

ESOPHAGEAL VARICES

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



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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 esophageal varices. Books in this series draw from various agencies and institutions associated with the United States Department of Health and Human Services, and in particular, the Office of the Secretary of Health and Human Services (OS), the Administration for Children and Families (ACF), the Administration on Aging (AOA), the Agency for Healthcare Research and Quality (AHRQ), the Agency for Toxic Substances and Disease Registry (ATSDR), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), the Healthcare Financing Administration (HCFA), the Health Resources and Services Administration (HRSA), the Indian Health Service (IHS), the institutions of the National Institutes of Health (NIH), the Program Support Center (PSC), and the Substance Abuse and Mental Health Services Administration (SAMHSA). In addition to these sources, information gathered from the National Library of Medicine, the United States Patent Office, the European Union, and their related organizations has been invaluable in the creation of this book. Some of the work represented was financially supported by the Research and Development Committee at INSEAD. This support is gratefully acknowledged. Finally, special thanks are owed to Tiffany Freeman for her excellent editorial support.

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FORWARD

In March 2001, the National Institutes of Health issued the following warning: "The number of Web sites offering health-related resources grows every day. Many sites provide valuable information, while others may have information that is unreliable or misleading."¹ Furthermore, because of the rapid increase in Internet-based information, many hours can be wasted searching, selecting, and printing. Since only the smallest fraction of information dealing with esophageal varices 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 esophageal varices, 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 esophageal varices, 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 esophageal varices. 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 esophageal varices, 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 esophageal varices.

The Editors

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

CHAPTER 1. STUDIES ON ESOPHAGEAL VARICES

Overview

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

The Combined Health Information Database

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

- **Bleeding Esophageal Varices: How to Treat This Dreaded Complication of Portal Hypertension**

Source: *Postgraduate Medicine*. 109(2): 75-76, 81-86, 89. February 2001.

Contact: Available from McGraw-Hill, Inc. 1221 Avenue of the Americas, New York, NY 10020. (612) 832-7869.

Summary: Bleeding **esophageal varices**, one of the most feared complications of portal hypertension (high blood pressure in the liver venous system), contribute to the estimated 32,000 deaths annually attributed to cirrhosis (liver scarring). This article describes the care of patients with this complication. The authors stress that successful control requires knowledge of the pertinent anatomy, underlying pathophysiology of

portal hypertension, and natural history of gastroesophageal varices. The authors discuss the various prophylactic (preventive) and therapeutic approaches to management, including pharmacologic agents (drug therapy), endoscopic sclerotherapy, and transjugular intrahepatic portosystemic shunt (TIPS). Nonselective beta blockers are the treatment of choice for prevention of the first bleeding episode. Active bleeding is managed with octreotide and endoscopic sclerotherapy. Goals in the management of active bleeding are hemodynamic resuscitation, prevention and treatment of complications, and control of bleeding. Complications related to bleeding or its treatment can substantially increase the risk of death in each episode. TIPS and shunt surgery are reserved for those in whom octreotide and endoscopic surgery have failed. Endoscopic band ligation (tying off) should be used for prevention of recurrent bleeding. If endoscopic band ligation fails, patients can be offered TIPS or surgical therapy; they should be evaluated for liver transplantation. 4 figures. 4 tables. 11 references.

- **New Approach to Esophageal Varices: Endoscopic Variceal Ligation**

Source: Gastroenterology Nursing. 14(1): 4-8. August 1991.

Summary: Bleeding from **esophageal varices** is a devastating complication of portal hypertension and is associated with a high mortality rate. This article presents a discussion of the use of endoscopic variceal ligation (EVL) for **esophageal varices**. The management goals for this group of patients are to achieve hemostasis in the acute phase, reduce variceal size, reduce the potential of rebleeding and eliminate varices with a follow-up program. Endoscopic variceal ligation was developed as an alternative to endoscopic sclerotherapy. The author details the equipment and supplies used, recommended methods and technique, the role of the nurse or associate during the procedure, and some preliminary results from clinical trials using this procedure. A care plan for the patient undergoing elective EVL is outlined at the end of the article. 7 figures. 2 tables. 8 references.

- **Pathophysiology and Management of Esophageal Varices**

Source: Current Opinion in Gastroenterology. 8(4): 583-590. August 1992.

Summary: Esophageal varices are one of the most common and severe complications of chronic liver disease. This article reviews new aspects in epidemiology, pathogenesis, and treatment of varices. Specific topics include vascular feeders, communications, and drainage of esophagogastric varices; pathogenesis and risk of variceal bleeding, including wall tension, portal and variceal pressure, the direction of portal blood flow and development of portasystemic shunts, endoscopic signs, and liver function; prophylaxis and treatment of esophageal variceal bleeding, including the use of vasopressin, nitrates, somatostatin and octreotide, metoclopramide, sympathicolysis, balloon tamponade, endoscopic sclerotherapy, and propranolol combined with sclerotherapy; and new treatment approaches, including endoscopic ligation and the transjugular intrahepatic portasystemic shunt. 80 annotated references. (AA-M).

- **Is Ethanolamine Oleate An Ideal Sclerosing Agent for the Treatment of Esophageal Varices?**

Source: U.S. Pharmacist. 15(6): 60-61. June 1990.

Summary: Ethanolamine oleate 5 percent, recently approved by the U.S. Food and Drug Administration for use as a sclerosing agent in the treatment of **esophageal varices**, has been available in other countries for many years. Sclerosing agents, when injected into

an enlarged vein, cause inflammation of the vascular endothelium, formation of a clot that occludes the lumen, and the development of fibrous tissue. This brief article reviews the current uses of injection sclerotherapy with a variety of agents, discusses the complications of such therapy, and assesses the long-term efficacy of sclerotherapy for the treatment of **esophageal varices**. 13 references.

- **Management of Esophageal Varices in the Elderly**

Source: *Geriatric Medicine Today*. 9(3): 25-32. March 1990.

Summary: This article discusses the management of **esophageal varices** in the elderly. Variceal hemorrhage in the elderly requires active resuscitation, early confirmation by endoscopy, and primary therapy using acute variceal sclerotherapy. Balloon tamponade may provide acute control, but complications are common. Vasopressin infusion is combined with nitro-glycerin administration to prevent undesirable side effects. Recurrence of bleeding is prevented by a course of sclerotherapy to eradicate varices. The author notes that sclerotherapy is rarely effective as prophylaxis against the first bleeding episode. The author concludes that, following variceal bleeding, the majority of elderly patients survive long term and return to a full and active life. 1 table. 4 references. (AA-M).

- **Ursodeoxycholic Acid Delays the Onset of Esophageal Varices in Primary Biliary Cirrhosis**

Source: *Mayo Clinic Proceedings*. 72(12): 1137-1140. December 1997.

Contact: Available from Dowden Publishing Company, Inc. 110 Summit Avenue, Montvale, NJ 07645. (800) 707-7040 or (201) 782-5714. Fax (201) 391-2778.

Summary: This article reports on a study undertaken to address the effect of ursodeoxycholic acid (UDCA) therapy on the development of **esophageal varices** (enlarged blood vessels) in patients with primary biliary cirrhosis. As part of a prospective treatment trial, the authors compared the risk of varices developing in patients with primary biliary cirrhosis who received UDCA (13 to 15 mg per kg daily) with those who received placebo for up to 4 years. Upper endoscopy was performed every 2 years or as clinically indicated. At the end of the 4 year period, all patients in the placebo group were offered UDCA therapy. During followup, the risk of developing endoscopically confirmed varices was assessed. The 180 patients who entered the UDCA trial were assessed for the presence or absence of varices by esophagogastroduodenoscopy; 139 patients had no varices, and 41 demonstrated varices on initial examination. At 4 years, the risk of newly developing endoscopically confirmed varices was 16 percent for the UDCA-treated patients and 58 percent for the placebo treated patients. The authors conclude that, in addition to biochemical improvement, delay in death, and prolongation of time to orthotopic liver transplantation, UDCA has now been demonstrated to decrease the risk of **esophageal varices** in patients with primary biliary cirrhosis. 4 tables. 9 references. (AA-M).

- **Managing Esophageal Varices**

Source: *Contemporary Gastroenterology*. 5(5): 23-25, 28, 30, 32. June-July 1992.

Summary: This article, the third in a three-part series, discusses ways to manage **esophageal varices**. Four members of a panel consider a variety of methods for preventing further bleeding. Topics include continued sclerotherapy, the role of surgery, and the role of liver transplantation. Specific issues addressed include the problems of

congestive gastropathy, portal hypertensive gastropathy, portal hypertensive colopathy, the use of beta-blockers, shunt surgery, alcoholic cirrhosis, recurrent bleeding, the natural history of primary biliary cirrhosis, liver function tests, alcoholic hepatitis, and the role of psychiatry and alcohol rehabilitation in the management of these patients. 2 figures. 1 table. 17 references.

- **Esophageal Varices: When To Treat**

Source: Endoscopy Review. 7(9): 47-48. November-December 1990.

Summary: This brief article discusses **esophageal varices** and stresses the importance of an aggressive and organized treatment strategy for a successful outcome. Treatment for **esophageal varices** falls into four categories: prophylactic, elective, urgent, and emergency. The author concludes that elective eradication of the varices is the most desirable scenario and initial efforts at control of bleeding should attempt to convert an urgent or emergency situation into an elective one.

- **Management of Esophageal Varices**

Source: Current Opinion in Gastroenterology. 7(4): 566-571. August 1991.

