GEMFIBROZIL

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

JAMES N. PARKER, M.D.
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 gemfibrozil. 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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Table of Contents

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 gemfibrozil 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 gemfibrozil, 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 gemfibrozil, 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 gemfibrozil. 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 gemfibrozil, 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 gemfibrozil.

The Editors

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

CHAPTER 1. STUDIES ON GEMFIBROZIL

Overview

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

The Combined Health Information Database

The Combined Health Information Database summarizes studies across numerous federal agencies. To limit your investigation to research studies and gemfibrozil, 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 "gemfibrozil" (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:

- **Treatment of Hypercholesterolemia and Combined Hyperlipidemia with Simvastatin and Gemfibrozil in Patients with NIDDM: A Multicenter Comparison Study**

  Source: Diabetes Care. 21(4): 477-481. April 1998.

  Contact: Available from American Diabetes Association. 1701 North Beauregard Street, Alexandria, VA 22311. (800) 232-3472. Website: www.diabetes.org.

  Summary: This article describes a double-blind, double-dummy study that investigated the lipid-lowering efficacy of simvastatin and **gemfibrozil** in Finnish patients who had type 2 diabetes and combined hyperlipidemia (CHL) or isolated hypercholesterolemia (IHC). Patients with primary dyslipidemia and type 2 diabetes treated with oral hypoglycemic agents and insulin, alone or in combination, were recruited from 10 Finnish centers participating in the study. After a 4-week placebo run-in period, they

were randomly assigned to simvastatin or **gemfibrozil.** The 47 patients in the simvastatin group received 10 milligrams (mg) once a night for 8 weeks, 20 mg for the next 8 weeks, and 40 mg for the third 8-week period. The 49 patients in the **gemfibrozil** group received 600 mg twice a day throughout the 24 weeks. The lipid-lowering efficacy of both drugs was compared in all patients, as well as separately in patients with CHL and IHC. Results show that simvastatin reduced low density lipoprotein (LDL) and total cholesterol and the LDL-to-high density lipoprotein (HDL) cholesterol ratio more effectively in all patients, whereas **gemfibrozil** was more effective in elevating HDL cholesterol and decreasing triglyceride levels. The effects differed according to lipid phenotype at baseline. Simvastatin decreased LDL cholesterol levels by 30 to 40 percent in both phenotypes. **Gemfibrozil** caused a 15 percent reduction in LDL cholesterol in IHC but no change in CHL patients. Simvastatin produced 15 to 30 percent reductions in triglyceride levels in CHL but no change in IHC patients. **Gemfibrozil** caused reductions in triglycerides in CHL and in IHC patients, with 12 to 18 percent increases in HDL cholesterol in these groups. The article concludes that simvastatin is useful both in CHL and IHC patients, whereas **gemfibrozil** can be used in patients with high triglyceride and low or normal LDL cholesterol levels. 1 appendix. 2 figures. 3 tables. 26 references. (AA-M).

Federally Funded Research on Gemfibrozil

The U.S. Government supports a variety of research studies relating to gemfibrozil. 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 gemfibrozil.

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

- **Project Title: ANCILLARY STUDY DATA ANALYSIS IN VA-HIT**

  Principal Investigator & Institution: Rubins, Hanna; Medicine; University of Minnesota Twin Cities 200 Oak Street Se Minneapolis, Mn 554552070

  Timing: Fiscal Year 2002; Project Start 30-SEP-2001; Project End 31-AUG-2004

  Summary: The VA HDL Intervention trial (VA-HIT) was a multicenter, placebo controlled, randomized trial that showed that **gemfibrozil** significantly reduced major cardiovascular events in 2531 men with coronary heart disease, low levels of low density lipoprotein (LDL) cholesterol and low levels of high density lipoprotein (HDL) cholesterol. In addition to its unique lipid profile, the VA-HIT population also had a

[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).

high prevalence of diabetes, impaired fasting glucose, or high fasting plasma insulin; central obesity; and hypertension, which are all components (together with high triglycerides and low ILL-cholesterol) of a constellation of risk factors known as the metabolic syndrome. Since prior clinical trials have not enrolled this type of population, the VA- HIT database is a unique resource. The purpose of the present proposal is to use this database to study additional risk markers that were measured in the study population. Specific proposed analyses are: 1. An analysis of the association between levels of glucose tolerance, insulin resistance and other features of the metabolic syndrome, occurrence of major cardiovascular outcomes, and **gemfibrozil** efficacy. 2. An analysis of the effect of **gemfibrozil** on progression of carotid atherosclerosis, as measured by B-mode ultrasound. 3. An analysis of the association between LDL particle size distribution and lipoprotein subclass distribution; homocysteine; lipoprotein(a); C-reactive protein, tissue plasminogen activator; fibrinogen; and factor VII; major cardiovascular outcomes, and **gemfibrozil** efficacy. Written documentation that the data will be available to us is included in the letter from Dr. Peter Peduzzi of the VA Cooperative Studies Program.

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

- **Project Title: ARYL BRANCHED CHAIN ACYL COA ESTERS INHIBIT MYCOBACTERIU**

  Principal Investigator & Institution: Silverstein, Samuel C.; John C Dalton Professor and Chairman; Physiology/Cellualr Biophysics; Columbia University Health Sciences Po Box 49 New York, Ny 10032

  Timing: Fiscal Year 2002; Project Start 01-APR-2000; Project End 31-MAR-2004

  Summary: All current antibiotics, with the exception of isoniazid (INH) and ethionamide, inhibit bacterial growth by inhibiting bacterial RNA, DNA, protein or cell wall synthesis. While bacteria and mammalian cells synthesize lipids via pathways that are similar in principle, the enzymes that catalyze bacterial lipid synthesis differ in fundamental respects from their mammalian counterparts. Bacteria, especially M. tuberculosis (M.tb.), contain unique lipids not found in mammalian cells. We have discovered that the lypolipidemic drug **gemfibrozil** (GFZ), which has been used safely in humans for >20 years, blocks growth of 27 different pan-drug sensitive and multi-drug resistant strains of M tb. as well as 10 other species of bacteria. GFZ exerts a bactericidal effect on L. pneumophila, both in bacterial growth medium and in macrophages. Thus metabolites found in mammalian cells do not block GFZ's inhibitory effect on L. pneumophila. We have screened >10(12) L. pneumophila colonies but have found no GFZ-resistant mutants. This suggests that GFZ acts on highly conserved, hard to mutate enzyme(s). The 3- and 6-propylene analog of GFZ are 5- fold more potent than GFZ in blocking 14C-acetate incorporation into L. pneumophila lipids. Other fibric acids such as clofibrate and bezafibrate, are ineffective. We have identified an L. pneumophila enoyl reductase (Lpn FabX) that is GFZ's presumptive target, purified the enzyme and showed it is competitively inhibited by GFZ's CoA adduct (GFZ-CoA), but not by GFZ. GFZ-CoA also competitively inhibits InhA, the M.tb. enoyl reductase that is a target of INH. L. pneumophila converts 3H-GFZ to 3H- GFZ-CoA in vivo. GFZ-CoA is the first competitive inhibitor of a bacterial enoyl reductase to be identified. Funds are requested to explore the mechanisms by which GFZ inhibits M.tb growth, and to test the effects of GFZ and of its 3- and 6-propylene analogs, alone and in combination with other anti-tuberculosis drugs, on M.tb growth in macrophages and in mice.

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

- **Project Title: HIGH DENSITY LIPOPROTEIN SUBSPECIES AND CORONARY DISEASE**

  Principal Investigator & Institution: Asztalos, Bela F.; None; Tufts University Boston Boston, Ma 02111

  Timing: Fiscal Year 2002; Project Start 01-APR-2000; Project End 28-FEB-2004

  Summary: (Adapted from Investigator's Abstract) Coronary heart disease (CHD) remains a leading cause of death and disability. Significant risk factors for CHD include age, gender, hypertension, smoking, increased low density lipoprotein cholesterol (LDL-C), and decreased high density lipoprotein cholesterol (HDL-C). The major HDL proteins are apolipoprotein (apo) A-I and A-II, and one of the minor protein constituents is apo C-III. Within HDL are particles containing apo A-I with apo A-II (LpA-I/A-II) and without apo A-II (LpA-I). In addition, HDL can be further separated in 12 apo A-I-containing subclasses of different size and charge, when subjected to two-dimensional gel electrophoresis immunoblot image analysis. It has been reported that CHD patients have significantly less large alpha 1 HDL particles, LpA-I, and apo C-III in HDL than control subjects. This application focuses on two distinct populations: 1) the Veterans Administration High Density Lipoprotein Intervention Trial (VA-HIT), a lipid intervention trial in men with CHD and low HDL-C levels (placebo: n=1,267; gemfibrozil: n=1,264), and 2) the Framingham Offspring Study (FOS), a prospective epidemiologic study in subjects without CHD (n=1,681). The investigators propose to measure in both populations the following parameters: apo A-I-containing HDL subspecies (prebeta, alpha, and prealpha) in plasma by two-dimensional gel electrophoresis immunoblot and image analysis, LpA-I and LpA-I/A-II in plasma by differential electroimmunoassay, and apo C-III in HDL by immuboturbidometric assay. The study hypotheses are as follow. a) Subjects from the placebo arm of VA-HIT will have significantly lower alpha l HDL subspecies, LpA-I, and apo C-III in HDL, and higher HDL/alpha l and apo A-I/alpha l ratios than subjects free of CHD from FOS. b) These parameters will also predict prospectively risk of CHD in both groups. c) In the VA-HIT study, treatment with **gemfibrozil,** which has been shown to be associated with a 22 percent reduction in myocardial infarction and CHD death, will be associated with increases in alpha l HDL subspecies, LpA-I, and apo C-III in HDL, as well as decreases in HDL/alpha l and apo A-I/alpha l ratios, compared to placebo. d) The hypothesis that subjects with specific mutations in the lipoprotein lipase gene have less beneficial changes in HDL subspecies with **gemfibrozil** than subjects with no mutations will also be tested. The investigators state that these studies should provide better understanding about the diagnosis and treatment of HDL deficiency for the prevention of CHD.

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

- **Project Title: HIV PROTEASE INHIBITOR & LIPOPROTEIN RECEPTOR IMPAIRMENT**

  Principal Investigator & Institution: Strickland, Dudley K.; Head; American National Red Cross Washington, Dc 20037

  Timing: Fiscal Year 2002; Project Start 12-JUL-2000; Project End 30-JUN-2005

  Summary: This collaborative project, "Protease Inhibitors, Atherogenic Lipoproteins and Premature Atherosclerosis" comprises three proposals. Taken together, the studies will investigate potential atherosclerotic effects of protease inhibitors and assess their relationship to subclinical cardiovascular disease. The effects of HIV infection and associated antiretroviral therapy on plasma lipoprotein subclasses and pro-oxidant stress will be assessed under diverse clinical conditions to determine if HIV and its

therapy, in particular protease inhibitors, induce a proatherogenic milieu. Mechanisms whereby protease inhibitors may promote atherosclerosis in humans will be explored in a series of clinical studies: utilizing antiretroviral regimens with and without protease inhibitors, treating uninfected volunteers and using thalidomide to reduce the effects of TNFalpha in patients with advanced HIV infection. In vitro cell culture experiments and animal models will be used to test the hypothesis that HIV protease inhibitors interfere with normal function of certain low density lipoprotein receptor family members, and that dysregulation of receptor function has a deleterious effect and may accelerate atherosclerosis. The presence of subclinical cardiovascular disease, and its relationship to the atherogenic lipoprotein phenotype and pro- oxidant stress levels will be assessed using several markers of atherosclerosis including flow-mediated brachial reactivity, carotid intima-media thickness, coronary calcification and electron beam computed tomographic angiography. The impact of intervention with **gemfibrozil** will also be examined. The three projects are interwoven, both through an umbrella hypothesis and shared experimental materials. Subjects recruited for each clinical project will provide samples or measures to be used in other projects' assays or analyses. Results from in vitro studies and the animal model will affect design of clinical studies. Shared resources include an administrative/statistical support group, NMR spectroscopic lipid laboratory and pro-oxidant stress laboratory. The investigators will conduct ongoing discussions of study procedures and results, both to ensure smooth interaction of the research groups and to stimulate new analyses and initiatives.

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

- **Project Title: MELANOMA CHEMOPREVENTION**

  Principal Investigator & Institution: Dellavalle, Robert P.; Dermatology; University of Colorado Hlth Sciences Ctr P.O. Box 6508, Grants and Contracts Aurora, Co 800450508

  Timing: Fiscal Year 2002; Project Start 01-JUN-2002; Project End 31-MAY-2007

  Summary: (provided by applicant): The incidence of cutaneous malignant melanoma is rising faster than any other cancer in the US. 1 in 74 Americans will develop melanoma, more than 45,000 cases will be diagnosed, and more than 7,500 Americans will die from melanoma this year. Effective prevention of melanoma will not only save lives, but will also decrease the estimated one billion dollars spent annually treating melanoma in the US. There is currently no recognized chemoprevention for melanoma. Two large, randomized, placebo-controlled clinical trials, the VA-HIT Study utilizing **gemfibrozil,** and the AFCAPS Study utilizing lovastatin, have each reported an association of lipid-lowering medication therapy with statistically significant lower melanoma incidence rates. Lovastatin inhibits melanoma cell growth in tissue culture, and mice Jed lovastatin develop lower lung metastases following tail vein injection with mouse B16 melanoma cells. More recently low concentrations of atorvastatin have been reported to specifically induce apoptosis and inhibit migration of human A375 melanoma cells but not cultured melanocytes. To investigate the unconventional hypothesis that lipid-lowering medications might prevent melanoma, a case-control study will be conducted utilizing Veterans Administration (VA) databases to answer the following question: Do persons who have developed cutaneous malignant melanoma have a history of less lipid-lowering medication exposure than persons who are spared the disease? The answer to this question will help determine whether more expensive and labor intensive randomized prospective clinical trials of potentially teratogenic lipid-lowering medications should be initiated in persons at high risk of developing melanoma. Robert Dellavalle, MD, Ph.D., is an Assistant Professor of Dermatology at the University of Colorado Health Sciences Center and a staff dermatologist at the Denver VA medical

center He is committed to a career in academic dermatology and public health. His current career goals are completing a Masters of Science in Public Health and becoming an independent researcher in skin cancer prevention and control.

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

- **Project Title: PET DETECTION OF THE EFFECTS OF AGING ON THE HUMAN HEART**

  Principal Investigator & Institution: Gropler, Robert J.; Associate Professor; Radiology; Washington University Lindell and Skinker Blvd St. Louis, Mo 63130

  Timing: Fiscal Year 2003; Project Start 01-MAY-1998; Project End 30-JUN-2008

  Summary: (provided by applicant): Cardiovascular disease is the leading cause of death and disability in older Americans. Results of studies in experimental animals have shown that with senescence there is a decline in myocardial fatty acid utilization (MFAU) and oxidation (MFAO) and a relative increase in glucose utilization (MGU). These metabolic changes are paralleled by a decline in mechanical function. During the current grant interval, we have confirmed these observations in humans. The goal of this renewal application is to identify potential mechanisms responsible for the age-related shift in myocardial substrate metabolism and relate them to changes in left ventricular (LV) function. The nitric oxide (NO) system and the peroxisome proliferator activated receptor alpha (PPAR alpha) are promising candidates that will be investigated. Our first hypothesis is that changes in substrate utilization in the aging heart are mediated, at least in part, by a decline NO production and that these changes are paralleled by a decline in LV function. We will prove or disprove this hypothesis by performing a series of fairly-complex experiments that utilize PET quantification of myocardial substrate metabolism and echocardiographic measurements of LV systolic anddiast01ic function under conditions designed to reduce NO production in younger subjects (using L-NMMA) and increase NO production in older subjects (using L-arginine). Our second hypothesis is that changes in myocardial substrate metabolism and LV function in the aging heart may be mediated, at least in part, via a decline in PPAR alpha-mediated responses. Thus, administration of a PPAR alpha agonist to older humans will result in an increase in MFAO and MFAU and a decline in MGU and that this metabolic shift will be paralleled by an improvement in LV function. Using the same imaging techniques we will measure myocardial substrate metabolism and function before and after the administration of the PPAR alpha partial agonist, **gemfibrozil** to healthy older subjects to prove or disprove this hypothesis. The results of these studies should further our understanding of the role of NO and PPAR alpha in modulating this age-dependent myocardial metabolic shift and its impact on LV function. As a result, potentially new targets could be identified for novel therapeutics designed to treat various cardiac disorders that increase with age and potentially slow the impact of aging on the human heart.

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

- **Project Title: PROTEASE INHIBITOR RELATED DYSLIPIDEMIA**

  Principal Investigator & Institution: Wanke, Christine A.; Associate Professor; Family Medicine & Cmty Health; Tufts University Boston Boston, Ma 02111

  Timing: Fiscal Year 2002; Project Start 12-JUL-2000; Project End 30-JUN-2005

  Summary: Protease inhibitors are used as therapy in HIV patients and have been reported to cause elevations in plasma triglycerides, cholesterol, and glucose, and rarely to induce severe hypertriglyceridemia, pancreatitis, and diabetes mellitus with insulin

resistance, excess fat deposition, and lipodystrophy. Our aims are to measure fasting Serum cholesterol (C), triglyceride (TG), remnant lipoprotein (RLP) C and TG, low density lipoprotein (LDL) C, high density lipoprotein C, lipoprotein(a), apolipoproteins A-I and B, apo E genotype, homocysteine, free fatty acids, glucose, insulin, and blood pressure. We will also assess smoking status, carotid artery wall thickness by ultrasound, and coronary artery calcification by computerized tomography in our prospective cohort of 400 HIV patients whose nutritional status is being evaluated and who are taking a variety of antiviral agents including protease inhibitors. Comparisons will be made on and off inhibitors and also longitudinally, and with controls. Our comparison group are participants in the Framingham Offspring Study who have had all the same parameters measured (n=3250). HIV patients who become hyperlipidemic on protease inhibitors will be treated with either **gemfibrozil** or atorvastatin. We will also examine the effects of protease inhibition in Hep G2 and CaCo2 cells with or without supplementation with fatty acids and cholesterol on lipoprotein assembly and secretion and apolipoprotein, LDL receptor, and microsomal transfer protein (MTP) gene expression. The effects of protease inhibition on lipoprotein metabolism and aortic foam cell formation will also be assessed in F1B hamsters on chow and on diets high in cholesterol and saturated fat. In addition, using a primed constant infusion in the constantly fed state and deuterated leucine, the secretion and catabolism of apoB-48 and apoB-100 within lipoproteins will be determined by GC/MS analysis and multicompartmental modeling in the presence or absence of protease inhibition with ritonavir in 10 males and 10 female HIV patients. We will test the following hypothesis: 1) protease inhibitors increase triglyceride and cholesterol by increasing RLP; 2) elevated RLP leads to increased carotid wall thickness and coronary calcification; 3) these increases can be ameliorated with diet, **gemfibrozil** and/or atorvastatin treatment; 4) in cell culture these RLP increases are elated to enhanced secretion of apo B-100 due to less intracellular degradation, and excess cellular lipid content; 5) in hamsters there are increased RLP in serum in animals on the atherogenic diet, especially with protease inhibition, and this leads to increased aortic foam cell formation; 6) in humans protease inhibition causes increased triglyceride-rich lipoprotein apo B-100 secretion. This research should define the nature of the problem, its mechanism, and methods for treatment wit regard to the hyperlipidemia induced by protease inhibitors in HIV patients.

