis

Source: Arthritis Foundation

<http://www.arthritis.org/conditions/DiseaseCenter/jdms.asp>

- Organizations

American Autoimmune Related Diseases Association

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

Muscular Dystrophy Association

<http://www.mdausa.org/>

Myositis Association of America

<http://www.myositis.org/>

National Institute of Arthritis and Musculoskeletal and Skin Diseases

<http://www.niams.nih.gov/>

National Institute of Neurological Disorders and Stroke

<http://www.ninds.nih.gov/>

You may also choose to use the search utility provided by MEDLINEplus at the following Web address: <http://www.nlm.nih.gov/medlineplus/>. Simply type a keyword into the search box and click "Search." This utility is similar to the NIH search utility, with the exception that it only includes materials that are 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 polymyositis. CHID 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:

- Polymyositis and Dermatomyositis

Source: Detroit, MI: American Autoimmune Related Diseases Association, Inc. 199x. 4 p.

Contact: Available from American Autoimmune Related Diseases Association, Inc. (AARDA). Michigan National Bank Building, 15475 Gratiot Avenue, Detroit, MI 48205.

(313) 371-8600. Website: www.aarda.org. PRICE: Single copy free; send self-addressed, stamped envelope.

Summary: This fact sheet for people with **polymyositis** (PM) or dermatomyositis (DM) discusses the affected population, symptoms, diagnosis, and treatment of these autoimmune neuromuscular diseases. Although these diseases are more common in women, they can occur at any age and in both sexes. The main clinical feature is proximal limb and neck weakness. Persons with dermatomyositis may develop a purplish rash on the face and upper chest. Diagnosis is based on medical history, physical examination, and other routine laboratory tests such as manual muscle testing, muscle biopsy, electromyography, and nerve conduction velocity studies. Corticosteroid therapy is the frequently used to treat these diseases, although other drugs, intravenous gamma globulins, and exercise may also be prescribed. The fact sheet also explains what autoimmunity is, describes some of the antibodies found in persons with PM and DM, lists other common autoimmune diseases, and outlines the activities of the American Autoimmune Related Diseases Association.

- **Classification Criteria for Dermatomyositis and Polymyositis**

Source: Harrisonburg, VA: Myositis Association of America, Inc. 1998. 1 p.

Contact: Available from Myositis Association of America, Inc. 600-D University Blvd., Suite 104, Harrisonburg, VA 22801. (540) 433-7686. Fax (540) 432-0206. E-mail: maa@myositis.org. Website: www.myositis.org. PRICE: Contact organization.

Summary: This fact sheet provides health professionals with information on the classification criteria for dermatomyositis (DM) and **polymyositis** (PM). Criteria include skin lesions such as heliotrope rash, Gottron's sign, and erythema on the extensor surface of extremity joints; proximal muscle weakness; elevated serum creatine kinase or aldolase level; spontaneous pain or muscle pain on grasping; myogenic changes on EMG; positive anti-Jo-1 antibody; nondestructive arthritis or arthralgias; systemic inflammatory signs; and pathological findings compatible with inflammatory myositis. The fact sheet explains how clinicians can use the criteria to diagnose DM or PM.

- **Facts About the Inflammatory Myopathies. Polymyositis, Dermatomyositis, Inclusion Body Myositis, and Juvenile Myositis**

Source: Harrisonburg, VA: Myositis Association of America. 1996. 10 p.

Contact: Myositis Association of America, 1420 Huron Court, Harrisonburg, VA 22801. (540) 433-7686. (540) 432-0206 (fax).

Summary: This pamphlet for individuals with myositis presents an overview of the inflammatory myopathies. It discusses dermatomyositis, **polymyositis**, inclusion body myositis, and juvenile myositis in terms of their symptoms and treatment. In addition, the pamphlet highlights the activities of the Myositis Association of America.

Healthfinder™

Healthfinder™ is sponsored by the U.S. Department of Health and Human Services and 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:

- **Polymyositis**

Summary: A general overview of polymyositis that includes a description of the disorder, and treatment, prognosis and research information.

Source: National Institute of Neurological Disorders and Stroke, National Institutes of Health

<http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=786>

- **What is Myositis**

Summary: Basic information for consumers about the inflammatory myopathies, dermatomyositis, polymyositis, and inclusion body myositis -- a group of muscle diseases that are considered to be autoimmune

Source: Myositis Association of America

<http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=2355>

The NIH Search Utility

The NIH search utility 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 polymyositis. 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 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 <http://www.rarediseases.org/>. A complete guide on polymyositis can be purchased from NORD for a nominal fee.

Additional Web Sources

A number of Web sites are available to the public that often link to government sites. 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>
- 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

Associations and Polymyositis

The following is a list of associations that provide information on and resources relating to polymyositis:

- **Dermatomyositis and Polymyositis Support Group**

Telephone: 023 80 449708

Fax: 023 80 396402

Email: support@myositis.org.uk

Web Site: www.myositis.org.uk

Background: The Dermatomyositis and **Polymyositis** Support Group, based in the United Kingdom, offers support and advice for the following rare forms of myositis: dermatomyositis, **polymyositis**, inclusion body myositis, juvenile dermatomyositis. It raises funds to support research and is now working in collaboration with the Myositis Association of America to ensure that all sufferers and their families receive good information and advice, and that research is optimized.

Relevant area(s) of interest: Polymyositis

Finding Associations

There are several Internet directories that provide lists of medical associations with information on or resources relating to polymyositis. By consulting all of associations listed in this chapter, you will have nearly exhausted all sources for patient associations concerned with polymyositis.

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 polymyositis. 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.

Directory of Health Organizations

The Directory of Health Organizations, provided by the National Library of Medicine Specialized Information Services, is a comprehensive source of information on associations. The Directory of Health Organizations database can be accessed via the Internet at <http://www.sis.nlm.nih.gov/Dir/DirMain.html>. It is composed of two parts: DIRLINE and Health Hotlines.

The DIRLINE database comprises some 10,000 records of organizations, research centers, and government institutes and associations that primarily focus on health and biomedicine. To access DIRLINE directly, go to the following Web site: <http://dirline.nlm.nih.gov/>. Simply type in “polymyositis” (or a synonym), and you will receive information on all relevant organizations listed in the database.

Health Hotlines directs you to toll-free numbers to over 300 organizations. You can access this database directly at <http://www.sis.nlm.nih.gov/hotlines/>. On this page, you are given the option to search by keyword or by browsing the subject list. When you have received your search results, click on the name of the organization for its description and contact information.

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 “polymyositis”. 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.” Type “polymyositis” (or synonyms) into the “For these words:” box. You should check back periodically with this database since it is updated every three 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 health topic. You can access this database at the following Web site: <http://www.rarediseases.org/search/orgsearch.html>. Type “polymyositis” (or a synonym) into the search box, and click “Submit Query.”

APPENDIX C. FINDING MEDICAL LIBRARIES

Overview

In this Appendix, we show you how to quickly find a medical library in your area.

Preparation

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. If you would like to access NLM medical literature, then visit a library in your area that can request the publications for you.²⁶

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 in the U.S. and Canada

In addition to the NN/LM, the National Library of Medicine (NLM) lists a number of libraries with reference facilities that are open to the public. The following is the NLM's list and includes hyperlinks to each library's Web site. These Web pages can provide information on hours of operation and other restrictions. The list below is a small sample of

²⁶ Adapted from the NLM: <http://www.nlm.nih.gov/psd/cas/interlibrary.html>.

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)²⁷:

- **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)
- **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, Humboldt), <http://www.humboldt1.com/~kkhic/index.html>
- **California:** 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/>
- **California:** Patient Education Resource Center - Health Information and Resources (University of California, San Francisco), <http://sfghdean.ucsf.edu/barnett/PERC/default.asp>
- **California:** Redwood Health Library (Petaluma Health Care District), <http://www.phcd.org/rdwdlib.html>
- **California:** Los Gatos PlaneTree Health Library, <http://planetreesanjose.org/>
- **California:** Sutter Resource Library (Sutter Hospitals Foundation, Sacramento), <http://suttermedicalcenter.org/library/>
- **California:** Health Sciences Libraries (University of California, Davis), <http://www.lib.ucdavis.edu/healthsci/>
- **California:** ValleyCare Health Library & Ryan Comer Cancer Resource Center (ValleyCare Health System, Pleasanton), <http://gaenet.stmarys-ca.edu/other.libs/gbal/east/vchl.html>
- **California:** Washington Community Health Resource Library (Fremont), <http://www.healthlibrary.org/>
- **Colorado:** William V. Gervasini Memorial Library (Exempla Healthcare), <http://www.saintjosephdenver.org/yourhealth/libraries/>
- **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/>

²⁷ Abstracted from <http://www.nlm.nih.gov/medlineplus/libraries.html>.

- **Connecticut:** Waterbury Hospital Health Center Library (Waterbury Hospital, Waterbury), <http://www.waterburyhospital.com/library/consumer.shtml>
- **Delaware:** Consumer Health Library (Christiana Care Health System, Eugene du Pont Preventive Medicine & Rehabilitation Institute, Wilmington), http://www.christianacare.org/health_guide/health_guide_pmri_health_info.cfm
- **Delaware:** Lewis B. Flinn Library (Delaware Academy of Medicine, Wilmington), <http://www.delamed.org/chls.html>
- **Georgia:** Family Resource Library (Medical College of Georgia, Augusta), http://cmc.mcg.edu/kids_families/fam_resources/fam_res_lib/frl.htm
- **Georgia:** Health Resource Center (Medical Center of Central Georgia, Macon), <http://www.mccg.org/hrc/hrchome.asp>
- **Hawaii:** Hawaii Medical Library: Consumer Health Information Service (Hawaii Medical Library, Honolulu), <http://hml.org/CHIS/>
- **Idaho:** DeArmond Consumer Health Library (Kootenai Medical Center, Coeur d'Alene), <http://www.nicon.org/DeArmond/index.htm>
- **Illinois:** Health Learning Center of Northwestern Memorial Hospital (Chicago), http://www.nmh.org/health_info/hlc.html
- **Illinois:** Medical Library (OSF Saint Francis Medical Center, Peoria), <http://www.osfsaintfrancis.org/general/library/>
- **Kentucky:** Medical Library - Services for Patients, Families, Students & the Public (Central Baptist Hospital, Lexington), <http://www.centralbap.com/education/community/library.cfm>
- **Kentucky:** University of Kentucky - Health Information Library (Chandler Medical Center, Lexington), <http://www.mc.uky.edu/PatientEd/>
- **Louisiana:** Alton Ochsner Medical Foundation Library (Alton Ochsner Medical Foundation, New Orleans), <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, Farmington), <http://www.fchn.org/fmh/lib.htm>
- **Maine:** Gerrish-True Health Sciences Library (Central Maine Medical Center, Lewiston), <http://www.cmmc.org/library/library.html>
- **Maine:** Hadley Parrot Health Science Library (Eastern Maine Healthcare, Bangor), <http://www.emh.org/hll/hpl/guide.htm>
- **Maine:** Maine Medical Center Library (Maine Medical Center, Portland), <http://www.mmc.org/library/>
- **Maine:** Parkview Hospital (Brunswick), <http://www.parkviewhospital.org/>
- **Maine:** Southern Maine Medical Center Health Sciences Library (Southern Maine Medical Center, Biddeford), <http://www.smmc.org/services/service.php3?choice=10>
- **Maine:** Stephens Memorial Hospital's Health Information Library (Western Maine Health, Norway), <http://www.wmhcc.org/Library/>

- **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, Winnipeg), http://www.deerlodge.mb.ca/crane_library/about.asp
- **Maryland:** Health Information Center at the Wheaton Regional Library (Montgomery County, 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, Lowell), <http://www.lowellgeneral.org/library/HomePageLinks/WWW.htm>
- **Massachusetts:** Paul E. Woodard Health Sciences Library (New England Baptist Hospital, Boston), http://www.nebh.org/health_lib.asp
- **Massachusetts:** St. Luke's Hospital Health Sciences Library (St. Luke's Hospital, Southcoast Health System, New Bedford), <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, Worcester), <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, Ann Arbor), <http://www.cancer.med.umich.edu/learn/leares.htm>
- **Michigan:** Sladen Library & Center for Health Information Resources - Consumer Health Information (Detroit), <http://www.henryford.com/body.cfm?id=39330>
- **Montana:** Center for Health Information (St. Patrick Hospital and Health Sciences Center, Missoula)
- **National:** Consumer Health Library Directory (Medical Library Association, Consumer and Patient Health Information Section), <http://caphis.mlanet.org/directory/index.html>
- **National:** National Network of Libraries of Medicine (National Library of Medicine) - provides library services for health professionals in the United States who do not have access to a medical library, <http://nnlm.gov/>
- **National:** NN/LM List of Libraries Serving the Public (National Network of Libraries of Medicine), <http://nnlm.gov/members/>

- **Nevada:** Health Science Library, West Charleston Library (Las Vegas-Clark County Library District, Las Vegas), http://www.lvcld.org/special_collections/medical/index.htm
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library, Hanover), <http://www.dartmouth.edu/~biomed/resources.html#conshealth.html#d/>
- **New Jersey:** Consumer Health Library (Rahway Hospital, Rahway), <http://www.rahwayhospital.com/library.htm>
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center, Englewood), <http://www.englewoodhospital.com/links/index.htm>
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center, Englewood), <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, Syracuse), <http://www.upstate.edu/library/hic/>
- **New York:** Health Sciences Library (Long Island Jewish Medical Center, New Hyde Park), <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:** The Health Information Center at Saint Francis Hospital (Saint Francis Health System, Tulsa), <http://www.sfh-tulsa.com/services/healthinfo.asp>
- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center, The Dalles), <http://www.mcmc.net/phrc/>
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center, Hershey), <http://www.hmc.psu.edu/commhealth/>
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center, Danville), <http://www.geisinger.edu/education/commmlib.shtml>
- **Pennsylvania:** HealthInfo Library (Moses Taylor Hospital, Scranton), <http://www.mth.org/healthwellness.html>
- **Pennsylvania:** Hopwood Library (University of Pittsburgh, Health Sciences Library System, Pittsburgh), http://www.hsls.pitt.edu/guides/chi/hopwood/index_html
- **Pennsylvania:** Koop Community Health Information Center (College of Physicians of Philadelphia), <http://www.collphyphil.org/kooppg1.shtml>
- **Pennsylvania:** Learning Resources Center - Medical Library (Susquehanna Health System, Williamsport), <http://www.shscare.org/services/lrc/index.asp>
- **Pennsylvania:** Medical Library (UPMC Health System, Pittsburgh), <http://www.upmc.edu/passavant/library.htm>
- **Quebec, Canada:** Medical Library (Montreal General Hospital), <http://www.mghlib.mcgill.ca/>

- **South Dakota:** Rapid City Regional Hospital Medical Library (Rapid City Regional Hospital), <http://www.rcrh.org/Services/Library/Default.asp>
- **Texas:** Houston HealthWays (Houston Academy of Medicine-Texas Medical Center Library), <http://hhw.library.tmc.edu/>
- **Washington:** Community Health Library (Kittitas Valley Community Hospital), <http://www.kvch.com/>
- **Washington:** Southwest Washington Medical Center Library (Southwest Washington Medical Center, Vancouver), <http://www.swmedicalcenter.com/body.cfm?id=72>

ONLINE GLOSSARIES

The Internet provides access to a number of free-to-use medical dictionaries. 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://cancerweb.ncl.ac.uk/omd/>
- Rare Diseases Terms (Office of Rare Diseases):
<http://ord.aspensys.com/asp/diseases/diseases.asp>
- Technology Glossary (National Library of Medicine) - Health Care Technology:
<http://www.nlm.nih.gov/nichsr/ta101/ta10108.htm>

Beyond these, MEDLINEplus contains a very patient-friendly encyclopedia covering every aspect of medicine (licensed from A.D.A.M., Inc.). The ADAM Medical Encyclopedia can be accessed at <http://www.nlm.nih.gov/medlineplus/encyclopedia.html>. ADAM is also available on commercial Web sites such as drkoop.com (<http://www.drkoop.com/>) and Web MD (http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a). The NIH suggests the following Web sites in the ADAM Medical Encyclopedia when searching for information on polymyositis:

- **Basic Guidelines for Polymyositis**

Myasthenia gravis

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000712.htm>

Polymyositis (adult)

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000428.htm>

- **Signs & Symptoms for Polymyositis**

Cough

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003072.htm>

Difficulty swallowing

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003115.htm>

Dysphagia

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003115.htm>

Dysphonia

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003054.htm>

Dyspnea

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm>

Fever

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003090.htm>

Hand tremor

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003192.htm>

Joint pain

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003261.htm>

Lung disease

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000066.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>

Muscle weakness

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003174.htm>

Rales

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003323.htm>

Rash

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003220.htm>

Shortness of breath

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003075.htm>

Weakness

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003174.htm>

- **Diagnostics and Tests for Polymyositis**

Aldolase

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003566.htm>

ALT

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003473.htm>

AST

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003472.htm>

Biopsy

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003416.htm>

Chest X-ray

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003804.htm>

CPK

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003503.htm>

Creatine kinase

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003503.htm>

CT

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003330.htm>

Electromyography

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003929.htm>

EMG

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003929.htm>

ESR

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003638.htm>

LDH

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003471.htm>

MRI

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003335.htm>

Muscle biopsy

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003924.htm>

Serum aldolase

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003566.htm>

Serum creatinine

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003475.htm>

TSH

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003684.htm>

X-ray

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003337.htm>

- **Background Topics for Polymyositis**

Aspiration

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002216.htm>

Chronic

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002312.htm>

Electrolytes

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002350.htm>

Heart disease

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000147.htm>

Incidence

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002387.htm>

Malignancy

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002253.htm>

Proximal

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002287.htm>

Respiratory

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002290.htm>

Systemic

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002294.htm>

Online Dictionary Directories

The following are additional online directories compiled by the National Library of Medicine, including a number of specialized medical dictionaries:

- 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>

POLYMYOSITIS DICTIONARY

The definitions below are derived from official public sources, including the National Institutes of Health [NIH] and the European Union [EU].