Summary: This review covers the recent literature on management of **esophageal varices**. Approximately 50 percent of patients with **esophageal varices** will bleed from them. The risk of rebleeding is 30 percent at 6 weeks and 70 percent at 1 year. The mortality for each bleeding episode approaches 50 percent. Management of **esophageal varices** must therefore deal with control and prevention of bleeding. Currently, there is a distinct tendency toward endoscopic sclerotherapy as the primary palliative treatment of choice. Obliteration with tissue adhesive has improved its efficacy dramatically. Endoscopic variceal ligation offers a novel alternative to sclerotherapy. If these options fail, selective shunt should be performed. For patients with endstage liver disease, orthotopic liver transplantation is the final therapeutic option promising the best long-term survival. 33 annotated references. (AA).

Federally Funded Research on Esophageal Varices

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

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

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).

animals or simulated models to explore esophageal varices. The following is typical of the type of information found when searching the CRISP database for esophageal varices:

- **Project Title: DEVELOPMENT OF A FLEXIBLE INFRARED IMAGING ENDOSCOPE**

Principal Investigator & Institution: Havey, Gary D.; Advanced Medical Electronics Corporation Suite #190 Maple Grove, Mn 55369

Timing: Fiscal Year 2003; Project Start 28-JUL-2000; Project End 31-MAR-2006

Summary: (provided by applicant): Advanced Medical Electronics (AME) proposes to develop a flexible infrared microbolometer based endoscope for use during surgical heat treatments to accurately measure tissue temperatures. The primary phase II goal is to create the smallest far-infrared camera ever developed to provide real-time spatially accurate two-dimensional surface temperature measurements from the distal tip of an endoscope. The proposed flexible endoscope will be used for both visual thermal imaging in the abdomen during percutaneous thermal treatment of cancer tumors with minimal invasiveness and for endoscopic thermal treatment of surface tissue diseases (i.e. esophageal varices). New medical technologies involving for example concentrated RF energy, can effectively treat tumors and surface tissue diseases. These techniques require a very accurate measure of adjacent surface tissue temperatures for safe and effective application. The proposed system uses a newly available infrared (IR) sensing technology called a microbolometer coupled with a state-of-the-art packaging technique to make these required measurements at the tip of an endoscope and present the information to a surgeon in real-time using a false color display.

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

- **Project Title: ESOPHAGEAL VARICES BY B-ADRENERGIC BLOCKERS**

Principal Investigator & Institution: Groszmann, Roberto J.; Internal Medicine; Yale University 47 College Street, Suite 203 New Haven, Ct 065208047

Timing: Fiscal Year 2002; Project Start 20-APR-1993; Project End 31-MAR-2004

Summary: Cirrhosis is the fifth leading cause of death in the United States in individuals under the age of 65, the productive years of life. It affects men and women equally, and impacts on all races and socio- economical levels. Portal hypertension is the main complication of cirrhosis, regardless of etiology. Gastroesophageal varices and variceal hemorrhage are a direct consequence of portal hypertension and account in large part for the high mortality of cirrhosis. Non-selective beta- adrenergic blockers decrease portal pressure and have been shown to prevent the first variceal hemorrhage in patients with cirrhosis and varices. Early portal hypotensive therapy, before the patients develop varices, would be beneficial not only because it may prevent or delay the formation of varices (and variceal hemorrhage) but because it may prevent or delay the development of other complications of portal hypertension, such as ascites. This ongoing multi-center, prospective, randomized, placebo-controlled, double-blind trial was designed with the primary aim of investigating if early therapy with timolol, a non-selective beta-adrenergic blocker, can prevent or delay the development of varices in patients with cirrhosis and portal hypertension. Secondary aims will examine whether timolol prevents or delays other complications of portal hypertension such as ascites and porto-systemic encephalopathy, as well as liver transplantation or death. Patients with cirrhosis, without varices on endoscopy and with portal hypertension (portal pressure greater than 6 mmHg) are included in the study. This grant application was funded in April of 1993 and patient randomization began in August of 1993. Patient

accrual took longer than originally estimated, however it is now certain that the number of 190 patients required for the study will have been randomized by the end of the current funding period (March 1998), since at the writing of this proposal 158 patients had already been randomized. In calculating sample size, we assumed a rate of development of varices of 50 percent at 4 years in the control arm, to be reduced to 30 percent in the timolol arm. So far our observed rates for development of varices are consistent with our planned estimates. However, we have now estimated that a minimum follow-up of 4 years (after last patient is recruited) is necessary to ensure high statistical power (80 percent at the 2-sided 0.05 level). The trial is highly significant for the promise it holds for the treatment of cirrhosis of all etiologies and for an understanding of the natural history of the disease. The four centers involved are widely renown for their studies in this area and have collaborated productively in the past, including the only published double-blind trial of propranolol in the prevention of first variceal hemorrhage in patients with cirrhosis and varices.

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

- **Project Title: HISTOACRYL FOR BLEEDING GASTRIC AND REFRACTORY ESOPHAGEAL VARICES**

Principal Investigator & Institution: Binmoeller, Kenneth; University of California San Diego La Jolla, Ca 920930934

Timing: Fiscal Year 2002

Summary: This abstract is not available.

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

- **Project Title: URSODEOXYCHOLIC ACID IN PRIMARY BILIARY CIRRHOSIS**

Principal Investigator & Institution: Combes, Burton; University of Texas Sw Med Ctr/Dallas Dallas, Tx 753909105

Timing: Fiscal Year 2002

Summary: Aims are to 1) compare effects of UDCA versus placebo on alkaline phosphatase, aspartate aminotransferase, bilirubin, albumin, immunoglobulin M, and prothrombin time; 2) evaluate effects on symptoms such as fatigue and pruritus; 3) determine effects on development or clinical progression of **esophageal varices**, ascites or edema, and encephalopathy; 4) determine effects on histologic changes at 2 years; 5) determine whether UDCA favorably affects survival or need for transplantation; 6) assess toxicity & determine safety.

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

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.³ The advantage of PubMed over previously mentioned sources is that it covers a greater

³ 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.

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

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

- **A case of fibrosing mediastinitis with obstruction of superior vena cava and downhill esophageal varices: a rare cause of upper gastrointestinal hemorrhage.**
 Author(s): Basaranoglu M, Ozdemir S, Celik AF, Senturk H, Akin P.
 Source: Journal of Clinical Gastroenterology. 1999 April; 28(3): 268-70.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10192621
- **A case of phacomatosis pigmentovascularis accompanied with esophageal varices due to hypoplasia of the portal veins.**
 Author(s): Kaise M, Watanabe A, Kobayashi Y.
 Source: Gastroenterol Jpn. 1992 August; 27(4): 546-9.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1526436
- **A comparison between endoscopic injection of bleeding esophageal varices using ethanalamine oleate and fibrin glue sealant in patients with bilharzial liver fibrosis.**
 Author(s): Naga MI, Goubran HA, Said M, Burnouf-Radosevich M, Burnouf T, Huart JJ.
 Source: Endoscopy. 1999 June; 31(5): 405.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10433054
- **A comparison of combination endoscopic therapy and interventional radiology with esophageal transection for the treatment of esophageal varices.**
 Author(s): Tajiri T, Onda M, Taniai N, Yoshida H, Mamada Y.
 Source: Hepatogastroenterology. 2002 November-December; 49(48): 1552-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12397733
- **A new endoscopic resection technique for early gastric cancer, using an endoscopic ligating device designed to treat esophageal varices: preliminary report of four cases.**
 Author(s): Yokoyama T, Usui K, Tsujimoto M, Kitamura H, Kawasaki S, Makuuchi M.
 Source: Endoscopy. 1995 March; 27(3): 283.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=7664714
- **A prospective randomized controlled trial of sclerotherapy vs ligation in the prophylactic treatment of high-risk esophageal varices.**
 Author(s): Svoboda P, Kantorova I, Ochmann J, Kozumplik L, Marsova J.
 Source: Surgical Endoscopy. 1999 June; 13(6): 580-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10347295

- **A prospective randomized trial of sclerotherapy versus ligation in the elective treatment of bleeding esophageal varices.**
Author(s): Baroncini D, Milandri GL, Borioni D, Piemontese A, Cennamo V, Billi P, Dal Monte PP, D'Imperio N.
Source: Endoscopy. 1997 May; 29(4): 235-40.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9255524
- **A prospective study of the ability of three endoscopic classifications to predict hemorrhage from esophageal varices.**
Author(s): Rigo GP, Merighi A, Chahin NJ, Mastronardi M, Codeluppi PL, Ferrari A, Armocida C, Zanasi G, Cristani A, Cioni G, et al.
Source: Gastrointestinal Endoscopy. 1992 July-August; 38(4): 425-9.
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- **Update of endoscopic band ligation therapy for treatment of esophageal varices.**
Author(s): Van Stiegmann G.
Source: Endoscopy. 2003 August; 35(8): S5-8. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12929046
- **Upright posture decreases esophageal varices flow velocity in patients with cirrhosis.**
Author(s): Iwao T, Oho K, Sakai T, Sato M, Nakano R, Yamawaki M, Toyonaga A, Tanikawa K.
Source: Journal of Hepatology. 1998 March; 28(3): 447-53.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9551683
- **Ursodeoxycholic acid delays the onset of esophageal varices in primary biliary cirrhosis.**
Author(s): Lindor KD, Jorgensen RA, Therneau TM, Malinchoc M, Dickson ER.
Source: Mayo Clinic Proceedings. 1997 December; 72(12): 1137-40.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9413293
- **Use of high-resolution endoluminal sonography to measure the radius and wall thickness of esophageal varices.**
Author(s): Schiano TD, Adrain AL, Cassidy MJ, McCray W, Liu JB, Baranowski RJ, Bellary S, Black M, Miller LS.
Source: Gastrointestinal Endoscopy. 1996 October; 44(4): 425-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8905362
- **Use of mini-loops for the treatment of esophageal varices.**
Author(s): McNair AN.
Source: Gastrointestinal Endoscopy. 1998 November; 48(5): 556.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9831857
- **Use of octreotide in the acute management of bleeding esophageal varices.**
Author(s): Sadowski DC.
Source: Canadian Journal of Gastroenterology = Journal Canadien De Gastroenterologie. 1997 May-June; 11(4): 339-43. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9218860
- **Usefulness of endoscopic ultrasonographic analysis of variceal hemodynamics for the treatment of esophageal varices.**
Author(s): Irisawa A, Saito A, Obara K, Shibukawa G, Takagi T, Yamamoto G, Sakamoto H, Takiguchi F, Shishido H, Hikichi T, Oyama H, Sato N, Katakura K, Kasukawa R, Sato Y.
Source: Fukushima J Med Sci. 2001 December; 47(2): 39-50.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11989618