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

- **Project Title: STATIN LACTONES IN STATIN TOXICITY**

  Principal Investigator & Institution: Christians, Uwe; Associate Professor; Anesthesiology; University of Colorado Hlth Sciences Ctr P.O. Box 6508, Grants and Contracts Aurora, Co 800450508

  Timing: Fiscal Year 2003; Project Start 08-APR-2003; Project End 31-MAR-2007

  Summary: (provided by applicant): 3-Hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors (statins) have emerged as the most valuable cholesterol-lowering drugs. Statins have wide therapeutic indeces and are generally well tolerated. However, the combination of statins with mainly triglyceride-lowering fibrates, especially nicotinic acid or **gemfibrozil,** or potent cytochrome P450/p-glycoprotein inhibitors significantly increases the risk to develop myopathy such as potentially fatal rhabdomyolysis. A recent example stressing the clinical importance of statin/fibrate drug interactions is the removal of cerivastatin from the market on August 8, 2001 after at least 40 fatal cases of rhabdomyolysis were reported when cerivastatin was co-administered with the fibrate **gemfibrozil.** Although for each statin an equilibrium

between both acid and lactone form exists in vivo, very little attention has been paid to the potential role of the lactones of statins administered as open acids (atorvastatin, cerivastatin, fluvastatin, pravastatin) in pharmacokinetic and pharmacodynamic drug interactions and toxicity.This is surprising since the lactone forms are considerably more lipophilic than the acid forms, and it seems reasonable to assume that their access and affinities to cytochrome P450 enzymes, transporters and their tissue distribution, e.g. into muscle cells, differs significantly from the acids. It is our hypothesis that the statin lactones play a key role in statin pharmacokinetics and toxicity. To identify the role of statin lactones in statin toxicity, we will assess both lactone pharmacokinetics and their pharmacodynamic effects on liver and muscle cell metabolism using magnetic resonance spectroscopy (MRS). It will be our primary goal to assess the mechanistic role of statin lactones in the pharmacokinetics, toxicity and drug-drug interactions of statins in comparison to their corresponding acids. Our secondary goal will be to compare the lactones/acids of the different statins with each other.

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

E-Journals: PubMed Central[3]

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

- **Mechanism of action of gemfibrozil on lipoprotein metabolism.** by Saku K, Gartside PS, Hynd BA, Kashyap ML.; 1985 May; http://www.pubmedcentral.gov/picrender.fcgi?tool=pmcentrez&action=stream&blobtype=pdf&artid=425514

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

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[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.

[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.

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

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  Author(s): Tuomilehto J, Salonen J, Kuuisto P, Virtamo J, Manninen V, Malkonen M.
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  Author(s): D'Agostino RB, Kannel WB, Stepanians MN, D'Agostino LC.
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  Source: Clinical Therapeutics. 1995 September-October; 17(5): 901-10.
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- **A comparison of the use, effectiveness and safety of bezafibrate, gemfibrozil and simvastatin in normal clinical practice using the New Zealand Intensive Medicines Monitoring Programme (IMMP).**
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  Author(s): Glueck CJ, Speirs J, Tracy T.
  Source: The Journal of Laboratory and Clinical Medicine. 1990 May; 115(5): 603-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2341762

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  Author(s): Rosenson RS, Frauenheim WA.
  Source: The American Journal of Cardiology. 1994 September 1; 74(5): 499-500.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8059735

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  Author(s): Syvanne M, Whittall RA, Turpeinen U, Nieminen MS, Frick MH, Kesaniemi YA, Pasternack A, Humphries SE, Taskinen MR.
  Source: Atherosclerosis. 2004 February; 172(2): 267-72.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15019536

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  Author(s): Schwandt P, Weisweiler P, Neureuther G.
  Source: Artery. 1979 February; 5(2): 117-24.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=231950

- **Severe rhabdomyolysis and cerivastatin-gemfibrozil combination therapy.**
  Author(s): Roca B, Calvo B, Monferrer R.
  Source: The Annals of Pharmacotherapy. 2002 April; 36(4): 730-1. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11936088

- **Severe rhabdomyolysis associated with the cerivastin-gemfibrozil combination therapy: report of a case.**
  Author(s): Lau TK, Leachman DR, Lufschanowski R.
  Source: Texas Heart Institute Journal / from the Texas Heart Institute of St. Luke's Episcopal Hospital, Texas Children's Hospital. 2001; 28(2): 142-5. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11453128

- **Severe rhabdomyolysis related to cerivastatin without gemfibrozil.**
  Author(s): Hyman DJ, Henry A, Taylor A.
  Source: Annals of Internal Medicine. 2002 July 2; 137(1): 74.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12093260

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  Author(s): Bharani A.
  Source: Bmj (Clinical Research Ed.). 1992 September 19; 305(6855): 693.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1393117

- **Sexual dysfunction secondary to gemfibrozil.**
  Author(s): James CW, Wu TS, McNelis KC.
  Source: Pharmacotherapy. 2002 January; 22(1): 123-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11794424

- **Simultaneous determination of gemfibrozil and its metabolites in plasma and urine by a fully automated high performance liquid chromatographic system.**
  Author(s): Nakagawa A, Shigeta A, Iwabuchi H, Horiguchi M, Nakamura K, Takahagi H.
  Source: Biomedical Chromatography : Bmc. 1991 March; 5(2): 68-73.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1868260

- **Skeletal muscle metabolism before and after gemfibrozil treatment in dialysed patients with chronic renal failure.**
  Author(s): Thompson CH, Irish A, Kemp GJ, Taylor DJ, Radda GK.
  Source: Clinical Nephrology. 1996 June; 45(6): 386-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8793231

- **Some coronary risk factors related to the insulin resistance syndrome and treatment with gemfibrozil. Experience from the Helsinki Heart Study.**
  Author(s): Tenkanen L, Manttari M, Manninen V.
  Source: Circulation. 1995 October 1; 92(7): 1779-85.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7671361

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  Author(s): Hammoudeh M, Siam AR, Khanjar I.
  Source: British Journal of Rheumatology. 1995 July; 34(7): 692-3.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7670796

- **Synthesis and antiplatelet activity of gemfibrozil chiral analogues.**
  Author(s): Ammazzalorso A, Amoroso R, Baraldi M, Bettoni G, Braghiroli D, De Filippis B, Duranti A, Moretti M, Tortorella P, Tricca ML, Vezzalini F.
  Source: Bioorganic & Medicinal Chemistry Letters. 2002 March 11; 12(5): 817-21.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11859010

- **The 5A/6A polymorphism in the promoter of the stromelysin-1 (MMP-3) gene predicts progression of angiographically determined coronary artery disease in men in the LOCAT gemfibrozil study. Lopid Coronary Angiography Trial.**
  Author(s): Humphries SE, Luong LA, Talmud PJ, Frick MH, Kesaniemi YA, Pasternack A, Taskinen MR, Syvanne M.
  Source: Atherosclerosis. 1998 July; 139(1): 49-56.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9699891

- **The effect of Gemfibrozil on human serum apolipoproteins and on serum reserve cholesterol binding capacity (SRCBC).**
  Author(s): Borresen AL, Berg K, Dahlen G, Gillnas T, Ericson C.
  Source: Artery. 1981; 9(1): 77-86.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7018466

- **The effect of gemfibrozil on lipid profile and glucose metabolism in hypertriglyceridaemic well-controlled non-insulin-dependent diabetic patients. For the Gemfibrozil Study Group.**
  Author(s): Avogaro A, Piliego T, Catapano A, Miola M, Tiengo A.
  Source: Acta Diabetologica. 1999 June; 36(1-2): 27-33.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10436249

- **The effect of gemfibrozil on serum lipids in diabetic patients.**
  Author(s): Konttinen A, Kuisma I, Ralli R, Pohjola S, Ojala K.
  Source: Ann Clin Res. 1979 December; 11(6): 240-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=398183

- **The effect of gemfibrozil on the pharmacokinetics of rosuvastatin.**
  Author(s): Schneck DW, Birmingham BK, Zalikowski JA, Mitchell PD, Wang Y, Martin PD, Lasseter KC, Brown CD, Windass AS, Raza A.
  Source: Clinical Pharmacology and Therapeutics. 2004 May; 75(5): 455-63.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15116058

- **The effect of renal function on the pharmacokinetics of gemfibrozil.**
  Author(s): Evans JR, Forland SC, Cutler RE.
  Source: Journal of Clinical Pharmacology. 1987 December; 27(12): 994-1000.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3481387

- **The effects of gemfibrozil on hyperlipidemia in children with persistent nephrotic syndrome.**
  Author(s): Buyukcelik M, Anarat A, Bayazit AK, Noyan A, Ozel A, Anarat R, Aydingulu H, Dikmen N.
  Source: Turk J Pediatr. 2002 January-March; 44(1): 40-4.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11858378

- **The effects of gemfibrozil upon the hypercoagulable state in dyslipidaemic patients with chronic renal failure.**
  Author(s): Irish AB, Thompson CH.
  Source: Nephrology, Dialysis, Transplantation : Official Publication of the European Dialysis and Transplant Association - European Renal Association. 1996 November; 11(11): 2223-8.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8941582

- **The effects of gemfibrozil upon the metabolism of chylomicron-like emulsions in patients with endogenous hypertriglyceridemia.**
  Author(s): Santos RD, Ventura LI, Sposito AC, Schreiber R, Ramires JA, Maranhao RC.
  Source: Cardiovascular Research. 2001 February 1; 49(2): 456-65.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11164856

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  Author(s): Weis S, Kudchodkar BJ, Clearfield MB, Lacko AG.
  Source: Artery. 1992; 19(6): 353-66.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1471924

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  Author(s): Janus ED, Costa D, Ononogbu IC, Lewis B.
  Source: Proc R Soc Med. 1976; 69 Suppl 2: 76-7.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1019156

- **The Gemfibrozil Study.**
  Author(s): Manninen V.
  Source: Acta Med Scand Suppl. 1985; 701: 83-8.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3907298

- **The hypolipidemic effect of gemfibrozil on hyperlipidemia in patients with non-insulin-dependent diabetes mellitus.**
  Author(s): Chang DM, Fuh MM, Jeng CY, Shian LR.
  Source: Taiwan Yi Xue Hui Za Zhi. 1986 May; 85(5): 443-50. No Abstract Available.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3463653

- **The hypolipidemic effects of gemfibrozil in type V hyperlipidemia. A double-blind, crossover study.**
  Author(s): Leaf DA, Connor WE, Illingworth DR, Bacon SP, Sexton G.
  Source: Jama : the Journal of the American Medical Association. 1989 December 8; 262(22): 3154-60.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2681858

- **The influence of simvastatin alone or in combination with gemfibrozil on plasma lipids and lipoproteins in patients with type III hyperlipoproteinemia.**
  Author(s): Feussner G, Eichinger M, Ziegler R.
  Source: Clin Investig. 1992 November; 70(11): 1027-35.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1472833

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  Author(s): Okerholm RA, Keeley FJ, Peterson FE, Glazko AJ.
  Source: Proc R Soc Med. 1976; 69 Suppl 2: 11-4. No Abstract Available.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=828261

- **The priming effect of gemfibrozil on reactive oxygen metabolism of phagocytic leucocytes. An intriguing side effect.**
  Author(s): Scatena R, Nocca G, De Sole P, Fresu R, Zuppi C, Giardina B.
  Source: Clinica Chimica Acta; International Journal of Clinical Chemistry. 1997 October 31; 266(2): 173-83.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9437545

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  Author(s): Nye ER, Sutherland WH, Temple W.
  Source: N Z Med J. 1980 November 12; 92(671): 345-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6935550

- **The use of gemfibrozil in a patient with chronic myelogenous leukemia to successfully manage retinoid-induced hypertriglyceridemia.**
  Author(s): Cohen PR.
  Source: Clin Investig. 1993 January; 71(1): 74-7.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8453265

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  Author(s): Honorato J, Masso RM, Purroy A.
  Source: Proc R Soc Med. 1976; 69 Suppl 2: 78-9. No Abstract Available.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=798200

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  Author(s): Kremer P, Marowski C, Jones C, Acacia E.
  Source: Current Medical Research and Opinion. 1989; 11(5): 293-303.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2702851

- **Toleration and bioavailability of gemfibrozil in healthy men.**
  Author(s): Smith TC.
  Source: Proc R Soc Med. 1976; 69 Suppl 2: 24-7. No Abstract Available.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=798193

- **Treatment of combined hyperlipidemia with fluvastatin and gemfibrozil, alone or in combination, does not induce muscle damage.**
  Author(s): Smit JW, Jansen GH, de Bruin TW, Erkelens DW.
  Source: The American Journal of Cardiology. 1995 July 13; 76(2): 126A-128A.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7604787

- **Treatment of combined hyperlipidemia with lovastatin versus gemfibrozil: a comparison study.**
  Author(s): Ojala JP, Helve E, Tikkanen MJ.
  Source: Cardiology. 1990; 77 Suppl 4: 39-49.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2073671

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  Author(s): Mulder M, Smelt AH, Zhao SP, Frants RR, Havekes LM.
  Source: Metabolism: Clinical and Experimental. 1993 March; 42(3): 327-33.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8487651

- **Treatment of hypercholesterolemia and combined hyperlipidemia with simvastatin and gemfibrozil in patients with NIDDM. A multicenter comparison study.**
  Author(s): Tikkanen MJ, Laakso M, Ilmonen M, Helve E, Kaarsalo E, Kilkki E, Saltevo J.
  Source: Diabetes Care. 1998 April; 21(4): 477-81.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9571327

- **Treatment of hyperlipidemia in heart transplant recipients with gemfibrozil +/- lovastatin.**
  Author(s): Peters JR, Kubo SH, Olivari MT, Knutson KR, Hunninghake DB.
  Source: The American Journal of Cardiology. 1993 June 15; 71(16): 1485-8.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8517408

- **Treatment of hyperlipidemia in renal transplant patients with gemfibrozil and dietary modification.**
  Author(s): Knight RJ, Vathsala A, Schoenberg L, Camel S, Weinberg RB, Goldstein RA, Lewis RM, van Buren CT, Kahan BD.
  Source: Transplantation. 1992 January; 53(1): 224-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1733073

- **Treatment of hyperlipidemia with gemfibrozil.**
  Author(s): Hartshorn JC, Deans K.
  Source: The Journal of Cardiovascular Nursing. 1987 August; 1(4): 76-80.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3474354

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  Author(s): Groggel GC, Cheung AK, Ellis-Benigni K, Wilson DE.
  Source: Kidney International. 1989 August; 36(2): 266-71.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2779095

- **Treatment of patients with familial defective apolipoprotein B-100 with pravastatin and gemfibrozil: a two-period cross-over study.**
  Author(s): Hansen PS, Meinertz H, Gerdes LU, Klausen IC, Faergeman O.
  Source: Clin Investig. 1994 December; 72(12): 1065-70.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7711417

- **Treatment of type III hyperlipoproteinemia with gemfibrozil to retard progression of coronary artery disease.**
  Author(s): Kuo PT, Wilson AC, Kostis JB, Moreyra AB, Dodge HT.
  Source: American Heart Journal. 1988 July; 116(1 Pt 1): 85-90.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3164977

- **Upregulation of low density lipoprotein receptor by gemfibrozil, a hypolipidemic agent, in human hepatoma cells through stabilization of mRNA transcripts.**
  Author(s): Goto D, Okimoto T, Ono M, Shimotsu H, Abe K, Tsujita Y, Kuwano M.
  Source: Arteriosclerosis, Thrombosis, and Vascular Biology. 1997 November; 17(11): 2707-12.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9409246

- **Vasculitis, Raynaud's phenomenon and polyarthritis associated with gemfibrozil therapy.**
  Author(s): Smith GW, Hurst NP.
  Source: British Journal of Rheumatology. 1993 January; 32(1): 84-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8422571

CHAPTER 2. NUTRITION AND GEMFIBROZIL

Overview

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

Finding Nutrition Studies on Gemfibrozil

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 "gemfibrozil" (or synonyms) into the search box, and click "Go." To narrow the search, you can also select the "Title" field.