Abdominal: Having to do with the abdomen, which is the part of the body between the chest and the hips that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs. [NIH]

Abdominal Pain: Sensation of discomfort, distress, or agony in the abdominal region. [NIH]

Abortion: 1. The premature expulsion from the uterus of the products of conception - of the embryo, or of a nonviable fetus. The four classic symptoms, usually present in each type of abortion, are uterine contractions, uterine haemorrhage, softening and dilatation of the cervix, and presentation or expulsion of all or part of the products of conception. 2. Premature stoppage of a natural or a pathological process. [EU]

Abscess: A localized, circumscribed collection of pus. [NIH]

Acantholysis: Separation of the prickle cells of the stratum spinosum of the epidermis, resulting in atrophy of the prickle cell layer. It is seen in diseases such as pemphigus vulgaris (see pemphigus) and keratosis follicularis. [NIH]

Acetylcholine: A neurotransmitter. Acetylcholine in vertebrates is the major transmitter at neuromuscular junctions, autonomic ganglia, parasympathetic effector junctions, a subset of sympathetic effector junctions, and at many sites in the central nervous system. It is generally not used as an administered drug because it is broken down very rapidly by cholinesterases, but it is useful in some ophthalmological applications. [NIH]

Acetylcholinesterase: An enzyme that catalyzes the hydrolysis of acetylcholine to choline and acetate. In the CNS, this enzyme plays a role in the function of peripheral neuromuscular junctions. EC 3.1.1.7. [NIH]

Actin: Essential component of the cell skeleton. [NIH]

Acute Disease: Disease having a short and relatively severe course. [NIH]

Acute lymphoblastic leukemia: ALL. A quickly progressing disease in which too many immature white blood cells called lymphoblasts are found in the blood and bone marrow. Also called acute lymphocytic leukemia. [NIH]

Acute lymphocytic leukemia: ALL. A quickly progressing disease in which too many immature white blood cells called lymphoblasts are found in the blood and bone marrow. Also called acute lymphoblastic leukemia. [NIH]

Acute renal: A condition in which the kidneys suddenly stop working. In most cases, kidneys can recover from almost complete loss of function. [NIH]

Adaptability: Ability to develop some form of tolerance to conditions extremely different from those under which a living organism evolved. [NIH]

Adenine: A purine base and a fundamental unit of adenine nucleotides. [NIH]

Adenocarcinoma: A malignant epithelial tumor with a glandular organization. [NIH]

Adenosine: A nucleoside that is composed of adenine and d-ribose. Adenosine or adenosine derivatives play many important biological roles in addition to being components of DNA and RNA. Adenosine itself is a neurotransmitter. [NIH]

Adenosine Triphosphate: Adenosine 5'-(tetrahydrogen triphosphate). An adenine

nucleotide containing three phosphate groups esterified to the sugar moiety. In addition to its crucial roles in metabolism adenosine triphosphate is a neurotransmitter. [NIH]

Adrenal Cortex: The outer layer of the adrenal gland. It secretes mineralocorticoids, androgens, and glucocorticoids. [NIH]

Adverse Effect: An unwanted side effect of treatment. [NIH]

Aerobic: In biochemistry, reactions that need oxygen to happen or happen when oxygen is present. [NIH]

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

Aetiology: Study of the causes of disease. [EU]

Affinity: 1. Inherent likeness or relationship. 2. A special attraction for a specific element, organ, or structure. 3. Chemical affinity; the force that binds atoms in molecules; the tendency of substances to combine by chemical reaction. 4. The strength of noncovalent chemical binding between two substances as measured by the dissociation constant of the complex. 5. In immunology, a thermodynamic expression of the strength of interaction between a single antigen-binding site and a single antigenic determinant (and thus of the stereochemical compatibility between them), most accurately applied to interactions among simple, uniform antigenic determinants such as haptens. Expressed as the association constant (K litres mole⁻¹), which, owing to the heterogeneity of affinities in a population of antibody molecules of a given specificity, actually represents an average value (mean intrinsic association constant). 6. The reciprocal of the dissociation constant. [EU]

Alanine: A non-essential amino acid that occurs in high levels in its free state in plasma. It is produced from pyruvate by transamination. It is involved in sugar and acid metabolism, increases immunity, and provides energy for muscle tissue, brain, and the central nervous system. [NIH]

Albumin: 1. Any protein that is soluble in water and moderately concentrated salt solutions and is coagulable by heat. 2. Serum albumin; the major plasma protein (approximately 60 per cent of the total), which is responsible for much of the plasma colloidal osmotic pressure and serves as a transport protein carrying large organic anions, such as fatty acids, bilirubin, and many drugs, and also carrying certain hormones, such as cortisol and thyroxine, when their specific binding globulins are saturated. Albumin is synthesized in the liver. Low serum levels occur in protein malnutrition, active inflammation and serious hepatic and renal disease. [EU]

Algorithms: A procedure consisting of a sequence of algebraic formulas and/or logical steps to calculate or determine a given task. [NIH]

Alkaline: Having the reactions of an alkali. [EU]

Alleles: Mutually exclusive forms of the same gene, occupying the same locus on homologous chromosomes, and governing the same biochemical and developmental process. [NIH]

Allogeneic: Taken from different individuals of the same species. [NIH]

Allograft: An organ or tissue transplant between two humans. [NIH]

Alopecia: Absence of hair from areas where it is normally present. [NIH]

Alternative medicine: Practices not generally recognized by the medical community as standard or conventional medical approaches and used instead of standard treatments. Alternative medicine includes the taking of dietary supplements, megadose vitamins, and herbal preparations; the drinking of special teas; and practices such as massage therapy, magnet therapy, spiritual healing, and meditation. [NIH]

Alveolitis: Inflammation of an alveolus. Called also odontobothritis. [EU]

Amino acid: Any organic compound containing an amino ($-NH_2$) and a carboxyl ($-COOH$) group. The 20 α -amino acids listed in the accompanying table are the amino acids from which proteins are synthesized by formation of peptide bonds during ribosomal translation of messenger RNA; all except glycine, which is not optically active, have the L configuration. Other amino acids occurring in proteins, such as hydroxyproline in collagen, are formed by posttranslational enzymatic modification of amino acids residues in polypeptide chains. There are also several important amino acids, such as the neurotransmitter γ -aminobutyric acid, that have no relation to proteins. Abbreviated AA. [EU]

Amino Acid Sequence: The order of amino acids as they occur in a polypeptide chain. This is referred to as the primary structure of proteins. It is of fundamental importance in determining protein conformation. [NIH]

Amyloid: A general term for a variety of different proteins that accumulate as extracellular fibrils of 7-10 nm and have common structural features, including a beta-pleated sheet conformation and the ability to bind such dyes as Congo red and thioflavine (Kandel, Schwartz, and Jessel, Principles of Neural Science, 3rd ed). [NIH]

Anaemia: A reduction below normal in the number of erythrocytes per cu. mm., in the quantity of haemoglobin, or in the volume of packed red cells per 100 ml. of blood which occurs when the equilibrium between blood loss (through bleeding or destruction) and blood production is disturbed. [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]

Anal: Having to do with the anus, which is the posterior opening of the large bowel. [NIH]

Analog: In chemistry, a substance that is similar, but not identical, to another. [NIH]

Anaplasia: Loss of structural differentiation and useful function of neoplastic cells. [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]

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

Animal model: An animal with a disease either the same as or like a disease in humans. Animal models are used to study the development and progression of diseases and to test new treatments before they are given to humans. Animals with transplanted human cancers or other tissues are called xenograft models. [NIH]

Anions: Negatively charged atoms, radicals or groups of atoms which travel to the anode or positive pole during electrolysis. [NIH]

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

Annealing: The spontaneous alignment of two single DNA strands to form a double helix. [NIH]

Anorexia: Lack or loss of appetite for food. Appetite is psychologic, dependent on memory and associations. Anorexia can be brought about by unattractive food, surroundings, or company. [NIH]

Antibiotics: Substances produced by microorganisms that can inhibit or suppress the

growth of other microorganisms. [NIH]

Antibodies: Immunoglobulin molecules having a specific amino acid sequence by virtue of which they interact only with the antigen that induced their synthesis in cells of the lymphoid series (especially plasma cells), or with an antigen closely related to it. [NIH]

Antibodies, Anticardiolipin: Antiphospholipid antibodies found in association with systemic lupus erythematosus (lupus erythematosus, systemic), antiphospholipid syndrome, and in a variety of other diseases as well as in healthy individuals. The antibodies are detected by solid-phase immunoassay employing the purified phospholipid antigen cardiolipin. [NIH]

Antibodies, Antiphospholipid: Autoantibodies directed against phospholipids. These antibodies are characteristically found in patients with systemic lupus erythematosus, antiphospholipid syndrome, related autoimmune diseases, some non-autoimmune diseases, and also in healthy individuals. [NIH]

Antibody: A type of protein made by certain white blood cells in response to a foreign substance (antigen). Each antibody can bind to only a specific antigen. The purpose of this binding is to help destroy the antigen. Antibodies can work in several ways, depending on the nature of the antigen. Some antibodies destroy antigens directly. Others make it easier for white blood cells to destroy the antigen. [NIH]

Anticoagulant: A drug that helps prevent blood clots from forming. Also called a blood thinner. [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]

Antigen-presenting cell: APC. A cell that shows antigen on its surface to other cells of the immune system. This is an important part of an immune response. [NIH]

Anti-infective: An agent that so acts. [EU]

Anti-inflammatory: Having to do with reducing inflammation. [NIH]

Anti-Inflammatory Agents: Substances that reduce or suppress inflammation. [NIH]

Antimetabolite: A chemical that is very similar to one required in a normal biochemical reaction in cells. Antimetabolites can stop or slow down the reaction. [NIH]

Antineoplastic: Inhibiting or preventing the development of neoplasms, checking the maturation and proliferation of malignant cells. [EU]

Antiphospholipid Syndrome: The presence of antibodies directed against phospholipids (antibodies, antiphospholipid). The condition is associated with a variety of diseases, notably systemic lupus erythematosus and other connective tissue diseases, thrombopenia, and arterial or venous thromboses. In pregnancy it can cause abortion. Of the phospholipids, the cardiolipins show markedly elevated levels of anticardiolipin antibodies (antibodies, anticardiolipin). Present also are high levels of lupus anticoagulant (lupus coagulation inhibitor). [NIH]

Antiserum: The blood serum obtained from an animal after it has been immunized with a particular antigen. It will contain antibodies which are specific for that antigen as well as antibodies specific for any other antigen with which the animal has previously been immunized. [NIH]

Anus: The opening of the rectum to the outside of the body. [NIH]

Aplastic anemia: A condition in which the bone marrow is unable to produce blood cells. [NIH]

Apoptosis: One of the two mechanisms by which cell death occurs (the other being the pathological process of necrosis). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA (DNA fragmentation) at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathologic processes associated with tumor growth. [NIH]

Aromatic: Having a spicy odour. [EU]

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

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

Arterioles: The smallest divisions of the arteries located between the muscular arteries and the capillaries. [NIH]

Arteritis: Inflammation of an artery. [NIH]

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

Arthritis, Rheumatoid: A chronic systemic disease, primarily of the joints, marked by inflammatory changes in the synovial membranes and articular structures, widespread fibrinoid degeneration of the collagen fibers in mesenchymal tissues, and by atrophy and rarefaction of bony structures. Etiology is unknown, but autoimmune mechanisms have been implicated. [NIH]

Arthropathy: Any joint disease. [EU]

Articular: Of or pertaining to a joint. [EU]

Aspartic: The naturally occurring substance is L-aspartic acid. One of the acidic-amino-acids is obtained by the hydrolysis of proteins. [NIH]

Aspartic Acid: One of the non-essential amino acids commonly occurring in the L-form. It is found in animals and plants, especially in sugar cane and sugar beets. It may be a neurotransmitter. [NIH]

Aspiration: The act of inhaling. [NIH]

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

Asymptomatic: Having no signs or symptoms of disease. [NIH]

Ataxia: Impairment of the ability to perform smoothly coordinated voluntary movements. This condition may affect the limbs, trunk, eyes, pharynx, larynx, and other structures. Ataxia may result from impaired sensory or motor function. Sensory ataxia may result from posterior column injury or peripheral nerve diseases. Motor ataxia may be associated with cerebellar diseases; cerebral cortex diseases; thalamic diseases; basal ganglia diseases; injury to the red nucleus; and other conditions. [NIH]

Atrial: Pertaining to an atrium. [EU]

Atrial Fibrillation: Disorder of cardiac rhythm characterized by rapid, irregular atrial impulses and ineffective atrial contractions. [NIH]

Atrioventricular: Pertaining to an atrium of the heart and to a ventricle. [EU]

Atrium: A chamber; used in anatomical nomenclature to designate a chamber affording

entrance to another structure or organ. Usually used alone to designate an atrium of the heart. [EU]

Atrophy: Decrease in the size of a cell, tissue, organ, or multiple organs, associated with a variety of pathological conditions such as abnormal cellular changes, ischemia, malnutrition, or hormonal changes. [NIH]

Attenuation: Reduction of transmitted sound energy or its electrical equivalent. [NIH]

Autoantibodies: Antibodies that react with self-antigens (autoantigens) of the organism that produced them. [NIH]

Autoantigens: Endogenous tissue constituents that have the ability to interact with autoantibodies and cause an immune response. [NIH]

Autoimmune disease: A condition in which the body recognizes its own tissues as foreign and directs an immune response against them. [NIH]

Autoimmune Hepatitis: A liver disease caused when the body's immune system destroys liver cells for no known reason. [NIH]

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

Autologous: Taken from an individual's own tissues, cells, or DNA. [NIH]

Bacteria: Unicellular prokaryotic microorganisms which generally possess rigid cell walls, multiply by cell division, and exhibit three principal forms: round or coccil, rodlike or bacillary, and spiral or spirochetal. [NIH]

Bacterium: Microscopic organism which may have a spherical, rod-like, or spiral unicellular or non-cellular body. Bacteria usually reproduce through asexual processes. [NIH]

Barium: An element of the alkaline earth group of metals. It has an atomic symbol Ba, atomic number 56, and atomic weight 138. All of its acid-soluble salts are poisonous. [NIH]

Barium swallow: A series of x-rays of the esophagus. The x-ray pictures are taken after the person drinks a solution that contains barium. The barium coats and outlines the esophagus on the x-ray. Also called an esophagram. [NIH]

Basal Ganglia: Large subcortical nuclear masses derived from the telencephalon and located in the basal regions of the cerebral hemispheres. [NIH]

Basal Ganglia Diseases: Diseases of the basal ganglia including the putamen; globus pallidus; claustrum; amygdala; and caudate nucleus. Dyskinesias (most notably involuntary movements and alterations of the rate of movement) represent the primary clinical manifestations of these disorders. Common etiologies include cerebrovascular disease; neurodegenerative diseases; and craniocerebral trauma. [NIH]

Basal metabolic rate: Represents the minimum energy expenditure required for the maintenance of vital functions; normally the amount of energy expended, measured in calories, per unit of time at rest; measured after 14-18 hours of rest. [NIH]

Base: In chemistry, the nonacid part of a salt; a substance that combines with acids to form salts; a substance that dissociates to give hydroxide ions in aqueous solutions; a substance whose molecule or ion can combine with a proton (hydrogen ion); a substance capable of donating a pair of electrons (to an acid) for the formation of a coordinate covalent bond. [EU]

Benign: Not cancerous; does not invade nearby tissue or spread to other parts of the body. [NIH]

Beta-pleated: Particular three-dimensional pattern of amyloidoses. [NIH]

Bilateral: Affecting both the right and left side of body. [NIH]

Bile: An emulsifying agent produced in the liver and secreted into the duodenum. Its composition includes bile acids and salts, cholesterol, and electrolytes. It aids digestion of fats in the duodenum. [NIH]

Bile duct: A tube through which bile passes in and out of the liver. [NIH]

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

Biogenesis: The origin of life. It includes studies of the potential basis for life in organic compounds but excludes studies of the development of altered forms of life through mutation and natural selection, which is evolution. [NIH]

Biological response modifier: BRM. A substance that stimulates the body's response to infection and disease. [NIH]

Biopsy: Removal and pathologic examination of specimens in the form of small pieces of tissue from the living body. [NIH]

Biopterin: A natural product that has been considered as a growth factor for some insects. [NIH]

Biotechnology: Body of knowledge related to the use of organisms, cells or cell-derived constituents for the purpose of developing products which are technically, scientifically and clinically useful. Alteration of biologic function at the molecular level (i.e., genetic engineering) is a central focus; laboratory methods used include transfection and cloning technologies, sequence and structure analysis algorithms, computer databases, and gene and protein structure function analysis and prediction. [NIH]

Bladder: The organ that stores urine. [NIH]

Blister: Visible accumulations of fluid within or beneath the epidermis. [NIH]

Blood pressure: The pressure of blood against the walls of a blood vessel or heart chamber. Unless there is reference to another location, such as the pulmonary artery or one of the heart chambers, it refers to the pressure in the systemic arteries, as measured, for example, in the forearm. [NIH]

Blood vessel: A tube in the body through which blood circulates. Blood vessels include a network of arteries, arterioles, capillaries, venules, and veins. [NIH]

Blot: To transfer DNA, RNA, or proteins to an immobilizing matrix such as nitrocellulose. [NIH]

Body Fluids: Liquid components of living organisms. [NIH]

Bone Marrow: The soft tissue filling the cavities of bones. Bone marrow exists in two types, yellow and red. Yellow marrow is found in the large cavities of large bones and consists mostly of fat cells and a few primitive blood cells. Red marrow is a hematopoietic tissue and is the site of production of erythrocytes and granular leukocytes. Bone marrow is made up of a framework of connective tissue containing branching fibers with the frame being filled with marrow cells. [NIH]

Bone scan: A technique to create images of bones on a computer screen or on film. A small amount of radioactive material is injected into a blood vessel and travels through the bloodstream; it collects in the bones and is detected by a scanner. [NIH]

Bowel: The long tube-shaped organ in the abdomen that completes the process of digestion. There is both a small and a large bowel. Also called the intestine. [NIH]

Bowel Movement: Body wastes passed through the rectum and anus. [NIH]

Brachytherapy: A collective term for interstitial, intracavity, and surface radiotherapy. It uses small sealed or partly-sealed sources that may be placed on or near the body surface or

within a natural body cavity or implanted directly into the tissues. [NIH]

Bradycardia: Excessive slowness in the action of the heart, usually with a heart rate below 60 beats per minute. [NIH]

Branch: Most commonly used for branches of nerves, but applied also to other structures. [NIH]

Bronchoalveolar Lavage: Washing out of the lungs with saline or mucolytic agents for diagnostic or therapeutic purposes. It is very useful in the diagnosis of diffuse pulmonary infiltrates in immunosuppressed patients. [NIH]

Bronchoalveolar Lavage Fluid: Fluid obtained by washout of the alveolar compartment of the lung. It is used to assess biochemical and inflammatory changes in and effects of therapy on the interstitial lung tissue. [NIH]

Buccal: Pertaining to or directed toward the cheek. In dental anatomy, used to refer to the buccal surface of a tooth. [EU]