- **Using the overtube as a mouth guard for endoscopic band ligation of esophageal varices.**
 Author(s): Kadayifci A, Oksuzoglu G, Sivri B, Arslan M.
 Source: Endoscopy. 1996 September; 28(7): 643.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8911819
- **Variation at the Angiotensin-converting enzyme and endothelial nitric oxide synthase genes is associated with the risk of esophageal varices among patients with alcoholic cirrhosis.**
 Author(s): Coto E, Rodrigo L, Alvarez R, Fuentes D, Rodriguez M, Menendez LG, Ciriza C, Gonzalez P, Alvarez V.
 Source: Journal of Cardiovascular Pharmacology. 2001 December; 38(6): 833-9.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11707686
- **Vascular complications of superior mesenteric artery infusion with pitressin in treatment of bleeding esophageal varices.**
 Author(s): Berardi RS.
 Source: American Journal of Surgery. 1974 June; 127(6): 757-61.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=4545539
- **Vasoconstrictor therapy in bleeding esophageal varices.**
 Author(s): Walker S.
 Source: Hepatogastroenterology. 1990 December; 37(6): 538-43. Review. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1981203
- **Vasopressin perfusion of esophageal varices in cirrhotic patients: cineangiographic study.**
 Author(s): Valla D, Huet PM, LaFortune M, Marleau D.
 Source: Radiology. 1984 July; 152(1): 45-9.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6610186
- **Venography during endoscopic injection sclerotherapy of esophageal varices.**
 Author(s): Grobe JL, Kozarek RA, Sanowski RA, LeGrand J, Kovac A.
 Source: Gastrointestinal Endoscopy. 1984 February; 30(1): 6-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6608467
- **Venous complications of sclerotherapy for esophageal varices.**
 Author(s): Hunter GC, Steinkirchner T, Burbige EJ, Guernsey JM, Putnam CW.
 Source: American Journal of Surgery. 1988 December; 156(6): 497-501.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3264465

- **Video laparoscopy for the treatment of bleeding esophageal varices.**
 Author(s): Zilberstein B, Sallet JA, Ramos A, Eshkenazy R.
 Source: Surgical Laparoscopy & Endoscopy. 1997 June; 7(3): 185-91.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9194275

- **Volatile varices. Detect and manage esophageal varices in the field.**
 Author(s): Dickison P.
 Source: Jems. 2000 July; 25(7): 76-86; Quiz 88-9. No Abstract Available.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11183108

- **What happens to esophageal varices after transection and devascularization?**
 Author(s): Hosking SW, Johnson AG.
 Source: Surgery. 1987 May; 101(5): 531-4.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=3576445

- **What to do about esophageal varices?**
 Author(s): Reynolds TB.
 Source: The New England Journal of Medicine. 1983 December 22; 309(25): 1575-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6361556

- **Which patients with cirrhosis should undergo endoscopic screening for esophageal varices detection?**
 Author(s): Schepis F, Camma C, Niceforo D, Magnano A, Pallio S, Cinquegrani M, D'amico G, Pasta L, Craxi A, Saitta A, Raimondo G.
 Source: Hepatology (Baltimore, Md.). 2001 February; 33(2): 333-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11172334

- **White ball appearance in endoscopic ligation of bleeding esophageal varices.**
 Author(s): Matsutani S, Maruyama H, Sato G, Suzuki T, Umebara K, Mitsunashi O, Fukuzawa T, Mizumoto H, Saisho H.
 Source: Gastrointestinal Endoscopy. 1998 March; 47(3): 254-6.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9540878

- **Who benefits from endoscopic sclerotherapy of bleeding oesophageal varices? Proposal for differential indications. The Copenhagen Esophageal Varices Sclerotherapy Project.**
 Author(s): Moller S, Sorensen TI, Tygstrup N.
 Source: Journal of Hepatology. 1992 May; 15(1-2): 184-91.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1506638

- **Why is prophylactic portal nondecompressive surgery effective in preventing hemorrhage from esophageal varices?**

Author(s): Conn HO.

Source: Hepatology (Baltimore, Md.). 1990 July; 12(1): 166-9. Review.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=2197210

CHAPTER 2. NUTRITION AND ESOPHAGEAL VARICES

Overview

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

Finding Nutrition Studies on Esophageal Varices

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.⁴ 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 "esophageal varices" (or synonyms) into the search box, and click "Go." To narrow the search, you can also select the "Title" field.

⁴ Adapted from <http://ods.od.nih.gov>. IBIDS is produced by the Office of Dietary Supplements (ODS) at the National Institutes of Health to assist the public, healthcare providers, educators, and researchers in locating credible, scientific information on dietary supplements. IBIDS was developed and will be maintained through an interagency partnership with the Food and Nutrition Information Center of the National Agricultural Library, U.S. Department of Agriculture.

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

- **Endoscopic injection of bleeding esophageal varices with a poly-N-acetyl glucosamine gel formulation in the canine portal hypertension model.**
Author(s): Digestive Disease Center, Department of Medicine, Medical University of South Carolina, Charleston, USA.
Source: Kulling, D Vournakis, J N Woo, S Demcheva, M V Tagge, D U Rios, G Finkielsztejn, S Hawes, R H Gastrointest-Endosc. 1999 June; 49(6): 764-71 0016-5107
- **Endoscopic sclerotherapy versus medical treatment for bleeding esophageal varices in patients with schistosomal liver disease.**
Author(s): Ain-Shams University Hospital, Cairo, Egypt.
Source: el Zayadi, A el Din, S S Kabil, S M Gastrointest-Endosc. 1988 Jul-August; 34(4): 314-7 0016-5107
- **Experimental study on the effects of sclerosants for esophageal varices on blood coagulation, fibrinolysis and systemic hemodynamics.**
Author(s): Department of Surgery II, Nagoya University School of Medicine, Japan.
Source: Suzuki, N Nakao, A Nonami, T Takagi, H Gastroenterol-Jpn. 1992 June; 27(3): 309-16 0435-1339
- **Gastric bleeding after endoscopic injection sclerotherapy for esophageal varices may be fatal.**
Author(s): Department of Surgery II, Kyushu University, Faculty of Medicine, Fukuoka, Japan.
Source: Higashi, H Kitano, S Hashizume, M Yamaga, H Wada, H Sugimachi, K Int-Surg. 1991 Oct-December; 76(4): 214-7 0020-8868
- **Giant bar-type esophageal varices not eradicated by repeated injection sclerotherapy.**
Author(s): Department of Surgery II, Faculty of Medicine, Kyushu University, Fukuoka, Japan.
Source: Hashizume, M Tanoue, K Kitano, S Ohta, M Sugimachi, K Gastrointest-Endosc. 1991 Mar-April; 37(2): 187-9 0016-5107
- **Injection sclerotherapy for bleeding esophageal varices in cirrhotic patients with hepatocellular carcinoma.**
Author(s): Surgical "B" Unit, Princess Margaret Hospital, Hong Kong.
Source: Ng, W D Chan, Y T Ho, K K Kong, C K Gastrointest-Endosc. 1989 Jan-February; 35(1): 69-70 0016-5107
- **Obliteration of esophageal varices using EUS-guided sclerotherapy with color Doppler.**
Author(s): St. Luke's Medical Center, Pancreatic Biliary Center, Milwaukee, Wisconsin, USA.
Source: Lahoti, S Catalano, M F Alcocer, E Hogan, W J Geenen, J E Gastrointest-Endosc. 2000 March; 51(3): 331-3 0016-5107
- **Prediction of the recurrence of esophageal varices based on portal vein pressure and oxygen tension in portal and peripheral blood.**
Author(s): Second Department of Internal Medicine, Fukushima Medical Collage, Japan.
Source: Obara, K Sakamoto, H Kasukawa, R Gastroenterol-Jpn. 1991 December; 26(6): 707-11 0435-1339

Federal Resources on Nutrition

In addition to the IBIDS, the United States Department of Health and Human Services (HHS) and the United States Department of Agriculture (USDA) provide many sources of information on general nutrition and health. Recommended resources include:

- healthfinder®, HHS's gateway to health information, including diet and nutrition: <http://www.healthfinder.gov/scripts/SearchContext.asp?topic=238&page=0>
- The United States Department of Agriculture's Web site dedicated to nutrition information: www.nutrition.gov
- The Food and Drug Administration's Web site for federal food safety information: www.foodsafety.gov
- The National Action Plan on Overweight and Obesity sponsored by the United States Surgeon General: <http://www.surgeongeneral.gov/topics/obesity/>
- The Center for Food Safety and Applied Nutrition has an Internet site sponsored by the Food and Drug Administration and the Department of Health and Human Services: <http://vm.cfsan.fda.gov/>
- Center for Nutrition Policy and Promotion sponsored by the United States Department of Agriculture: <http://www.usda.gov/cnpp/>
- Food and Nutrition Information Center, National Agricultural Library sponsored by the United States Department of Agriculture: <http://www.nal.usda.gov/fnic/>
- Food and Nutrition Service sponsored by the United States Department of Agriculture: <http://www.fns.usda.gov/fns/>

Additional Web Resources

A number of additional Web sites offer encyclopedic information covering food and nutrition. The following is a representative sample:

- AOL: <http://search.aol.com/cat.adp?id=174&layer=&from=subcats>
- Family Village: http://www.familyvillage.wisc.edu/med_nutrition.html
- Google: <http://directory.google.com/Top/Health/Nutrition/>
- Healthnotes: <http://www.healthnotes.com/>
- Open Directory Project: <http://dmoz.org/Health/Nutrition/>
- Yahoo.com: <http://dir.yahoo.com/Health/Nutrition/>
- WebMD® Health: <http://my.webmd.com/nutrition>
- WholeHealthMD.com: <http://www.wholehealthmd.com/reflib/0,1529,00.html>

CHAPTER 3. ALTERNATIVE MEDICINE AND ESOPHAGEAL VARICES

Overview

In this chapter, we will begin by introducing you to official information sources on complementary and alternative medicine (CAM) relating to esophageal varices. 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 esophageal varices 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 "esophageal varices" (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 esophageal varices:

- **A conservative triple antioxidant approach to the treatment of hepatitis C. Combination of alpha lipoic acid (thioctic acid), silymarin, and selenium: three case histories.**
 Author(s): Berkson BM.
 Source: Medizinische Klinik (Munich, Germany : 1983). 1999 October 15; 94 Suppl 3: 84-9.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10554539
- **A sclerosant with astringent properties developed in China for oesophageal varices: comparison with ethanolamine oleate and polidocanol.**
 Author(s): Nishida R, Inoue R, Takimoto Y, Kita T.
 Source: Journal of Gastroenterology and Hepatology. 1999 May; 14(5): 481-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=10355514

- **Calcium channel blockers in cirrhotic patients with portal hypertension.**
Author(s): Li D, Lu H, Li X, Quan Q, Li X, Lu W.
Source: Chinese Medical Journal. 1995 November; 108(11): 803-8.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8585970
- **Care of the patient with oesophageal varices.**
Author(s): Hudson S.
Source: Nursing Standard : Official Newspaper of the Royal College of Nursing. 2000 March 1-7; 14(24): 55.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11235372
- **Comparison of fiberoptic endoscopy in acute upper gastrointestinal haemorrhage in Africans and Europeans.**
Author(s): Wicks AC, Thomas GE, Clain DJ.
Source: British Medical Journal. 1975 November 1; 4(5991): 259-60.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1081417
- **Current views on liver diseases in Ethiopia.**
Author(s): Tsega E.
Source: Ethiop Med J. 1977 April; 15(2): 75-82.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=201462
- **Endoscopic treatment of esophagogastric varices.**
Author(s): Adler M, Bourgeois N, Delhaye M, Deviere J, Gay F, Gelin M, Le Moine O, Vandermeeren A, Van Gossum A, Lambilliotte JP.
Source: Acta Gastroenterol Belg. 1992 May-June; 55(3): 251-9. Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1632142
- **Endoscopic treatment of gastrointestinal bleeding. Topical therapy and variceal injection.**
Author(s): Silvis SE.
Source: Digestive Diseases and Sciences. 1981 July; 26(7 Suppl): 44S-46S.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6985336
- **Late effects of treatment for Wilms' tumor.**
Author(s): Thomas PR, Griffith KD, Fineberg BB, Perez CA, Land VJ.
Source: International Journal of Radiation Oncology, Biology, Physics. 1983 May; 9(5): 651-7.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=6303994
- **Long-term follow-up of gastric variceal sclerotherapy: an eleven-year experience.**
Author(s): Sarin SK.

Source: Gastrointestinal Endoscopy. 1997 July; 46(1): 8-14.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=9260698

- **Octreotide for acute esophageal variceal bleeding: a meta-analysis.**
 Author(s): Corley DA, Cello JP, Adkisson W, Ko WF, Kerlikowske K.
 Source: Gastroenterology. 2001 March; 120(4): 946-54.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11231948

- **Prevention in liver disease.**
 Author(s): Arguedas MR, Fallon MB.
 Source: The American Journal of the Medical Sciences. 2001 February; 321(2): 145-51.
 Review.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11217817

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 esophageal varices; 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**

- Hepatitis**

- 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. BOOKS ON ESOPHAGEAL VARICES

Overview

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

Book Summaries: Federal Agencies

The Combined Health Information Database collects various book abstracts from a variety of healthcare institutions and federal agencies. To access these summaries, go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. You will need to use the "Detailed Search" option. To find book summaries, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer. For the format option, select "Monograph/Book." Now type "esophageal varices" (or synonyms) into the "For these words:" box. You should check back periodically with this database which is updated every three months. The following is a typical result when searching for books on esophageal varices:

- **Benign Diseases**

Source: Mount Kisco, NY: Futura Publishing Company, Inc. 1990. 439 p.

Contact: Available from Futura Publishing Company, Inc. 2 Bedford Ridge Road, P.O. Box 330, Mount Kisco, NY 10549. (914) 666-7528. PRICE: \$75 plus shipping and handling. ISBN: 0879933682.

Summary: This book comprises chapters based on presentations that were made at the Fourth World Congress of the International Society for Diseases of the Esophagus, held in Chicago, Illinois in 1989. The editors focus primarily on benign diseases of the esophagus, emphasizing primarily original and innovative material which addresses controversial and unsettled subjects in pathophysiology, diagnosis, and treatment of esophageal disease. Forty-four chapters are presented in eight categories: congenital disease, gastroesophageal reflux disease, Barrett's esophagus, stricture, esophageal

perforation, motility disorders, **esophageal varices**, and the operative treatment of complex benign disease. Each chapter includes figures, tables, and references, and a subject index concludes the volume.

- **Diseases of the Esophagus, Volume II: Benign Diseases**

Source: Armonk, NY: Futura Publishing Company. 1990. 441 p.

Contact: Available from Futura Publishing Company, Inc. 135 Bedford Road, Armonk, NY 10504. (914) 273-1014. PRICE: Contact directly for current price. ISBN: 0879933682.

Summary: This book is made up of chapters based on presentations that were made at the Fourth World Congress of the International Society for Diseases of the Esophagus, held in Chicago, Illinois, September 1989. Forty-four chapters are presented in eight sections: congenital disease, gastroesophageal reflux disease, Barrett's esophagus, stricture, esophageal perforation, **esophageal varices**, and operative treatment of complex benign disease. The authors emphasis primarily original and innovative material which addresses controversial and unsettled subjects in pathophysiology, diagnosis, and treatment of esophageal disease. Each chapter includes brief references; a subject index concludes the volume.

- **Advanced Therapeutic Endoscopy**

Source: New York, NY: Raven Press, Ltd. 1990. 379 p.

Contact: Available from Raven Press. 1185 Avenue of the Americas, Dept. 5B, New York, NY 10036. (800) 777-2836 or (212) 930-9500. Fax (212) 869-3495. PRICE: \$139 plus shipping (as of 1995). ISBN: 0881676810.

Summary: This medical textbook is designed to provide the experienced endoscopist with information about the newest and most innovative techniques in the therapeutic use of endoscopy. Thirty chapters, each authored by specialists in the field, are organized into sections considering the esophagus, the stomach, the colon, the small bowel and liver, the biliary system, general considerations, and pediatric endoscopy. Specific topics include dilation of benign esophageal strictures; foreign bodies and bezoars of the upper gastrointestinal tract; sclerotherapy of **esophageal varices**; therapy for upper gastrointestinal hemorrhage; hemorrhoids; dilatation of colonic strictures; anorectal manometry; enteroscopy; endoscopic sphincterotomy; endoscopic retrograde cholangiopancreatography; biliary and pancreatic manometry; the use of antibiotic prophylaxis; and gastroscopy and colonoscopy in children. Each chapter includes diagrams and charts, black-and-white photographs, and numerous references. A subject index concludes the volume.

Chapters on Esophageal Varices

In order to find chapters that specifically relate to esophageal varices, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and esophageal varices using the "Detailed Search" option. Go to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. To find book chapters, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Book Chapter." Type "esophageal varices" (or synonyms) into the "For these words:" box. The following is a typical result when searching for book chapters on esophageal varices:

- **Esophageal Varices: Early Management is Better**

Source: in Barkin, J.S., and Rogers, A.I., eds. *Difficult Decisions in Digestive Diseases*. 2nd ed. St. Louis, MO: Mosby-Year Book, Inc. 1994. p. 171-182.