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[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 is a typical result when searching for recently indexed consumer information on gemfibrozil:

- **Altering triglyceride concentrations changes insulin-glucose relationships in hypertriglyceridemic patients. Double-blind study with gemfibrozil with implications for atherosclerosis.**
  Author(s): Division of Endocrinology and Metabolism, Toronto Hospital, Ontario, Canada.
  Source: Steiner, G Diabetes-Care. 1991 November; 14(11): 1077-81 0149-5992
- **Effects of gemfibrozil on triglyceride levels in patients with NIDDM. Hyperlipidemia in Diabetes Investigators.**
  Author(s): Eastern Virginia Medical School, Department of Internal Medicine, Norfolk 23510.
  Source: Vinik, A I Colwell, J A Diabetes-Care. 1993 January; 16(1): 37-44 0149-5992
- **My doctor has me taking Lopid (gemfibrozil) twice a day. My cholesterol level is only 187, but my HDL cholesterol is low at 25. My LDL cholesterol is"normal" at 98 and my triglycerides are 318. These pills give me stomach cramps and they are expensive. Do I need to take them?**
  Source: Anonymous Harv-Heart-Lett. 1998 August; 8(12): 8 1051-5313
- **Treatment of hypercholesterolemia and combined hyperlipidemia with simvastatin and gemfibrozil in patients with NIDDM. A multicenter comparison study.**
  Author(s): Department of Medicine, University of Helsinki, Finland.
  Source: Tikkanen, M J Laakso, M Ilmonen, M Helve, E Kaarsalo, E Kilkki, E Saltevo, J Diabetes-Care. 1998 April; 21(4): 477-81 0149-5992

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

- **Chronic administration of the cholesterol reducing drug gemfibrozil fails to alter 5-HT1A and 5-HT2A mediated receptor behaviours in rats.**
  Author(s): Research Laboratories of Solvay Pharmaceuticals, The Netherlands.
  Source: McCreary, A C Handley, S L J-Psychopharmacol. 2000; 14(3): 280-3 0269-8811
- **Comparative metabolism and disposition of gemfibrozil in male and female Sprague-Dawley rats and Syrian golden hamsters.**
  Author(s): Research Triangle Institute, Research Triangle Park, North Carolina 27709-2194, USA. kjd@rti.org
  Source: Dix, K J Coleman, D P Jeffcoat, A R Drug-Metab-Dispos. 1999 January; 27(1): 138-46 0090-9556
- **Comparison of the effects of gemfibrozil and clofibric acid on peroxisomal enzymes and cholesterol synthesis of rat hepatocytes.**
  Author(s): Faculty of Pharmaceutical Sciences, Josai University, Sakado, Saitama, Japan.
  Source: Hashimoto, F Taira, S Hayashi, H Biol-Pharm-Bull. 1998 November; 21(11): 1142-7 0918-6158
- **Effect of gemfibrozil on centrifugal behavior of rat peroxisomes and activities of peroxisomal enzymes involved in lipid metabolism.**
  Author(s): Faculty of Pharmaceutical Sciences, Josai University, Saitama, Japan.
  Source: Hashimoto, F Hamada, S Hayashi, H Biol-Pharm-Bull. 1997 April; 20(4): 315-21 0918-6158

- **Efficacy and tolerability of etofibrate and gemfibrozil in combined hyperlipidaemia.**
  Author(s): Diakonie-Krankenhaus, Int. Dept., Bad Kreuznach, Germany.
  Source: Wolf, H R Drugs-Exp-Clin-Res. 1994; 20(3): 109-13 0378-6501
- **Fish oil supplementation versus gemfibrozil treatment in hyperlipidemic NIDDM. A randomized crossover study.**
  Author(s): Department of Medicine III, University of Vienna, AKH, Austria.
  Source: Fasching, P Rohac, M Liener, K Schneider, B Nowotny, P Waldhausl, W Horm-Metab-Res. 1996 May; 28(5): 230-6 0018-5043
- **Inhibition of rat liver microsomal fatty acid chain elongation by gemfibrozil in vitro.**
  Author(s): Dept. Farmacologia y Quimica Terapeutica, Facultad de Farmacia, Barcelona, Spain.
  Source: Sanchez, R M Vinals, M Alegret, M Vazquez, M Adzet, T Merlos, M Laguna, J C FEBS-Lett. 1992 March 23; 300(1): 89-92 0014-5793
- **Isolation and identification of novel metabolites of gemfibrozil in rat urine.**
  Author(s): Chemistry and Life Sciences Division, Research Triangle Institute, Research Triangle Park, North Carolina 27709-2194, USA. bft@rti.org
  Source: Thomas, B F Burgess, J P Coleman, D P Scheffler, N M Jeffcoat, A R Dix, K J Drug-Metab-Dispos. 1999 January; 27(1): 147-57 0090-9556
- **Lipid-regulating action of gemfibrozil in the stroke-prone spontaneously hypertensive rat.**
  Author(s): Department of Hygiene, Kinki University School of Medicine, Osaka-Sayama, Japan.
  Source: Ogawa, H Tasaka, M Clin-Exp-Pharmacol-Physiol-Suppl. 1995; 1S313-5 0143-9294

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**

The following is a specific Web list relating to gemfibrozil; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **Vitamins**

  Vitamin B3
  Source: Healthnotes, Inc.; www.healthnotes.com

  Vitamin B3
  Source: Prima Communications, Inc.www.personalhealthzone.com

  Vitamin E
  Source: Healthnotes, Inc.; www.healthnotes.com

  Vitamin E
  Alternative names: Alpha-Tocopherol
  Source: Integrative Medicine Communications; www.drkoop.com

- **Minerals**

  Alpha-Tocopherol
  Alternative names: Vitamin E
  Source: Integrative Medicine Communications; www.drkoop.com

  Beta-Tocopherol
  Alternative names: Vitamin E
  Source: Integrative Medicine Communications; www.drkoop.com

D-Alpha-Tocopherol
Alternative names: Vitamin E
Source: Integrative Medicine Communications; www.drkoop.com

Delta-Tocopherol
Alternative names: Vitamin E
Source: Integrative Medicine Communications; www.drkoop.com

Gamma-Tocopherol
Alternative names: Vitamin E
Source: Integrative Medicine Communications; www.drkoop.com

- **Food and Diet**

Garlic
Source: Healthnotes, Inc.; www.healthnotes.com

CHAPTER 3. ALTERNATIVE MEDICINE AND GEMFIBROZIL

Overview

In this chapter, we will begin by introducing you to official information sources on complementary and alternative medicine (CAM) relating to gemfibrozil. At the conclusion of this chapter, we will provide additional sources.

National Center for Complementary and Alternative Medicine

The National Center for Complementary and Alternative Medicine (NCCAM) of the National Institutes of Health (**http://nccam.nih.gov/**) has created a link to the National Library of Medicine's databases to facilitate research for articles that specifically relate to gemfibrozil and complementary medicine. To search the database, go to the following Web site: **http://www.nlm.nih.gov/nccam/camonpubmed.html**. Select "CAM on PubMed." Enter "gemfibrozil" (or synonyms) into the search box. Click "Go." The following references provide information on particular aspects of complementary and alternative medicine that are related to gemfibrozil:

- **A new reality: achieving cholesterol-lowering goals in clinical practice.**
  Author(s): Gaw A.
  Source: Atherosclerosis. Supplements. 2002 April; 2(4): 5-8; Discussion 8-11. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11976071

- **A risk factor for atherosclerosis: triglyceride-rich lipoproteins.**
  Author(s): Malloy MJ, Kane JP.
  Source: Adv Intern Med. 2001; 47: 111-36. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11795072

- **Adverse effects of hypolipidaemic drugs.**
  Author(s): Knodel LC, Talbert RL.

Source: Med Toxicol. 1987 January-February; 2(1): 10-32. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3547004

- **An observational study of severe hypertriglyceridemia, hypertriglyceridemic acute pancreatitis, and failure of triglyceride-lowering therapy when estrogens are given to women with and without familial hypertriglyceridemia.**
  Author(s): Goldenberg NM, Wang P, Glueck CJ.
  Source: Clinica Chimica Acta; International Journal of Clinical Chemistry. 2003 June; 332(1-2): 11-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12763274

- **Beneficial effects of fish liver preparations of sea bass (Lates calcarifer) versus gemfibrozil in high fat diet-induced lipid-intolerant rats.**
  Author(s): Rizvi F, Iftikhar M, George JP.
  Source: Journal of Medicinal Food. 2003 Summer; 6(2): 123-8.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12935323

- **Clinical pharmacology of 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors.**
  Author(s): Moghadasian MH.
  Source: Life Sciences. 1999; 65(13): 1329-37. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10503952

- **Coenzyme Q10 and cardiovascular disease: a review.**
  Author(s): Sarter B.
  Source: The Journal of Cardiovascular Nursing. 2002 July; 16(4): 9-20. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12597259

- **Commentary. Secondary causes of hypertriglyceridemia and pancreatitis.**
  Author(s): Wagh A, Stone NJ.
  Source: Clinica Chimica Acta; International Journal of Clinical Chemistry. 2003 June; 332(1-2): 21.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12763275

- **Diagnostic pitfalls during therapy for extreme hypertriglyceridaemia.**
  Author(s): Orth M, Luley C.
  Source: Eur J Clin Chem Clin Biochem. 1997 February; 35(2): 101-3.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9056751

- **Disturbances in dietary fat metabolism and their role in the development of atherosclerosis.**
  Author(s): Weintraub M, Charach G, Grosskopf I.

Source: Biomedicine & Pharmacotherapy = Biomedecine & Pharmacotherapie. 1997; 51(8): 311-3.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9436521

- **Drug treatment of combined hyperlipidemia.**
  Author(s): Wierzbicki AS, Mikhailidis DP, Wray R.
  Source: American Journal of Cardiovascular Drugs : Drugs, Devices, and Other Interventions. 2001; 1(5): 327-36. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14728015

- **Effect of dietary lipid-lowering drugs upon plasma lipids and egg yolk cholesterol levels of laying hens.**
  Author(s): Mori AV, Mendonca CX Jr, Santos CO.
  Source: Journal of Agricultural and Food Chemistry. 1999 November; 47(11): 4731-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10552881

- **Effect of trans-dehydrocrotonin, a 19-nor-clerodane diterpene from Croton cajucara on experimental hypertriglyceridaemia and hypercholesterolaemia induced by Triton WR 1339 (tyloxapol) in mice.**
  Author(s): Silva RM, Santos FA, Maciel MA, Pinto AC, Rao VS.
  Source: Planta Medica. 2001 November; 67(8): 763-5.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11731925

- **Ezetimibe: the first in a novel class of selective cholesterol-absorption inhibitors.**
  Author(s): Gupta EK, Ito MK.
  Source: Heart Disease. 2002 November-December; 4(6): 399-409.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12441019

- **Fish oil (omega-3 fatty acids) in treatment of hypertriglyceridemia. A practical approach for the primary care physician.**
  Author(s): Bays H, Lansing AM.
  Source: J Ky Med Assoc. 1994 March; 92(3): 105-8.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8035110

- **Fish oil supplementation versus gemfibrozil treatment in hyperlipidemic NIDDM. A randomized crossover study.**
  Author(s): Fasching P, Rohac M, Liener K, Schneider B, Nowotny P, Waldhausl W.
  Source: Hormone and Metabolic Research. Hormon- Und Stoffwechselforschung. Hormones Et Metabolisme. 1996 May; 28(5): 230-6.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8738112

- **Gemfibrozil and Mediterranean diet for patients with high plasma levels of lipoprotein [Lp(a)] and cholesterol--pilot study.**
  Author(s): Simoni G, Gianotti A, Ardia A, Baiardi A, Civalleri D.
  Source: Cardiovascular Drugs and Therapy / Sponsored by the International Society of Cardiovascular Pharmacotherapy. 1995 April; 9(2): 347-50.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7662602

- **Management of hyperlipidaemia associated with heart transplantation.**
  Author(s): Wenke K.
  Source: Drugs. 2004; 64(10): 1053-68.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15139786

- **Management of lipid abnormalities in patients on CAPD.**
  Author(s): Balaskas EV, Bamihas GI, Tourkantonis A.
  Source: Perit Dial Int. 1997 May-June; 17(3): 308-9. No Abstract Available.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9237296

- **Management of lipids in primary and secondary prevention of cardiovascular diseases.**
  Author(s): Lavie CJ, Gau GT, Squires RW, Kottke BA.
  Source: Mayo Clinic Proceedings. 1988 June; 63(6): 605-21. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3287024

- **Overview of pharmacologic therapy for the treatment of dyslipidemia.**
  Author(s): Lipsy RJ.
  Source: J Manag Care Pharm. 2003 January-February; 9(1 Suppl): 9-12. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14613353

- **Patient with gemfibrozil-controlled hypertriglyceridemia that developed acute pancreatitis after starting ketogenic diet.**
  Author(s): Buse GJ, Riley KD, Dress CM, Neumaster TD.
  Source: Current Surgery. 2004 March-April; 61(2): 224-6.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15051269

- **Prevention of coronary heart disease and hypertension.**
  Author(s): Sleight P.
  Source: Journal of Cardiovascular Pharmacology. 1988; 12 Suppl 7: S3-10. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2467124

- **Recent developments in the treatment of hypertriglyceridemia.**
  Author(s): Duriez P, Fruchart JC.

Source: Current Atherosclerosis Reports. 1999 July; 1(1): 31-7. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11122689

- **Regulation of rat liver apolipoprotein A-I, apolipoprotein A-II and acyl-coenzyme A oxidase gene expression by fibrates and dietary fatty acids.**
  Author(s): Berthou L, Saladin R, Yaqoob P, Branellec D, Calder P, Fruchart JC, Denefle P, Auwerx J, Staels B.
  Source: European Journal of Biochemistry / Febs. 1995 August 15; 232(1): 179-87.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7556148

- **Rhabdomyolysis-related renal tubular damage studied by proton nuclear magnetic resonance spectroscopy of urine.**
  Author(s): Bairaktari E, Seferiadis K, Liamis G, Psihogios N, Tsolas O, Elisaf M.
  Source: Clinical Chemistry. 2002 July; 48(7): 1106-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12089184

- **Severe hypertriglyceridemia and pancreatitis when estrogen replacement therapy is given to hypertriglyceridemic women.**
  Author(s): Glueck CJ, Lang J, Hamer T, Tracy T.
  Source: The Journal of Laboratory and Clinical Medicine. 1994 January; 123(1): 59-64.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8288962

- **Statin-fibrate combination: therapy for hyperlipidemia: a review.**
  Author(s): Wierzbicki AS, Mikhailidis DP, Wray R, Schacter M, Cramb R, Simpson WG, Byrne CB.
  Source: Current Medical Research and Opinion. 2003; 19(3): 155-68. Review.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12814127

- **Study of the hypolipidemic properties of pectin, garlic and ginseng in hypercholesterolemic rabbits.**
  Author(s): Ismail MF, Gad MZ, Hamdy MA.
  Source: Pharmacological Research : the Official Journal of the Italian Pharmacological Society. 1999 February; 39(2): 157-66.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10072708

- **The effect of concentrated n-3 fatty acids versus gemfibrozil on plasma lipoproteins, low density lipoprotein heterogeneity and oxidizability in patients with hypertriglyceridemia.**
  Author(s): Stalenhoef AF, de Graaf J, Wittekoek ME, Bredie SJ, Demacker PN, Kastelein JJ.
  Source: Atherosclerosis. 2000 November; 153(1): 129-38.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11058707

- **The effects of the phytoestrogenic isoflavone genistein on the hepatic disposition of preformed and hepatically generated gemfibrozil 1-O-acyl glucuronide in the isolated perfused rat liver.**
  Author(s): Lucas AN, Brogan LR, Nation RL, Milne RW, Evans AM, Shackleford DM.
  Source: The Journal of Pharmacy and Pharmacology. 2003 October; 55(10): 1433-9.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14607027

- **The protective action of ethanolic ginger (Zingiber officinale) extract in cholesterol fed rabbits.**
  Author(s): Bhandari U, Sharma JN, Zafar R.
  Source: Journal of Ethnopharmacology. 1998 June; 61(2): 167-71.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9683348

- **The sense of coherence, occupation and all-cause mortality in the Helsinki Heart Study.**
  Author(s): Poppius E, Tenkanen L, Hakama M, Kalimo R, Pitkanen T.
  Source: European Journal of Epidemiology. 2003; 18(5): 389-93.
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12889683

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering CAM and related topics. The following is a representative sample:

- Alternative Medicine Foundation, Inc.: **http://www.herbmed.org/**
- AOL: **http://search.aol.com/cat.adp?id=169&layer=&from=subcats**
- Chinese Medicine: **http://www.newcenturynutrition.com/**
- drkoop.com®: **http://www.drkoop.com/InteractiveMedicine/IndexC.html**
- Family Village: **http://www.familyvillage.wisc.edu/med_altn.htm**
- Google: **http://directory.google.com/Top/Health/Alternative/**
- Healthnotes: **http://www.healthnotes.com/**
- MedWebPlus: **http://medwebplus.com/subject/Alternative_and_Complementary_Medicine**
- Open Directory Project: **http://dmoz.org/Health/Alternative/**
- HealthGate: **http://www.tnp.com/**
- WebMD®Health: **http://my.webmd.com/drugs_and_herbs**
- WholeHealthMD.com: **http://www.wholehealthmd.com/reflib/0,1529,00.html**
- Yahoo.com: **http://dir.yahoo.com/Health/Alternative_Medicine/**

The following is a specific Web list relating to gemfibrozil; please note that any particular subject below may indicate either a therapeutic use, or a contraindication (potential danger), and does not reflect an official recommendation:

- **General Overview**

  Arteriosclerosis
  Source: Integrative Medicine Communications; www.drkoop.com

  Atherosclerosis
  Source: Integrative Medicine Communications; www.drkoop.com

  Coronary Artery Disease
  Source: Integrative Medicine Communications; www.drkoop.com

  High Cholesterol
  Source: Healthnotes, Inc.; www.healthnotes.com

  High Cholesterol
  Source: Integrative Medicine Communications; www.drkoop.com

  High Cholesterol
  Source: Prima Communications, Inc.www.personalhealthzone.com

  High Triglycerides
  Source: Healthnotes, Inc.; www.healthnotes.com

  Hypercholesterolemia
  Source: Integrative Medicine Communications; www.drkoop.com

  TIAs
  Source: Integrative Medicine Communications; www.drkoop.com

  Transient Ischemic Attacks
  Source: Integrative Medicine Communications; www.drkoop.com

- **Herbs and Supplements**

  Cholesterol-Lowering Drugs
  Source: Healthnotes, Inc.; www.healthnotes.com

  Clopidogrel
  Source: Healthnotes, Inc.; www.healthnotes.com

  Coenzyme Q10
  Source: Healthnotes, Inc.; www.healthnotes.com

  Coenzyme Q10
  Alternative names: CoQ10
  Source: Integrative Medicine Communications; www.drkoop.com

CoQ10
Alternative names: Coenzyme Q10
Source: Integrative Medicine Communications; www.drkoop.com

Fibric Acid Derivatives
Source: Integrative Medicine Communications; www.drkoop.com

Gemfibrozil
Source: Healthnotes, Inc.; www.healthnotes.com

Ginkgo
Alternative names: Ginkgo biloba
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org

Ginkgo Biloba
Source: Healthnotes, Inc.; www.healthnotes.com

Ginkgo Biloba
Alternative names: Maidenhair Tree
Source: Integrative Medicine Communications; www.drkoop.com

Maidenhair Tree
Alternative names: Ginkgo Biloba
Source: Integrative Medicine Communications; www.drkoop.com

Ticlopidine
Source: Healthnotes, Inc.; www.healthnotes.com

General References

A good place to find general background information on CAM is the National Library of Medicine. It has prepared within the MEDLINEplus system an information topic page dedicated to complementary and alternative medicine. To access this page, go to the MEDLINEplus site at **http://www.nlm.nih.gov/medlineplus/alternativemedicine.html**. This Web site provides a general overview of various topics and can lead to a number of general sources.