Buccal mucosa: The inner lining of the cheeks and lips. [NIH]

Calcium: A basic element found in nearly all organized tissues. It is a member of the alkaline earth family of metals with the atomic symbol Ca, atomic number 20, and atomic weight 40. Calcium is the most abundant mineral in the body and combines with phosphorus to form calcium phosphate in the bones and teeth. It is essential for the normal functioning of nerves and muscles and plays a role in blood coagulation (as factor IV) and in many enzymatic processes. [NIH]

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

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]

Carcinogenic: Producing carcinoma. [EU]

Carcinogens: Substances that increase the risk of neoplasms in humans or animals. Both genotoxic chemicals, which affect DNA directly, and nongenotoxic chemicals, which induce neoplasms by other mechanism, are included. [NIH]

Carcinoma: Cancer that begins in the skin or in tissues that line or cover internal organs. [NIH]

Cardiac: Having to do with the heart. [NIH]

Cardiolipins: Acidic phospholipids composed of two molecules of phosphatidic acid covalently linked to a molecule of glycerol. They occur primarily in mitochondrial inner membranes and in bacterial plasma membranes. They are the main antigenic components of the Wassermann-type antigen that is used in nontreponemal syphilis serodiagnosis. [NIH]

Cardiomyopathy: A general diagnostic term designating primary myocardial disease, often of obscure or unknown etiology. [EU]

Cardiovascular: Having to do with the heart and blood vessels. [NIH]

Cardioversion: Electrical reversion of cardiac arrhythmias to normal sinus rhythm, formerly using alternatic current, but now employing direct current. [NIH]

Carpal Tunnel Syndrome: A median nerve injury inside the carpal tunnel that results in

symptoms of pain, numbness, tingling, clumsiness, and a lack of sweating, which can be caused by work with certain hand and wrist postures. [NIH]

Case report: A detailed report of the diagnosis, treatment, and follow-up of an individual patient. Case reports also contain some demographic information about the patient (for example, age, gender, ethnic origin). [NIH]

Caspases: A family of intracellular cysteine endopeptidases. They play a key role in inflammation and mammalian apoptosis. They are specific for aspartic acid at the P1 position. They are divided into two classes based on the lengths of their N-terminal prodomains. Caspases-1,-2,-4,-5,-8, and -10 have long prodomains and -3,-6,-7,-9 have short prodomains. EC 3.4.22.-. [NIH]

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

Celiac Disease: A disease characterized by intestinal malabsorption and precipitated by gluten-containing foods. The intestinal mucosa shows loss of villous structure. [NIH]

Cell: The individual unit that makes up all of the tissues of the body. All living things are made up of one or more cells. [NIH]

Cell Adhesion: Adherence of cells to surfaces or to other cells. [NIH]

Cell Adhesion Molecules: Surface ligands, usually glycoproteins, that mediate cell-to-cell adhesion. Their functions include the assembly and interconnection of various vertebrate systems, as well as maintenance of tissue integration, wound healing, morphogenic movements, cellular migrations, and metastasis. [NIH]

Cell Death: The termination of the cell's ability to carry out vital functions such as metabolism, growth, reproduction, responsiveness, and adaptability. [NIH]

Cell Differentiation: Progressive restriction of the developmental potential and increasing specialization of function which takes place during the development of the embryo and leads to the formation of specialized cells, tissues, and organs. [NIH]

Cell Division: The fission of a cell. [NIH]

Cell Transplantation: Transference of cells within an individual, between individuals of the same species, or between individuals of different species. [NIH]

Central Nervous System: The main information-processing organs of the nervous system, consisting of the brain, spinal cord, and meninges. [NIH]

Cerebellar: Pertaining to the cerebellum. [EU]

Cerebellar Diseases: Diseases that affect the structure or function of the cerebellum. Cardinal manifestations of cerebellar dysfunction include dysmetria, gait ataxia, and muscle hypotonia. [NIH]

Cerebral: Of or pertaining to the cerebrum or the brain. [EU]

Cerebral Cortex: The thin layer of gray matter on the surface of the cerebral hemisphere that develops from the telencephalon and folds into gyri. It reaches its highest development in man and is responsible for intellectual faculties and higher mental functions. [NIH]

Cerebral Palsy: Refers to a motor disability caused by a brain dysfunction. [NIH]

Cerebrum: The largest part of the brain. It is divided into two hemispheres, or halves, called the cerebral hemispheres. The cerebrum controls muscle functions of the body and also controls speech, emotions, reading, writing, and learning. [NIH]

Character: In current usage, approximately equivalent to personality. The sum of the relatively fixed personality traits and habitual modes of response of an individual. [NIH]

Chemokines: Class of pro-inflammatory cytokines that have the ability to attract and

activate leukocytes. They can be divided into at least three structural branches: C (chemokines, C), CC (chemokines, CC), and CXC (chemokines, CXC), according to variations in a shared cysteine motif. [NIH]

Chin: The anatomical frontal portion of the mandible, also known as the mentum, that contains the line of fusion of the two separate halves of the mandible (symphysis menti). This line of fusion divides inferiorly to enclose a triangular area called the mental protuberance. On each side, inferior to the second premolar tooth, is the mental foramen for the passage of blood vessels and a nerve. [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]

Choline: A basic constituent of lecithin that is found in many plants and animal organs. It is important as a precursor of acetylcholine, as a methyl donor in various metabolic processes, and in lipid metabolism. [NIH]

Cholinergic: Resembling acetylcholine in pharmacological action; stimulated by or releasing acetylcholine or a related compound. [EU]

Cholinesterase Inhibitors: Drugs that inhibit cholinesterases. The neurotransmitter acetylcholine is rapidly hydrolyzed, and thereby inactivated, by cholinesterases. When cholinesterases are inhibited, the action of endogenously released acetylcholine at cholinergic synapses is potentiated. Cholinesterase inhibitors are widely used clinically for their potentiation of cholinergic inputs to the gastrointestinal tract and urinary bladder, the eye, and skeletal muscles; they are also used for their effects on the heart and the central nervous system. [NIH]

Chromatin: The material of chromosomes. It is a complex of DNA, histones, and nonhistone proteins (chromosomal proteins, non-histone) found within the nucleus of a cell. [NIH]

Chromosome: Part of a cell that contains genetic information. Except for sperm and eggs, all human cells contain 46 chromosomes. [NIH]

Chronic: A disease or condition that persists or progresses over a long period of time. [NIH]

Chronic Disease: Disease or ailment of long duration. [NIH]

Chronic Fatigue Syndrome: Fatigue caused by the combined effects of different types of prolonged fatigue. [NIH]

Chronic leukemia: A slowly progressing cancer of the blood-forming tissues. [NIH]

Chronic renal: Slow and progressive loss of kidney function over several years, often resulting in end-stage renal disease. People with end-stage renal disease need dialysis or transplantation to replace the work of the kidneys. [NIH]

Cirrhosis: A type of chronic, progressive liver disease. [NIH]

Clinical Medicine: The study and practice of medicine by direct examination of the patient. [NIH]

Clinical trial: A research study that tests how well new medical treatments or other interventions work in people. Each study is designed to test new methods of screening, prevention, diagnosis, or treatment of a disease. [NIH]

Cloning: The production of a number of genetically identical individuals; in genetic engineering, a process for the efficient replication of a great number of identical DNA molecules. [NIH]

Clubbing: A proliferative change in the soft tissues about the terminal phalanges of the fingers or toes, with no constant osseous changes. [NIH]

Coagulation: 1. The process of clot formation. 2. In colloid chemistry, the solidification of a

sol into a gelatinous mass; an alteration of a disperse phase or of a dissolved solid which causes the separation of the system into a liquid phase and an insoluble mass called the clot or curd. Coagulation is usually irreversible. 3. In surgery, the disruption of tissue by physical means to form an amorphous residuum, as in electrocoagulation and photocoagulation. [EU]

Cofactor: A substance, microorganism or environmental factor that activates or enhances the action of another entity such as a disease-causing agent. [NIH]

Colitis: Inflammation of the colon. [NIH]

Collagen: A polypeptide substance comprising about one third of the total protein in mammalian organisms. It is the main constituent of skin, connective tissue, and the organic substance of bones and teeth. Different forms of collagen are produced in the body but all consist of three alpha-polypeptide chains arranged in a triple helix. Collagen is differentiated from other fibrous proteins, such as elastin, by the content of proline, hydroxyproline, and hydroxylysine; by the absence of tryptophan; and particularly by the high content of polar groups which are responsible for its swelling properties. [NIH]

Collagen disease: A term previously used to describe chronic diseases of the connective tissue (e.g., rheumatoid arthritis, systemic lupus erythematosus, and systemic sclerosis), but now is thought to be more appropriate for diseases associated with defects in collagen, which is a component of the connective tissue. [NIH]

Colon: The long, coiled, tubelike organ that removes water from digested food. The remaining material, solid waste called stool, moves through the colon to the rectum and leaves the body through the anus. [NIH]

Combination Therapy: Association of 3 drugs to treat AIDS (AZT + DDC or DDI + protease inhibitor). [NIH]

Complement: A term originally used to refer to the heat-labile factor in serum that causes immune cytolysis, the lysis of antibody-coated cells, and now referring to the entire functionally related system comprising at least 20 distinct serum proteins that is the effector not only of immune cytolysis but also of other biologic functions. Complement activation occurs by two different sequences, the classic and alternative pathways. The proteins of the classic pathway are termed 'components of complement' and are designated by the symbols C1 through C9. C1 is a calcium-dependent complex of three distinct proteins C1q, C1r and C1s. The proteins of the alternative pathway (collectively referred to as the properdin system) and complement regulatory proteins are known by semisystematic or trivial names. Fragments resulting from proteolytic cleavage of complement proteins are designated with lower-case letter suffixes, e.g., C3a. Inactivated fragments may be designated with the suffix 'i', e.g. C3bi. Activated components or complexes with biological activity are designated by a bar over the symbol e.g. C1 or C4b,2a. The classic pathway is activated by the binding of C1 to classic pathway activators, primarily antigen-antibody complexes containing IgM, IgG1, IgG3; C1q binds to a single IgM molecule or two adjacent IgG molecules. The alternative pathway can be activated by IgA immune complexes and also by nonimmunologic materials including bacterial endotoxins, microbial polysaccharides, and cell walls. Activation of the classic pathway triggers an enzymatic cascade involving C1, C4, C2 and C3; activation of the alternative pathway triggers a cascade involving C3 and factors B, D and P. Both result in the cleavage of C5 and the formation of the membrane attack complex. Complement activation also results in the formation of many biologically active complement fragments that act as anaphylatoxins, opsonins, or chemotactic factors. [EU]

Complete remission: The disappearance of all signs of cancer. Also called a complete response. [NIH]

Computational Biology: A field of biology concerned with the development of techniques

for the collection and manipulation of biological data, and the use of such data to make biological discoveries or predictions. This field encompasses all computational methods and theories applicable to molecular biology and areas of computer-based techniques for solving biological problems including manipulation of models and datasets. [NIH]

Computed tomography: CT scan. A series of detailed pictures of areas inside the body, taken from different angles; the pictures are created by a computer linked to an x-ray machine. Also called computerized tomography and computerized axial tomography (CAT) scan. [NIH]

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

Congestion: Excessive or abnormal accumulation of blood in a part. [EU]

Conjugated: Acting or operating as if joined; simultaneous. [EU]

Conjunctiva: The mucous membrane that lines the inner surface of the eyelids and the anterior part of the sclera. [NIH]

Connective Tissue: Tissue that supports and binds other tissues. It consists of connective tissue cells embedded in a large amount of extracellular matrix. [NIH]

Connective Tissue: Tissue that supports and binds other tissues. It consists of connective tissue cells embedded in a large amount of extracellular matrix. [NIH]

Connective Tissue Cells: A group of cells that includes fibroblasts, cartilage cells, adipocytes, smooth muscle cells, and bone cells. [NIH]

Connective Tissue Diseases: A heterogeneous group of disorders, some hereditary, others acquired, characterized by abnormal structure or function of one or more of the elements of connective tissue, i.e., collagen, elastin, or the mucopolysaccharides. [NIH]

Constitutional: 1. Affecting the whole constitution of the body; not local. 2. Pertaining to the constitution. [EU]

Contamination: The soiling or pollution by inferior material, as by the introduction of organisms into a wound, or sewage into a stream. [EU]

Contraindications: Any factor or sign that it is unwise to pursue a certain kind of action or treatment, e. g. giving a general anesthetic to a person with pneumonia. [NIH]

Control group: In a clinical trial, the group that does not receive the new treatment being studied. This group is compared to the group that receives the new treatment, to see if the new treatment works. [NIH]

Coordination: Muscular or motor regulation or the harmonious cooperation of muscles or groups of muscles, in a complex action or series of actions. [NIH]

Cornea: The transparent part of the eye that covers the iris and the pupil and allows light to enter the inside. [NIH]

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

Coronary Thrombosis: Presence of a thrombus in a coronary artery, often causing a myocardial infarction. [NIH]

Corticosteroid: Any of the steroids elaborated by the adrenal cortex (excluding the sex hormones of adrenal origin) in response to the release of corticotrophin (adrenocorticotrophic hormone) by the pituitary gland, to any of the synthetic equivalents of these steroids, or to angiotensin II. They are divided, according to their predominant biological activity, into three major groups: glucocorticoids, chiefly influencing carbohydrate, fat, and protein metabolism; mineralocorticoids, affecting the regulation of electrolyte and water balance;

and C19 androgens. Some corticosteroids exhibit both types of activity in varying degrees, and others exert only one type of effect. The corticosteroids are used clinically for hormonal replacement therapy, for suppression of ACTH secretion by the anterior pituitary, as antineoplastic, antiallergic, and anti-inflammatory agents, and to suppress the immune response. Called also adrenocortical hormone and corticoid. [EU]

Cortisol: A steroid hormone secreted by the adrenal cortex as part of the body's response to stress. [NIH]

Cortisone: A natural steroid hormone produced in the adrenal gland. It can also be made in the laboratory. Cortisone reduces swelling and can suppress immune responses. [NIH]

Cowpox: A mild, eruptive skin disease of milk cows caused by cowpox virus, with lesions occurring principally on the udder and teats. Human infection may occur while milking an infected animal. [NIH]

Cowpox Virus: A species of orthopoxvirus that is the etiologic agent of cowpox. It is closely related to but antigenically different from vaccinia virus. [NIH]

Cranial: Pertaining to the cranium, or to the anterior (in animals) or superior (in humans) end of the body. [EU]

Creatine: An amino acid that occurs in vertebrate tissues and in urine. In muscle tissue, creatine generally occurs as phosphocreatine. Creatine is excreted as creatinine in the urine. [NIH]

Creatine Kinase: A transferase that catalyzes formation of phosphocreatine from ATP + creatine. The reaction stores ATP energy as phosphocreatine. Three cytoplasmic isoenzymes have been identified in human tissues: MM from skeletal muscle, MB from myocardial tissue, and BB from nervous tissue as well as a mitochondrial isoenzyme. Macro-creatine kinase refers to creatine kinase complexed with other serum proteins. EC 2.7.3.2. [NIH]

Creatinine: A compound that is excreted from the body in urine. Creatinine levels are measured to monitor kidney function. [NIH]

Curative: Tending to overcome disease and promote recovery. [EU]

Cutaneous: Having to do with the skin. [NIH]

Cyclophosphamide: Precursor of an alkylating nitrogen mustard antineoplastic and immunosuppressive agent that must be activated in the liver to form the active aldophosphamide. It is used in the treatment of lymphomas, leukemias, etc. Its side effect, alopecia, has been made use of in defleecing sheep. Cyclophosphamide may also cause sterility, birth defects, mutations, and cancer. [NIH]

Cyclosporine: A drug used to help reduce the risk of rejection of organ and bone marrow transplants by the body. It is also used in clinical trials to make cancer cells more sensitive to anticancer drugs. [NIH]

Cysteine Endopeptidases: Endopeptidases which have a cysteine involved in the catalytic process. This group of enzymes is inactivated by sulfhydryl reagents. EC 3.4.22. [NIH]

Cytochrome: Any electron transfer hemoprotein having a mode of action in which the transfer of a single electron is effected by a reversible valence change of the central iron atom of the heme prosthetic group between the +2 and +3 oxidation states; classified as cytochromes a in which the heme contains a formyl side chain, cytochromes b, which contain protoheme or a closely similar heme that is not covalently bound to the protein, cytochromes c in which protoheme or other heme is covalently bound to the protein, and cytochromes d in which the iron-tetrapyrrole has fewer conjugated double bonds than the hemes have. Well-known cytochromes have been numbered consecutively within groups and are designated by subscripts (beginning with no subscript), e.g. cytochromes c, c1, C2, .