Contact: Available from Mosby-Year Book, Inc. 11830 Westline Industrial Drive, St. Louis, MO 63146. (800) 633-6699 or (800) 325-4177 or (314) 872-8370. Fax (314) 432-1380. PRICE: \$84 (as of 1995). ISBN: 0801680190.

Summary: This chapter, from a medical text on difficult decisions in digestive diseases, explains **esophageal varices**, stressing early management. The chapter covers risk factors in the pathogenesis of variceal bleeding; grading of varices by size; and management of **esophageal varices**, including prophylaxis of the initial bleed from a varix, control of acute bleeding, and prevention of recurrent bleeding. The chapter also covers treatment options, including medical therapies; prophylactic sclerotherapy; prophylactic shunt surgery; endoscopic ligation (banding); balloon tamponade; long-term sclerotherapy; and surgical procedures, including transjugular intrahepatic portal-systemic shunts, emergency portacaval shunts, and esophageal transection. The author concludes the chapter with a comparison of various and combination therapies. 3 figures. 3 tables. 135 references.

CHAPTER 5. MULTIMEDIA ON ESOPHAGEAL VARICES

Overview

In this chapter, we show you how to keep current on multimedia sources of information on esophageal varices. We start with sources that have been summarized by federal agencies, and then show you how to find bibliographic information catalogued by the National Library of Medicine.

Video Recordings

An excellent source of multimedia information on esophageal varices is the Combined Health Information Database. You will need to limit your search to "Videorecording" and "esophageal varices" using the "Detailed Search" option. Go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. To find video productions, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Videorecording (videotape, videocassette, etc.)." Type "esophageal varices" (or synonyms) into the "For these words:" box. The following is a typical result when searching for video recordings on esophageal varices:

- **Gastroenterology Update**

Source: Mt. Laurel, NJ: CME Conference Video, Inc. 1992. (videocassettes and syllabus).

Contact: Available from P.O. Box 5077, Cherry Hill, NJ 08034-5077. (800) 284-8433. Fax (800) 284-5964. PRICE: \$375. Group practice packages available.

Summary: This video education program reviews clinical gastroenterology, emphasizing recent developments in diagnosis and treatment. Topics covered include oropharyngeal dysphagia; the pathogenesis of gastroesophageal reflux; esophageal motility disorders; hemochromatosis; cholestatic liver disease; viral hepatitis; the management of malignant esophageal obstruction; clinical and therapeutic assessment in inflammatory bowel disease (IBD); and nutritional support in IBD. The video program includes numerous case presentations, including with patients presenting with colorectal cancer, **esophageal varices**, portal hypertension, reflux esophagitis, and drug-induced esophageal injury.

CHAPTER 6. PERIODICALS AND NEWS ON ESOPHAGEAL VARICES

Overview

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

News Services and Press Releases

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

- **Simple test can predict esophageal varices in children**
Source: Reuters Medical News
Date: July 19, 2001

- **White Nipple Sign On Esophageal Varices Indicates Recent Bleeding**

Source: Reuters Medical News

Date: November 14, 1996

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/alphaneews_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 "esophageal varices" (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 "esophageal varices" (or synonyms). If you know the name of a company that is relevant to esophageal varices, 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 "esophageal varices" (or synonyms).

Academic Periodicals covering Esophageal Varices

Numerous periodicals are currently indexed within the National Library of Medicine's PubMed database that are known to publish articles relating to esophageal varices. In addition to these sources, you can search for articles covering esophageal varices 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 esophageal varices. One such source is the United States Pharmacopeia. In 1820, eleven physicians met in Washington, D.C. to establish the first compendium of standard drugs for the United States. They called this compendium the U.S. Pharmacopeia (USP). Today, the USP is a non-profit organization consisting of 800 volunteer scientists, eleven elected officials, and 400 representatives of state associations and colleges of medicine and pharmacy. The USP is located in Rockville, Maryland, and its home page is located at <http://www.usp.org/>. The USP currently provides standards for over 3,700 medications. The resulting USP DI[®] Advice for the Patient[®] can be accessed through the National Library of Medicine of the National Institutes of Health. The database is partially derived from lists of federally approved medications in the Food and Drug Administration's (FDA) Drug Approvals database, located at <http://www.fda.gov/cder/da/da.htm>.

While the FDA database is rather large and difficult to navigate, the Pharmacopeia is both user-friendly and free to use. It covers more than 9,000 prescription and over-the-counter medications. To access this database, simply type the following hyperlink into your Web browser: <http://www.nlm.nih.gov/medlineplus/druginformation.html>. To view examples of a given medication (brand names, category, description, preparation, proper use, precautions, side effects, etc.), simply follow the hyperlinks indicated within the United States Pharmacopeia (USP).

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

Hepatitis B Vaccine Recombinant

- **Systemic - U.S. Brands:** Engerix-B; Recombivax HB; Recombivax HB Dialysis Formulation
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202281.html>

Lansoprazole

- **Systemic - U.S. Brands:** Prevacid
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202787.html>

Norfloxacin

- **Ophthalmic - U.S. Brands:** Chibroxin
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202635.html>

Octreotide

- **Systemic - U.S. Brands:** Sandostatin; Sandostatin LAR Depot
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202421.html>

Commercial Databases

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

Mosby's Drug Consult™

Mosby's Drug Consult™ database (also available on CD-ROM and book format) covers 45,000 drug products including generics and international brands. It provides prescribing information, drug interactions, and patient information. Subscription information is available at the following hyperlink: <http://www.mosbysdrugconsult.com/>.

PDRhealth

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

Other Web Sites

Drugs.com (www.drugs.com) reproduces the information in the Pharmacopeia as well as commercial information. You may also want to consider the Web site of the Medical Letter,

Inc. (<http://www.medletter.com/>) which allows users to download articles on various drugs and therapeutics for a nominal fee.

Researching Orphan Drugs

Although the list of orphan drugs is revised on a daily basis, you can quickly research orphan drugs that might be applicable to esophageal varices by using the database managed by the National Organization for Rare Disorders, Inc. (NORD), at <http://www.rarediseases.org/>. Scroll down the page, and on the left toolbar, click on "Orphan Drug Designation Database." On this page (<http://www.rarediseases.org/search/noddsearch.html>), type "esophageal varices" (or synonyms) into the search box, and click "Submit Query." When you receive your results, note that not all of the drugs may be relevant, as some may have been withdrawn from orphan status. Write down or print out the name of each drug and the relevant contact information. From there, visit the Pharmacopeia Web site and type the name of each orphan drug into the search box at <http://www.nlm.nih.gov/medlineplus/druginformation.html>. You may need to contact the sponsor or NORD for further information.

NORD conducts "early access programs for investigational new drugs (IND) under the Food and Drug Administration's (FDA's) approval 'Treatment INDs' programs which allow for a limited number of individuals to receive investigational drugs before FDA marketing approval." If the orphan product about which you are seeking information is approved for marketing, information on side effects can be found on the product's label. If the product is not approved, you may need to contact the sponsor.

The following is a list of orphan drugs currently listed in the NORD Orphan Drug Designation Database for esophageal varices:

- **Terlipressin (trade name: Glypressin)**
http://www.rarediseases.org/nord/search/nodd_full?code=344
- **Somatostatin**
http://www.rarediseases.org/nord/search/nodd_full?code=228
- **Sodium tetradecyl sulfate (trade name: Sotradecol)**
http://www.rarediseases.org/nord/search/nodd_full?code=203
- **Ethanolamine oleate (trade name: Ethamolin)**
http://www.rarediseases.org/nord/search/nodd_full?code=454

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 Institute⁵:

- 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/>

⁵ 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.⁶ 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:⁷

- **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

⁶ Remember, for the general public, the National Library of Medicine recommends the databases referenced in MEDLINEplus (<http://medlineplus.gov/> or <http://www.nlm.nih.gov/medlineplus/databases.html>).

⁷ 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 Gateway⁸

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.⁹ To use the NLM Gateway, simply go to the search site at <http://gateway.nlm.nih.gov/gw/Cmd>. Type "esophageal varices" (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	10302
Books / Periodicals / Audio Visual	61
Consumer Health	716
Meeting Abstracts	3
Other Collections	25
Total	11107

HSTAT¹⁰

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.¹¹ 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.¹² Simply search by "esophageal varices" (or synonyms) at the following Web site: <http://text.nlm.nih.gov>.

⁸ Adapted from NLM: <http://gateway.nlm.nih.gov/gw/Cmd?Overview.x>.

⁹ 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).

¹⁰ Adapted from HSTAT: <http://www.nlm.nih.gov/pubs/factsheets/hstat.html>.

¹¹ The HSTAT URL is <http://hstat.nlm.nih.gov/>.

¹² 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 Biologists¹³

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.¹⁴ 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.¹⁵ This site has new articles every few weeks, so it can be considered an online magazine of sorts. It is intended for general background information. You can access the Coffee Break Web site at the following hyperlink: <http://www.ncbi.nlm.nih.gov/Coffeebreak/>.

Other Commercial Databases

In addition to resources maintained by official agencies, other databases exist that are commercial ventures addressing medical professionals. Here are some examples that may interest you:

- **CliniWeb International:** Index and table of contents to selected clinical information on the Internet; see <http://www.ohsu.edu/clinweb/>.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see <http://www.mwsearch.com/>.

¹³ Adapted from <http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html>.

¹⁴ 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.