CHAPTER 4. PATENTS ON GEMFIBROZIL

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.[8] 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 "gemfibrozil" (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on gemfibrozil, we have not necessarily excluded non-medical patents in this bibliography.

Patents on Gemfibrozil

By performing a patent search focusing on gemfibrozil, 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

[8]Adapted 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 gemfibrozil:

- **Antimicrobial activity of gemfibrozil and related compounds and derivatives and metabolites thereof**

  Inventor(s): Blanchard; John S. (Larchmont, NY), Kabbash; Christina (Greenwich, CT), Shuman; Howard A. (Larchmont, NY), Silverstein; Samuel C. (New York, NY)

  Assignee(s): Albert Einstein College of Medicine of Yeshiva University (Bronx, NY), The Trustees of Columbia University in the City of New York (New York, NY)

  Patent Number: 6,531,291

  Date filed: November 10, 1999

  Abstract: The present invention provides a method of selecting a compound which inhibits the enzymatic activity of enoyl reductase which comprises: (A) contacting enoyl reductase with the compound linked to an acyl carrier protein; (B) measuring the enzymatic activity of the entoy reductase of step (A) compared with the enzymatic activity of enoyl reductase in the absence of the compound and selecting the compound which inhibits the enzymatic activity of enoyl reductase.

  Excerpt(s): Throughout this application, various publications are referenced by a number in brackets. Full citations for these publications may be found listed by number at the end of the specification immediately preceding the claims. The disclosures of these publications in their entireties are hereby incorporated by reference into this application in order to more fully describe the state of the art as known to those skilled therein as of the date of the invention described and claimed herein. or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit activity of the enzyme. Ability of commercially available GFZ analogs to inhibit.sup.14 C-acetate incorporation into the TCA precipitates of intact L. pneumophila. Analogs were added to L. pneumophila in AYE medium containing.sup.14 C-acetate at a concentration of 0.5 mM. At various time points 100.mu.l aliquots of the cultures were TCA precipitated and analyzed for.sup.14 C-acetate content by scintillation spectroscopy.

  Web site: http://www.delphion.com/details?pn=US06531291__

- **Compositions and methods for lowering cholesterol while maintaining antioxidant levels**

  Inventor(s): Najarian; Thomas (18 Mannix Cir., Belmont, MA 02178)

  Assignee(s): none reported

  Patent Number: 5,662,934

  Date filed: May 27, 1993

  Abstract: Compositions comprising a physiologically-acceptable antioxidant and a cholesterol-lowering agent for treating hypercholesterolemia and the accompanying lowering of antioxidant levels in an individual are disclosed. A preferred composition for use in reducing serum cholesterol levels while maintaining antioxidant levels in an individual comprises beta-carotene and **gemfibrozil** (LOPID.RTM.).

Excerpt(s): It is widely acknowledged that high levels of cholesterol can lead to cardiovascular disease. In recent years, the need to maintain a healthy level of serum cholesterol has become increasingly important. However, many individuals find that this is only possible through the use of cholesterol-lowering agents. Several trials of the long-term effects of cholesterol-lowering drugs on patients have shown reduced death from and incidence of heart disease. (See Lipid Research Clinics Investigators, Arch Intern Med 152:1399-1410 (1992)). However, some long-term studies on cholesterol lowering have suggested that very low cholesterol levels in an individual may be associated with an increased risk of cancer death. (J. A. Heady, WHO Clofibrate/Cholesterol Trial: Clarifications, The Lancet 340:1405-1406 (1992); The Helsinki Heart Study, JAMA 260:641-665 (1988); and The Helsinki Heart Study 8.5 year cumulative update (1992)). There is compelling evidence that oxidized low-density lipoprotein (LDL) plays an important role in the formation of artherosclerotic lesions. (Chisolm, Clin. Cardiol. 14:I-25 - I-30 (1991)). As LDL becomes oxidized, its properties and mechanisms of interaction with cells are altered extensively. These changes cause the oxidized LDL to act deleteriously at various levels of artherosclerotic lesion development. Recent studies have shown that taking antioxidants such as vitamin E or beta carotene, reduces an individual's risk of heart attack presumably by preventing the oxidation of LDL (See NY Times, p. A9, cols. 1-6, Nov. 19, 1992). In addition, studies have shown that individuals who have low plasma levels of antioxidants have an elevated risk of cancer. Stahelin et al., Am J Epidemiology 133:766-775 (1991); Potischman, et al., Nutr. Cancer 15:205-215 (1991). The present invention is directed to compositions comprising a physiologically-acceptable antioxidant and a cholesterol-lowering agent for treating hypercholesterolemia and the accompanying lowering of antioxidant levels in an individual. Preferred compositions include beta-carotene and a cholesterol-lowering agent, such as **gemfibrozil** (LOPID.RTM.), for treating the aforementioned condition. Alternatively, a cholesterol-lowering agent can be administered in conjunction with a physiologically acceptable antioxidant e.g., simultaneously with or sequentially. Compositions of the invention are useful for administration to an individual to lower serum cholesterol levels while maintaining or elevating serum antioxidant levels in the individual.

Web site: http://www.delphion.com/details?pn=US05662934__

- **Gemfibrozil containing pharmaceutical compositions**

  Inventor(s): Bezzegh; Denes (Budapest, HU), Drabant; Sandor (Budapest, HU), Fekete; Pal (Budapest, HU), Fellner, nee Kohalmi; Erzsebet (Budapest, HU), Gora, nee Hernyes; Magdolna (Budapest, HU), Klebovich; Imre (Budapest, HU), Mandi; Attila (Budapest, HU), Maroshelyi, nee Kovacs; Biborka (Budapest, HU), Sandorfalvy; Andrea (Budapest, HU), Szanto; Marta (Budapest, HU), Szlavy, nee Szell; Zsuzsa (Budapest, HU), Ujfalussy; Gyorgy (Budapest, HU)

  Assignee(s): Egis Gyogyszergyar Rt. (Budapest, HU)

  Patent Number: 5,726,201

  Date filed: May 15, 1995

  Abstract: The invention relates to oral solid pharmaceutical composition containing as active ingredient **gemfibrozil** and conventional pharmaceutical auxiliary agents comprising as surfactant bis-(2-ethyl-hexyl)-sodium-sulfosuccinate in an amount of 0.05-0.5% by weight relative to **gemfibrozil** content of the composition.The pharmaceutical compositions according to the present invention contain a relatively small amount of a

surfactant, provide uniform dissolution of the active ingredient among the different batches and the standard deviation of the dissolution rate is low.

Excerpt(s): According to the present invention there are provided oral solid **gemfibrozil** containing pharmaceutical compositions and a process for the preparation thereof. More particularly the invention relates to oral **gemfibrozil** compositions, preferably in the form of tablets, film-coated tablets and capsules. Gemfibrozil--5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid--is a widely used antihyperlipoproteinemic agent having a high daily dose ranging between 900 mg and 1500 mg. The active agent is poorly water soluble and has a hydrophobic character. For this reason the preparation of **gemfibrozil** containing pharmaceutical compositions with adequate dissolution and adsorption of the active ingredient involves serious difficulties. Immediate and sustained release **gemfibrozil** containing pharmaceutical compositions are disclosed in HU-PS No. 204,192. According to this prior art 0.7-0.8% of polysorbate 80 (Tween 80) is used as surfactant in the preparation of granules.

Web site: http://www.delphion.com/details?pn=US05726201__

- **Gemfibrozil formulations**

  Inventor(s): Fawzi; Mahdi B. (Flanders, NJ), Ghebre-Sellassie; Isaac (Stanhope, NJ)

  Assignee(s): Warner-Lambert Company (Morris Plains, NJ)

  Patent Number: 5,281,421

  Date filed: April 16, 1992

  Abstract: Improved oral formulations are prepared by admixing **gemfibrozil** with from 1 to 4%, by weight, of a pharmaceutically acceptable surfactant having an HLB value of from about 10 to about 50.

  Excerpt(s): The present invention relates to improved formulation of **gemfibrozil.** Gemfibrozil, or 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid, is a widely used antihyperlipoproteinemic agent. Physically the chemical is a crystalline material which melts in the range of 61.degree. to 63.degree. C. (hexane) and exhibits a boiling point of 158.degree.-159.degree.sub.0.02 C. The substance is nonhygroscopic and generally compatible with common pharmaceutical excipients but has very poor solubility in water. This is particularly true in a highly acidic medium (such as is encountered in the stomach) since its apparent pKa is 4.7. The typical daily dose is high, generally about 1200 mg, probably because of the poor water solubility. This dosage generally is administered using for example two capsules of 300 mg or a single compressed tablet of 600 mg, administration in each case being b.i.d.

  Web site: http://www.delphion.com/details?pn=US05281421__

- **Modified release gemfibrozil composition**

  Inventor(s): Ghebre-Sellassie; Isaac (Stanhope, NJ), Gordon; Robert H. (Dover, NJ), Khan; Sadath U. (Mine Hill, NJ)

  Assignee(s): Warner-Lambert Company (Ann Arbor, MI)

  Patent Number: 4,927,639

  Date filed: February 2, 1989

Abstract: A disintegratable formulation of **gemfibrozil** providing both immediate and sustained release and comprises a tablet compressed from a mixture of a first and second granulation, and a disintegration excipient operable to effect partial or complete disintegration in the stomach. The first granulation comprises finely divided particles of pure **gemfibrozil** granulated with at least one cellulose derivative and the second granulation comprises finely divided particles of pure **gemfibrozil** granulated with a pharmaceutically acceptable water soluble or insoluble polymer which are then uniformly coated with a pharmaceutically acceptable (meth)acrylate copolymer prior to admixture with the first granulation. The first and second granulations are present in the final composition in a ratio of from about 10:1 to about 1:10.

Excerpt(s): The present invention relates to modified release **gemfibrozil** formulations. Gemfibrozil, or 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid, is a widely used antihyperlipoproteinemic agent. While apparently absorbed throughout the gastrointestinal tract, maximum absorption appears to occur in the upper gastrointestinal tract and this is true notwithstanding the poor solubility of the drug at acidic pH. Prior attempts at developing sustained release formulations, as for example reservoir systems, have not met with a great deal of success, producing either inadequate bioavailability or unacceptable release profiles. Paradoxically, it appears the achievement of a sustained release formulation requires disintegration or erosion in the stomach.

Web site: http://www.delphion.com/details?pn=US04927639__

- **Process and composition for the development of controlled release gemfibrozil dosage form**

  Inventor(s): Ghebre-Sellassie; Isaac (Morris Plains, NJ), Iyer; Uma (Mendham, NJ)

  Assignee(s): Warner-Lambert Company (Morris Plains, NJ)

  Patent Number: 5,358,723

  Date filed: May 4, 1993

  Abstract: Gemfibrozil formulations prepared from a single granulation of **gemfibrozil** and a release-control agent are disclosed. The release-control agent is present in an amount sufficient to provide both immediate and controlled release of **gemfibrozil.** A method of preparing the formulation and a compressed tablet are also disclosed.

  Excerpt(s): The present invention relates to controlled release **gemfibrozil** formulations. In particular, the present invention is directed to formulations having both immediate and controlled release of **gemfibrozil.** Gemfibrozil, or 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid, is a widely used antihyper-lipoproteinemic agent. While apparently absorbed throughout the gastrointestinal tract, maximum absorption appears to occur in the upper gastrointestinal tract, notwithstanding the poor solubility of the drug at acidic pH's. In recent years, for patient convenience, it has become desirable to provide controlled release formulations. In self-medicating patients, where efficacious blood serum levels of the active ingredient are imperative, controlled release formulations are particularly useful. In addition, controlled release formulations are useful for those patients who may easily forget to take medication.

  Web site: http://www.delphion.com/details?pn=US05358723__

- **Process for preparing 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid**

  Inventor(s): Kearney; Francis R. (Holland, MI)

  Assignee(s): Warner-Lambert Company (Morris Plains, NJ)

  Patent Number: 4,665,226

  Date filed: December 9, 1985

  Abstract: An improved two-step process for preparing 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid (**gemfibrozil**) which regularly affords gembibrozil in overall yields in excess of 80% comprises reacting an alkali metal salt of a lower alkyl ester of 2-methylpropanoic acid with 1,3-dibromopropane or 1-bromo-3-chloropropane in a polar aprotic solvent such as tetrahydrofuran, and then reacting the intermediate thus formed with an alkali metal salt of 2,5-dimethylphenol in a mixed toluene/dimethylsulfoxide solvent system.

  Excerpt(s): The present invention relates to chemical processes for preparing (substituted-phenoxy)alkanoic acids and esters. More particularly, the present invention concerns an improved process for preparing 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid. Substituted phenoxyalkanoic acids as a class have been found to regulate blood lipid levels and to possess utility as agents for the treatment or prevention of arteriosclerosis. (See, for example, U.S. Pats. Nos. 3,674,836 to Creger, 4,238,492 to Majoie, and 4,351,950 to Sircar.). In particular, the compound 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid, known generically as **gemfibrozil,** has been shown to be effective in elevating blood serum levels of high-density lipoproteins while simultaneously lowering the levels of low-density serum lipoproteins. (See, for example, P. Samuel, "Effects of **Gemfibrozil** on Serum Lipids", Am. J. Med., May 23, 1983, pp. 23-27.

  Web site: http://www.delphion.com/details?pn=US04665226__

- **Water dispersible gemfibrozil compositions**

  Inventor(s): Fawzi; Mahdi B. (Road Flanders, NJ), Ghebre-Sellassie; Isaac (Stanhope, NJ), Gordon; Robert H. (Dover, NJ), Iyer; Uma (Mendham, NJ)

  Assignee(s): Warner-Lambert Company (Ann Arbor, MI)

  Patent Number: 4,971,804

  Date filed: February 2, 1989

  Abstract: A water-dispersible formulation of **gemfibrozil** comprising finely divided particles of pure **gemfibrozil** uniformly coated with a mixture of a wax and at least one hydrophilic material, the coated particles in turn being overcoated with a minor amount of a surfactant.

  Excerpt(s): The present invention relates to a water-dispersible formulation of **gemfibrozil.** Gemfibrozil, or 5-(2,5-dimethylphenoxy)-2,2-dimethylpentanoic acid, is a widely used antihyperlipoproteinemic agent which, because of the required large dose, generally is administered several times a day in the form of multiple capsules. Although it would be desirable to administer the agent in a water-dispersible formulation, this approach heretofore has been unattainable because of the unpleasant burning after-taste which it produces in the buccal mucosa. It also would be beneficial to provide such water-dispersible formulations with sustained release properties so as to reduce the number of times the drug must be administered.

Web site: http://www.delphion.com/details?pn=US04971804__

Patent Applications on Gemfibrozil

As of December 2000, U.S. patent applications are open to public viewing.[9] 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 gemfibrozil:

- **Novel antimicrobial activity of gemfibrozil and related compounds and derivatives and metabolites thereof**

  Inventor(s): Blanchard, John S.; (Pelham, NY), Kabbash, Christina; (Greenwich, CT), Shuman, Howard A.; (Larchmont, NY), Silverstein, Samuel C.; (New York, NY)

  Correspondence: John P. White; Cooper & Dunham Llp; 1185 Avenue OF The Americas; New York; NY; 10036; US

  Patent Application Number: 20030191146

  Date filed: February 13, 2003

  Abstract: The present invention provides for a method of inhibiting activity of an enoyl reductase enzyme in a cell which comprises contacting the cell with a compound having the structure: 1wherein each of R.sub.1, R.sub.2, R.sub.3, R.sub.4, R.sub.5 and R.sub.6 is independently selected from the group consisting of: --H, --F, --Cl, --Br, --I, --OH, --OR, --CN, --COR.sub.7, --SR.sub.7, --N(R.sub.7).sub.2, --NR.sub.7--COR.sub.8, --NO.sub.2, --(CH.sub.2).sub.p --OR.sub.7, --COSR.sub.7, --COOH, --CONH.sub.2, --NH.sub.2, a straight chain or branched, substituted or unsubstituted C.sub.1-C.sub.10 alkyl, C.sub.2-C.sub.10 alkenyl, C.sub.2-C.sub.10 alkynyl, C.sub.3-C.sub.10 cycloalkyl, C.sub.3-C.sub.10 cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl;wherein L is alternatively --N--, --S--, --O-- or --C--;wherein R.sub.7 is independently selected from the group consisting of --H, --F, --Cl, --Br, --I, --OH, --CN, --COH, --SH.sub.2, --NH.sub.2, --NHCOH, --(CH.sub.2).sub.pOH, a straight chain or branched, substituted or unsubstituted C.sub.1-C.sub.10 alkyl, C.sub.2-C.sub.10 alkenyl, C.sub.2-C.sub.10 alkynyl, C.sub.3-C.sub.10 cycloalkyl, C.sub.3-C.sub.10 cycloalkenyl, thioalkyl, methylene thioalkyl, acyl, phenyl, substituted phenyl, or heteroaryl;wherein A is selected from the group consisting of --N.sub.2--, --NH--, --C.dbd.C.dbd.CH.sub.2--, --C.ident.C--C.sub.2HOH--, --C.ident.C--CH.sub.2--, --CH.sub.2--CH.sub.2 --O--, --CH.sub.2--CH.sub.2--CH.sub.2--O--, --S--, --S(.dbd.O).sub.2--, --C.dbd.O--, --C.dbd.O--O--, --NH--C.dbd.O--, --C.dbd.O--NH--;wherein Q is independently an integer from 1 to 10, or if Q is 1, A may be a (C.sub.1-C.sub.10)-alkyl chain, (C.sub.1-C.sub.10)-alkenyl chain or (C.sub.1-C.sub.10)-alkynyl chain which is branched or unbranched, substituted or unsubstituted and is optionally interrupted 1 to 3 times by --O-- or --S-- or --N--;wherein X is --CO.sub.2--, --CH.dbd.CH.sub.3, phenyl, substituted phenyl, or heteroaryl, --O-phenyl(CH.sub.3).sub.2, --C(CH.sub.2).sub.2--CO--NH.su- b.2, --C(CH.sub.2).sub.2--COOH;or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit activity of the enzyme.