New cytochromes are named according to the wavelength in nanometres of the absorption maximum of the a-band of the iron (II) form in pyridine, e.g., c-555. [EU]

Cytokine: Small but highly potent protein that modulates the activity of many cell types, including T and B cells. [NIH]

Cytomegalovirus: A genus of the family Herpesviridae, subfamily Betaherpesvirinae, infecting the salivary glands, liver, spleen, lungs, eyes, and other organs, in which they produce characteristically enlarged cells with intranuclear inclusions. Infection with Cytomegalovirus is also seen as an opportunistic infection in AIDS. [NIH]

Cytoplasm: The protoplasm of a cell exclusive of that of the nucleus; it consists of a continuous aqueous solution (cytosol) and the organelles and inclusions suspended in it (phaneroplasm), and is the site of most of the chemical activities of the cell. [EU]

Cytotoxic: Cell-killing. [NIH]

Cytotoxicity: Quality of being capable of producing a specific toxic action upon cells of special organs. [NIH]

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

Deletion: A genetic rearrangement through loss of segments of DNA (chromosomes), bringing sequences, which are normally separated, into close proximity. [NIH]

Denaturation: Rupture of the hydrogen bonds by heating a DNA solution and then cooling it rapidly causes the two complementary strands to separate. [NIH]

Dendrites: Extensions of the nerve cell body. They are short and branched and receive stimuli from other neurons. [NIH]

Dendritic: 1. Branched like a tree. 2. Pertaining to or possessing dendrites. [EU]

Dendritic cell: A special type of antigen-presenting cell (APC) that activates T lymphocytes. [NIH]

Density: The logarithm to the base 10 of the opacity of an exposed and processed film. [NIH]

Diabetes Mellitus: A heterogeneous group of disorders that share glucose intolerance in common. [NIH]

Diagnostic procedure: A method used to identify a disease. [NIH]

Diaphragm: The musculofibrous partition that separates the thoracic cavity from the abdominal cavity. Contraction of the diaphragm increases the volume of the thoracic cavity aiding inspiration. [NIH]

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

Digestion: The process of breakdown of food for metabolism and use by the body. [NIH]

Digestive system: The organs that take in food and turn it into products that the body can use to stay healthy. Waste products the body cannot use leave the body through bowel movements. The digestive system includes the salivary glands, mouth, esophagus, stomach, liver, pancreas, gallbladder, small and large intestines, and rectum. [NIH]

Dilated cardiomyopathy: Heart muscle disease that leads to enlargement of the heart's chambers, robbing the heart of its pumping ability. [NIH]

Direct: 1. Straight; in a straight line. 2. Performed immediately and without the intervention of subsidiary means. [EU]

Dissociation: 1. The act of separating or state of being separated. 2. The separation of a molecule into two or more fragments (atoms, molecules, ions, or free radicals) produced by the absorption of light or thermal energy or by solvation. 3. In psychology, a defense

mechanism in which a group of mental processes are segregated from the rest of a person's mental activity in order to avoid emotional distress, as in the dissociative disorders (q.v.), or in which an idea or object is segregated from its emotional significance; in the first sense it is roughly equivalent to splitting, in the second, to isolation. 4. A defect of mental integration in which one or more groups of mental processes become separated off from normal consciousness and, thus separated, function as a unitary whole. [EU]

Distal: Remote; farther from any point of reference; opposed to proximal. In dentistry, used to designate a position on the dental arch farther from the median line of the jaw. [EU]

Diverticulum: A pathological condition manifested as a pouch or sac opening from a tubular or sacular organ. [NIH]

Drive: A state of internal activity of an organism that is a necessary condition before a given stimulus will elicit a class of responses; e.g., a certain level of hunger (drive) must be present before food will elicit an eating response. [NIH]

Drug Interactions: The action of a drug that may affect the activity, metabolism, or toxicity of another drug. [NIH]

Duct: A tube through which body fluids pass. [NIH]

Dyes: Chemical substances that are used to stain and color other materials. The coloring may or may not be permanent. Dyes can also be used as therapeutic agents and test reagents in medicine and scientific research. [NIH]

Dysphagia: Difficulty in swallowing. [EU]

Dysplasia: Cells that look abnormal under a microscope but are not cancer. [NIH]

Dyspnea: Difficult or labored breathing. [NIH]

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

Effector: It is often an enzyme that converts an inactive precursor molecule into an active second messenger. [NIH]

Effusion: The escape of fluid into a part or tissue, as an exudation or a transudation. [EU]

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

Elastin: The protein that gives flexibility to tissues. [NIH]

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

Electrolyte: A substance that dissociates into ions when fused or in solution, and thus becomes capable of conducting electricity; an ionic solute. [EU]

Electromyography: Recording of the changes in electric potential of muscle by means of surface or needle electrodes. [NIH]

Elementary Particles: Individual components of atoms, usually subatomic; subnuclear particles are usually detected only when the atomic nucleus decays and then only transiently, as most of them are unstable, often yielding pure energy without substance, i.e., radiation. [NIH]

Embryo: The prenatal stage of mammalian development characterized by rapid morphological changes and the differentiation of basic structures. [NIH]

Empyema: Presence of pus in a hollow organ or body cavity. [NIH]

Endemic: Present or usually prevalent in a population or geographical area at all times; said of a disease or agent. Called also endemial. [EU]

Endocarditis: Exudative and proliferative inflammatory alterations of the endocardium,

characterized by the presence of vegetations on the surface of the endocardium or in the endocardium itself, and most commonly involving a heart valve, but sometimes affecting the inner lining of the cardiac chambers or the endocardium elsewhere. It may occur as a primary disorder or as a complication of or in association with another disease. [EU]

Endocardium: The innermost layer of the heart, comprised of endothelial cells. [NIH]

Endoscope: A thin, lighted tube used to look at tissues inside the body. [NIH]

Endotoxin: Toxin from cell walls of bacteria. [NIH]

End-stage renal: Total chronic kidney failure. When the kidneys fail, the body retains fluid and harmful wastes build up. A person with ESRD needs treatment to replace the work of the failed kidneys. [NIH]

Environmental Exposure: The exposure to potentially harmful chemical, physical, or biological agents in the environment or to environmental factors that may include ionizing radiation, pathogenic organisms, or toxic chemicals. [NIH]

Environmental Health: The science of controlling or modifying those conditions, influences, or forces surrounding man which relate to promoting, establishing, and maintaining health. [NIH]

Enzymatic: Phase where enzyme cuts the precursor protein. [NIH]

Enzyme: A protein that speeds up chemical reactions in the body. [NIH]

Eosinophilia: Abnormal increase in eosinophils in the blood, tissues or organs. [NIH]

Eosinophilic: A condition found primarily in grinding workers caused by a reaction of the pulmonary tissue, in particular the eosinophilic cells, to dust that has entered the lung. [NIH]

Eosinophils: Granular leukocytes with a nucleus that usually has two lobes connected by a slender thread of chromatin, and cytoplasm containing coarse, round granules that are uniform in size and stainable by eosin. [NIH]

Epidemic: Occurring suddenly in numbers clearly in excess of normal expectancy; said especially of infectious diseases but applied also to any disease, injury, or other health-related event occurring in such outbreaks. [EU]

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

Epidermal: Pertaining to or resembling epidermis. Called also epidermic or epidermoid. [EU]

Epidermis: Nonvascular layer of the skin. It is made up, from within outward, of five layers: 1) basal layer (stratum basale epidermidis); 2) spinous layer (stratum spinosum epidermidis); 3) granular layer (stratum granulosum epidermidis); 4) clear layer (stratum lucidum epidermidis); and 5) horny layer (stratum corneum epidermidis). [NIH]

Epitope: A molecule or portion of a molecule capable of binding to the combining site of an antibody. For every given antigenic determinant, the body can construct a variety of antibody-combining sites, some of which fit almost perfectly, and others which barely fit. [NIH]

Epitope Mapping: Methods used for studying the interactions of antibodies with specific regions of protein antigens. Important applications of epitope mapping are found within the area of immunochemistry. [NIH]

Erythema: Redness of the skin produced by congestion of the capillaries. This condition may result from a variety of causes. [NIH]

Erythrocytes: Red blood cells. Mature erythrocytes are non-nucleated, biconcave disks containing hemoglobin whose function is to transport oxygen. [NIH]

Esophageal: Having to do with the esophagus, the muscular tube through which food passes from the throat to the stomach. [NIH]

Esophagram: A series of x-rays of the esophagus. The x-ray pictures are taken after the person drinks a solution that contains barium. The barium coats and outlines the esophagus on the x-ray. Also called a barium swallow. [NIH]

Esophagus: The muscular tube through which food passes from the throat to the stomach. [NIH]

Essential Tremor: A rhythmic, involuntary, purposeless, oscillating movement resulting from the alternate contraction and relaxation of opposing groups of muscles. [NIH]

Eukaryotic Cells: Cells of the higher organisms, containing a true nucleus bounded by a nuclear membrane. [NIH]

Exercise Test: Controlled physical activity, more strenuous than at rest, which is performed in order to allow assessment of physiological functions, particularly cardiovascular and pulmonary, but also aerobic capacity. Maximal (most intense) exercise is usually required but submaximal exercise is also used. The intensity of exercise is often graded, using criteria such as rate of work done, oxygen consumption, and heart rate. Physiological data obtained from an exercise test may be used for diagnosis, prognosis, and evaluation of disease severity, and to evaluate therapy. Data may also be used in prescribing exercise by determining a person's exercise capacity. [NIH]

Exocrine: Secreting outwardly, via a duct. [EU]

Extensor: A muscle whose contraction tends to straighten a limb; the antagonist of a flexor. [NIH]

External-beam radiation: Radiation therapy that uses a machine to aim high-energy rays at the cancer. Also called external radiation. [NIH]

Extracellular: Outside a cell or cells. [EU]

Extracellular Matrix: A meshwork-like substance found within the extracellular space and in association with the basement membrane of the cell surface. It promotes cellular proliferation and provides a supporting structure to which cells or cell lysates in culture dishes adhere. [NIH]

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

Family Planning: Programs or services designed to assist the family in controlling reproduction by either improving or diminishing fertility. [NIH]

Fasciculation: A small local contraction of muscles, visible through the skin, representing a spontaneous discharge of a number of fibres innervated by a single motor nerve filament. [EU]

Fasciitis: Inflammation of the fascia. There are three major types: 1) Eosinophilic fasciitis, an inflammatory reaction with eosinophilia, producing hard thickened skin with an orange-peel configuration suggestive of scleroderma and considered by some a variant of scleroderma; 2) Necrotizing fasciitis, a serious fulminating infection (usually by a beta hemolytic *Streptococcus*) causing extensive necrosis of superficial fascia; 3) Nodular/Pseudosarcomatous/Proliferative fasciitis, characterized by a rapid growth of fibroblasts with mononuclear inflammatory cells and proliferating capillaries in soft tissue, often the forearm; it is not malignant but is sometimes mistaken for fibrosarcoma. [NIH]

Fat: Total lipids including phospholipids. [NIH]

Fatigue: The state of weariness following a period of exertion, mental or physical, characterized by a decreased capacity for work and reduced efficiency to respond to stimuli. [NIH]

Fetal Death: Death of the young developing in utero. [NIH]

Fibrillation: A small, local, involuntary contraction of muscle, invisible under the skin, resulting from spontaneous activation of single muscle cells or muscle fibres. [EU]

Fibroblasts: Connective tissue cells which secrete an extracellular matrix rich in collagen and other macromolecules. [NIH]

Fibrosarcoma: A type of soft tissue sarcoma that begins in fibrous tissue, which holds bones, muscles, and other organs in place. [NIH]

Fibrosis: Any pathological condition where fibrous connective tissue invades any organ, usually as a consequence of inflammation or other injury. [NIH]

Flexor: Muscles which flex a joint. [NIH]

Flow Cytometry: Technique using an instrument system for making, processing, and displaying one or more measurements on individual cells obtained from a cell suspension. Cells are usually stained with one or more fluorescent dyes specific to cell components of interest, e.g., DNA, and fluorescence of each cell is measured as it rapidly transverse the excitation beam (laser or mercury arc lamp). Fluorescence provides a quantitative measure of various biochemical and biophysical properties of the cell, as well as a basis for cell sorting. Other measurable optical parameters include light absorption and light scattering, the latter being applicable to the measurement of cell size, shape, density, granularity, and stain uptake. [NIH]

Fludarabine: An anticancer drug that belongs to the family of drugs called antimetabolites. [NIH]

Foramen: A natural hole of perforation, especially one in a bone. [NIH]

Forearm: The part between the elbow and the wrist. [NIH]

Fungi: A kingdom of eukaryotic, heterotrophic organisms that live as saprobes or parasites, including mushrooms, yeasts, smuts, molds, etc. They reproduce either sexually or asexually, and have life cycles that range from simple to complex. Filamentous fungi refer to those that grow as multicellular colonies (mushrooms and molds). [NIH]

Gadolinium: An element of the rare earth family of metals. It has the atomic symbol Gd, atomic number 64, and atomic weight 157.25. Its oxide is used in the control rods of some nuclear reactors. [NIH]

Gait: Manner or style of walking. [NIH]

Galanthamine: A cholinesterase inhibitor. It has been used to reverse the muscular effects of gallamine and tubocurarine and has been studied as a treatment for Alzheimer's disease and other central nervous system disorders. [NIH]

Gallbladder: The pear-shaped organ that sits below the liver. Bile is concentrated and stored in the gallbladder. [NIH]

Ganglia: Clusters of multipolar neurons surrounded by a capsule of loosely organized connective tissue located outside the central nervous system. [NIH]

Gas: Air that comes from normal breakdown of food. The gases are passed out of the body through the rectum (flatus) or the mouth (burp). [NIH]

Gas exchange: Primary function of the lungs; transfer of oxygen from inhaled air into the blood and of carbon dioxide from the blood into the lungs. [NIH]

Gastrointestinal: Refers to the stomach and intestines. [NIH]

Gastrointestinal tract: The stomach and intestines. [NIH]

Gastrostomy: Creation of an artificial external opening into the stomach for nutritional support or gastrointestinal compression. [NIH]

Gene: The functional and physical unit of heredity passed from parent to offspring. Genes are pieces of DNA, and most genes contain the information for making a specific protein. [NIH]

Gene Expression: The phenotypic manifestation of a gene or genes by the processes of gene action. [NIH]

Genetic Engineering: Directed modification of the gene complement of a living organism by such techniques as altering the DNA, substituting genetic material by means of a virus, transplanting whole nuclei, transplanting cell hybrids, etc. [NIH]

Genetic testing: Analyzing DNA to look for a genetic alteration that may indicate an increased risk for developing a specific disease or disorder. [NIH]

Genital: Pertaining to the genitalia. [EU]

Giant Cells: Multinucleated masses produced by the fusion of many cells; often associated with viral infections. In AIDS, they are induced when the envelope glycoprotein of the HIV virus binds to the CD4 antigen of uninfected neighboring T4 cells. The resulting syncytium leads to cell death and thus may account for the cytopathic effect of the virus. [NIH]

Gland: An organ that produces and releases one or more substances for use in the body. Some glands produce fluids that affect tissues or organs. Others produce hormones or participate in blood production. [NIH]

Glomerular: Pertaining to or of the nature of a glomerulus, especially a renal glomerulus. [EU]

Glomeruli: Plural of glomerulus. [NIH]

Glomerulonephritis: Glomerular disease characterized by an inflammatory reaction, with leukocyte infiltration and cellular proliferation of the glomeruli, or that appears to be the result of immune glomerular injury. [NIH]

Glomerulus: A tiny set of looping blood vessels in the nephron where blood is filtered in the kidney. [NIH]

Glucocorticoid: A compound that belongs to the family of compounds called corticosteroids (steroids). Glucocorticoids affect metabolism and have anti-inflammatory and immunosuppressive effects. They may be naturally produced (hormones) or synthetic (drugs). [NIH]

Glucose: D-Glucose. A primary source of energy for living organisms. It is naturally occurring and is found in fruits and other parts of plants in its free state. It is used therapeutically in fluid and nutrient replacement. [NIH]

Glucose Intolerance: A pathological state in which the fasting plasma glucose level is less than 140 mg per deciliter and the 30-, 60-, or 90-minute plasma glucose concentration following a glucose tolerance test exceeds 200 mg per deciliter. This condition is seen frequently in diabetes mellitus but also occurs with other diseases. [NIH]

Gluten: The protein of wheat and other grains which gives to the dough its tough elastic character. [EU]

Glycogen: A sugar stored in the liver and muscles. It releases glucose into the blood when cells need it for energy. Glycogen is the chief source of stored fuel in the body. [NIH]

Glycolysis: The pathway by which glucose is catabolized into two molecules of pyruvic acid with the generation of ATP. [NIH]

Glycoprotein: A protein that has sugar molecules attached to it. [NIH]

Gonadal: Pertaining to a gonad. [EU]

Gonadorelin: A decapeptide hormone released by the hypothalamus. It stimulates the

synthesis and secretion of both follicle-stimulating hormone (FSH) and luteinizing hormone (LH) from the pituitary gland. [NIH]

Gonadotropin: The water-soluble follicle stimulating substance, by some believed to originate in chorionic tissue, obtained from the serum of pregnant mares. It is used to supplement the action of estrogens. [NIH]

Governing Board: The group in which legal authority is vested for the control of health-related institutions and organizations. [NIH]

Grade: The grade of a tumor depends on how abnormal the cancer cells look under a microscope and how quickly the tumor is likely to grow and spread. Grading systems are different for each type of cancer. [NIH]

Graft: Healthy skin, bone, or other tissue taken from one part of the body and used to replace diseased or injured tissue removed from another part of the body. [NIH]

Graft Rejection: An immune response with both cellular and humoral components, directed against an allogeneic transplant, whose tissue antigens are not compatible with those of the recipient. [NIH]

Graft-versus-host disease: GVHD. A reaction of donated bone marrow or peripheral stem cells against a person's tissue. [NIH]

Gram-positive: Retaining the stain or resisting decolorization by alcohol in Gram's method of staining, a primary characteristic of bacteria whose cell wall is composed of a thick layer of peptidoglycan with attached teichoic acids. [EU]

Granule: A small pill made from sucrose. [EU]

Granulocytes: Leukocytes with abundant granules in the cytoplasm. They are divided into three groups: neutrophils, eosinophils, and basophils. [NIH]

Gravis: Eruption of watery blisters on the skin among those handling animals and animal products. [NIH]

Growth: The progressive development of a living being or part of an organism from its earliest stage to maturity. [NIH]

Hair follicles: Shafts or openings on the surface of the skin through which hair grows. [NIH]

Hairy cell leukemia: A type of chronic leukemia in which the abnormal white blood cells appear to be covered with tiny hairs when viewed under a microscope. [NIH]

Haplotypes: The genetic constitution of individuals with respect to one member of a pair of allelic genes, or sets of genes that are closely linked and tend to be inherited together such as those of the major histocompatibility complex. [NIH]

Haptens: Small antigenic determinants capable of eliciting an immune response only when coupled to a carrier. Haptens bind to antibodies but by themselves cannot elicit an antibody response. [NIH]

Headache: Pain in the cranial region that may occur as an isolated and benign symptom or as a manifestation of a wide variety of conditions including subarachnoid hemorrhage; craniocerebral trauma; central nervous system infections; intracranial hypertension; and other disorders. In general, recurrent headaches that are not associated with a primary disease process are referred to as headache disorders (e.g., migraine). [NIH]

Heart failure: Loss of pumping ability by the heart, often accompanied by fatigue, breathlessness, and excess fluid accumulation in body tissues. [NIH]

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

Helix-loop-helix: Regulatory protein of cell cycle. [NIH]

Hemoglobin: One of the fractions of glycosylated hemoglobin A1c. Glycosylated hemoglobin is formed when linkages of glucose and related monosaccharides bind to hemoglobin A and its concentration represents the average blood glucose level over the previous several weeks. HbA1c levels are used as a measure of long-term control of plasma glucose (normal, 4 to 6 percent). In controlled diabetes mellitus, the concentration of glycosylated hemoglobin A is within the normal range, but in uncontrolled cases the level may be 3 to 4 times the normal concentration. Generally, complications are substantially lower among patients with Hb levels of 7 percent or less than in patients with HbA1c levels of 9 percent or more. [NIH]

Hemoglobinuria: The presence of free hemoglobin in the urine. [NIH]

Hemolytic: A disease that affects the blood and blood vessels. It destroys red blood cells, cells that cause the blood to clot, and the lining of blood vessels. HUS is often caused by the *Escherichia coli* bacterium in contaminated food. People with HUS may develop acute renal failure. [NIH]