¹⁵ 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 esophageal varices 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 esophageal varices. 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 esophageal varices. 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 “esophageal varices”:

Esophageal Cancer

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

Esophagus Disorders

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

Gastroesophageal Reflux/Hiatal Hernia

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

Liver Diseases

<http://www.nlm.nih.gov/medlineplus/liverdiseases.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 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 esophageal varices. 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://dmz.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 esophageal varices. By consulting all of associations listed in this chapter, you will have nearly exhausted all sources for patient associations concerned with esophageal varices.

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 esophageal varices. 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 "esophageal varices" (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 "esophageal varices". 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 "esophageal varices" (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 “esophageal varices” (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.¹⁶

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

¹⁶ 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)¹⁷:

- **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://sfguide.ucsf.edu/barnett/PERC/default.asp>
- **California:** Redwood Health Library (Petaluma Health Care District), <http://www.phcd.org/rdwlib.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/>

¹⁷ Abstracted from <http://www.nlm.nih.gov/medlineplus/libraries.html>.

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

- **Manitoba, Canada:** Consumer & Patient Health Information Service (University of Manitoba Libraries), <http://www.umanitoba.ca/libraries/units/health/reference/chis.html>
- **Manitoba, Canada:** J.W. Crane Memorial Library (Deer Lodge Centre, Winnipeg), http://www.deerlodge.mb.ca/crane_library/about.asp
- **Maryland:** Health Information Center at the Wheaton Regional Library (Montgomery County, Dept. of Public Libraries, Wheaton Regional Library), <http://www.mont.lib.md.us/healthinfo/hic.asp>
- **Massachusetts:** Baystate Medical Center Library (Baystate Health System), <http://www.baystatehealth.com/1024/>
- **Massachusetts:** Boston University Medical Center Alumni Medical Library (Boston University Medical Center), <http://med-libwww.bu.edu/library/lib.html>
- **Massachusetts:** Lowell General Hospital Health Sciences Library (Lowell General Hospital, Lowell), <http://www.lowellgeneral.org/library/HomePageLinks/WWW.htm>
- **Massachusetts:** Paul E. Woodard Health Sciences Library (New England Baptist Hospital, Boston), http://www.nebh.org/health_lib.asp
- **Massachusetts:** St. Luke's Hospital Health Sciences Library (St. Luke's Hospital, Southcoast Health System, New Bedford), <http://www.southcoast.org/library/>
- **Massachusetts:** Treadwell Library Consumer Health Reference Center (Massachusetts General Hospital), <http://www.mgh.harvard.edu/library/chrcindex.html>
- **Massachusetts:** UMass HealthNet (University of Massachusetts Medical School, Worcester), <http://healthnet.umassmed.edu/>
- **Michigan:** Botsford General Hospital Library - Consumer Health (Botsford General Hospital, Library & Internet Services), <http://www.botsfordlibrary.org/consumer.htm>
- **Michigan:** Helen DeRoy Medical Library (Providence Hospital and Medical Centers), <http://www.providence-hospital.org/library/>
- **Michigan:** Marquette General Hospital - Consumer Health Library (Marquette General Hospital, Health Information Center), <http://www.mgh.org/center.html>
- **Michigan:** Patient Education Resource Center - University of Michigan Cancer Center (University of Michigan Comprehensive Cancer Center, Ann Arbor), <http://www.cancer.med.umich.edu/learn/leares.htm>
- **Michigan:** Sladen Library & Center for Health Information Resources - Consumer Health Information (Detroit), <http://www.henryford.com/body.cfm?id=39330>
- **Montana:** Center for Health Information (St. Patrick Hospital and Health Sciences Center, Missoula)
- **National:** Consumer Health Library Directory (Medical Library Association, Consumer and Patient Health Information Section), <http://caphis.mlanet.org/directory/index.html>
- **National:** National Network of Libraries of Medicine (National Library of Medicine) - provides library services for health professionals in the United States who do not have access to a medical library, <http://nnlm.gov/>
- **National:** NN/LM List of Libraries Serving the Public (National Network of Libraries of Medicine), <http://nnlm.gov/members/>

- **Nevada:** Health Science Library, West Charleston Library (Las Vegas-Clark County Library District, Las Vegas), http://www.lvcld.org/special_collections/medical/index.htm
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library, Hanover), <http://www.dartmouth.edu/~biomed/resources.html#conshealth.html#d/>
- **New Jersey:** Consumer Health Library (Rahway Hospital, Rahway), <http://www.rahwayhospital.com/library.htm>
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center, Englewood), <http://www.englewoodhospital.com/links/index.htm>
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center, Englewood), <http://www.geocities.com/ResearchTriangle/9360/>
- **New York:** Choices in Health Information (New York Public Library) - NLM Consumer Pilot Project participant, <http://www.nypl.org/branch/health/links.html>
- **New York:** Health Information Center (Upstate Medical University, State University of New York, Syracuse), <http://www.upstate.edu/library/hic/>
- **New York:** Health Sciences Library (Long Island Jewish Medical Center, New Hyde Park), <http://www.lij.edu/library/library.html>
- **New York:** ViaHealth Medical Library (Rochester General Hospital), <http://www.nyam.org/library/>
- **Ohio:** Consumer Health Library (Akron General Medical Center, Medical & Consumer Health Library), <http://www.akrongeneral.org/hwlibrary.htm>
- **Oklahoma:** The Health Information Center at Saint Francis Hospital (Saint Francis Health System, Tulsa), <http://www.sfh-tulsa.com/services/healthinfo.asp>
- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center, The Dalles), <http://www.mcmc.net/phrc/>
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center, Hershey), <http://www.hmc.psu.edu/commhealth/>
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center, Danville), <http://www.geisinger.edu/education/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>

ESOPHAGEAL VARICES DICTIONARY

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

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

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]

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]

Acoustic: Having to do with sound or hearing. [NIH]

Acrylonitrile: A highly poisonous compound used widely in the manufacture of plastics, adhesives and synthetic rubber. [NIH]

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

Adrenergic: Activated by, characteristic of, or secreting epinephrine or substances with similar activity; the term is applied to those nerve fibres that liberate norepinephrine at a synapse when a nerve impulse passes, i.e., the sympathetic fibres. [EU]

Adrenergic Antagonists: Drugs that bind to but do not activate adrenergic receptors. Adrenergic antagonists block the actions of the endogenous adrenergic transmitters epinephrine and norepinephrine. [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]

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]

Alimentary: Pertaining to food or nutritive material, or to the organs of digestion. [EU]

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

Alkaline Phosphatase: An enzyme that catalyzes the conversion of an orthophosphoric monoester and water to an alcohol and orthophosphate. EC 3.1.3.1. [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]

Amino acid: Any organic compound containing an amino (-NH₂) and a carboxyl (-COOH) group. The 20 α-amino acids listed in the accompanying table are the amino acids from which proteins are synthesized by formation of peptide bonds during ribosomal translation of messenger RNA; all except glycine, which is not optically active, have the L configuration. Other amino acids occurring in proteins, such as hydroxyproline in collagen, are formed by posttranslational enzymatic modification of amino acid residues in polypeptide chains. There are also several important amino acids, such as the neurotransmitter γ-aminobutyric acid, that have no relation to proteins. Abbreviated AA. [EU]

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

Amino-terminal: The end of a protein or polypeptide chain that contains a free amino group (-NH₂). [NIH]

Ampulla: A sac-like enlargement of a canal or duct. [NIH]

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

Anastomosis: A procedure to connect healthy sections of tubular structures in the body after the diseased portion has been surgically removed. [NIH]

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

Angina: Chest pain that originates in the heart. [NIH]

Angina Pectoris: The symptom of paroxysmal pain consequent to myocardial ischemia usually of distinctive character, location and radiation, and provoked by a transient stressful situation during which the oxygen requirements of the myocardium exceed the capacity of the coronary circulation to supply it. [NIH]

Angiodysplasia: Degenerative, acquired lesions consisting of distorted, dilated, thin-walled vessels lined by vascular endothelium. This pathological state is seen especially in the gastrointestinal tract and is frequently a cause of upper and lower gastrointestinal hemorrhage in the elderly. [NIH]

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

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

Anorectal: Pertaining to the anus and rectum or to the junction region between the two. [EU]

Antiarrhythmic: An agent that prevents or alleviates cardiac arrhythmia. [EU]

Antibiotic: A drug used to treat infections caused by bacteria and other microorganisms. [NIH]

Antibiotic Prophylaxis: Use of antibiotics before, during, or after a diagnostic, therapeutic, or surgical procedure to prevent infectious complications. [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]

Antiemetic: An agent that prevents or alleviates nausea and vomiting. Also antinauseant. [EU]

Antihypertensive: An agent that reduces high blood pressure. [EU]

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

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

Anxiety: Persistent feeling of dread, apprehension, and impending disaster. [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]

Arteriovenous: Both arterial and venous; pertaining to or affecting an artery and a vein. [EU]

Arteriovenous Fistula: An abnormal communication between an artery and a vein. [NIH]

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

Ascites: Accumulation or retention of free fluid within the peritoneal cavity. [NIH]

Aspartate: A synthetic amino acid. [NIH]

Astringent: Causing contraction, usually locally after topical application. [EU]

Atresia: Lack of a normal opening from the esophagus, intestines, or anus. [NIH]

Bacteremia: The presence of viable bacteria circulating in the blood. Fever, chills, tachycardia, and tachypnea are common acute manifestations of bacteremia. The majority of cases are seen in already hospitalized patients, most of whom have underlying diseases or procedures which render their bloodstreams susceptible to invasion. [NIH]