  Excerpt(s): Throughout this application, various publications are referenced by a number in brackets. Full citations for these publications may be found listed by number at the end of the specification immediately preceding the claims. The disclosures of

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

these publications in their entireties are hereby incorporated by reference into this application in order to more fully describe the state of the art as known to those skilled therein as of the date of the invention described and claimed herein. or a pharmaceutically acceptable salt or ester thereof, which compound is present in a concentration effective to inhibit activity of the enzyme. FIGS. 15A-D. Effect of GFZ on the accumulation of electron-lucent inclusions by L. pneumophila Philadelphia 1. (A and B) Electron micrographs of L. pneumophila grown for three days on CYE agar at 37.degree. C. without (10,000.times.) (A) or with (20,000.times.) (B) GFZ (30.mu.g/ml). (C and D) Fluorescence micrographs (100.times.) of Nile Blue A stained L. pneumophila grown for three days on CYE agar at 37.degree. C. without (C) or with (D) GFZ (30.mu.g/ml).

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 gemfibrozil, 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 "gemfibrozil" (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 gemfibrozil.

You can also use this procedure to view pending patent applications concerning gemfibrozil. 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 GEMFIBROZIL

Overview

This chapter provides bibliographic book references relating to gemfibrozil. In addition to online booksellers such as **www.amazon.com** and **www.bn.com**, excellent sources for book titles on gemfibrozil 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: 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 "gemfibrozil" at online booksellers' Web sites, you may discover non-medical books that use the generic term "gemfibrozil" (or a synonym) in their titles. The following is indicative of the results you might find when searching for "gemfibrozil" (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **Further Progress With Gemfibrozil (International Congress and Symposium Series, No 87)** by Clive Wood; ISBN: 0905958160; http://www.amazon.com/exec/obidos/ASIN/0905958160/icongroupinterna

CHAPTER 6. PERIODICALS AND NEWS ON GEMFIBROZIL

Overview

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

News Services and Press Releases

One of the simplest ways of tracking press releases on gemfibrozil 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 "gemfibrozil" (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 gemfibrozil. 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 "gemfibrozil" (or synonyms). The following was recently listed in this archive for gemfibrozil:

- **Niacin more effective than gemfibrozil in raising HDL cholesterol**
  Source: Reuters Medical News
  Date: May 10, 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 "gemfibrozil" (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 "gemfibrozil" (or synonyms). If you know the name of a company that is relevant to gemfibrozil, 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 "gemfibrozil" (or synonyms).

Academic Periodicals covering Gemfibrozil

Numerous periodicals are currently indexed within the National Library of Medicine's PubMed database that are known to publish articles relating to gemfibrozil. In addition to

these sources, you can search for articles covering gemfibrozil 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 7. 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 gemfibrozil. 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 Phamacopeia is both user-friendly and free to use. It covers more than 9,000 prescription and over-the-counter medications. To access this database, simply type the following hyperlink into your Web browser: **http://www.nlm.nih.gov/medlineplus/druginformation.html**. To view examples of a given medication (brand names, category, description, preparation, proper use, precautions, side effects, etc.), simply follow the hyperlinks indicated within the United States Pharmacopeia (USP).

Below, we have compiled a list of medications associated with gemfibrozil. 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 gemfibrozil:

Clopidogrel

- **Systemic - U.S. Brands:** Plavix
  http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/203403.html

Gemfibrozil

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

Ticlopidine

- **Systemic - U.S. Brands:** Ticlid
  http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202637.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/**.

PDR*health*

The PDR*health* 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. PDR*health* can be searched by brand name, generic name, or indication. It features multiple drug interactions reports. Search PDR*health* 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 Institute[10]:

- 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/**

[10] 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.[11] 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:[12]

- **Bioethics:** Access to published literature on the ethical, legal, and public policy issues surrounding healthcare and biomedical research. This information is provided in conjunction with the Kennedy Institute of Ethics located at Georgetown University, Washington, D.C.: **http://www.nlm.nih.gov/databases/databases_bioethics.html**
- **HIV/AIDS Resources:** Describes various links and databases dedicated to HIV/AIDS research: **http://www.nlm.nih.gov/pubs/factsheets/aidsinfs.html**
- **NLM Online Exhibitions:** Describes "Exhibitions in the History of Medicine": **http://www.nlm.nih.gov/exhibition/exhibition.html**. Additional resources for historical scholarship in medicine: **http://www.nlm.nih.gov/hmd/hmd.html**
- **Biotechnology Information:** Access to public databases. The National Center for Biotechnology Information conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information for the better understanding of molecular processes affecting human health and disease: **http://www.ncbi.nlm.nih.gov/**
- **Population Information:** The National Library of Medicine provides access to worldwide coverage of population, family planning, and related health issues, including family planning technology and programs, fertility, and population law and policy: **http://www.nlm.nih.gov/databases/databases_population.html**
- **Cancer Information:** Access to cancer-oriented databases: **http://www.nlm.nih.gov/databases/databases_cancer.html**
- **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**

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[11] Remember, for the general public, the National Library of Medicine recommends the databases referenced in MEDLINE*plus* (**http://medlineplus.gov/** or **http://www.nlm.nih.gov/medlineplus/databases.html**).

[12] 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 Gateway[13]

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.[14] To use the NLM Gateway, simply go to the search site at **http://gateway.nlm.nih.gov/gw/Cmd**. Type "gemfibrozil" (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	1340
Books / Periodicals / Audio Visual	3
Consumer Health	48
Meeting Abstracts	13
Other Collections	6
Total	1410

HSTAT[15]

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.[16] 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.[17] Simply search by "gemfibrozil" (or synonyms) at the following Web site: **http://text.nlm.nih.gov**.

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[13] Adapted from NLM: **http://gateway.nlm.nih.gov/gw/Cmd?Overview.x**.

[14] 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).

[15] Adapted from HSTAT: **http://www.nlm.nih.gov/pubs/factsheets/hstat.html**.

[16] The HSTAT URL is **http://hstat.nlm.nih.gov/**.

[17] 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 Biologists[18]

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.[19] 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.[20] 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/cliniweb/**.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see **http://www.mwsearch.com/**.

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[18] Adapted from **http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html**.

[19] 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.

[20] 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.

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 gemfibrozil 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 gemfibrozil. 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 gemfibrozil. 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 "gemfibrozil":

Charcot-Marie-Tooth Disease
http://www.nlm.nih.gov/medlineplus/charcotmarietoothdisease.html

Drug and Medical Device Safety
http://www.nlm.nih.gov/medlineplus/drugandmedicaldevicesafety.html

Fibromyalgia
http://www.nlm.nih.gov/medlineplus/fibromyalgia.html

Medicines
http://www.nlm.nih.gov/medlineplus/medicines.html

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 gemfibrozil. 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:

- **Diabetes and Dyslipidemia: Beyond Glucose Control: Some Questions and Answers About Diabetes and Lipids**

  Source: Morris Plains, NJ: Parke-Davis. 1992. 19 p.

  Contact: Available from Parke-Davis. Medical Affairs, Morris Plains, NJ 07950. (800) 223-0432. PRICE: Single copy free.

  Summary: This question-and-answer booklet presents some commonly asked questions about diabetes and lipids and is based on material from the symposium Current Approaches to Treating Dyslipidemia in the Diabetic Patient, held in June 1991 in conjunction with the 73rd Annual Meeting of the Endocrine Society. Topics include general considerations of dyslipidemia in diabetes; elevated triglycerides and low HDL; coronary heart disease (CHD) risk factors; management of the dyslipidemic patient; and the patient with diabetes who has multiple CHD risk factors. The booklet concludes with the package insert information for the drug Lipid (Gemfibrozil tablets). 2 figures. 3 tables. 34 references.

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

Additional Web Sources

A number of Web sites 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**

Finding Associations

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

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 gemfibrozil. 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 "gemfibrozil" (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 "gemfibrozil". 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 "gemfibrozil" (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 "gemfibrozil" (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.[21]

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

[21] 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)[22]:

- **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://gaelnet.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/**

[22] 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.lsuhsc.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, Worchester), **http://healthnet.umassmed.edu/**
- **Michigan:** Botsford General Hospital Library - Consumer Health (Botsford General Hospital, Library & Internet Services), **http://www.botsfordlibrary.org/consumer.htm**
- **Michigan:** Helen DeRoy Medical Library (Providence Hospital and Medical Centers), **http://www.providence-hospital.org/library/**
- **Michigan:** Marquette General Hospital - Consumer Health Library (Marquette General Hospital, Health Information Center), **http://www.mgh.org/center.html**
- **Michigan:** Patient Education Resouce Center - University of Michigan Cancer Center (University of Michigan Comprehensive Cancer Center, 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.lvccld.org/special_collections/medical/index.htm**
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library, Hanover), **http://www.dartmouth.edu/~biomed/resources.htmld/conshealth.htmld/**
- **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/commlib.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.shscares.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**).

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**

GEMFIBROZIL 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]

Acceptor: A substance which, while normally not oxidized by oxygen or reduced by hydrogen, can be oxidized or reduced in presence of a substance which is itself undergoing oxidation or reduction. [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]

Acromioclavicular Joint: The gliding joint formed by the outer extremity of the clavicle and the inner margin of the acromion process of the scapula. [NIH]

Acromion: The lateral extension of the spine of the scapula and the highest point of the shoulder. [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]

Acyl: Chemical signal used by bacteria to communicate. [NIH]

Acyl Carrier Protein: Consists of a polypeptide chain and 4'-phosphopantetheine linked to a serine residue by a phosphodiester bond. Acyl groups are bound as thiol esters to the pantothenyl group. Acyl carrier protein is involved in every step of fatty acid synthesis by the cytoplasmic system. [NIH]

Adduct: Complex formed when a carcinogen combines with DNA or a protein. [NIH]

Adipose Tissue: Connective tissue composed of fat cells lodged in the meshes of areolar tissue. [NIH]

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

Adsorption: The condensation of gases, liquids, or dissolved substances on the surfaces of solids. It includes adsorptive phenomena of bacteria and viruses as well as of tissues treated with exogenous drugs and chemicals. [NIH]

Adsorptive: It captures volatile compounds by binding them to agents such as activated carbon or adsorptive resins. [NIH]

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

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]

Agar: A complex sulfated polymer of galactose units, extracted from Gelidium cartilagineum, Gracilaria confervoides, and related red algae. It is used as a gel in the preparation of solid culture media for microorganisms, as a bulk laxative, in making emulsions, and as a supporting medium for immunodiffusion and immunoelectrophoresis. [NIH]

Age of Onset: The age or period of life at which a disease or the initial symptoms or manifestations of a disease appear in an individual. [NIH]

Agonist: In anatomy, a prime mover. In pharmacology, a drug that has affinity for and stimulates physiologic activity at cell receptors normally stimulated by naturally occurring substances. [EU]

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]

Alkaloid: A member of a large group of chemicals that are made by plants and have nitrogen in them. Some alkaloids have been shown to work against cancer. [NIH]

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

Alpha 1-Antitrypsin: Plasma glycoprotein member of the serpin superfamily which inhibits trypsin, neutrophil elastase, and other proteolytic enzymes. Commonly referred to as alpha 1-proteinase inhibitor (A1PI), it exists in over 30 different biochemical variant forms known collectively as the PI (protease inhibitor) system. Hereditary A1PI deficiency is associated with pulmonary emphysema. [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]

Ameliorated: A changeable condition which prevents the consequence of a failure or accident from becoming as bad as it otherwise would. [NIH]

Amino acid: Any organic compound containing an amino (-NH2 and a carboxyl (- COOH) group. The 20 a-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 y-aminobutyric acid, that have no relation to proteins. Abbreviated AA. [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]

Anaphylatoxins: The family of peptides C3a, C4a, C5a, and C5a des-arginine produced in the serum during complement activation. They produce smooth muscle contraction, mast cell histamine release, affect platelet aggregation, and act as mediators of the local inflammatory process. The order of anaphylatoxin activity from strongest to weakest is C5a, C3a, C4a, and C5a des-arginine. The latter is the so-called "classical" anaphylatoxin but shows no spasmogenic activity though it contains some chemotactic ability. [NIH]

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

Anomalies: Birth defects; abnormalities. [NIH]

Antibiotics: Substances produced by microorganisms that can inhibit or suppress the growth of other microorganisms. [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]

Antidiabetic: An agent that prevents or alleviates diabetes. [EU]

Antifungal: Destructive to fungi, or suppressing their reproduction or growth; effective against fungal infections. [EU]

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

Antigen-Antibody Complex: The complex formed by the binding of antigen and antibody molecules. The deposition of large antigen-antibody complexes leading to tissue damage causes immune complex diseases. [NIH]

Antimicrobial: Killing microorganisms, or suppressing their multiplication or growth. [EU]

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

Antineoplastic Agents: Substances that inhibit or prevent the proliferation of neoplasms. [NIH]

Antioxidant: A substance that prevents damage caused by free radicals. Free radicals are

highly reactive chemicals that often contain oxygen. They are produced when molecules are split to give products that have unpaired electrons. This process is called oxidation. [NIH]

Antipruritic: Relieving or preventing itching. [EU]

Antiviral: Destroying viruses or suppressing their replication. [EU]

Antiviral Agents: Agents used in the prophylaxis or therapy of virus diseases. Some of the ways they may act include preventing viral replication by inhibiting viral DNA polymerase; binding to specific cell-surface receptors and inhibiting viral penetration or uncoating; inhibiting viral protein synthesis; or blocking late stages of virus assembly. [NIH]

Apolipoproteins: The protein components of lipoproteins which remain after the lipids to which the proteins are bound have been removed. They play an important role in lipid transport and metabolism. [NIH]

Apolipoproteins A: Lipoproteins found in human blood serum in the high-density and very-high-density lipoprotein fraction (HDL, VHDL). They consist of several different polypeptides, the most important of which are apolipoprotein A-I and A-II. They maintain the structural integrity of the HDL particles and are activators of lecithin:cholesterol acyltransferase (LCAT). Atherosclerotic patients show low apolipoprotein A levels and these apolipoproteins are either absent or present in extremely low plasma concentration in Tangier disease. [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]

Aqueous: Having to do with water. [NIH]

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

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]

Arteriolosclerosis: Sclerosis and thickening of the walls of the smaller arteries (arterioles). Hyaline arteriolosclerosis, in which there is homogeneous pink hyaline thickening of the arteriolar walls, is associated with benign nephrosclerosis. Hyperplastic arteriolosclerosis, in which there is a concentric thickening with progressive narrowing of the lumina may be associated with malignant hypertension, nephrosclerosis, and scleroderma. [EU]

Arteriosclerosis: Thickening and loss of elasticity of arterial walls. Atherosclerosis is the most common form of arteriosclerosis and involves lipid deposition and thickening of the intimal cell layers within arteries. Additional forms of arteriosclerosis involve calcification of the media of muscular arteries (Monkeberg medial calcific sclerosis) and thickening of the walls of small arteries or arterioles due to cell proliferation or hyaline deposition (arteriolosclerosis). [NIH]

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

Aspergillosis: Infections with fungi of the genus Aspergillus. [NIH]

Assay: Determination of the amount of a particular constituent of a mixture, or of the

biological or pharmacological potency of a drug. [EU]

Astrocytes: The largest and most numerous neuroglial cells in the brain and spinal cord. Astrocytes (from "star" cells) are irregularly shaped with many long processes, including those with "end feet" which form the glial (limiting) membrane and directly and indirectly contribute to the blood brain barrier. They regulate the extracellular ionic and chemical environment, and "reactive astrocytes" (along with microglia) respond to injury. Astrocytes have high- affinity transmitter uptake systems, voltage-dependent and transmitter-gated ion channels, and can release transmitter, but their role in signaling (as in many other functions) is not well understood. [NIH]

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

Atherogenic: Causing the formation of plaque in the lining of the arteries. [NIH]

ATP: ATP an abbreviation for adenosine triphosphate, a compound which serves as a carrier of energy for cells. [NIH]

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]

Autodigestion: Autolysis; a condition found in disease of the stomach: the stomach wall is digested by the gastric juice. [NIH]

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

Bactericidal: Substance lethal to bacteria; substance capable of killing bacteria. [NIH]

Barbiturate: A drug with sedative and hypnotic effects. Barbiturates have been used as sedatives and anesthetics, and they have been used to treat the convulsions associated with epilepsy. [NIH]

Basophils: Granular leukocytes characterized by a relatively pale-staining, lobate nucleus and cytoplasm containing coarse dark-staining granules of variable size and stainable by basic dyes. [NIH]

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

Beta carotene: A vitamin A precursor. Beta carotene belongs to the family of fat-soluble vitamins called carotenoids. [NIH]

Bezafibrate: Antilipemic agent that lowers cholesterol and triglycerides. It decreases low density lipoproteins and increases high density lipoproteins. [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 Acids: Acids made by the liver that work with bile to break down fats. [NIH]

Bile Acids and Salts: Steroid acids and salts. The primary bile acids are derived from cholesterol in the liver and usually conjugated with glycine or taurine. The secondary bile acids are further modified by bacteria in the intestine. They play an important role in the digestion and absorption of fat. They have also been used pharmacologically, especially in the treatment of gallstones. [NIH]

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

Biliary: Having to do with the liver, bile ducts, and/or gallbladder. [NIH]

Biliary Tract: The gallbladder and its ducts. [NIH]

Bilirubin: A bile pigment that is a degradation product of heme. [NIH]

Bioavailability: The degree to which a drug or other substance becomes available to the target tissue after administration. [EU]

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

Biosynthesis: The building up of a chemical compound in the physiologic processes of a living organism. [EU]

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]

Blastocyst: The mammalian embryo in the post-morula stage in which a fluid-filled cavity, enclosed primarily by trophoblast, contains an inner cell mass which becomes the embryonic disc. [NIH]

Blastomycosis: A fungal infection that may appear in two forms: 1) a primary lesion characterized by the formation of a small cutaneous nodule and small nodules along the lymphatics that may heal within several months; and 2) chronic granulomatous lesions characterized by thick crusts, warty growths, and unusual vascularity and infection in the middle or upper lobes of the lung. [NIH]

Blood Glucose: Glucose in blood. [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 urea: A waste product in the blood that comes from the breakdown of food protein. The kidneys filter blood to remove urea. As kidney function decreases, the BUN level increases. [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]