Hemorrhage: Bleeding or escape of blood from a vessel. [NIH]

Hepatic: Refers to the liver. [NIH]

Hepatitis: Inflammation of the liver and liver disease involving degenerative or necrotic alterations of hepatocytes. [NIH]

Hepatitis A: Hepatitis caused by hepatovirus. It can be transmitted through fecal contamination of food or water. [NIH]

Hepatocellular: Pertaining to or affecting liver cells. [EU]

Hepatocellular carcinoma: A type of adenocarcinoma, the most common type of liver tumor. [NIH]

Hepatocytes: The main structural component of the liver. They are specialized epithelial cells that are organized into interconnected plates called lobules. [NIH]

Hepatovirus: A genus of Picornaviridae causing infectious hepatitis naturally in humans and experimentally in other primates. It is transmitted through fecal contamination of food or water. [NIH]

Hereditary: Of, relating to, or denoting factors that can be transmitted genetically from one generation to another. [NIH]

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

Heterogeneity: The property of one or more samples or populations which implies that they are not identical in respect of some or all of their parameters, e. g. heterogeneity of variance. [NIH]

Homologous: Corresponding in structure, position, origin, etc., as (a) the feathers of a bird and the scales of a fish, (b) antigen and its specific antibody, (c) allelic chromosomes. [EU]

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

Hormone: A substance in the body that regulates certain organs. Hormones such as gastrin help in breaking down food. Some hormones come from cells in the stomach and small intestine. [NIH]

Host: Any animal that receives a transplanted graft. [NIH]

Humoral: Of, relating to, proceeding from, or involving a bodily humour - now often used of endocrine factors as opposed to neural or somatic. [EU]

Humour: 1. A normal functioning fluid or semifluid of the body (as the blood, lymph or bile) especially of vertebrates. 2. A secretion that is itself an excitant of activity (as certain

hormones). [EU]

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

Hydrogen Peroxide: A strong oxidizing agent used in aqueous solution as a ripening agent, bleach, and topical anti-infective. It is relatively unstable and solutions deteriorate over time unless stabilized by the addition of acetanilide or similar organic materials. [NIH]

Hydrolysis: The process of cleaving a chemical compound by the addition of a molecule of water. [NIH]

Hydroxylysine: A hydroxylated derivative of the amino acid lysine that is present in certain collagens. [NIH]

Hydroxyproline: A hydroxylated form of the imino acid proline. A deficiency in ascorbic acid can result in impaired hydroxyproline formation. [NIH]

Hypercalcemia: Abnormally high level of calcium in the blood. [NIH]

Hypersensitivity: Altered reactivity to an antigen, which can result in pathologic reactions upon subsequent exposure to that particular antigen. [NIH]

Hyperthyroidism: Excessive functional activity of the thyroid gland. [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]

Id: The part of the personality structure which harbors the unconscious instinctive desires and strivings of the individual. [NIH]

Idiopathic: Describes a disease of unknown cause. [NIH]

Immune Complex Diseases: Group of diseases mediated by the deposition of large soluble complexes of antigen and antibody with resultant damage to tissue. Besides serum sickness and the arthus reaction, evidence supports a pathogenic role for immune complexes in many other systemic immunologic diseases including glomerulonephritis, systemic lupus erythematosus and polyarteritis nodosa. [NIH]

Immune function: Production and action of cells that fight disease or infection. [NIH]

Immune response: The activity of the immune system against foreign substances (antigens). [NIH]

Immune system: The organs, cells, and molecules responsible for the recognition and disposal of foreign ("non-self") material which enters the body. [NIH]

Immunity: Nonsusceptibility to the invasive or pathogenic effects of foreign microorganisms or to the toxic effect of antigenic substances. [NIH]

Immunochemistry: Field of chemistry that pertains to immunological phenomena and the study of chemical reactions related to antigen stimulation of tissues. It includes physicochemical interactions between antigens and antibodies. [NIH]

Immunodeficiency: The decreased ability of the body to fight infection and disease. [NIH]

Immunofluorescence: A technique for identifying molecules present on the surfaces of cells

or in tissues using a highly fluorescent substance coupled to a specific antibody. [NIH]

Immunoglobulin: A protein that acts as an antibody. [NIH]

Immunohistochemistry: Histochemical localization of immunoreactive substances using labeled antibodies as reagents. [NIH]

Immunology: The study of the body's immune system. [NIH]

Immunophenotyping: Process of classifying cells of the immune system based on structural and functional differences. The process is commonly used to analyze and sort T-lymphocytes into subsets based on CD antigens by the technique of flow cytometry. [NIH]

Immunosuppressant: An agent capable of suppressing immune responses. [EU]

Immunosuppressive: Describes the ability to lower immune system responses. [NIH]

Immunosuppressive Agents: Agents that suppress immune function by one of several mechanisms of action. Classical cytotoxic immunosuppressants act by inhibiting DNA synthesis. Others may act through activation of suppressor T-cell populations or by inhibiting the activation of helper cells. While immunosuppression has been brought about in the past primarily to prevent rejection of transplanted organs, new applications involving mediation of the effects of interleukins and other cytokines are emerging. [NIH]

Impairment: In the context of health experience, an impairment is any loss or abnormality of psychological, physiological, or anatomical structure or function. [NIH]

Implant radiation: A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near the tumor. Also called [NIH]

In situ: In the natural or normal place; confined to the site of origin without invasion of neighbouring tissues. [EU]

In Situ Hybridization: A technique that localizes specific nucleic acid sequences within intact chromosomes, eukaryotic cells, or bacterial cells through the use of specific nucleic acid-labeled probes. [NIH]

In vitro: In the laboratory (outside the body). The opposite of in vivo (in the body). [NIH]

In vivo: In the body. The opposite of in vitro (outside the body or in the laboratory). [NIH]

Incision: A cut made in the body during surgery. [NIH]

Indicative: That indicates; that points out more or less exactly; that reveals fairly clearly. [EU]

Induction: The act or process of inducing or causing to occur, especially the production of a specific morphogenetic effect in the developing embryo through the influence of evocators or organizers, or the production of anaesthesia or unconsciousness by use of appropriate agents. [EU]

Infarction: A pathological process consisting of a sudden insufficient blood supply to an area, which results in necrosis of that area. It is usually caused by a thrombus, an embolus, or a vascular torsion. [NIH]

Infection: 1. Invasion and multiplication of microorganisms in body tissues, which may be clinically unapparent or result in local cellular injury due to competitive metabolism, toxins, intracellular replication, or antigen-antibody response. The infection may remain localized, subclinical, and temporary if the body's defensive mechanisms are effective. A local infection may persist and spread by extension to become an acute, subacute, or chronic clinical infection or disease state. A local infection may also become systemic when the microorganisms gain access to the lymphatic or vascular system. 2. An infectious disease. [EU]

Infiltration: The diffusion or accumulation in a tissue or cells of substances not normal to it or in amounts of the normal. Also, the material so accumulated. [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]

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

Infusion: A method of putting fluids, including drugs, into the bloodstream. Also called intravenous infusion. [NIH]

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

Initiation: Mutation induced by a chemical reactive substance causing cell changes; being a step in a carcinogenic process. [NIH]

Initiator: A chemically reactive substance which may cause cell changes if ingested, inhaled or absorbed into the body; the substance may thus initiate a carcinogenic process. [NIH]

Inlay: In dentistry, a filling first made to correspond with the form of a dental cavity and then cemented into the cavity. [NIH]

Insight: The capacity to understand one's own motives, to be aware of one's own psychodynamics, to appreciate the meaning of symbolic behavior. [NIH]

Insulator: Material covering the metal conductor of the lead. It is usually polyurethane or silicone. [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]

Insulin-dependent diabetes mellitus: A disease characterized by high levels of blood glucose resulting from defects in insulin secretion, insulin action, or both. Autoimmune, genetic, and environmental factors are involved in the development of type I diabetes. [NIH]

Interferon: A biological response modifier (a substance that can improve the body's natural response to disease). Interferons interfere with the division of cancer cells and can slow tumor growth. There are several types of interferons, including interferon-alpha, -beta, and -gamma. These substances are normally produced by the body. They are also made in the laboratory for use in treating cancer and other diseases. [NIH]

Interferon-alpha: One of the type I interferons produced by peripheral blood leukocytes or lymphoblastoid cells when exposed to live or inactivated virus, double-stranded RNA, or bacterial products. It is the major interferon produced by virus-induced leukocyte cultures and, in addition to its pronounced antiviral activity, it causes activation of NK cells. [NIH]

Interleukin-1: A soluble factor produced by monocytes, macrophages, and other cells which activates T-lymphocytes and potentiates their response to mitogens or antigens. IL-1 consists of two distinct forms, IL-1 alpha and IL-1 beta which perform the same functions but are distinct proteins. The biological effects of IL-1 include the ability to replace macrophage requirements for T-cell activation. The factor is distinct from interleukin-2. [NIH]

Interleukin-2: Chemical mediator produced by activated T lymphocytes and which regulates the proliferation of T cells, as well as playing a role in the regulation of NK cell activity. [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]

Internal radiation: A procedure in which radioactive material sealed in needles, seeds, wires, or catheters is placed directly into or near the tumor. Also called brachytherapy, implant radiation, or interstitial radiation therapy. [NIH]

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

Intestinal: Having to do with the intestines. [NIH]

Intestinal Mucosa: The surface lining of the intestines where the cells absorb nutrients. [NIH]

Intestinal Pseudo-Obstruction: Obstruction of the intestines that is functional, not mechanical. [NIH]

Intestines: The section of the alimentary canal from the stomach to the anus. It includes the large intestine and small intestine. [NIH]

Intracellular: Inside a cell. [NIH]

Intracranial Hypertension: Increased pressure within the cranial vault. This may result from several conditions, including hydrocephalus; brain edema; intracranial masses; severe systemic hypertension; pseudotumor cerebri; and other disorders. [NIH]

Intravenous: IV. Into a vein. [NIH]

Intrinsic: Situated entirely within or pertaining exclusively to a part. [EU]

Invasive: 1. Having the quality of invasiveness. 2. Involving puncture or incision of the skin or insertion of an instrument or foreign material into the body; said of diagnostic techniques. [EU]

Involuntary: Reaction occurring without intention or volition. [NIH]

Iodine: A nonmetallic element of the halogen group that is represented by the atomic symbol I, atomic number 53, and atomic weight of 126.90. It is a nutritionally essential element, especially important in thyroid hormone synthesis. In solution, it has anti-infective properties and is used topically. [NIH]

Ionizing: Radiation comprising charged particles, e. g. electrons, protons, alpha-particles, etc., having sufficient kinetic energy to produce ionization by collision. [NIH]

Irradiation: The use of high-energy radiation from x-rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy) or from materials called radioisotopes. Radioisotopes produce radiation and can be placed in or near the tumor or in the area near cancer cells. This type of radiation treatment is called internal radiation therapy, implant radiation, interstitial radiation, or brachytherapy. Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. Irradiation is also called radiation therapy, radiotherapy, and x-ray therapy. [NIH]

Ischemia: Deficiency of blood in a part, due to functional constriction or actual obstruction of a blood vessel. [EU]

Isoenzyme: Different forms of an enzyme, usually occurring in different tissues. The isoenzymes of a particular enzyme catalyze the same reaction but they differ in some of their properties. [NIH]

Joint: The point of contact between elements of an animal skeleton with the parts that surround and support it. [NIH]

Kb: A measure of the length of DNA fragments, 1 Kb = 1000 base pairs. The largest DNA fragments are up to 50 kilobases long. [NIH]

Kidney Disease: Any one of several chronic conditions that are caused by damage to the cells of the kidney. People who have had diabetes for a long time may have kidney damage. Also called nephropathy. [NIH]

Lacrimal: Pertaining to the tears. [EU]

Lag: The time elapsing between application of a stimulus and the resulting reaction. [NIH]

Language Development: The gradual expansion in complexity and meaning of symbols and sounds as perceived and interpreted by the individual through a maturational and learning process. Stages in development include babbling, cooing, word imitation with cognition, and use of short sentences. [NIH]

Language Development Disorders: Conditions characterized by language abilities (comprehension and expression of speech and writing) that are below the expected level for a given age, generally in the absence of an intellectual impairment. These conditions may be associated with deafness; brain diseases; mental disorders; or environmental factors. [NIH]

Language Disorders: Conditions characterized by deficiencies of comprehension or expression of written and spoken forms of language. These include acquired and developmental disorders. [NIH]

Language Therapy: Rehabilitation of persons with language disorders or training of children with language development disorders. [NIH]

Large Intestine: The part of the intestine that goes from the cecum to the rectum. The large intestine absorbs water from stool and changes it from a liquid to a solid form. The large intestine is 5 feet long and includes the appendix, cecum, colon, and rectum. Also called colon. [NIH]

Laryngoscopy: Examination, therapy, or surgery of the interior of the larynx performed with a specially designed endoscope. [NIH]

Larynx: An irregularly shaped, musclocartilaginous tubular structure, lined with mucous membrane, located at the top of the trachea and below the root of the tongue and the hyoid bone. It is the essential sphincter guarding the entrance into the trachea and functioning secondarily as the organ of voice. [NIH]

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

Leucocyte: All the white cells of the blood and their precursors (myeloid cell series, lymphoid cell series) but commonly used to indicate granulocytes exclusive of lymphocytes. [NIH]

Leukemia: Cancer of blood-forming tissue. [NIH]

Leukocytes: White blood cells. These include granular leukocytes (basophils, eosinophils, and neutrophils) as well as non-granular leukocytes (lymphocytes and monocytes). [NIH]

Leuprolide: A potent and long acting analog of naturally occurring gonadotropin-releasing hormone (gonadorelin). Its action is similar to gonadorelin, which regulates the synthesis and release of pituitary gonadotropins. [NIH]

Library Services: Services offered to the library user. They include reference and circulation. [NIH]

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

Ligands: A RNA simulation method developed by the MIT. [NIH]

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

Lipid: Fat. [NIH]

Liver: A large, glandular organ located in the upper abdomen. The liver cleanses the blood and aids in digestion by secreting bile. [NIH]

Liver Cirrhosis: Liver disease in which the normal microcirculation, the gross vascular anatomy, and the hepatic architecture have been variably destroyed and altered with fibrous

septa surrounding regenerated or regenerating parenchymal nodules. [NIH]

Liver Neoplasms: Tumors or cancer of the liver. [NIH]

Liver scan: An image of the liver created on a computer screen or on film. A radioactive substance is injected into a blood vessel and travels through the bloodstream. It collects in the liver, especially in abnormal areas, and can be detected by the scanner. [NIH]

Localization: The process of determining or marking the location or site of a lesion or disease. May also refer to the process of keeping a lesion or disease in a specific location or site. [NIH]

Localized: Cancer which has not metastasized yet. [NIH]

Longitudinal study: Also referred to as a "cohort study" or "prospective study"; the analytic method of epidemiologic study in which subsets of a defined population can be identified who are, have been, or in the future may be exposed or not exposed, or exposed in different degrees, to a factor or factors hypothesized to influence the probability of occurrence of a given disease or other outcome. The main feature of this type of study is to observe large numbers of subjects over an extended time, with comparisons of incidence rates in groups that differ in exposure levels. [NIH]

Loop: A wire usually of platinum bent at one end into a small loop (usually 4 mm inside diameter) and used in transferring microorganisms. [NIH]

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

Lymph: The almost colorless fluid that travels through the lymphatic system and carries cells that help fight infection and disease. [NIH]

Lymph node: A rounded mass of lymphatic tissue that is surrounded by a capsule of connective tissue. Also known as a lymph gland. Lymph nodes are spread out along lymphatic vessels and contain many lymphocytes, which filter the lymphatic fluid (lymph). [NIH]

Lymphadenopathy: Disease or swelling of the lymph nodes. [NIH]

Lymphatic: The tissues and organs, including the bone marrow, spleen, thymus, and lymph nodes, that produce and store cells that fight infection and disease. [NIH]

Lymphatic system: The tissues and organs that produce, store, and carry white blood cells that fight infection and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes and a network of thin tubes that carry lymph and white blood cells. These tubes branch, like blood vessels, into all the tissues of the body. [NIH]

Lymphoblastic: One of the most aggressive types of non-Hodgkin lymphoma. [NIH]

Lymphoblasts: Interferon produced predominantly by leucocyte cells. [NIH]

Lymphocyte: A white blood cell. Lymphocytes have a number of roles in the immune system, including the production of antibodies and other substances that fight infection and diseases. [NIH]

Lymphocytic: Referring to lymphocytes, a type of white blood cell. [NIH]

Lymphocytosis: Excess of normal lymphocytes in the blood or in any effusion. [NIH]

Lymphoid: Referring to lymphocytes, a type of white blood cell. Also refers to tissue in which lymphocytes develop. [NIH]

Lymphoma: A general term for various neoplastic diseases of the lymphoid tissue. [NIH]

Lymphotoxin: Soluble substance released by lymphocytes activated by antigens or T-cell mitogens, that is cytotoxic to other cells. It is involved in allergies and chronic inflammatory

diseases. Lymphotoxin is antigenically distinct from tumor necrosis factor-alpha (tumor necrosis factor), though they both share a common receptor, biological activities, and significant amino acid sequences. [NIH]

Lytic: 1. Pertaining to lysis or to a lysis. 2. Producing lysis. [EU]

Macrophage: A type of white blood cell that surrounds and kills microorganisms, removes dead cells, and stimulates the action of other immune system cells. [NIH]

Magnetic Resonance Imaging: Non-invasive method of demonstrating internal anatomy based on the principle that atomic nuclei in a strong magnetic field absorb pulses of radiofrequency energy and emit them as radiowaves which can be reconstructed into computerized images. The concept includes proton spin tomographic techniques. [NIH]

Magnetic Resonance Spectroscopy: Spectroscopic method of measuring the magnetic moment of elementary particles such as atomic nuclei, protons or electrons. It is employed in clinical applications such as NMR Tomography (magnetic resonance imaging). [NIH]

Major Histocompatibility Complex: The genetic region which contains the loci of genes which determine the structure of the serologically defined (SD) and lymphocyte-defined (LD) transplantation antigens, genes which control the structure of the immune response-associated (Ia) antigens, the immune response (Ir) genes which control the ability of an animal to respond immunologically to antigenic stimuli, and genes which determine the structure and/or level of the first four components of complement. [NIH]

Malabsorption: Impaired intestinal absorption of nutrients. [EU]

Malignancy: A cancerous tumor that can invade and destroy nearby tissue and spread to other parts of the body. [NIH]