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

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

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

Beta blocker: A drug used to slow the heart rate and reduce pressure inside blood vessels. It also can regulate heart rhythm. [NIH]

Bezoars: Concretions of swallowed hair, fruit or vegetable fibers, or similar substances found in the alimentary canal. [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 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 Atresia: Atresia of the biliary tract, most commonly of the extrahepatic bile ducts. [NIH]

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

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

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

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

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

Blood Coagulation: The process of the interaction of blood coagulation factors that results in an insoluble fibrin clot. [NIH]

Blood Coagulation Factors: Endogenous substances, usually proteins, that are involved in the blood coagulation process. [NIH]

Blood Platelets: Non-nucleated disk-shaped cells formed in the megakaryocyte and found in the blood of all mammals. They are mainly involved in blood coagulation. [NIH]

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

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

Blood Volume: Volume of circulating blood. It is the sum of the plasma volume and erythrocyte volume. [NIH]

Body Fluids: Liquid components of living organisms. [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]

Brachiocephalic Veins: Large veins on either side of the root of the neck formed by the junction of the internal jugular and subclavian veins. They drain blood from the head, neck, and upper extremities, and unite to form the superior vena cava. [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]

Broad-spectrum: Effective against a wide range of microorganisms; said of an antibiotic. [EU]

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

Cardia: That part of the stomach surrounded by the esophagogastric junction, characterized by the lack of acid-forming cells. [NIH]

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

Cardiac Output: The volume of blood passing through the heart per unit of time. It is usually expressed as liters (volume) per minute so as not to be confused with stroke volume (volume per beat). [NIH]

Cardioselective: Having greater activity on heart tissue than on other tissue. [EU]

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]

Catheter: A flexible tube used to deliver fluids into or withdraw fluids from the body. [NIH]

Catheterization: Use or insertion of a tubular device into a duct, blood vessel, hollow organ, or body cavity for injecting or withdrawing fluids for diagnostic or therapeutic purposes. It differs from intubation in that the tube here is used to restore or maintain patency in obstructions. [NIH]

Caudal: Denoting a position more toward the cauda, or tail, than some specified point of reference; same as inferior, in human anatomy. [EU]

Cause of Death: Factors which produce cessation of all vital bodily functions. They can be analyzed from an epidemiologic viewpoint. [NIH]

Cefotaxime: Semisynthetic broad-spectrum cephalosporin. [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]

Cerebrospinal: Pertaining to the brain and spinal cord. [EU]

Cerebrospinal fluid: CSF. The fluid flowing around the brain and spinal cord. Cerebrospinal fluid is produced in the ventricles in the brain. [NIH]

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

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

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

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

Codons: Any triplet of nucleotides (coding unit) in DNA or RNA (if RNA is the carrier of primary genetic information as in some viruses) that codes for particular amino acid or signals the beginning or end of the message. [NIH]

Colitis: Inflammation of the colon. [NIH]

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

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

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

leaves the body through the anus. [NIH]

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

Colorectal: Having to do with the colon or the rectum. [NIH]

Colorectal Cancer: Cancer that occurs in the colon (large intestine) or the rectum (the end of the large intestine). A number of digestive diseases may increase a person's risk of colorectal cancer, including polyposis and Zollinger-Ellison Syndrome. [NIH]

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

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]

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]

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

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

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

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]

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

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

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

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

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

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

Decompression: Decompression external to the body, most often the slow lessening of external pressure on the whole body (especially in caisson workers, deep sea divers, and persons who ascend to great heights) to prevent decompression sickness. It includes also sudden accidental decompression, but not surgical (local) decompression or decompression applied through body openings. [NIH]

Decompression Sickness: A condition occurring as a result of exposure to a rapid fall in ambient pressure. Gases, nitrogen in particular, come out of solution and form bubbles in body fluid and blood. These gas bubbles accumulate in joint spaces and the peripheral circulation impairing tissue oxygenation causing disorientation, severe pain, and potentially death. [NIH]

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

Dialyzer: A part of the hemodialysis machine. (See hemodialysis under dialysis.) The dialyzer has two sections separated by a membrane. One section holds dialysate. The other holds the patient's blood. [NIH]

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

Diffusion: The tendency of a gas or solute to pass from a point of higher pressure or concentration to a point of lower pressure or concentration and to distribute itself throughout the available space; a major mechanism of biological transport. [NIH]

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

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

Digestive tract: The organs through which food passes when food is eaten. These organs are the mouth, esophagus, stomach, small and large intestines, and rectum. [NIH]

Dilation: A process by which the pupil is temporarily enlarged with special eye drops (mydriatic); allows the eye care specialist to better view the inside of the eye. [NIH]

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

Disinfectant: An agent that disinfects; applied particularly to agents used on inanimate objects. [EU]

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

Diuretic: A drug that increases the production of urine. [NIH]

Dopamine: An endogenous catecholamine and prominent neurotransmitter in several systems of the brain. In the synthesis of catecholamines from tyrosine, it is the immediate precursor to norepinephrine and epinephrine. Dopamine is a major transmitter in the extrapyramidal system of the brain, and important in regulating movement. A family of dopaminergic receptor subtypes mediate its action. Dopamine is used pharmacologically for its direct (beta adrenergic agonist) and indirect (adrenergic releasing) sympathomimetic effects including its actions as an inotropic agent and as a renal vasodilator. [NIH]

Dorsal: 1. Pertaining to the back or to any dorsum. 2. Denoting a position more toward the back surface than some other object of reference; same as posterior in human anatomy; superior in the anatomy of quadrupeds. [EU]

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]

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

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

Dysphagia: Difficulty in swallowing. [EU]

Echocardiography: Ultrasonic recording of the size, motion, and composition of the heart and surrounding tissues. The standard approach is transthoracic. [NIH]

Edema: Excessive amount of watery fluid accumulated in the intercellular spaces, most

commonly present in subcutaneous tissue. [NIH]

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

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

Elective: Subject to the choice or decision of the patient or physician; applied to procedures that are advantageous to the patient but not urgent. [EU]

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]

Emboli: Bit of foreign matter which enters the blood stream at one point and is carried until it is lodged or impacted in an artery and obstructs it. It may be a blood clot, an air bubble, fat or other tissue, or clumps of bacteria. [NIH]

Embolization: The blocking of an artery by a clot or foreign material. Embolization can be done as treatment to block the flow of blood to a tumor. [NIH]

Embolus: Bit of foreign matter which enters the blood stream at one point and is carried until it is lodged or impacted in an artery and obstructs it. It may be a blood clot, an air bubble, fat or other tissue, or clumps of bacteria. [NIH]

Emergency Treatment: First aid or other immediate intervention for accidents or medical conditions requiring immediate care and treatment before definitive medical and surgical management can be procured. [NIH]

Encephalopathy: A disorder of the brain that can be caused by disease, injury, drugs, or chemicals. [NIH]

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

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

Endoscopic: A technique where a lateral-view endoscope is passed orally to the duodenum for visualization of the ampulla of Vater. [NIH]

Endoscopic retrograde cholangiopancreatography: ERCP. A procedure to x-ray the pancreatic duct, hepatic duct, common bile duct, duodenal papilla, and gallbladder. In this procedure, a thin, lighted tube (endoscope) is passed through the mouth and down into the first part of the small intestine (duodenum). A smaller tube (catheter) is then inserted through the endoscope into the bile and pancreatic ducts. A dye is injected through the catheter into the ducts, and an x-ray is taken. [NIH]

Endoscopy: Endoscopic examination, therapy or surgery performed on interior parts of the body. [NIH]

Endosonography: Ultrasonography of internal organs using an ultrasound transducer sometimes mounted on a fiberoptic endoscope. In endosonography the transducer converts electronic signals into acoustic pulses or continuous waves and acts also as a receiver to detect reflected pulses from within the organ. An audiovisual-electronic interface converts the detected or processed echo signals, which pass through the electronics of the instrument,

into a form that the technologist can evaluate. The procedure should not be confused with endoscopy which employs a special instrument called an endoscope. The "endo-" of endosonography refers to the examination of tissue within hollow organs, with reference to the usual ultrasonography procedure which is performed externally or transcutaneously. [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, Lymphatic: Unbroken cellular lining (intima) of the lymph vessels (e.g., the high endothelial lymphatic venules). It is more permeable than vascular endothelium, lacking selective absorption and functioning mainly to remove plasma proteins that have filtered through the capillaries into the tissue spaces. [NIH]

Endothelium, Vascular: Single pavement layer of cells which line the luminal surface of the entire vascular system and regulate the transport of macromolecules and blood components from interstitium to lumen; this function has been most intensively studied in the blood capillaries. [NIH]

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

Enteroscopy: An examination of the small intestine with an endoscope. The endoscope is inserted through the mouth and stomach into the small intestine. [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]

Epidermoid carcinoma: A type of cancer in which the cells are flat and look like fish scales. Also called squamous cell carcinoma. [NIH]

Epinephrine: The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics. [NIH]

Epithelium: One or more layers of epithelial cells, supported by the basal lamina, which covers the inner or outer surfaces of the body. [NIH]

Equipment and Supplies: Expendable and nonexpendable equipment, supplies, apparatus, and instruments that are used in diagnostic, surgical, therapeutic, scientific, and experimental procedures. [NIH]

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

Esophageal Motility Disorders: Disorders affecting the motor function of the upper or lower esophageal sphincters, the esophageal body, or a combination of these parts. The failure of the sphincters to maintain a tonic pressure may result in the impeding of the passage of food, regurgitation of food, or reflux of gastric acid into the esophagus. [NIH]