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]

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]

Brachial: All the nerves from the arm are ripped from the spinal cord. [NIH]

Bradykinin: A nonapeptide messenger that is enzymatically produced from kallidin in the blood where it is a potent but short-lived agent of arteriolar dilation and increased capillary permeability. Bradykinin is also released from mast cells during asthma attacks, from gut walls as a gastrointestinal vasodilator, from damaged tissues as a pain signal, and may be a

neurotransmitter. [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]

Bypass: A surgical procedure in which the doctor creates a new pathway for the flow of body fluids. [NIH]

Calcification: Deposits of calcium in the tissues of the breast. Calcification in the breast can be seen on a mammogram, but cannot be detected by touch. There are two types of breast calcification, macrocalcification and microcalcification. Macrocalcifications are large deposits and are usually not related to cancer. Microcalcifications are specks of calcium that may be found in an area of rapidly dividing cells. Many microcalcifications clustered together may be a sign of cancer. [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]

Calculi: An abnormal concretion occurring mostly in the urinary and biliary tracts, usually composed of mineral salts. Also called stones. [NIH]

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

Capsules: Hard or soft soluble containers used for the oral administration of medicine. [NIH]

Carbohydrate: An aldehyde or ketone derivative of a polyhydric alcohol, particularly of the pentahydric and hexahydric alcohols. They are so named because the hydrogen and oxygen are usually in the proportion to form water, (CH2O)n. The most important carbohydrates are the starches, sugars, celluloses, and gums. They are classified into mono-, di-, tri-, poly- and heterosaccharides. [EU]

Carcinogen: Any substance that causes cancer. [NIH]

Carcinogenic: Producing carcinoma. [EU]

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

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

Cardiovascular disease: Any abnormal condition characterized by dysfunction of the heart and blood vessels. CVD includes atherosclerosis (especially coronary heart disease, which can lead to heart attacks), cerebrovascular disease (e.g., stroke), and hypertension (high blood pressure). [NIH]

Carotene: The general name for a group of pigments found in green, yellow, and leafy vegetables, and yellow fruits. The pigments are fat-soluble, unsaturated aliphatic hydrocarbons functioning as provitamins and are converted to vitamin A through enzymatic processes in the intestinal wall. [NIH]

Carotenoids: Substance found in yellow and orange fruits and vegetables and in dark green, leafy vegetables. May reduce the risk of developing cancer. [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]

Catabolism: Any destructive metabolic process by which organisms convert substances into excreted compounds. [EU]

Cause of Death: Factors which produce cessation of all vital bodily functions. They can be analyzed from an epidemiologic viewpoint. [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 Death: The termination of the cell's ability to carry out vital functions such as metabolism, growth, reproduction, responsiveness, and adaptability. [NIH]

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

Cell proliferation: An increase in the number of cells as a result of cell growth and cell division. [NIH]

Cellobiose: A disaccharide consisting of two glucose units in beta (1-4) glycosidic linkage. Obtained from the partial hydrolysis of cellulose. [NIH]

Cellulose: A polysaccharide with glucose units linked as in cellobiose. It is the chief constituent of plant fibers, cotton being the purest natural form of the substance. As a raw material, it forms the basis for many derivatives used in chromatography, ion exchange materials, explosives manufacturing, and pharmaceutical preparations. [NIH]

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

Central Nervous System Infections: Pathogenic infections of the brain, spinal cord, and meninges. DNA virus infections; RNA virus infections; bacterial infections; mycoplasma infections; Spirochaetales infections; fungal infections; protozoan infections; helminthiasis; and prion diseases may involve the central nervous system as a primary or secondary process. [NIH]

Centrifugation: A method of separating organelles or large molecules that relies upon differential sedimentation through a preformed density gradient under the influence of a gravitational field generated in a centrifuge. [NIH]

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

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]

Chemoprevention: The use of drugs, vitamins, or other agents to try to reduce the risk of, or delay the development or recurrence of, cancer. [NIH]

Chemotactic Factors: Chemical substances that attract or repel cells or organisms. The concept denotes especially those factors released as a result of tissue injury, invasion, or immunologic activity, that attract leukocytes, macrophages, or other cells to the site of infection or insult. [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]

Cholesterol Esters: Fatty acid esters of cholesterol which constitute about two-thirds of the cholesterol in the plasma. The accumulation of cholesterol esters in the arterial intima is a characteristic feature of atherosclerosis. [NIH]

Cholestyramine: Strongly basic anion exchange resin whose main constituent is polystyrene trimethylbenzylammonium as Cl(-) anion. It exchanges chloride ions with bile salts, thus decreasing their concentration and that of cholesterol. It is used as a hypocholesteremic in diarrhea and biliary obstruction and as an antipruritic. [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]

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

Chronic granulocytic leukemia: A slowly progressing disease in which too many white blood cells are made in the bone marrow. Also called chronic myelogenous leukemia or chronic myeloid leukemia. [NIH]

Chronic myelogenous leukemia: CML. A slowly progressing disease in which too many white blood cells are made in the bone marrow. Also called chronic myeloid leukemia or chronic granulocytic leukemia. [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]

Chylomicrons: A class of lipoproteins that carry dietary cholesterol and triglycerides from the small intestines to the tissues. [NIH]

Clavicle: A long bone of the shoulder girdle. [NIH]

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

Clinical study: A research study in which patients receive treatment in a clinic or other medical facility. Reports of clinical studies can contain results for single patients (case reports) or many patients (case series or clinical trials). [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]

Clofibric Acid: An antilipemic agent and the biologically active metabolite of clofibrate. [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]

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

Colchicine: A major alkaloid from Colchicum autumnale L. and found also in other Colchicum species. Its primary therapeutic use is in the treatment of gout, but it has been used also in the therapy of familial Mediterranean fever (periodic disease). [NIH]

Colestipol: Highly crosslinked and insoluble basic anion exchange resin used as anticholesteremic. It may also may reduce triglyceride levels. [NIH]

Colloidal: Of the nature of a colloid. [EU]

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]

Complementary and alternative medicine: CAM. Forms of treatment that are used in addition to (complementary) or instead of (alternative) standard treatments. These practices are not considered standard medical approaches. CAM includes dietary supplements, megadose vitamins, herbal preparations, special teas, massage therapy, magnet therapy, spiritual healing, and meditation. [NIH]

Complementary medicine: Practices not generally recognized by the medical community as standard or conventional medical approaches and used to enhance or complement the standard treatments. Complementary 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]

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]

Computerized axial tomography: 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 CAT scan, computed tomography (CT scan), or computerized tomography. [NIH]

Computerized tomography: 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 axial tomography (CAT) scan and computed tomography (CT scan). [NIH]

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

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

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]

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]

Contrast medium: A substance that is introduced into or around a structure and, because of

the difference in absorption of x-rays by the contrast medium and the surrounding tissues, allows radiographic visualization of the structure. [EU]

Controlled clinical trial: A clinical study that includes a comparison (control) group. The comparison group receives a placebo, another treatment, or no treatment at all. [NIH]

Controlled study: An experiment or clinical trial that includes a comparison (control) group. [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 heart disease: A type of heart disease caused by narrowing of the coronary arteries that feed the heart, which needs a constant supply of oxygen and nutrients carried by the blood in the coronary arteries. When the coronary arteries become narrowed or clogged by fat and cholesterol deposits and cannot supply enough blood to the heart, CHD results. [NIH]

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

Corpus: The body of the uterus. [NIH]

Corpus Luteum: The yellow glandular mass formed in the ovary by an ovarian follicle that has ruptured and discharged its ovum. [NIH]

Corpuscle: A small mass or body; a sensory nerve end bulb; a cell, especially that of the blood or the lymph. [NIH]

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

Cost-benefit: A quantitative technique of economic analysis which, when applied to radiation practice, compares the health detriment from the radiation doses concerned with the cost of radiation dose reduction in that practice. [NIH]

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

Craniocerebral Trauma: Traumatic injuries involving the cranium and intracranial structures (i.e., brain; cranial nerves; meninges; and other structures). Injuries may be classified by whether or not the skull is penetrated (i.e., penetrating vs. nonpenetrating) or whether there is an associated hemorrhage. [NIH]

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]

Culture Media: Any liquid or solid preparation made specifically for the growth, storage, or transport of microorganisms or other types of cells. The variety of media that exist allow for the culturing of specific microorganisms and cell types, such as differential media, selective media, test media, and defined media. Solid media consist of liquid media that have been solidified with an agent such as agar or gelatin. [NIH]

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

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

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

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]

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]

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]

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

Dairy Products: Raw and processed or manufactured milk and milk-derived products. These are usually from cows (bovine) but are also from goats, sheep, reindeer, and water buffalo. [NIH]

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

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

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

Dermatologist: A doctor who specializes in the diagnosis and treatment of skin problems. [NIH]

Dermatology: A medical specialty concerned with the skin, its structure, functions, diseases, and treatment. [NIH]

Detoxification: Treatment designed to free an addict from his drug habit. [EU]

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

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

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

Diastolic: Of or pertaining to the diastole. [EU]

Dietary Fats: Fats present in food, especially in animal products such as meat, meat products, butter, ghee. They are present in lower amounts in nuts, seeds, and avocados. [NIH]

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

Dihydrotestosterone: Anabolic agent. [NIH]

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

Disposition: A tendency either physical or mental toward certain diseases. [EU]

DNA Topoisomerase: An enzyme catalyzing ATP-independent breakage of single-stranded DNA, followed by passage and rejoining of another single-stranded DNA. This enzyme class brings about the conversion of one topological isomer of DNA into another, e.g., the relaxation of superhelical turns in DNA, the interconversion of simple and knotted rings of single-stranded DNA, and the intertwisting of single-stranded rings of complementary sequences. (From Enzyme Nomenclature, 1992) EC 5.99.1.2. [NIH]

Double-blind: Pertaining to a clinical trial or other experiment in which neither the subject nor the person administering treatment knows which treatment any particular subject is receiving. [EU]

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

Duodenum: The first part of the small intestine. [NIH]

Dyslipidemia: Disorders in the lipoprotein metabolism; classified as hypercholesterolemia, hypertriglyceridemia, combined hyperlipidemia, and low levels of high-density lipoprotein (HDL) cholesterol. All of the dyslipidemias can be primary or secondary. Both elevated levels of low-density lipoprotein (LDL) cholesterol and low levels of HDL cholesterol predispose to premature atherosclerosis. [NIH]

Dyspareunia: Painful sexual intercourse. [NIH]

Edema: Excessive amount of watery fluid accumulated in the intercellular spaces, most commonly present in subcutaneous tissue. [NIH]

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

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

Egg Yolk: Cytoplasm stored in an egg that contains nutritional reserves for the developing embryo. It is rich in polysaccharides, lipids, and proteins. [NIH]

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

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

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

Electrons: Stable elementary particles having the smallest known negative charge, present in all elements; also called negatrons. Positively charged electrons are called positrons. The numbers, energies and arrangement of electrons around atomic nuclei determine the chemical identities of elements. Beams of electrons are called cathode rays or beta rays, the latter being a high-energy biproduct of nuclear decay. [NIH]

Electrophoresis: An electrochemical process in which macromolecules or colloidal particles with a net electric charge migrate in a solution under the influence of an electric current. [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]

Emphysema: A pathological accumulation of air in tissues or organs. [NIH]

Emulsions: Colloids of two immiscible liquids where either phase may be either fatty or aqueous; lipid-in-water emulsions are usually liquid, like milk or lotion and water-in-lipid emulsions tend to be creams. [NIH]

Endogenous: Produced inside an organism or cell. The opposite is external (exogenous) production. [NIH]

Endometrium: The layer of tissue that lines the uterus. [NIH]

Endopeptidases: A subclass of peptide hydrolases. They are classified primarily by their catalytic mechanism. Specificity is used only for identification of individual enzymes. They comprise the serine endopeptidases, EC 3.4.21; cysteine endopeptidases, EC 3.4.22; aspartic endopeptidases, EC 3.4.23, metalloendopeptidases, EC 3.4.24; and a group of enzymes yet to be assigned to any of the above sub-classes, EC 3.4.99. EC 3.4.-. [NIH]

Endothelial cell: The main type of cell found in the inside lining of blood vessels, lymph vessels, and the heart. [NIH]

Endothelium: A layer of epithelium that lines the heart, blood vessels (endothelium, vascular), lymph vessels (endothelium, lymphatic), and the serous cavities of the body. [NIH]

Endothelium-derived: Small molecule that diffuses to the adjacent muscle layer and relaxes it. [NIH]

Endotoxic: Of, relating to, or acting as an endotoxin (= a heat-stable toxin, associated with the outer membranes of certain gram-negative bacteria. Endotoxins are not secreted and are released only when the cells are disrupted). [EU]

Endotoxins: Toxins closely associated with the living cytoplasm or cell wall of certain microorganisms, which do not readily diffuse into the culture medium, but are released upon lysis of the cells. [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 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]

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]

Eosinophilic Gastroenteritis: Infection and swelling of the lining of the stomach, small intestine, or large intestine. The infection is caused by white blood cells (eosinophils). [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]

Epithelial: Refers to the cells that line the internal and external surfaces of the body. [NIH]

Epithelial Cells: Cells that line the inner and outer surfaces of the body. [NIH]

Erythrocyte Membrane: The semipermeable outer portion of the red corpuscle. It is known as a 'ghost' after hemolysis. [NIH]

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

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

Estrogen: One of the two female sex hormones. [NIH]

Estrogen Replacement Therapy: The use of hormonal agents with estrogen-like activity in postmenopausal or other estrogen-deficient women to alleviate effects of hormone deficiency, such as vasomotor symptoms, dyspareunia, and progressive development of osteoporosis. This may also include the use of progestational agents in combination therapy. [NIH]

Excipient: Any more or less inert substance added to a prescription in order to confer a suitable consistency or form to the drug; a vehicle. [EU]

Excrete: To get rid of waste from the body. [NIH]

Exogenous: Developed or originating outside the organism, as exogenous disease. [EU]

Extracellular: Outside a cell or cells. [EU]

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

Faecal: Pertaining to or of the nature of feces. [EU]

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

Fat: Total lipids including phospholipids. [NIH]

Feces: The excrement discharged from the intestines, consisting of bacteria, cells exfoliated from the intestines, secretions, chiefly of the liver, and a small amount of food residue. [EU]

Fibrinogen: Plasma glycoprotein clotted by thrombin, composed of a dimer of three non-identical pairs of polypeptide chains (alpha, beta, gamma) held together by disulfide bonds. Fibrinogen clotting is a sol-gel change involving complex molecular arrangements: whereas fibrinogen is cleaved by thrombin to form polypeptides A and B, the proteolytic action of other enzymes yields different fibrinogen degradation products. [NIH]

Fibrinolysis: The natural enzymatic dissolution of fibrin. [NIH]

Fibrinolytic: Pertaining to, characterized by, or causing the dissolution of fibrin by enzymatic action [EU]

Fold: A plication or doubling of various parts of the body. [NIH]

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

Free Radicals: Highly reactive molecules with an unsatisfied electron valence pair. Free radicals are produced in both normal and pathological processes. They are proven or suspected agents of tissue damage in a wide variety of circumstances including radiation, damage from environment chemicals, and aging. Natural and pharmacological prevention of free radical damage is being actively investigated. [NIH]

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

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

Gastrointestinal tract: The stomach and intestines. [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]

Genistein: An isoflavonoid derived from soy products. It inhibits protein-tyrosine kinase and topoisomerase-ii (dna topoisomerase (atp-hydrolysing)) activity and is used as an antineoplastic and antitumor agent. Experimentally, it has been shown to induce G2 phase arrest in human and murine cell lines. [NIH]

Genotype: The genetic constitution of the individual; the characterization of the genes. [NIH]

Geriatric: Pertaining to the treatment of the aged. [EU]

Ginger: Deciduous plant rich in volatile oil (oils, volatile). It is used as a flavoring agent and has many other uses both internally and topically. [NIH]

Ginseng: An araliaceous genus of plants that contains a number of pharmacologically active agents used as stimulants, sedatives, and tonics, especially in traditional medicine. [NIH]

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]

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]

Glucose tolerance: The power of the normal liver to absorb and store large quantities of glucose and the effectiveness of intestinal absorption of glucose. The glucose tolerance test is a metabolic test of carbohydrate tolerance that measures active insulin, a hepatic function based on the ability of the liver to absorb glucose. The test consists of ingesting 100 grams of glucose into a fasting stomach; blood sugar should return to normal in 2 to 21 hours after ingestion. [NIH]

Glucose Tolerance Test: Determination of whole blood or plasma sugar in a fasting state before and at prescribed intervals (usually 1/2 hr, 1 hr, 3 hr, 4 hr) after taking a specified amount (usually 100 gm orally) of glucose. [NIH]

Glucuronic Acid: Derivatives of uronic acid found throughout the plant and animal kingdoms. They detoxify drugs and toxins by conjugating with them to form glucuronides in the liver which are more water-soluble metabolites that can be easily eliminated from the body. [NIH]

Glucuronides: Glycosides of glucuronic acid formed by the reaction of uridine diphosphate glucuronic acid with certain endogenous and exogenous substances. Their formation is important for the detoxification of drugs, steroid excretion and bilirubin metabolism to a more water-soluble compound that can be eliminated in the urine and bile. [NIH]

Glyburide: An antidiabetic sulfonylurea derivative with actions similar to those of chlorpropamide. [NIH]

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

Glycosaminoglycans: Heteropolysaccharides which contain an N-acetylated hexosamine in a characteristic repeating disaccharide unit. The repeating structure of each disaccharide involves alternate 1,4- and 1,3-linkages consisting of either N-acetylglucosamine or N-acetylgalactosamine. [NIH]

Gout: Hereditary metabolic disorder characterized by recurrent acute arthritis, hyperuricemia and deposition of sodium urate in and around the joints, sometimes with formation of uric acid calculi. [NIH]

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

Guanylate Cyclase: An enzyme that catalyzes the conversion of GTP to 3',5'-cyclic GMP and pyrophosphate. It also acts on ITP and dGTP. (From Enzyme Nomenclature, 1992) EC 4.6.1.2. [NIH]

Habitual: Of the nature of a habit; according to habit; established by or repeated by force of habit, customary. [EU]

Haematological: Relating to haematology, that is that branch of medical science which treats of the morphology of the blood and blood-forming tissues. [EU]