Malignant: Cancerous; a growth with a tendency to invade and destroy nearby tissue and spread to other parts of the body. [NIH]

Malnutrition: A condition caused by not eating enough food or not eating a balanced diet. [NIH]

Mammogram: An x-ray of the breast. [NIH]

Mandible: The largest and strongest bone of the face constituting the lower jaw. It supports the lower teeth. [NIH]

Median Nerve: A major nerve of the upper extremity. In humans, the fibers of the median nerve originate in the lower cervical and upper thoracic spinal cord (usually C6 to T1), travel via the brachial plexus, and supply sensory and motor innervation to parts of the forearm and hand. [NIH]

Mediate: Indirect; accomplished by the aid of an intervening medium. [EU]

Medical Records: Recording of pertinent information concerning patient's illness or illnesses. [NIH]

MEDLINE: An online database of MEDLARS, the computerized bibliographic Medical Literature Analysis and Retrieval System of the National Library of Medicine. [NIH]

Melanocytes: Epidermal dendritic pigment cells which control long-term morphological color changes by alteration in their number or in the amount of pigment they produce and store in the pigment containing organelles called melanosomes. Melanophores are larger cells which do not exist in mammals. [NIH]

Melanoma: A form of skin cancer that arises in melanocytes, the cells that produce pigment. Melanoma usually begins in a mole. [NIH]

Membrane: A very thin layer of tissue that covers a surface. [NIH]

Memory: Complex mental function having four distinct phases: (1) memorizing or learning,

(2) retention, (3) recall, and (4) recognition. Clinically, it is usually subdivided into immediate, recent, and remote memory. [NIH]

Meninges: The three membranes that cover and protect the brain and spinal cord. [NIH]

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

Mental Disorders: Psychiatric illness or diseases manifested by breakdowns in the adaptational process expressed primarily as abnormalities of thought, feeling, and behavior producing either distress or impairment of function. [NIH]

Mesenchymal: Refers to cells that develop into connective tissue, blood vessels, and lymphatic tissue. [NIH]

Metastasis: The spread of cancer from one part of the body to another. Tumors formed from cells that have spread are called "secondary tumors" and contain cells that are like those in the original (primary) tumor. The plural is metastases. [NIH]

Methimazole: A thioureylene antithyroid agent that inhibits the formation of thyroid hormones by interfering with the incorporation of iodine into tyrosyl residues of thyroglobulin. This is done by interfering with the oxidation of iodide ion and iodotyrosyl groups through inhibition of the peroxidase enzyme. [NIH]

Methotrexate: An antineoplastic antimetabolite with immunosuppressant properties. It is an inhibitor of dihydrofolate reductase and prevents the formation of tetrahydrofolate, necessary for synthesis of thymidylate, an essential component of DNA. [NIH]

MI: Myocardial infarction. Gross necrosis of the myocardium as a result of interruption of the blood supply to the area; it is almost always caused by atherosclerosis of the coronary arteries, upon which coronary thrombosis is usually superimposed. [NIH]

Microbe: An organism which cannot be observed with the naked eye; e. g. unicellular animals, lower algae, lower fungi, bacteria. [NIH]

Microcirculation: The vascular network lying between the arterioles and venules; includes capillaries, metarterioles and arteriovenous anastomoses. Also, the flow of blood through this network. [NIH]

Microorganism: An organism that can be seen only through a microscope. Microorganisms include bacteria, protozoa, algae, and fungi. Although viruses are not considered living organisms, they are sometimes classified as microorganisms. [NIH]

Microwaves: That portion of the electromagnetic spectrum lying between UHF (ultrahigh frequency) radio waves and heat (infrared) waves. Microwaves are used to generate heat, especially in some types of diathermy. They may cause heat damage to tissues. [NIH]

Mineralocorticoids: A group of corticosteroids primarily associated with the regulation of water and electrolyte balance. This is accomplished through the effect on ion transport in renal tubules, resulting in retention of sodium and loss of potassium. Mineralocorticoid secretion is itself regulated by plasma volume, serum potassium, and angiotensin II. [NIH]

Mitosis: A method of indirect cell division by means of which the two daughter nuclei normally receive identical complements of the number of chromosomes of the somatic cells of the species. [NIH]

Mixed Connective Tissue Disease: A syndrome with overlapping clinical features of systemic lupus erythematosus, scleroderma, polymyositis, and Raynaud's phenomenon. The disease is differentially characterized by high serum titers of antibodies to ribonuclease-sensitive extractable (saline soluble) nuclear antigen and a "speckled" epidermal nuclear staining pattern on direct immunofluorescence. [NIH]

Modification: A change in an organism, or in a process in an organism, that is acquired

from its own activity or environment. [NIH]

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

Molecule: A chemical made up of two or more atoms. The atoms in a molecule can be the same (an oxygen molecule has two oxygen atoms) or different (a water molecule has two hydrogen atoms and one oxygen atom). Biological molecules, such as proteins and DNA, can be made up of many thousands of atoms. [NIH]

Monitor: An apparatus which automatically records such physiological signs as respiration, pulse, and blood pressure in an anesthetized patient or one undergoing surgical or other procedures. [NIH]

Monoclonal: An antibody produced by culturing a single type of cell. It therefore consists of a single species of immunoglobulin molecules. [NIH]

Monocyte: A type of white blood cell. [NIH]

Monocyte Chemoattractant Protein-1: A chemokine that is a chemoattractant for human monocytes and may also cause cellular activation of specific functions related to host defense. It is produced by leukocytes of both monocyte and lymphocyte lineage and by fibroblasts during tissue injury. [NIH]

Mononuclear: A cell with one nucleus. [NIH]

Motion Sickness: Sickness caused by motion, as sea sickness, train sickness, car sickness, and air sickness. [NIH]

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

Mucosa: A mucous membrane, or tunica mucosa. [EU]

Mucus: The viscous secretion of mucous membranes. It contains mucin, white blood cells, water, inorganic salts, and exfoliated cells. [NIH]

Multidrug resistance: Adaptation of tumor cells to anticancer drugs in ways that make the drugs less effective. [NIH]

Multiple sclerosis: A disorder of the central nervous system marked by weakness, numbness, a loss of muscle coordination, and problems with vision, speech, and bladder control. Multiple sclerosis is thought to be an autoimmune disease in which the body's immune system destroys myelin. Myelin is a substance that contains both protein and fat (lipid) and serves as a nerve insulator and helps in the transmission of nerve signals. [NIH]

Muscle Fibers: Large single cells, either cylindrical or prismatic in shape, that form the basic unit of muscle tissue. They consist of a soft contractile substance enclosed in a tubular sheath. [NIH]

Muscle Hypertonia: Abnormal increase in skeletal or smooth muscle tone. Skeletal muscle hypertonicity may be associated with pyramidal tract lesions or basal ganglia diseases. [NIH]

Muscular Atrophy: Derangement in size and number of muscle fibers occurring with aging, reduction in blood supply, or following immobilization, prolonged weightlessness, malnutrition, and particularly in denervation. [NIH]

Muscular Diseases: Acquired, familial, and congenital disorders of skeletal muscle and smooth muscle. [NIH]

Muscular Dystrophies: A general term for a group of inherited disorders which are characterized by progressive degeneration of skeletal muscles. [NIH]

Musculoskeletal System: The muscles, bones, and cartilage of the body. [NIH]

Myalgia: Pain in a muscle or muscles. [EU]

Myasthenia: Muscular debility; any constitutional anomaly of muscle. [EU]

Myelin: The fatty substance that covers and protects nerves. [NIH]

Myocarditis: Inflammation of the myocardium; inflammation of the muscular walls of the heart. [EU]

Myocardium: The muscle tissue of the heart composed of striated, involuntary muscle known as cardiac muscle. [NIH]

Myopathy: Any disease of a muscle. [EU]

Myosin: Chief protein in muscle and the main constituent of the thick filaments of muscle fibers. In conjunction with actin, it is responsible for the contraction and relaxation of muscles. [NIH]

Myositis: Inflammation of a voluntary muscle. [EU]

Myotonic Dystrophy: A condition presenting muscle weakness and wasting which may be progressive. [NIH]

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]

Nasal Mucosa: The mucous membrane lining the nasal cavity. [NIH]

Natural selection: A part of the evolutionary process resulting in the survival and reproduction of the best adapted individuals. [NIH]

Nausea: An unpleasant sensation in the stomach usually accompanied by the urge to vomit. Common causes are early pregnancy, sea and motion sickness, emotional stress, intense pain, food poisoning, and various enteroviruses. [NIH]

NCI: National Cancer Institute. NCI, part of the National Institutes of Health of the United States Department of Health and Human Services, is the federal government's principal agency for cancer research. NCI conducts, coordinates, and funds cancer research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer. Access the NCI Web site at <http://cancer.gov>. [NIH]

Need: A state of tension or dissatisfaction felt by an individual that impels him to action toward a goal he believes will satisfy the impulse. [NIH]

Neoplasia: Abnormal and uncontrolled cell growth. [NIH]

Neoplasm: A new growth of benign or malignant tissue. [NIH]

Neoplastic: Pertaining to or like a neoplasm (= any new and abnormal growth); pertaining to neoplasia (= the formation of a neoplasm). [EU]

Neopterin: A pteridine derivative present in body fluids; elevated levels result from immune system activation, malignant disease, allograft rejection, and viral infections. (From Stedman, 26th ed) Neopterin also serves as a precursor in the biosynthesis of biopterin. [NIH]

Nephritis: Inflammation of the kidney; a focal or diffuse proliferative or destructive process which may involve the glomerulus, tubule, or interstitial renal tissue. [EU]

Nephropathy: Disease of the kidneys. [EU]

Nerve: A cordlike structure of nervous tissue that connects parts of the nervous system with other tissues of the body and conveys nervous impulses to, or away from, these tissues. [NIH]

Nervous System: The entire nerve apparatus composed of the brain, spinal cord, nerves and ganglia. [NIH]

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

Neurologic: Having to do with nerves or the nervous system. [NIH]

Neuromuscular: Pertaining to muscles and nerves. [EU]

Neuromuscular Diseases: A general term encompassing lower motor neuron disease; peripheral nervous system diseases; and certain muscular diseases. Manifestations include muscle weakness; fasciculation; muscle atrophy; spasm; myokymia; muscle hypertonia, myalgias, and musclehypotonia. [NIH]

Neuromuscular Junction: The synapse between a neuron and a muscle. [NIH]

Neuropathy: A problem in any part of the nervous system except the brain and spinal cord. Neuropathies can be caused by infection, toxic substances, or disease. [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]

Neutrons: Electrically neutral elementary particles found in all atomic nuclei except light hydrogen; the mass is equal to that of the proton and electron combined and they are unstable when isolated from the nucleus, undergoing beta decay. Slow, thermal, epithermal, and fast neutrons refer to the energy levels with which the neutrons are ejected from heavier nuclei during their decay. [NIH]

Neutrophil: A type of white blood cell. [NIH]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Nitrogen: An element with the atomic symbol N, atomic number 7, and atomic weight 14. Nitrogen exists as a diatomic gas and makes up about 78% of the earth's atmosphere by volume. It is a constituent of proteins and nucleic acids and found in all living cells. [NIH]

Nuclear: A test of the structure, blood flow, and function of the kidneys. The doctor injects a mildly radioactive solution into an arm vein and uses x-rays to monitor its progress through the kidneys. [NIH]

Nuclear Proteins: Proteins found in the nucleus of a cell. Do not confuse with nucleoproteins which are proteins conjugated with nucleic acids, that are not necessarily present in the nucleus. [NIH]

Nuclei: A body of specialized protoplasm found in nearly all cells and containing the chromosomes. [NIH]

Nucleic acid: Either of two types of macromolecule (DNA or RNA) formed by polymerization of nucleotides. Nucleic acids are found in all living cells and contain the information (genetic code) for the transfer of genetic information from one generation to the next. [NIH]

Nucleolus: A small dense body (sub organelle) within the nucleus of eukaryotic cells, visible by phase contrast and interference microscopy in live cells throughout interphase. Contains RNA and protein and is the site of synthesis of ribosomal RNA. [NIH]

Nucleoproteins: Proteins conjugated with nucleic acids. [NIH]

Nucleus: A body of specialized protoplasm found in nearly all cells and containing the

chromosomes. [NIH]

Nutritional Support: The administration of nutrients for assimilation and utilization by a patient by means other than normal eating. It does not include fluid therapy which normalizes body fluids to restore water-electrolyte balance. [NIH]

Odour: A volatile emanation that is perceived by the sense of smell. [EU]

Oncogene: A gene that normally directs cell growth. If altered, an oncogene can promote or allow the uncontrolled growth of cancer. Alterations can be inherited or caused by an environmental exposure to carcinogens. [NIH]

Osteoarthritis: A progressive, degenerative joint disease, the most common form of arthritis, especially in older persons. The disease is thought to result not from the aging process but from biochemical changes and biomechanical stresses affecting articular cartilage. In the foreign literature it is often called osteoarthrosis deformans. [NIH]

Osteoporosis: Reduction of bone mass without alteration in the composition of bone, leading to fractures. Primary osteoporosis can be of two major types: postmenopausal osteoporosis and age-related (or senile) osteoporosis. [NIH]

Outpatient: A patient who is not an inmate of a hospital but receives diagnosis or treatment in a clinic or dispensary connected with the hospital. [NIH]

Oxidation: The act of oxidizing or state of being oxidized. Chemically it consists in the increase of positive charges on an atom or the loss of negative charges. Most biological oxidations are accomplished by the removal of a pair of hydrogen atoms (dehydrogenation) from a molecule. Such oxidations must be accompanied by reduction of an acceptor molecule. Univalent o. indicates loss of one electron; divalent o., the loss of two electrons. [EU]

Oxidative Phosphorylation: Electron transfer through the cytochrome system liberating free energy which is transformed into high-energy phosphate bonds. [NIH]

Oxygen Consumption: The oxygen consumption is determined by calculating the difference between the amount of oxygen inhaled and exhaled. [NIH]

Palate: The structure that forms the roof of the mouth. It consists of the anterior hard palate and the posterior soft palate. [NIH]

Palliative: 1. Affording relief, but not cure. 2. An alleviating medicine. [EU]

Pancreas: A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the Islets of Langerhans, while the exocrine portion is a compound acinar gland that secretes digestive enzymes. [NIH]

Pancreatic: Having to do with the pancreas. [NIH]

Pancreatic cancer: Cancer of the pancreas, a salivary gland of the abdomen. [NIH]

Paralysis: Loss of ability to move all or part of the body. [NIH]

Paraparesis: Mild to moderate loss of bilateral lower extremity motor function, which may be a manifestation of spinal cord diseases; peripheral nervous system diseases; muscular diseases; intracranial hypertension; parasagittal brain lesions; and other conditions. [NIH]

Parietal: 1. Of or pertaining to the walls of a cavity. 2. Pertaining to or located near the parietal bone, as the parietal lobe. [EU]

Parotid: The space that contains the parotid gland, the facial nerve, the external carotid artery, and the retromandibular vein. [NIH]

Paroxysmal: Recurring in paroxysms (= spasms or seizures). [EU]

Partial remission: The shrinking, but not complete disappearance, of a tumor in response to therapy. Also called partial response. [NIH]

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

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

Pathologic Processes: The abnormal mechanisms and forms involved in the dysfunctions of tissues and organs. [NIH]

Pathologist: A doctor who identifies diseases by studying cells and tissues under a microscope. [NIH]

Patient Education: The teaching or training of patients concerning their own health needs. [NIH]

Pelvic: Pertaining to the pelvis. [EU]

Pemphigus: Group of chronic blistering diseases characterized histologically by acantholysis and blister formation within the epidermis. [NIH]

Penicillamine: 3-Mercapto-D-valine. The most characteristic degradation product of the penicillin antibiotics. It is used as an antirheumatic and as a chelating agent in Wilson's disease. [NIH]

Penicillin: An antibiotic drug used to treat infection. [NIH]

Peptide: Any compound consisting of two or more amino acids, the building blocks of proteins. Peptides are combined to make proteins. [NIH]

Pericardium: The fibroserous sac surrounding the heart and the roots of the great vessels. [NIH]

Peripheral blood: Blood circulating throughout the body. [NIH]

Peripheral Nervous System: The nervous system outside of the brain and spinal cord. The peripheral nervous system has autonomic and somatic divisions. The autonomic nervous system includes the enteric, parasympathetic, and sympathetic subdivisions. The somatic nervous system includes the cranial and spinal nerves and their ganglia and the peripheral sensory receptors. [NIH]

Peripheral Nervous System Diseases: Diseases of the peripheral nerves external to the brain and spinal cord, which includes diseases of the nerve roots, ganglia, plexi, autonomic nerves, sensory nerves, and motor nerves. [NIH]

Peripheral stem cells: Immature cells found circulating in the bloodstream. New blood cells develop from peripheral stem cells. [NIH]

Pharmacologic: Pertaining to pharmacology or to the properties and reactions of drugs. [EU]

Pharynx: The hollow tube about 5 inches long that starts behind the nose and ends at the top of the trachea (windpipe) and esophagus (the tube that goes to the stomach). [NIH]

Phospholipids: Lipids containing one or more phosphate groups, particularly those derived from either glycerol (phosphoglycerides; glycerophospholipids) or sphingosine (sphingolipids). They are polar lipids that are of great importance for the structure and function of cell membranes and are the most abundant of membrane lipids, although not stored in large amounts in the system. [NIH]

Physical Examination: Systematic and thorough inspection of the patient for physical signs of disease or abnormality. [NIH]

Physical Fitness: A state of well-being in which performance is optimal, often as a result of

physical conditioning which may be prescribed for disease therapy. [NIH]

Physiologic: Having to do with the functions of the body. When used in the phrase "physiologic age," it refers to an age assigned by general health, as opposed to calendar age. [NIH]

Pilot study: The initial study examining a new method or treatment. [NIH]

Pitch: The subjective awareness of the frequency or spectral distribution of a sound. [NIH]

Pituitary Gland: A small, unpaired gland situated in the sella turcica tissue. It is connected to the hypothalamus by a short stalk. [NIH]

Plants: Multicellular, eukaryotic life forms of the kingdom Plantae. They are characterized by a mainly photosynthetic mode of nutrition; essentially unlimited growth at localized regions of cell divisions (meristems); cellulose within cells providing rigidity; the absence of organs of locomotion; absence of nervous and sensory systems; and an alteration of haploid and diploid generations. [NIH]

Plasma: The clear, yellowish, fluid part of the blood that carries the blood cells. The proteins that form blood clots are in plasma. [NIH]

Plasma cells: A type of white blood cell that produces antibodies. [NIH]

Plasma Exchange: Removal of plasma and replacement with various fluids, e.g., fresh frozen plasma, plasma protein fractions (PPF), albumin preparations, dextran solutions, saline. Used in treatment of autoimmune diseases, immune complex diseases, diseases of excess plasma factors, and other conditions. [NIH]

Plasma protein: One of the hundreds of different proteins present in blood plasma, including carrier proteins (such as albumin, transferrin, and haptoglobin), fibrinogen and other coagulation factors, complement components, immunoglobulins, enzyme inhibitors, precursors of substances such as angiotension and bradykinin, and many other types of proteins. [EU]

Pleura: The thin serous membrane enveloping the lungs and lining the thoracic cavity. [NIH]

Pleural: A circumscribed area of hyaline whorled fibrous tissue which appears on the surface of the parietal pleura, on the fibrous part of the diaphragm or on the pleura in the interlobar fissures. [NIH]

Pleural cavity: A space enclosed by the pleura (thin tissue covering the lungs and lining the interior wall of the chest cavity). It is bound by thin membranes. [NIH]

Pleural Effusion: Presence of fluid in the pleural cavity resulting from excessive transudation or exudation from the pleural surfaces. It is a sign of disease and not a diagnosis in itself. [NIH]

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

Pneumonia: Inflammation of the lungs. [NIH]

Pneumonitis: A disease caused by inhaling a wide variety of substances such as dusts and molds. Also called "farmer's disease". [NIH]

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

Polyarteritis Nodosa: A form of necrotizing vasculitis involving small- and medium-sized arteries. The signs and symptoms result from infarction and scarring of the affected organ system. [NIH]

Polyarthrititis: An inflammation of several joints together. [EU]

Polycystic: An inherited disorder characterized by many grape-like clusters of fluid-filled cysts that make both kidneys larger over time. These cysts take over and destroy working kidney tissue. PKD may cause chronic renal failure and end-stage renal disease. [NIH]

Polymerase: An enzyme which catalyses the synthesis of DNA using a single DNA strand as a template. The polymerase copies the template in the 5'-3'direction provided that sufficient quantities of free nucleotides, dATP and dTTP are present. [NIH]

Polymerase Chain Reaction: In vitro method for producing large amounts of specific DNA or RNA fragments of defined length and sequence from small amounts of short oligonucleotide flanking sequences (primers). The essential steps include thermal denaturation of the double-stranded target molecules, annealing of the primers to their complementary sequences, and extension of the annealed primers by enzymatic synthesis with DNA polymerase. The reaction is efficient, specific, and extremely sensitive. Uses for the reaction include disease diagnosis, detection of difficult-to-isolate pathogens, mutation analysis, genetic testing, DNA sequencing, and analyzing evolutionary relationships. [NIH]

Polymyalgia Rheumatica: A syndrome in the elderly characterized by proximal joint and muscle pain, high erythrocyte sedimentation rate, and a self-limiting course. Pain is usually accompanied by evidence of an inflammatory reaction. Women are affected twice as commonly as men and Caucasians more frequently than other groups. The condition is frequently associated with temporal arteritis and some theories pose the possibility that the two diseases arise from a single etiology or even that they are the same entity. [NIH]

Polysaccharide: A type of carbohydrate. It contains sugar molecules that are linked together chemically. [NIH]

Posterior: Situated in back of, or in the back part of, or affecting the back or dorsal surface of the body. In lower animals, it refers to the caudal end of the body. [EU]

Postmenopausal: Refers to the time after menopause. Menopause is the time in a woman's life when menstrual periods stop permanently; also called "change of life." [NIH]

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

Potentiates: A degree of synergism which causes the exposure of the organism to a harmful substance to worsen a disease already contracted. [NIH]

Potentiation: An overall effect of two drugs taken together which is greater than the sum of the effects of each drug taken alone. [NIH]

Practice Guidelines: Directions or principles presenting current or future rules of policy for the health care practitioner to assist him in patient care decisions regarding diagnosis, therapy, or related clinical circumstances. The guidelines may be developed by government agencies at any level, institutions, professional societies, governing boards, or by the convening of expert panels. The guidelines form a basis for the evaluation of all aspects of health care and delivery. [NIH]

Precursor: Something that precedes. In biological processes, a substance from which another, usually more active or mature substance is formed. In clinical medicine, a sign or symptom that heralds another. [EU]

Predictive factor: A situation or condition that may increase a person's risk of developing a certain disease or disorder. [NIH]

Prednisolone: A glucocorticoid with the general properties of the corticosteroids. It is the

drug of choice for all conditions in which routine systemic corticosteroid therapy is indicated, except adrenal deficiency states. [NIH]

Prednisone: A synthetic anti-inflammatory glucocorticoid derived from cortisone. It is biologically inert and converted to prednisolone in the liver. [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]

Primary Biliary Cirrhosis: A chronic liver disease. Slowly destroys the bile ducts in the liver. This prevents release of bile. Long-term irritation of the liver may cause scarring and cirrhosis in later stages of the disease. [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]

Prognostic factor: A situation or condition, or a characteristic of a patient, that can be used to estimate the chance of recovery from a disease, or the chance of the disease recurring (coming back). [NIH]

Progression: Increase in the size of a tumor or spread of cancer in the body. [NIH]

Progressive: Advancing; going forward; going from bad to worse; increasing in scope or severity. [EU]

Proline: A non-essential amino acid that is synthesized from glutamic acid. It is an essential component of collagen and is important for proper functioning of joints and tendons. [NIH]

Prophylaxis: An attempt to prevent disease. [NIH]

Prospective study: An epidemiologic study in which a group of individuals (a cohort), all free of a particular disease and varying in their exposure to a possible risk factor, is followed over a specific amount of time to determine the incidence rates of the disease in the exposed and unexposed groups. [NIH]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

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

Protein C: A vitamin-K dependent zymogen present in the blood, which, upon activation by thrombin and thrombomodulin exerts anticoagulant properties by inactivating factors Va and VIIIa at the rate-limiting steps of thrombin formation. [NIH]

Protein S: The vitamin K-dependent cofactor of activated protein C. Together with protein C, it inhibits the action of factors VIIIa and Va. A deficiency in protein S can lead to recurrent venous and arterial thrombosis. [NIH]

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

Proteinuria: The presence of protein in the urine, indicating that the kidneys are not working properly. [NIH]

Protons: Stable elementary particles having the smallest known positive charge, found in the nuclei of all elements. The proton mass is less than that of a neutron. A proton is the nucleus of the light hydrogen atom, i.e., the hydrogen ion. [NIH]

Protozoa: A subkingdom consisting of unicellular organisms that are the simplest in the animal kingdom. Most are free living. They range in size from submicroscopic to macroscopic. Protozoa are divided into seven phyla: Sarcomastigophora, Labyrinthomorpha, Apicomplexa, Microspora, Ascetospora, Myxozoa, and Ciliophora. [NIH]

Provirus: Virus that is integrated into the chromosome of a host cell and is transmitted in that form from one host cell generation to another without leading to the lysis of the host cells. [NIH]

Proximal: Nearest; closer to any point of reference; opposed to distal. [EU]

Psoralen: A substance that binds to the DNA in cells and stops them from multiplying. It is being studied in the treatment of graft-versus-host disease and is used in the treatment of psoriasis and vitiligo. [NIH]

Psoriasis: A common genetically determined, chronic, inflammatory skin disease characterized by rounded erythematous, dry, scaling patches. The lesions have a predilection for nails, scalp, genitalia, extensor surfaces, and the lumbosacral region. Accelerated epidermopoiesis is considered to be the fundamental pathologic feature in psoriasis. [NIH]

Psychic: Pertaining to the psyche or to the mind; mental. [EU]

Public Policy: A course or method of action selected, usually by a government, from among alternatives to guide and determine present and future decisions. [NIH]

Pulmonary: Relating to the lungs. [NIH]

Pulmonary Artery: The short wide vessel arising from the conus arteriosus of the right ventricle and conveying unaerated blood to the lungs. [NIH]

Pulmonary Fibrosis: Chronic inflammation and progressive fibrosis of the pulmonary alveolar walls, with steadily progressive dyspnea, resulting finally in death from oxygen lack or right heart failure. [NIH]

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]

Purpura: Purplish or brownish red discoloration, easily visible through the epidermis, caused by hemorrhage into the tissues. [NIH]

Quality of Life: A generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment. [NIH]

Quiescent: Marked by a state of inactivity or repose. [EU]

Radiation: Emission or propagation of electromagnetic energy (waves/rays), or the waves/rays themselves; a stream of electromagnetic particles (electrons, neutrons, protons, alpha particles) or a mixture of these. The most common source is the sun. [NIH]

Radiation therapy: The use of high-energy radiation from x-rays, gamma rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body in the area near cancer cells (internal radiation therapy, implant radiation, or brachytherapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. Also called radiotherapy. [NIH]

Radio Waves: That portion of the electromagnetic spectrum beyond the microwaves, with wavelengths as high as 30 KM. They are used in communications, including television. Short Wave or HF (high frequency), UHF (ultrahigh frequency) and VHF (very high frequency) waves are used in citizen's band communication. [NIH]

Radioactive: Giving off radiation. [NIH]

Radiolabeled: Any compound that has been joined with a radioactive substance. [NIH]

Radiotherapy: The use of ionizing radiation to treat malignant neoplasms and other benign conditions. The most common forms of ionizing radiation used as therapy are x-rays, gamma rays, and electrons. A special form of radiotherapy, targeted radiotherapy, links a cytotoxic radionuclide to a molecule that targets the tumor. When this molecule is an antibody or other immunologic molecule, the technique is called radioimmunotherapy. [NIH]

Random Allocation: A process involving chance used in therapeutic trials or other research endeavor for allocating experimental subjects, human or animal, between treatment and control groups, or among treatment groups. It may also apply to experiments on inanimate objects. [NIH]

Rarefaction: The reduction of the density of a substance; the attenuation of a gas. [NIH]

Receptor: A molecule inside or on the surface of a cell that binds to a specific substance and causes a specific physiologic effect in the cell. [NIH]

Recombinant: A cell or an individual with a new combination of genes not found together in either parent; usually applied to linked genes. [EU]

Rectal: By or having to do with the rectum. The rectum is the last 8 to 10 inches of the large intestine and ends at the anus. [NIH]

Rectum: The last 8 to 10 inches of the large intestine. [NIH]

Recurrence: The return of a sign, symptom, or disease after a remission. [NIH]

Red blood cells: RBCs. Cells that carry oxygen to all parts of the body. Also called erythrocytes. [NIH]

Red Nucleus: A pinkish-yellow portion of the midbrain situated in the rostral mesencephalic tegmentum. It receives a large projection from the contralateral half of the cerebellum via the superior cerebellar peduncle and a projection from the ipsilateral motor cortex. [NIH]

Reductase: Enzyme converting testosterone to dihydrotestosterone. [NIH]

Refer: To send or direct for treatment, aid, information, or decision. [NIH]

Refractory: Not readily yielding to treatment. [EU]

Regeneration: The natural renewal of a structure, as of a lost tissue or part. [EU]

Reliability: Used technically, in a statistical sense, of consistency of a test with itself, i. e. the extent to which we can assume that it will yield the same result if repeated a second time. [NIH]

Remission: A decrease in or disappearance of signs and symptoms of cancer. In partial remission, some, but not all, signs and symptoms of cancer have disappeared. In complete remission, all signs and symptoms of cancer have disappeared, although there still may be cancer in the body. [NIH]

Renal cell carcinoma: A type of kidney cancer. [NIH]

Renal failure: Progressive renal insufficiency and uremia, due to irreversible and progressive renal glomerular tubular or interstitial disease. [NIH]

Resection: Removal of tissue or part or all of an organ by surgery. [NIH]

Respiration: The act of breathing with the lungs, consisting of inspiration, or the taking into the lungs of the ambient air, and of expiration, or the expelling of the modified air which contains more carbon dioxide than the air taken in (Blakiston's Gould Medical Dictionary, 4th ed.). This does not include tissue respiration (= oxygen consumption) or cell respiration

(= cell respiration). [NIH]

Respiratory distress syndrome: A lung disease that occurs primarily in premature infants; the newborn must struggle for each breath and blueing of its skin reflects the baby's inability to get enough oxygen. [NIH]

Respiratory failure: Inability of the lungs to conduct gas exchange. [NIH]

Restoration: Broad term applied to any inlay, crown, bridge or complete denture which restores or replaces loss of teeth or oral tissues. [NIH]

Retina: The ten-layered nervous tissue membrane of the eye. It is continuous with the optic nerve and receives images of external objects and transmits visual impulses to the brain. Its outer surface is in contact with the choroid and the inner surface with the vitreous body. The outer-most layer is pigmented, whereas the inner nine layers are transparent. [NIH]

Retinoblastoma: An eye cancer that most often occurs in children younger than 5 years. It occurs in hereditary and nonhereditary (sporadic) forms. [NIH]

Retrospective: Looking back at events that have already taken place. [NIH]

Retrospective study: A study that looks backward in time, usually using medical records and interviews with patients who already have or had a disease. [NIH]

Rheumatic Diseases: Disorders of connective tissue, especially the joints and related structures, characterized by inflammation, degeneration, or metabolic derangement. [NIH]

Rheumatism: A group of disorders marked by inflammation or pain in the connective tissue structures of the body. These structures include bone, cartilage, and fat. [NIH]

Rheumatoid: Resembling rheumatism. [EU]

Rheumatoid arthritis: A form of arthritis, the cause of which is unknown, although infection, hypersensitivity, hormone imbalance and psychologic stress have been suggested as possible causes. [NIH]

Ribonuclease: RNA-digesting enzyme. [NIH]

Ribose: A pentose active in biological systems usually in its D-form. [NIH]

Ribosome: A granule of protein and RNA, synthesized in the nucleolus and found in the cytoplasm of cells. Ribosomes are the main sites of protein synthesis. Messenger RNA attaches to them and there receives molecules of transfer RNA bearing amino acids. [NIH]

Rickettsiae: One of a group of obligate intracellular parasitic microorganisms, once regarded as intermediate in their properties between bacteria and viruses but now classified as bacteria in the order Rickettsiales, which includes 17 genera and 3 families: Rickettsiace. [NIH]

Risk factor: A habit, trait, condition, or genetic alteration that increases a person's chance of developing a disease. [NIH]

Saliva: The clear, viscous fluid secreted by the salivary glands and mucous glands of the mouth. It contains mucins, water, organic salts, and ptylin. [NIH]

Salivary: The duct that convey saliva to the mouth. [NIH]

Salivary glands: Glands in the mouth that produce saliva. [NIH]

Saponins: Sapogenin glycosides. A type of glycoside widely distributed in plants. Each consists of a sapogenin as the aglycon moiety, and a sugar. The sapogenin may be a steroid or a triterpene and the sugar may be glucose, galactose, a pentose, or a methylpentose. Sapogenins are poisonous towards the lower forms of life and are powerful hemolytics when injected into the blood stream able to dissolve red blood cells at even extreme dilutions. [NIH]

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

Scans: Pictures of structures inside the body. Scans often used in diagnosing, staging, and monitoring disease include liver scans, bone scans, and computed tomography (CT) or computerized axial tomography (CAT) scans and magnetic resonance imaging (MRI) scans. In liver scanning and bone scanning, radioactive substances that are injected into the bloodstream collect in these organs. A scanner that detects the radiation is used to create pictures. In CT scanning, an x-ray machine linked to a computer is used to produce detailed pictures of organs inside the body. MRI scans use a large magnet connected to a computer to create pictures of areas inside the body. [NIH]

Sclera: The tough white outer coat of the eyeball, covering approximately the posterior five-sixths of its surface, and continuous anteriorly with the cornea and posteriorly with the external sheath of the optic nerve. [EU]

Scleroderma: A chronic disorder marked by hardening and thickening of the skin. Scleroderma can be localized or it can affect the entire body (systemic). [NIH]

Sclerosis: A pathological process consisting of hardening or fibrosis of an anatomical structure, often a vessel or a nerve. [NIH]

Screening: Checking for disease when there are no symptoms. [NIH]

Sebaceous: Gland that secretes sebum. [NIH]

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

Sedimentation: The act of causing the deposit of sediment, especially by the use of a centrifugal machine. [EU]

Seizures: Clinical or subclinical disturbances of cortical function due to a sudden, abnormal, excessive, and disorganized discharge of brain cells. Clinical manifestations include abnormal motor, sensory and psychic phenomena. Recurrent seizures are usually referred to as epilepsy or "seizure disorder." [NIH]

Semen: The thick, yellowish-white, viscid fluid secretion of male reproductive organs discharged upon ejaculation. In addition to reproductive organ secretions, it contains spermatozoa and their nutrient plasma. [NIH]

Senile: Relating or belonging to old age; characteristic of old age; resulting from infirmity of old age. [NIH]

Sequencing: The determination of the order of nucleotides in a DNA or RNA chain. [NIH]

Serologic: Analysis of a person's serum, especially specific immune or lytic serums. [NIH]

Serotonin: A biochemical messenger and regulator, synthesized from the essential amino acid L-tryptophan. In humans it is found primarily in the central nervous system, gastrointestinal tract, and blood platelets. Serotonin mediates several important physiological functions including neurotransmission, gastrointestinal motility, hemostasis, and cardiovascular integrity. Multiple receptor families (receptors, serotonin) explain the broad physiological actions and distribution of this biochemical mediator. [NIH]

Serum: The clear liquid part of the blood that remains after blood cells and clotting proteins have been removed. [NIH]

Sex Determination: The biological characteristics which distinguish human beings as female

or male. [NIH]

Shock: The general bodily disturbance following a severe injury; an emotional or moral upset occasioned by some disturbing or unexpected experience; disruption of the circulation, which can upset all body functions: sometimes referred to as circulatory shock. [NIH]

Sick Sinus Syndrome: Dysfunction of the sinoatrial node manifested by persistent sinus bradycardia, sinus arrest, sinoatrial exit block, chronic atrial fibrillation and inability of the heart to resume sinus rhythm following cardioversion for atrial fibrillation. [NIH]

Side effect: A consequence other than the one(s) for which an agent or measure is used, as the adverse effects produced by a drug, especially on a tissue or organ system other than the one sought to be benefited by its administration. [EU]

Signs and Symptoms: Clinical manifestations that can be either objective when observed by a physician, or subjective when perceived by the patient. [NIH]

Silicosis: A type of pneumoconiosis caused by inhalation of particles of silica, quartz, ganister or slate. [NIH]

Sinoatrial Node: The small mass of modified cardiac muscle fibers located at the junction of the superior vena cava and right atrium. Contraction impulses probably start in this node, spread over the atrium and are then transmitted by the atrioventricular bundle to the ventricle. [NIH]