Haematology: The science of the blood, its nature, functions, and diseases. [NIH]

Haemostasis: The arrest of bleeding, either by the physiological properties of vasoconstriction and coagulation or by surgical means. [EU]

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]

Headache Disorders: Common conditions characterized by persistent or recurrent headaches. Headache syndrome classification systems may be based on etiology (e.g., vascular headache, post-traumatic headaches, etc.), temporal pattern (e.g., cluster headache, paroxysmal hemicrania, etc.), and precipitating factors (e.g., cough headache). [NIH]

Heart attack: A seizure of weak or abnormal functioning of the heart. [NIH]

Heart Transplantation: The transference of a heart from one human or animal to another. [NIH]

Heme: The color-furnishing portion of hemoglobin. It is found free in tissues and as the prosthetic group in many hemeproteins. [NIH]

Hemodialysis: The use of a machine to clean wastes from the blood after the kidneys have failed. The blood travels through tubes to a dialyzer, which removes wastes and extra fluid. The cleaned blood then flows through another set of tubes back into the body. [NIH]

Hemofiltration: Extracorporeal ultrafiltration technique without hemodialysis for treatment of fluid overload and electrolyte disturbances affecting renal, cardiac, or pulmonary function. [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 conentration. 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]

Hemolysis: The destruction of erythrocytes by many different causal agents such as antibodies, bacteria, chemicals, temperature, and changes in tonicity. [NIH]

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

Hepatic: Refers to the liver. [NIH]

Hepatoblastoma: A type of liver tumor that occurs in infants and children. [NIH]

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

Hepatoma: A liver tumor. [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]

High-density lipoproteins: Lipoproteins that contain a small amount of cholesterol and carry cholesterol away from body cells and tissues to the liver for excretion from the body. Low-level HDL increases the risk of heart disease, so the higher the HDL level, the better. The HDL component normally contains 20 to 30 percent of total cholesterol, and HDL levels are inversely correlated with coronary heart disease risk. [NIH]

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]

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]

Hydrophobic: Not readily absorbing water, or being adversely affected by water, as a hydrophobic colloid. [EU]

Hydroxylation: Hydroxylate, to introduce hydroxyl into (a compound or radical) usually by replacement of hydrogen. [EU]

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

Hyperkalaemia: Pathology: an abnormally high concentration of potassium in the blood. [EU]

Hyperlipidaemia: A general term for elevated concentrations of any or all of the lipids in the plasma, including hyperlipoproteinaemia, hypercholesterolaemia, etc. [EU]

Hyperlipidemia: An excess of lipids in the blood. [NIH]

Hyperlipoproteinemia: Metabolic disease characterized by elevated plasma cholesterol and/or triglyceride levels. The inherited form is attributed to a single gene mechanism. [NIH]

Hypertension: Persistently high arterial blood pressure. Currently accepted threshold levels are 140 mm Hg systolic and 90 mm Hg diastolic pressure. [NIH]

Hypertriglyceridemia: Condition of elevated triglyceride concentration in the blood; an inherited form occurs in familial hyperlipoproteinemia IIb and hyperlipoproteinemia type IV. It has been linked to higher risk of heart disease and arteriosclerosis. [NIH]

Hyperuricemia: A buildup of uric acid (a byproduct of metabolism) in the blood; a side effect of some anticancer drugs. [NIH]

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

Hypoglycemic: An orally active drug that produces a fall in blood glucose concentration. [NIH]

Hypoglycemic Agents: Agents which lower the blood glucose level. [NIH]

Hypolipidemic: A drug that lowers abnormally high plasma concentrations of cholesterol or triglycerides or both. [NIH]

Immunodiffusion: Technique involving the diffusion of antigen or antibody through a semisolid medium, usually agar or agarose gel, with the result being a precipitin reaction. [NIH]

Immunoelectrophoresis: A technique that combines protein electrophoresis and double immunodiffusion. In this procedure proteins are first separated by gel electrophoresis (usually agarose), then made visible by immunodiffusion of specific antibodies. A distinct elliptical precipitin arc results for each protein detectable by the antisera. [NIH]

Immunogenic: Producing immunity; evoking an immune response. [EU]

Impotence: The inability to perform sexual intercourse. [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]

Incontinence: Inability to control the flow of urine from the bladder (urinary incontinence) or the escape of stool from the rectum (fecal incontinence). [NIH]

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]

Infantile: Pertaining to an infant or to infancy. [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]

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]

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

Ingestion: Taking into the body by mouth [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]

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

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

Intestinal: Having to do with the intestines. [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]

Intravenous: IV. Into a vein. [NIH]

Ion Channels: Gated, ion-selective glycoproteins that traverse membranes. The stimulus for channel gating can be a membrane potential, drug, transmitter, cytoplasmic messenger, or a mechanical deformation. Ion channels which are integral parts of ionotropic neurotransmitter receptors are not included. [NIH]

Ions: An atom or group of atoms that have a positive or negative electric charge due to a gain (negative charge) or loss (positive charge) of one or more electrons. Atoms with a positive charge are known as cations; those with a negative charge are anions. [NIH]

Irritable Bowel Syndrome: A disorder that comes and goes. Nerves that control the muscles in the GI tract are too active. The GI tract becomes sensitive to food, stool, gas, and stress. Causes abdominal pain, bloating, and constipation or diarrhea. Also called spastic colon or mucous colitis. [NIH]

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]

Isoniazid: Antibacterial agent used primarily as a tuberculostatic. It remains the treatment of choice for tuberculosis. [NIH]

Itraconazole: An antifungal agent that has been used in the treatment of histoplasmosis, blastomycosis, cryptococcal meningitis, and aspergillosis. [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]

Ketoconazole: Broad spectrum antifungal agent used for long periods at high doses, especially in immunosuppressed patients. [NIH]

Kidney Transplantation: The transference of a kidney from one human or animal to another. [NIH]

Kinetic: Pertaining to or producing motion. [EU]

Labile: 1. Gliding; moving from point to point over the surface; unstable; fluctuating. 2. Chemically unstable. [EU]

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]

Laxative: An agent that acts to promote evacuation of the bowel; a cathartic or purgative. [EU]

Lesion: An area of abnormal tissue change. [NIH]

Lethal: Deadly, fatal. [EU]

Leucine: An essential branched-chain amino acid important for hemoglobin formation. [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]

Ligaments: Shiny, flexible bands of fibrous tissue connecting together articular extremities of bones. They are pliant, tough, and inextensile. [NIH]

Lipase: An enzyme of the hydrolase class that catalyzes the reaction of triacylglycerol and water to yield diacylglycerol and a fatty acid anion. It is produced by glands on the tongue and by the pancreas and initiates the digestion of dietary fats. (From Dorland, 27th ed) EC 3.1.1.3. [NIH]

Lipid: Fat. [NIH]

Lipid A: Lipid A is the biologically active component of lipopolysaccharides. It shows strong endotoxic activity and exhibits immunogenic properties. [NIH]

Lipodystrophy: A collection of rare conditions resulting from defective fat metabolism and characterized by atrophy of the subcutaneous fat. They include total, congenital or acquired, partial, abdominal infantile, and localized lipodystrophy. [NIH]

Lipophilic: Having an affinity for fat; pertaining to or characterized by lipophilia. [EU]

Lipopolysaccharides: Substance consisting of polysaccaride and lipid. [NIH]

Lipoprotein: Any of the lipid-protein complexes in which lipids are transported in the blood; lipoprotein particles consist of a spherical hydrophobic core of triglycerides or cholesterol esters surrounded by an amphipathic monolayer of phospholipids, cholesterol, and apolipoproteins; the four principal classes are high-density, low-density, and very-low-density lipoproteins and chylomicrons. [EU]

Lipoprotein Lipase: An enzyme of the hydrolase class that catalyzes the reaction of triacylglycerol and water to yield diacylglycerol and a fatty acid anion. The enzyme hydrolyzes triacylglycerols in chylomicrons, very-low-density lipoproteins, low-density lipoproteins, and diacylglycerols. It occurs on capillary endothelial surfaces, especially in mammary, muscle, and adipose tissue. Genetic deficiency of the enzyme causes familial hyperlipoproteinemia Type I. (Dorland, 27th ed) EC 3.1.1.34. [NIH]

Lipoprotein(a): A family of lipoprotein particles varying in density and size depending on the protein-lipid ratio and the protein composition. These particles consist of apolipoprotein B-100 covalently linked to apolipoprotein-a by one or two disulfide bonds. There is a correlation between high plasma levels of this lipoprotein and increased risk for atherosclerotic cardiovascular disease. [NIH]

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

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

Lovastatin: A fungal metabolite isolated from cultures of Aspergillus terreus. The compound is a potent anticholesteremic agent. It inhibits 3-hydroxy-3-methylglutaryl coenzyme A reductase (hydroxymethylglutaryl CoA reductases), which is the rate-limiting enzyme in cholesterol biosynthesis. It also stimulates the production of low-density lipoprotein receptors in the liver. [NIH]

Low-density lipoprotein: Lipoprotein that contains most of the cholesterol in the blood. LDL carries cholesterol to the tissues of the body, including the arteries. A high level of LDL increases the risk of heart disease. LDL typically contains 60 to 70 percent of the total serum cholesterol and both are directly correlated with CHD risk. [NIH]

Lung metastases: Cancer that has spread from the original (primary) tumor to the lung. [NIH]

Lymph: The almost colorless fluid that travels through the lymphatic system and carries cells that help fight infection and disease. [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]

Lymphocytes: White blood cells formed in the body's lymphoid tissue. The nucleus is round or ovoid with coarse, irregularly clumped chromatin while the cytoplasm is typically pale blue with azurophilic (if any) granules. Most lymphocytes can be classified as either T or B (with subpopulations of each); those with characteristics of neither major class are called null 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]

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]

Mammary: Pertaining to the mamma, or breast. [EU]

Mammogram: An x-ray of the breast. [NIH]

Meat: The edible portions of any animal used for food including domestic mammals (the major ones being cattle, swine, and sheep) along with poultry, fish, shellfish, and game. [NIH]

Medial: Lying near the midsaggital plane of the body; opposed to lateral. [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]

Melanosomes: Melanin-containing organelles found in melanocytes and melanophores. [NIH]

Membrane: A very thin layer of tissue that covers a surface. [NIH]

Meningitis: Inflammation of the meninges. When it affects the dura mater, the disease is termed pachymeningitis; when the arachnoid and pia mater are involved, it is called leptomeningitis, or meningitis proper. [EU]

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

Mental Health: The state wherein the person is well adjusted. [NIH]

Mesoderm: The middle germ layer of the embryo. [NIH]

Metabolic disorder: A condition in which normal metabolic processes are disrupted, usually because of a missing enzyme. [NIH]

Metabolite: Any substance produced by metabolism or by a metabolic process. [EU]

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]

Microcalcifications: Tiny deposits of calcium in the breast that cannot be felt but can be detected on a mammogram. A cluster of these very small specks of calcium may indicate that cancer is present. [NIH]

Microglia: The third type of glial cell, along with astrocytes and oligodendrocytes (which together form the macroglia). Microglia vary in appearance depending on developmental stage, functional state, and anatomical location; subtype terms include ramified, perivascular, ameboid, resting, and activated. Microglia clearly are capable of phagocytosis and play an important role in a wide spectrum of neuropathologies. They have also been suggested to act in several other roles including in secretion (e.g., of cytokines and neural growth factors), in immunological processing (e.g., antigen presentation), and in central nervous system development and remodeling. [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]

Microsomal: Of or pertaining to microsomes : vesicular fragments of endoplasmic reticulum formed after disruption and centrifugation of cells. [EU]

Migration: The systematic movement of genes between populations of the same species, geographic race, or variety. [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]

Mitoxantrone: An anthracenedione-derived antineoplastic agent. [NIH]

Modeling: A treatment procedure whereby the therapist presents the target behavior which the learner is to imitate and make part of his repertoire. [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]

Monocytes: Large, phagocytic mononuclear leukocytes produced in the vertebrate bone

marrow and released into the blood; contain a large, oval or somewhat indented nucleus surrounded by voluminous cytoplasm and numerous organelles. [NIH]

Mononuclear: A cell with one nucleus. [NIH]

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

Morphological: Relating to the configuration or the structure of live organs. [NIH]

Morphology: The science of the form and structure of organisms (plants, animals, and other forms of life). [NIH]

Mucosa: A mucous membrane, or tunica mucosa. [EU]

Multicenter study: A clinical trial that is carried out at more than one medical institution. [NIH]

Multidrug resistance: Adaptation of tumor cells to anticancer drugs in ways that make the drugs less effective. [NIH]

Mutate: To change the genetic material of a cell. Then changes (mutations) can be harmful, beneficial, or have no effect. [NIH]

Myelogenous: Produced by, or originating in, the bone marrow. [NIH]

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]

Myocardium: The muscle tissue of the heart composed of striated, involuntary muscle known as cardiac muscle. [NIH]

Myopathy: Any disease of a muscle. [EU]

Myositis: Inflammation of a voluntary muscle. [EU]

Necrosis: A pathological process caused by the progressive degradative action of enzymes that is generally associated with severe cellular trauma. It is characterized by mitochondrial swelling, nuclear flocculation, uncontrolled cell lysis, and ultimately cell death. [NIH]

Nephrosis: Descriptive histopathologic term for renal disease without an inflammatory component. [NIH]

Nephrotic: Pertaining to, resembling, or caused by nephrosis. [EU]

Nephrotic Syndrome: Clinical association of heavy proteinuria, hypoalbuminemia, and generalized edema. [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]

Nitric Oxide: A free radical gas produced endogenously by a variety of mammalian cells. It is synthesized from arginine by a complex reaction, catalyzed by nitric oxide synthase. Nitric oxide is endothelium-derived relaxing factor. It is released by the vascular endothelium and mediates the relaxation induced by some vasodilators such as acetylcholine and bradykinin. It also inhibits platelet aggregation, induces disaggregation of aggregated platelets, and inhibits platelet adhesion to the vascular endothelium. Nitric oxide activates cytosolic guanylate cyclase and thus elevates intracellular levels of cyclic GMP. [NIH]

Nitric-Oxide Synthase: An enzyme that catalyzes the conversion of L-arginine, NADPH, and oxygen to citrulline, nitric oxide, and NADP+. The enzyme found in brain, but not that induced in lung or liver by endotoxin, requires calcium. (From Enzyme Nomenclature, 1992)

EC 1.14.13.39. [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]

Nuclei: A body of specialized protoplasm found in nearly all cells and containing the chromosomes. [NIH]

Nucleus: A body of specialized protoplasm found in nearly all cells and containing the chromosomes. [NIH]

Nutritional Status: State of the body in relation to the consumption and utilization of nutrients. [NIH]

Observational study: An epidemiologic study that does not involve any intervention, experimental or otherwise. Such a study may be one in which nature is allowed to take its course, with changes in one characteristic being studied in relation to changes in other characteristics. Analytical epidemiologic methods, such as case-control and cohort study designs, are properly called observational epidemiology because the investigator is observing without intervention other than to record, classify, count, and statistically analyze results. [NIH]

Omega-3 fatty acid: A type of fat obtained in the diet and involved in immunity. [NIH]

Opacity: Degree of density (area most dense taken for reading). [NIH]

Organ Culture: The growth in aseptic culture of plant organs such as roots or shoots, beginning with organ primordia or segments and maintaining the characteristics of the organ. [NIH]

Organelles: Specific particles of membrane-bound organized living substances present in eukaryotic cells, such as the mitochondria; the golgi apparatus; endoplasmic reticulum; lysomomes; plastids; and vacuoles. [NIH]

Orlistat: A lipase inhibitor used for weight loss. Lipase is an enzyme found in the bowel that assists in lipid absorption by the body. Orlistat blocks this enzyme, reducing the amount of fat the body absorbs by about 30 percent. It is known colloquially as a "fat blocker." Because more oily fat is left in the bowel to be excreted, Orlistat can cause an oily anal leakage and fecal incontinence. Orlistat may not be suitable for people with bowel conditions such as irritable bowel syndrome or Crohn's disease. [NIH]

Osmotic: Pertaining to or of the nature of osmosis (= the passage of pure solvent from a solution of lesser to one of greater solute concentration when the two solutions are separated by a membrane which selectively prevents the passage of solute molecules, but is permeable to the solvent). [EU]

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]

Ovum: A female germ cell extruded from the ovary at ovulation. [NIH]

Ovum Implantation: Endometrial implantation of the blastocyst. [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]

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]

Pancreatitis: Acute or chronic inflammation of the pancreas, which may be asymptomatic or symptomatic, and which is due to autodigestion of a pancreatic tissue by its own enzymes. It is caused most often by alcoholism or biliary tract disease; less commonly it may be associated with hyperlipaemia, hyperparathyroidism, abdominal trauma (accidental or operative injury), vasculitis, or uraemia. [EU]

Particle: A tiny mass of material. [EU]

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

Pathologic Processes: The abnormal mechanisms and forms involved in the dysfunctions of tissues and organs. [NIH]

Patient Education: The teaching or training of patients concerning their own health needs. [NIH]

Peptide: Any compound consisting of two or more amino acids, the building blocks of proteins. Peptides are combined to make proteins. [NIH]

Perfusion: Bathing an organ or tissue with a fluid. In regional perfusion, a specific area of the body (usually an arm or a leg) receives high doses of anticancer drugs through a blood vessel. Such a procedure is performed to treat cancer that has not spread. [NIH]

Peripheral blood: Blood circulating throughout the body. [NIH]

Peritoneal: Having to do with the peritoneum (the tissue that lines the abdominal wall and covers most of the organs in the abdomen). [NIH]

Peritoneal Cavity: The space enclosed by the peritoneum. It is divided into two portions, the greater sac and the lesser sac or omental bursa, which lies behind the stomach. The two sacs are connected by the foramen of Winslow, or epiploic foramen. [NIH]

Peritoneal Dialysis: Dialysis fluid being introduced into and removed from the peritoneal cavity as either a continuous or an intermittent procedure. [NIH]

Peritoneum: Endothelial lining of the abdominal cavity, the parietal peritoneum covering the inside of the abdominal wall and the visceral peritoneum covering the bowel, the mesentery, and certain of the organs. The portion that covers the bowel becomes the serosal layer of the bowel wall. [NIH]

P-Glycoprotein: A 170 kD transmembrane glycoprotein from the superfamily of ABC transporters. It serves as an ATP-dependent efflux pump for a variety of chemicals, including many antineoplastic agents. Overexpression of this glycoprotein is associated with multidrug resistance. [NIH]

Pharmaceutical Preparations: Drugs intended for human or veterinary use, presented in their finished dosage form. Included here are materials used in the preparation and/or formulation of the finished dosage form. [NIH]

Pharmacodynamic: Is concerned with the response of living tissues to chemical stimuli, that is, the action of drugs on the living organism in the absence of disease. [NIH]

Pharmacokinetic: The mathematical analysis of the time courses of absorption, distribution, and elimination of drugs. [NIH]

Pharmacologic: Pertaining to pharmacology or to the properties and reactions of drugs. [EU]

Phenotype: The outward appearance of the individual. It is the product of interactions between genes and between the genotype and the environment. This includes the killer phenotype, characteristic of yeasts. [NIH]

Phenyl: Ingredient used in cold and flu remedies. [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]

Phosphorylated: Attached to a phosphate group. [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]

Pigment: A substance that gives color to tissue. Pigments are responsible for the color of skin, eyes, and hair. [NIH]

Pilot study: The initial study examining a new method or treatment. [NIH]

Placenta: A highly vascular fetal organ through which the fetus absorbs oxygen and other nutrients and excretes carbon dioxide and other wastes. It begins to form about the eighth day of gestation when the blastocyst adheres to the decidua. [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; absense of nervous and sensory systems; and an alteration of haploid and diploid generations. [NIH]

Plaque: A clear zone in a bacterial culture grown on an agar plate caused by localized destruction of bacterial cells by a bacteriophage. The concentration of infective virus in a fluid can be estimated by applying the fluid to a culture and counting the number of. [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 protein: One of the hundreds of different proteins present in blood plasma, including carrier proteins (such 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]

Plasmin: A product of the lysis of plasminogen (profibrinolysin) by plasminogen activators. It is composed of two polypeptide chains, light (B) and heavy (A), with a molecular weight of 75,000. It is the major proteolytic enzyme involved in blood clot retraction or the lysis of fibrin and quickly inactivated by antiplasmins. EC 3.4.21.7. [NIH]

Plasminogen: Precursor of fibrinolysin (plasmin). It is a single-chain beta-globulin of molecular weight 80-90,000 found mostly in association with fibrinogen in plasma; plasminogen activators change it to fibrinolysin. It is used in wound debriding and has been investigated as a thrombolytic agent. [NIH]

Plasminogen Activators: A heterogeneous group of proteolytic enzymes that convert plasminogen to plasmin. They are concentrated in the lysosomes of most cells and in the vascular endothelium, particularly in the vessels of the microcirculation. EC 3.4.21.-. [NIH]

Platelet Aggregation: The attachment of platelets to one another. This clumping together

can be induced by a number of agents (e.g., thrombin, collagen) and is part of the mechanism leading to the formation of a thrombus. [NIH]

Platelets: A type of blood cell that helps prevent bleeding by causing blood clots to form. Also called thrombocytes. [NIH]

Pneumonia: Inflammation of the lungs. [NIH]

Polyarthritis: An inflammation of several joints together. [EU]

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]

Polymorphism: The occurrence together of two or more distinct forms in the same population. [NIH]

Polypeptide: A peptide which on hydrolysis yields more than two amino acids; called tripeptides, tetrapeptides, etc. according to the number of amino acids contained. [EU]

Polysaccharide: A type of carbohydrate. It contains sugar molecules that are linked together chemically. [NIH]

Polyunsaturated fat: An unsaturated fat found in greatest amounts in foods derived from plants, including safflower, sunflower, corn, and soybean oils. [NIH]

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]

Postprandial: Occurring after dinner, or after a meal; postcibal. [EU]

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

Potentiates: A degree of synergism which causes the exposure of the organism to a harmful substance to worsen a disease already contracted. [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]

Pravastatin: An antilipemic fungal metabolite isolated from cultures of Nocardia autotrophica. It acts as a competitive inhibitor of HMG CoA reductase (hydroxymethylglutaryl CoA reductases). [NIH]

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

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]

Prekallikrein: A plasma protein which is the precursor of kallikrein. Plasma that is deficient in prekallikrein has been found to be abnormal in thromboplastin formation, kinin generation, evolution of a permeability globulin, and plasmin formation. The absence of prekallikrein in plasma leads to Fletcher factor deficiency, a congenital disease. [NIH]

Presumptive: A treatment based on an assumed diagnosis, prior to receiving confirmatory laboratory test results. [NIH]

Prevalence: The total number of cases of a given disease in a specified population at a

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

Progesterone: Pregn-4-ene-3,20-dione. The principal progestational hormone of the body, secreted by the corpus luteum, adrenal cortex, and placenta. Its chief function is to prepare the uterus for the reception and development of the fertilized ovum. It acts as an antiovulatory agent when administered on days 5-25 of the menstrual cycle. [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]

Promoter: A chemical substance that increases the activity of a carcinogenic process. [NIH]

Prone: Having the front portion of the body downwards. [NIH]

Prophylaxis: An attempt to prevent disease. [NIH]

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

Protease Inhibitors: Compounds which inhibit or antagonize biosynthesis or actions of proteases (endopeptidases). [NIH]

Protein Binding: The process in which substances, either endogenous or exogenous, bind to proteins, peptides, enzymes, protein precursors, or allied compounds. Specific protein-binding measures are often used as assays in diagnostic assessments. [NIH]

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]

Protein-Tyrosine Kinase: An enzyme that catalyzes the phosphorylation of tyrosine residues in proteins with ATP or other nucleotides as phosphate donors. EC 2.7.1.112. [NIH]

Proteinuria: The presence of protein in the urine, indicating that the kidneys are not working properly. [NIH]

Proteoglycan: A molecule that contains both protein and glycosaminoglycans, which are a type of polysaccharide. Proteoglycans are found in cartilage and other connective tissues. [NIH]

Proteolytic: 1. Pertaining to, characterized by, or promoting proteolysis. 2. An enzyme that promotes proteolysis (= the splitting of proteins by hydrolysis of the peptide bonds with formation of smaller polypeptides). [EU]

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]

Public Health: Branch of medicine concerned with the prevention and control of disease and disability, and the promotion of physical and mental health of the population on the international, national, state, or municipal level. [NIH]

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]

Publishing: "The business or profession of the commercial production and issuance of literature" (Webster's 3d). It includes the publisher, publication processes, editing and editors. Production may be by conventional printing methods or by electronic publishing. [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]

Race: A population within a species which exhibits general similarities within itself, but is both discontinuous and distinct from other populations of that species, though not sufficiently so as to achieve the status of a taxon. [NIH]

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]

Radioactive: Giving off radiation. [NIH]

Randomized: Describes an experiment or clinical trial in which animal or human subjects are assigned by chance to separate groups that compare different treatments. [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]

Recurrence: The return of a sign, symptom, or disease after a remission. [NIH]

Reductase: Enzyme converting testosterone to dihydrotestosterone. [NIH]

Refer: To send or direct for treatment, aid, information, de decision. [NIH]

Regimen: A treatment plan that specifies the dosage, the schedule, and the duration of treatment. [NIH]

Renal failure: Progressive renal insufficiency and uremia, due to irreversible and progressive renal glomerular tubular or interstitial disease. [NIH]

Renal tubular: A defect in the kidneys that hinders their normal excretion of acids. Failure to excrete acids can lead to weak bones, kidney stones, and poor growth in children. [NIH]

Retinoid: Vitamin A or a vitamin A-like compound. [NIH]

Retrospective: Looking back at events that have already taken place. [NIH]

Rhabdomyolysis: Necrosis or disintegration of skeletal muscle often followed by myoglobinuria. [NIH]

Risk factor: A habit, trait, condition, or genetic alteration that increases a person's chance of developing a disease. [NIH]

Ritonavir: An HIV protease inhibitor that works by interfering with the reproductive cycle of HIV. [NIH]

Rosiglitazone: A drug taken to help reduce the amount of sugar in the blood. Rosiglitazone helps make insulin more effective and improves regulation of blood sugar. It belongs to the family of drugs called thiazolidinediones. [NIH]

Saturated fat: A type of fat found in greatest amounts in foods from animals, such as fatty cuts of meat, poultry with the skin, whole-milk dairy products, lard, and in some vegetable oils, including coconut, palm kernel, and palm oils. Saturated fat raises blood cholesterol more than anything else eaten. On a Step I Diet, no more than 8 to 10 percent of total calories should come from saturated fat, and in the Step II Diet, less than 7 percent of the day's total calories should come from saturated fat. [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]

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]

Senescence: The bodily and mental state associated with advancing age. [NIH]

Serine: A non-essential amino acid occurring in natural form as the L-isomer. It is synthesized from glycine or threonine. It is involved in the biosynthesis of purines, pyrimidines, and other amino acids. [NIH]

Serum: The clear liquid part of the blood that remains after blood cells and clotting proteins have been removed. [NIH]

Serum Albumin: A major plasma protein that serves in maintaining the plasma colloidal osmotic pressure and transporting large organic anions. [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]

Simvastatin: A derivative of lovastatin and potent competitive inhibitor of 3-hydroxy-3-methylglutaryl coenzyme A reductase (hydroxymethylglutaryl CoA reductases), which is the rate-limiting enzyme in cholesterol biosynthesis. It may also interfere with steroid hormone production. Due to the induction of hepatic LDL receptors, it increases breakdown of LDL-cholesterol (lipoproteins, LDL cholesterol). [NIH]

Skeletal: Having to do with the skeleton (boney part of the body). [NIH]

Small intestine: The part of the digestive tract that is located between the stomach and the large intestine. [NIH]

Smooth muscle: Muscle that performs automatic tasks, such as constricting blood vessels. [NIH]

Sodium: An element that is a member of the alkali group of metals. It has the atomic symbol Na, atomic number 11, and atomic weight 23. With a valence of 1, it has a strong affinity for oxygen and other nonmetallic elements. Sodium provides the chief cation of the extracellular body fluids. Its salts are the most widely used in medicine. (From Dorland, 27th ed) Physiologically the sodium ion plays a major role in blood pressure regulation, maintenance of fluid volume, and electrolyte balance. [NIH]

Solvent: 1. Dissolving; effecting a solution. 2. A liquid that dissolves or that is capable of dissolving; the component of a solution that is present in greater amount. [EU]

Soybean Oil: Oil from soybean or soybean plant. [NIH]

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]

Spectroscopic: The recognition of elements through their emission spectra. [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]

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]

Stabilization: The creation of a stable state. [EU]

Statistically significant: Describes a mathematical measure of difference between groups. The difference is said to be statistically significant if it is greater than what might be expected to happen by chance alone. [NIH]

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]

Stimulants: Any drug or agent which causes stimulation. [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]

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]

Subarachnoid: Situated or occurring between the arachnoid and the pia mater. [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]

Substance P: An eleven-amino acid neurotransmitter that appears in both the central and peripheral nervous systems. It is involved in transmission of pain, causes rapid contractions of the gastrointestinal smooth muscle, and modulates inflammatory and immune responses. [NIH]

Substrate: A substance upon which an enzyme acts. [EU]

Supplementation: Adding nutrients to the diet. [NIH]

Support group: A group of people with similar disease who meet to discuss how better to cope with their cancer and treatment. [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]

Symptomatic: Having to do with symptoms, which are signs of a condition or disease. [NIH]

Systemic: Affecting the entire body. [NIH]

Systolic: Indicating the maximum arterial pressure during contraction of the left ventricle of

the heart. [EU]

Teratogenic: Tending to produce anomalies of formation, or teratism (= anomaly of formation or development : condition of a monster). [EU]

Testosterone: A hormone that promotes the development and maintenance of male sex characteristics. [NIH]

Thalidomide: A pharmaceutical agent originally introduced as a non-barbiturate hypnotic, but withdrawn from the market because of its known tetratogenic effects. It has been reintroduced and used for a number of immunological and inflammatory disorders. Thalidomide displays immunosuppresive and anti-angiogenic activity. It inhibits release of tumor necrosis factor alpha from monocytes, and modulates other cytokine action. [NIH]

Therapeutics: The branch of medicine which is concerned with the treatment of diseases, palliative or curative. [NIH]

Threshold: For a specified sensory modality (e. g. light, sound, vibration), the lowest level (absolute threshold) or smallest difference (difference threshold, difference limen) or intensity of the stimulus discernible in prescribed conditions of stimulation. [NIH]

Thrombin: An enzyme formed from prothrombin that converts fibrinogen to fibrin. (Dorland, 27th ed) EC 3.4.21.5. [NIH]

Thrombolytic: 1. Dissolving or splitting up a thrombus. 2. A thrombolytic agent. [EU]

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]

Thromboplastin: Constituent composed of protein and phospholipid that is widely distributed in many tissues. It serves as a cofactor with factor VIIa to activate factor X in the extrinsic pathway of blood coagulation. [NIH]

Thrombosis: The formation or presence of a blood clot inside a blood vessel. [NIH]

Thyroxine: An amino acid of the thyroid gland which exerts a stimulating effect on thyroid metabolism. [NIH]

Tissue: A group or layer of cells that are alike in type and work together to perform a specific function. [NIH]

Tissue Culture: Maintaining or growing of tissue, organ primordia, or the whole or part of an organ in vitro so as to preserve its architecture and/or function (Dorland, 28th ed). Tissue culture includes both organ culture and cell culture. [NIH]

Tissue Distribution: Accumulation of a drug or chemical substance in various organs (including those not relevant to its pharmacologic or therapeutic action). This distribution depends on the blood flow or perfusion rate of the organ, the ability of the drug to penetrate organ membranes, tissue specificity, protein binding. The distribution is usually expressed as tissue to plasma ratios. [NIH]

Tissue Plasminogen Activator: A proteolytic enzyme in the serine protease family found in many tissues which converts plasminogen to plasmin. It has fibrin-binding activity and is immunologically different from urinary plasminogen activator. The primary sequence, composed of 527 amino acids, is identical in both the naturally occurring and synthetic proteases. EC 3.4.21.68. [NIH]

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

Tomography: 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]

Transfection: The uptake of naked or purified DNA into cells, usually eukaryotic. It is analogous to bacterial transformation. [NIH]

Transmitter: A chemical substance which effects the passage of nerve impulses from one cell to the other at the synapse. [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]

Triglyceride: A lipid carried through the blood stream to tissues. Most of the body's fat tissue is in the form of triglycerides, stored for use as energy. Triglycerides are obtained primarily from fat in foods. [NIH]

Trophoblast: The outer layer of cells of the blastocyst which works its way into the endometrium during ovum implantation and grows rapidly, later combining with mesoderm. [NIH]

Trypsin: A serine endopeptidase that is formed from trypsinogen in the pancreas. It is converted into its active form by enteropeptidase in the small intestine. It catalyzes hydrolysis of the carboxyl group of either arginine or lysine. EC 3.4.21.4. [NIH]

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

Tuberculostatic: Inhibiting the growth of Mycobacterium tuberculosis. [EU]

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]

Type 2 diabetes: Usually characterized by a gradual onset with minimal or no symptoms of metabolic disturbance and no requirement for exogenous insulin. The peak age of onset is 50 to 60 years. Obesity and possibly a genetic factor are usually present. [NIH]

Ultrafiltration: The separation of particles from a suspension by passage through a filter with very fine pores. In ultrafiltration the separation is accomplished by convective transport; in dialysis separation relies instead upon differential diffusion. Ultrafiltration occurs naturally and is a laboratory procedure. Artificial ultrafiltration of the blood is referred to as hemofiltration or hemodiafiltration (if combined with hemodialysis). [NIH]

Uraemia: 1. An excess in the blood of urea, creatinine, and other nitrogenous end products of protein and amino acids metabolism; more correctly referred to as azotemia. 2. In current usage the entire constellation of signs and symptoms of chronic renal failure, including

nausea, vomiting anorexia, a metallic taste in the mouth, a uraemic odour of the breath, pruritus, uraemic frost on the skin, neuromuscular disorders, pain and twitching in the muscles, hypertension, edema, mental confusion, and acid-base and electrolyte imbalances. [EU]

Urea: A compound (CO(NH2)2), formed in the liver from ammonia produced by the deamination of amino acids. It is the principal end product of protein catabolism and constitutes about one half of the total urinary solids. [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]

Uric: A kidney stone that may result from a diet high in animal protein. When the body breaks down this protein, uric acid levels rise and can form stones. [NIH]

Uridine Diphosphate: A uracil nucleotide containing a pyrophosphate group esterified to C5 of the sugar moiety. [NIH]

Uridine Diphosphate Glucuronic Acid: A nucleoside diphosphate sugar which serves as a source of glucuronic acid for polysaccharide biosynthesis. It may also be epimerized to UDP iduronic acid, which donates iduronic acid to polysaccharides. In animals, UDP glucuronic acid is used for formation of many glucosiduronides with various aglycones. [NIH]

Urinary: Having to do with urine or the organs of the body that produce and get rid of urine. [NIH]

Urinary Plasminogen Activator: A proteolytic enzyme that converts plasminogen to plasmin where the preferential cleavage is between arginine and valine. It was isolated originally from human urine, but is found in most tissues of most vertebrates. EC 3.4.21.73. [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]

Uterus: The small, hollow, pear-shaped organ in a woman's pelvis. This is the organ in which a fetus develops. Also called the womb. [NIH]

Vascular: Pertaining to blood vessels or indicative of a copious blood supply. [EU]

Vasculitis: Inflammation of a blood vessel. [NIH]

Vasoconstriction: Narrowing of the blood vessels without anatomic change, for which constriction, pathologic is used. [NIH]

Vasodilatation: A state of increased calibre of the blood vessels. [EU]

Vasodilators: Any nerve or agent which induces dilatation of the blood vessels. [NIH]

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

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

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]

Ventricular: Pertaining to a ventricle. [EU]

Vesicular: 1. Composed of or relating to small, saclike bodies. 2. Pertaining to or made up of vesicles on the skin. [EU]

Veterinary Medicine: The medical science concerned with the prevention, diagnosis, and treatment of diseases in animals. [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]

Virus Diseases: A general term for diseases produced by viruses. [NIH]

Visceral: , from viscus a viscus) pertaining to a viscus. [EU]

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]

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]

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]

Yeasts: A general term for single-celled rounded fungi that reproduce by budding. Brewers' and bakers' yeasts are Saccharomyces cerevisiae; therapeutic dried yeast is dried yeast. [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]

INDEX

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