Skeletal: Having to do with the skeleton (boney part of the body). [NIH]

Skeleton: The framework that supports the soft tissues of vertebrate animals and protects many of their internal organs. The skeletons of vertebrates are made of bone and/or cartilage. [NIH]

Skin test: A test for an immune response to a compound by placing it on or under the skin. [NIH]

Smallpox: A generalized virus infection with a vesicular rash. [NIH]

Social Environment: The aggregate of social and cultural institutions, forms, patterns, and processes that influence the life of an individual or community. [NIH]

Soft tissue: Refers to muscle, fat, fibrous tissue, blood vessels, or other supporting tissue of the body. [NIH]

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

Sound wave: An alteration of properties of an elastic medium, such as pressure, particle displacement, or density, that propagates through the medium, or a superposition of such alterations. [NIH]

Spasm: An involuntary contraction of a muscle or group of muscles. Spasms may involve skeletal muscle or smooth muscle. [NIH]

Spastic: 1. Of the nature of or characterized by spasms. 2. Hypertonic, so that the muscles are stiff and the movements awkward. 3. A person exhibiting spasticity, such as occurs in spastic paralysis or in cerebral palsy. [EU]

Spasticity: A state of hypertonicity, or increase over the normal tone of a muscle, with heightened deep tendon reflexes. [EU]

Specialist: In medicine, one who concentrates on 1 special branch of medical science. [NIH]

Species: A taxonomic category subordinate to a genus (or subgenus) and superior to a subspecies or variety, composed of individuals possessing common characters distinguishing them from other categories of individuals of the same taxonomic level. In

taxonomic nomenclature, species are designated by the genus name followed by a Latin or Latinized adjective or noun. [EU]

Specificity: Degree of selectivity shown by an antibody with respect to the number and types of antigens with which the antibody combines, as well as with respect to the rates and the extents of these reactions. [NIH]

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

Speech pathologist: A specialist who evaluates and treats people with communication and swallowing problems. Also called a speech therapist. [NIH]

Sphincter: A ringlike band of muscle fibres that constricts a passage or closes a natural orifice; called also musculus sphincter. [EU]

Spinal cord: The main trunk or bundle of nerves running down the spine through holes in the spinal bone (the vertebrae) from the brain to the level of the lower back. [NIH]

Spinal Cord Diseases: Pathologic conditions which feature spinal cord damage or dysfunction, including disorders involving the meninges and perimeningeal spaces surrounding the spinal cord. Traumatic injuries, vascular diseases, infections, and inflammatory/autoimmune processes may affect the spinal cord. [NIH]

Spleen: An organ that is part of the lymphatic system. The spleen produces lymphocytes, filters the blood, stores blood cells, and destroys old blood cells. It is located on the left side of the abdomen near the stomach. [NIH]

Splenomegaly: Enlargement of the spleen. [NIH]

Spondylitis: Inflammation of the vertebrae. [EU]

Sporadic: Neither endemic nor epidemic; occurring occasionally in a random or isolated manner. [EU]

Sports Medicine: The field of medicine concerned with physical fitness and the diagnosis and treatment of injuries sustained in sports activities. [NIH]

Staging: Performing exams and tests to learn the extent of the cancer within the body, especially whether the disease has spread from the original site to other parts of the body. [NIH]

Stem cell transplantation: A method of replacing immature blood-forming cells that were destroyed by cancer treatment. The stem cells are given to the person after treatment to help the bone marrow recover and continue producing healthy blood cells. [NIH]

Stem Cells: Relatively undifferentiated cells of the same lineage (family type) that retain the ability to divide and cycle throughout postnatal life to provide cells that can become specialized and take the place of those that die or are lost. [NIH]

Sterile: Unable to produce children. [NIH]

Sterility: 1. The inability to produce offspring, i.e., the inability to conceive (female s.) or to induce conception (male s.). 2. The state of being aseptic, or free from microorganisms. [EU]

Steroid: A group name for lipids that contain a hydrogenated cyclopentanoperhydrophenanthrene ring system. Some of the substances included in this group are progesterone, adrenocortical hormones, the gonadal hormones, cardiac aglycones, bile acids, sterols (such as cholesterol), toad poisons, saponins, and some of the carcinogenic hydrocarbons. [EU]

Steroid therapy: Treatment with corticosteroid drugs to reduce swelling, pain, and other

symptoms of inflammation. [NIH]

Stimulus: That which can elicit or evoke action (response) in a muscle, nerve, gland or other excitable issue, or cause an augmenting action upon any function or metabolic process. [NIH]

Stomach: An organ of digestion situated in the left upper quadrant of the abdomen between the termination of the esophagus and the beginning of the duodenum. [NIH]

Stool: The waste matter discharged in a bowel movement; feces. [NIH]

Strand: DNA normally exists in the bacterial nucleus in a helix, in which two strands are coiled together. [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]

Stress: Forcibly exerted influence; pressure. Any condition or situation that causes strain or tension. Stress may be either physical or psychologic, or both. [NIH]

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

Subacute: Somewhat acute; between acute and chronic. [EU]

Subclinical: Without clinical manifestations; said of the early stage(s) of an infection or other disease or abnormality before symptoms and signs become apparent or detectable by clinical examination or laboratory tests, or of a very mild form of an infection or other disease or abnormality. [EU]

Subcutaneous: Beneath the skin. [NIH]

Subspecies: A category intermediate in rank between species and variety, based on a smaller number of correlated characters than are used to differentiate species and generally conditioned by geographical and/or ecological occurrence. [NIH]

Substrate: A substance upon which an enzyme acts. [EU]

Substrate Specificity: A characteristic feature of enzyme activity in relation to the kind of substrate on which the enzyme or catalytic molecule reacts. [NIH]

Sudden death: Cardiac arrest caused by an irregular heartbeat. The term "death" is somewhat misleading, because some patients survive. [NIH]

Superoxide: Derivative of molecular oxygen that can damage cells. [NIH]

Superoxide Dismutase: An oxidoreductase that catalyzes the reaction between superoxide anions and hydrogen to yield molecular oxygen and hydrogen peroxide. The enzyme protects the cell against dangerous levels of superoxide. EC 1.15.1.1. [NIH]

Suppression: A conscious exclusion of disapproved desire contrary with repression, in which the process of exclusion is not conscious. [NIH]

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

Symphysis: A secondary cartilaginous joint. [NIH]

Synapses: Specialized junctions at which a neuron communicates with a target cell. At classical synapses, a neuron's presynaptic terminal releases a chemical transmitter stored in synaptic vesicles which diffuses across a narrow synaptic cleft and activates receptors on the postsynaptic membrane of the target cell. The target may be a dendrite, cell body, or axon of another neuron, or a specialized region of a muscle or secretory cell. Neurons may also

communicate through direct electrical connections which are sometimes called electrical synapses; these are not included here but rather in gap junctions. [NIH]

Synovial: Of pertaining to, or secreting synovia. [EU]

Synovial Membrane: The inner membrane of a joint capsule surrounding a freely movable joint. It is loosely attached to the external fibrous capsule and secretes synovial fluid. [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]

Systemic: Affecting the entire body. [NIH]

Systemic disease: Disease that affects the whole body. [NIH]

Systemic lupus erythematosus: SLE. A chronic inflammatory connective tissue disease marked by skin rashes, joint pain and swelling, inflammation of the kidneys, inflammation of the fibrous tissue surrounding the heart (i.e., the pericardium), as well as other problems. Not all affected individuals display all of these problems. May be referred to as lupus. [NIH]

Technetium: The first artificially produced element and a radioactive fission product of uranium. The stablest isotope has a mass number 99 and is used diagnostically as a radioactive imaging agent. Technetium has the atomic symbol Tc, atomic number 43, and atomic weight 98.91. [NIH]

Telangiectasia: The permanent enlargement of blood vessels, causing redness in the skin or mucous membranes. [NIH]

Temporal: One of the two irregular bones forming part of the lateral surfaces and base of the skull, and containing the organs of hearing. [NIH]

Thalamic: Cell that reaches the lateral nucleus of amygdala. [NIH]

Thalamic Diseases: Disorders of the centrally located thalamus, which integrates a wide range of cortical and subcortical information. Manifestations include sensory loss, movement disorders; ataxia, pain syndromes, visual disorders, a variety of neuropsychological conditions, and coma. Relatively common etiologies include cerebrovascular disorders; craniocerebral trauma; brain neoplasms; brain hypoxia; intracranial hemorrhages; and infectious processes. [NIH]

Therapeutics: The branch of medicine which is concerned with the treatment of diseases, palliative or curative. [NIH]

Thermal: Pertaining to or characterized by heat. [EU]

Thigh: A leg; in anatomy, any elongated process or part of a structure more or less comparable to a leg. [NIH]

Thrombin: An enzyme formed from prothrombin that converts fibrinogen to fibrin. (Dorland, 27th ed) EC 3.4.21.5. [NIH]

Thrombomodulin: A cell surface glycoprotein of endothelial cells that binds thrombin and serves as a cofactor in the activation of protein C and its regulation of blood coagulation. [NIH]

Thrombopenia: Reduction in the number of platelets in the blood. [NIH]

Thromboses: The formation or presence of a blood clot within a blood vessel during life. [NIH]

Thrombosis: The formation or presence of a blood clot inside a blood vessel. [NIH]

Thymoma: A tumor of the thymus, an organ that is part of the lymphatic system and is located in the chest, behind the breastbone. [NIH]

Thymus: An organ that is part of the lymphatic system, in which T lymphocytes grow and multiply. The thymus is in the chest behind the breastbone. [NIH]

Thyroid: A gland located near the windpipe (trachea) that produces thyroid hormone, which helps regulate growth and metabolism. [NIH]

Thyroid Gland: A highly vascular endocrine gland consisting of two lobes, one on either side of the trachea, joined by a narrow isthmus; it produces the thyroid hormones which are concerned in regulating the metabolic rate of the body. [NIH]

Thyroid Hormones: Hormones secreted by the thyroid gland. [NIH]

Thyroiditis: Inflammation of the thyroid gland. [NIH]

Thyrototoxicosis: The clinical syndrome that reflects the response of the peripheral tissues to an excess of thyroid hormone. [NIH]

Thyrotropin: A peptide hormone secreted by the anterior pituitary. It promotes the growth of the thyroid gland and stimulates the synthesis of thyroid hormones and the release of thyroxine by the thyroid gland. [NIH]

Tin: A trace element that is required in bone formation. It has the atomic symbol Sn, atomic number 50, and atomic weight 118.71. [NIH]

Tissue: A group or layer of cells that are alike in type and work together to perform a specific function. [NIH]

Tomography: Imaging methods that result in sharp images of objects located on a chosen plane and blurred images located above or below the plane. [NIH]

Toxic: Having to do with poison or something harmful to the body. Toxic substances usually cause unwanted side effects. [NIH]

Toxicity: The quality of being poisonous, especially the degree of virulence of a toxic microbe or of a poison. [EU]

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

Toxins: Specific, characterizable, poisonous chemicals, often proteins, with specific biological properties, including immunogenicity, produced by microbes, higher plants, or animals. [NIH]

Toxoplasmosis: The acquired form of infection by *Toxoplasma gondii* in animals and man. [NIH]

Trachea: The cartilaginous and membranous tube descending from the larynx and branching into the right and left main bronchi. [NIH]

Transfection: The uptake of naked or purified DNA into cells, usually eukaryotic. It is analogous to bacterial transformation. [NIH]

Transplantation: Transference of a tissue or organ, alive or dead, within an individual, between individuals of the same species, or between individuals of different species. [NIH]

Trauma: Any injury, wound, or shock, must frequently physical or structural shock, producing a disturbance. [NIH]

Tremor: Cyclical movement of a body part that can represent either a physiologic process or a manifestation of disease. Intention or action tremor, a common manifestation of cerebellar diseases, is aggravated by movement. In contrast, resting tremor is maximal when there is no attempt at voluntary movement, and occurs as a relatively frequent manifestation of Parkinson disease. [NIH]

Tropomyosin: A protein found in the thin filaments of muscle fibers. It inhibits contraction of the muscle unless its position is modified by troponin. [NIH]

Troponin: One of the minor protein components of skeletal muscle. Its function is to serve as the calcium-binding component in the troponin-tropomyosin B-actin-myosin complex by conferring calcium sensitivity to the cross-linked actin and myosin filaments. [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]

Tuberous Sclerosis: A rare congenital disease in which the essential pathology is the appearance of multiple tumors in the cerebrum and in other organs, such as the heart or kidneys. [NIH]

Tubocurarine: A neuromuscular blocker and active ingredient in curare; plant based alkaloid of Menispermaceae. [NIH]

Tumor Necrosis Factor: Serum glycoprotein produced by activated macrophages and other mammalian mononuclear leukocytes which has necrotizing activity against tumor cell lines and increases ability to reject tumor transplants. It mimics the action of endotoxin but differs from it. It has a molecular weight of less than 70,000 kDa. [NIH]

Tumour: 1. Swelling, one of the cardinal signs of inflammations; morbid enlargement. 2. A new growth of tissue in which the multiplication of cells is uncontrolled and progressive; called also neoplasm. [EU]

Ulcerative colitis: Chronic inflammation of the colon that produces ulcers in its lining. This condition is marked by abdominal pain, cramps, and loose discharges of pus, blood, and mucus from the bowel. [NIH]

Unconscious: Experience which was once conscious, but was subsequently rejected, as the "personal unconscious". [NIH]

Uranium: A radioactive element of the actinide series of metals. It has an atomic symbol U, atomic number 92, and atomic weight 238.03. U-235 is used as the fissionable fuel in nuclear weapons and as fuel in nuclear power reactors. [NIH]

Uremia: The illness associated with the buildup of urea in the blood because the kidneys are not working effectively. Symptoms include nausea, vomiting, loss of appetite, weakness, and mental confusion. [NIH]

Urethra: The tube through which urine leaves the body. It empties urine from the bladder. [NIH]

Urinary: Having to do with urine or the organs of the body that produce and get rid of urine. [NIH]

Urine: Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra. [NIH]

Uvea: The middle coat of the eyeball, consisting of the choroid in the back of the eye and the ciliary body and iris in the front of the eye. [NIH]

Uveitis: An inflammation of part or all of the uvea, the middle (vascular) tunic of the eye, and commonly involving the other tunics (the sclera and cornea, and the retina). [EU]

Vaccination: Administration of vaccines to stimulate the host's immune response. This includes any preparation intended for active immunological prophylaxis. [NIH]

Vaccine: A substance or group of substances meant to cause the immune system to respond to a tumor or to microorganisms, such as bacteria or viruses. [NIH]

Vaccinia: The cutaneous and occasional systemic reactions associated with vaccination using smallpox (variola) vaccine. [NIH]

Vaccinia Virus: The type species of Orthopoxvirus, related to cowpox virus, but whose true origin is unknown. It has been used as a live vaccine against smallpox. It is also used as a vector for inserting foreign DNA into animals. Rabbitpox virus is a subspecies of vaccinia virus. [NIH]

Vacuole: A fluid-filled cavity within the cytoplasm of a cell. [NIH]

Valine: A branched-chain essential amino acid that has stimulant activity. It promotes muscle growth and tissue repair. It is a precursor in the penicillin biosynthetic pathway. [NIH]

Variola: A generalized virus infection with a vesicular rash. [NIH]

Vascular: Pertaining to blood vessels or indicative of a copious blood supply. [EU]

Vasculitis: Inflammation of a blood vessel. [NIH]

Vector: Plasmid or other self-replicating DNA molecule that transfers DNA between cells in nature or in recombinant DNA technology. [NIH]

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

Venous: Of or pertaining to the veins. [EU]

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

Venules: The minute vessels that collect blood from the capillary plexuses and join together to form veins. [NIH]

Vertebrae: A bony unit of the segmented spinal column. [NIH]

Veterinary Medicine: The medical science concerned with the prevention, diagnosis, and treatment of diseases in animals. [NIH]

Villous: Of a surface, covered with villi. [NIH]

Vinyl Chloride: A gas that has been used as an aerosol propellant and is the starting material for polyvinyl resins. Toxicity studies have shown various adverse effects, particularly the occurrence of liver neoplasms. [NIH]

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

Virulence: The degree of pathogenicity within a group or species of microorganisms or viruses as indicated by case fatality rates and/or the ability of the organism to invade the tissues of the host. [NIH]

Virus: Submicroscopic organism that causes infectious disease. In cancer therapy, some viruses may be made into vaccines that help the body build an immune response to, and kill, tumor cells. [NIH]

Vitiligo: A disorder consisting of areas of macular depigmentation, commonly on extensor aspects of extremities, on the face or neck, and in skin folds. Age of onset is often in young adulthood and the condition tends to progress gradually with lesions enlarging and extending until a quiescent state is reached. [NIH]

Vitro: Descriptive of an event or enzyme reaction under experimental investigation occurring outside a living organism. Parts of an organism or microorganism are used together with artificial substrates and/or conditions. [NIH]

Vivo: Outside of or removed from the body of a living organism. [NIH]

Vocal cord: The vocal folds of the larynx. [NIH]

Voice Quality: Voice quality is that component of speech which gives the primary

distinction to a given speaker's voice when pitch and loudness are excluded. It involves both phonatory and resonatory characteristics. Some of the descriptions of voice quality are harshness, breathiness and nasality. [NIH]

Vulgaris: An affection of the skin, especially of the face, the back and the chest, due to chronic inflammation of the sebaceous glands and the hair follicles. [NIH]

White blood cell: A type of cell in the immune system that helps the body fight infection and disease. White blood cells include lymphocytes, granulocytes, macrophages, and others. [NIH]

Windpipe: A rigid tube, 10 cm long, extending from the cricoid cartilage to the upper border of the fifth thoracic vertebra. [NIH]

Wound Healing: Restoration of integrity to traumatized tissue. [NIH]

Xenograft: The cells of one species transplanted to another species. [NIH]

X-ray: High-energy radiation used in low doses to diagnose diseases and in high doses to treat cancer. [NIH]

X-ray therapy: The use of high-energy radiation from x-rays to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy) or from materials called radioisotopes. Radioisotopes produce radiation and can be placed in or near the tumor or in the area near cancer cells. This type of radiation treatment is called internal radiation therapy, implant radiation, interstitial radiation, or brachytherapy. Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. X-ray therapy is also called radiation therapy, radiotherapy, and irradiation. [NIH]

Zymogen: Inactive form of an enzyme which can then be converted to the active form, usually by excision of a polypeptide, e. g. trypsinogen is the zymogen of trypsin. [NIH]

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