Esophageal Perforation: A dilated vessel in the lower end of the esophagus that result from portal hypertension. [NIH]

Esophageal Stricture: A narrowing of the esophagus often caused by acid flowing back from the stomach. This condition may require surgery. [NIH]

Esophageal Varices: Stretched veins in the esophagus that occur when the liver is not

working properly. If the veins burst, the bleeding can cause death. [NIH]

Esophagitis: Inflammation, acute or chronic, of the esophagus caused by bacteria, chemicals, or trauma. [NIH]

Esophagoscopy: Endoscopic examination, therapy, or surgery of the esophagus. [NIH]

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

Ethanol: A clear, colorless liquid rapidly absorbed from the gastrointestinal tract and distributed throughout the body. It has bactericidal activity and is used often as a topical disinfectant. It is widely used as a solvent and preservative in pharmaceutical preparations as well as serving as the primary ingredient in alcoholic beverages. [NIH]

Ethanolamine: A viscous, hygroscopic amino alcohol with an ammoniacal odor. It is widely distributed in biological tissue and is a component of lecithin. It is used as a surfactant, fluorimetric reagent, and to remove CO₂ and H₂S from natural gas and other gases. [NIH]

Extracellular: Outside a cell or cells. [EU]

Extravasation: A discharge or escape, as of blood, from a vessel into the tissues. [EU]

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

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

Fat: Total lipids including phospholipids. [NIH]

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

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

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

Fistula: Abnormal communication most commonly seen between two internal organs, or between an internal organ and the surface of the body. [NIH]

Fluid Therapy: Therapy whose basic objective is to restore the volume and composition of the body fluids to normal with respect to water-electrolyte balance. Fluids may be administered intravenously, orally, by intermittent gavage, or by hypodermoclysis. [NIH]

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]

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

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

Gangrene: Death and putrefaction of tissue usually due to a loss of blood supply. [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]

Gastric: Having to do with the stomach. [NIH]

Gastric Acid: Hydrochloric acid present in gastric juice. [NIH]

Gastroenterology: A subspecialty of internal medicine concerned with the study of the physiology and diseases of the digestive system and related structures (esophagus, liver, gallbladder, and pancreas). [NIH]

Gastroesophageal Reflux: Reflux of gastric juice and/or duodenal contents (bile acids, pancreatic juice) into the distal esophagus, commonly due to incompetence of the lower esophageal sphincter. Gastric regurgitation is an extension of this process with entry of fluid into the pharynx or mouth. [NIH]

Gastroesophageal Reflux Disease: Flow of the stomach's contents back up into the esophagus. Happens when the muscle between the esophagus and the stomach (the lower esophageal sphincter) is weak or relaxes when it shouldn't. May cause esophagitis. Also called esophageal reflux or reflux esophagitis. [NIH]

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

Gastrointestinal Hemorrhage: Bleeding in the gastrointestinal tract. [NIH]

Gastrointestinal tract: The stomach and intestines. [NIH]

Gastroscopy: Endoscopic examination, therapy, or surgery of the interior of the stomach. [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]

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

Glutathione Peroxidase: An enzyme catalyzing the oxidation of 2 moles of glutathione in the presence of hydrogen peroxide to yield oxidized glutathione and water. EC 1.11.1.9. [NIH]

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

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

Grading: A system for classifying cancer cells in terms of how abnormal they appear when examined under a microscope. The objective of a grading system is to provide information about the probable growth rate of the tumor and its tendency to spread. The systems used to grade tumors vary with each type of cancer. Grading plays a role in treatment decisions. [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]

Haematoma: A localized collection of blood, usually clotted, in an organ, space, or tissue, due to a break in the wall of a blood vessel. [EU]

Haemorrhage: The escape of blood from the vessels; bleeding. Small haemorrhages are classified according to size as petechiae (very small), purpura (up to 1 cm), and ecchymoses (larger). The massive accumulation of blood within a tissue is called a haematoma. [EU]

Hematoma: An extravasation of blood localized in an organ, space, or tissue. [NIH]

Hematuria: Presence of blood in the urine. [NIH]

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

Hemochromatosis: A disease that occurs when the body absorbs too much iron. The body stores the excess iron in the liver, pancreas, and other organs. May cause cirrhosis of the liver. Also called iron overload disease. [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]

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

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

Hemorrhoids: Varicosities of the hemorrhoidal venous plexuses. [NIH]

Hemostasis: The process which spontaneously arrests the flow of blood from vessels carrying blood under pressure. It is accomplished by contraction of the vessels, adhesion and aggregation of formed blood elements, and the process of blood or plasma coagulation. [NIH]

Hepatic: Refers to the liver. [NIH]

Hepatic Duct, Common: Predominantly extrahepatic bile duct which is formed by the junction of the right and left hepatic ducts, which are predominantly intrahepatic, and, in turn, joins the cystic duct to form the common bile duct. [NIH]

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

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

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

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

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

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

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

Histology: The study of tissues and cells under a microscope. [NIH]

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]

Hydrocephalus: Excessive accumulation of cerebrospinal fluid within the cranium which may be associated with dilation of cerebral ventricles, intracranial hypertension; headache; lethargy; urinary incontinence; and ataxia (and in infants macrocephaly). This condition may be caused by obstruction of cerebrospinal fluid pathways due to neurologic abnormalities, intracranial hemorrhages; central nervous system infections; brain

neoplasms; craniocerebral trauma; and other conditions. Impaired resorption of cerebrospinal fluid from the arachnoid villi results in a communicating form of hydrocephalus. Hydrocephalus ex-vacuo refers to ventricular dilation that occurs as a result of brain substance loss from cerebral infarction and other conditions. [NIH]

Hyperplasia: An increase in the number of cells in a tissue or organ, not due to tumor formation. It differs from hypertrophy, which is an increase in bulk without an increase in the number of cells. [NIH]

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

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

Hypertrophy: General increase in bulk of a part or organ, not due to tumor formation, nor to an increase in the number of cells. [NIH]

Hypoplasia: Incomplete development or underdevelopment of an organ or tissue. [EU]

Hypotensive: Characterized by or causing diminished tension or pressure, as abnormally low blood pressure. [EU]

Hypothalamus: Ventral part of the diencephalon extending from the region of the optic chiasm to the caudal border of the mammillary bodies and forming the inferior and lateral walls of the third ventricle. [NIH]

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

Immunization: Deliberate stimulation of the host's immune response. Active immunization involves administration of antigens or immunologic adjuvants. Passive immunization involves administration of immune sera or lymphocytes or their extracts (e.g., transfer factor, immune RNA) or transplantation of immunocompetent cell producing tissue (thymus or bone marrow). [NIH]

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

Impaction: The trapping of an object in a body passage. Examples are stones in the bile duct or hardened stool in the colon. [NIH]

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

Incompetence: Physical or mental inadequacy or insufficiency. [EU]

Indocyanine Green: A tricarboyanine dye that is used diagnostically in liver function tests and to determine blood volume and cardiac output. [NIH]

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

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

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

Inflammation: A pathological process characterized by injury or destruction of tissues caused by a variety of cytologic and chemical reactions. It is usually manifested by typical

signs of pain, heat, redness, swelling, and loss of function. [NIH]

Inflammatory bowel disease: A general term that refers to the inflammation of the colon and rectum. Inflammatory bowel disease includes ulcerative colitis and Crohn's disease. [NIH]

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

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

Intracellular: Inside a cell. [NIH]

Intrahepatic: Within the liver. [NIH]

Intravascular: Within a vessel or vessels. [EU]

Intravenous: IV. Into a vein. [NIH]

Introns: Non-coding, intervening sequences of DNA that are transcribed, but are removed from within the primary gene transcript and rapidly degraded during maturation of messenger RNA. Most genes in the nuclei of eukaryotes contain introns, as do mitochondrial and chloroplast genes. [NIH]

Intubation: Introduction of a tube into a hollow organ to restore or maintain patency if obstructed. It is differentiated from catheterization in that the insertion of a catheter is usually performed for the introducing or withdrawing of fluids from the body. [NIH]

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

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]

Isosorbide: 1,4:3,6-Dianhydro D-glucitol. Chemically inert osmotic diuretic used mainly to treat hydrocephalus; also used in glaucoma. [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]

Laparoscopy: Examination, therapy or surgery of the abdomen's interior by means of a laparoscope. [NIH]

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

Levo: It is an experimental treatment for heroin addiction that was developed by German scientists around 1948 as an analgesic. Like methadone, it binds with opioid receptors, but it is longer acting. [NIH]

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

Ligation: Application of a ligature to tie a vessel or strangulate a part. [NIH]

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

Liver Cirrhosis: Liver disease in which the normal microcirculation, the gross vascular anatomy, and the hepatic architecture have been variably destroyed and altered with fibrous septa surrounding regenerated or regenerating parenchymal nodules. [NIH]

Liver Transplantation: The transference of a part of or an entire liver from one human or animal to another. [NIH]

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

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

Lower Esophageal Sphincter: The muscle between the esophagus and stomach. When a person swallows, this muscle relaxes to let food pass from the esophagus to the stomach. It stays closed at other times to keep stomach contents from flowing back into the esophagus. [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]

Lymphatic system: The tissues and organs that produce, store, and carry white blood cells that fight infection and other diseases. This system includes the bone marrow, spleen, thymus, lymph nodes and a network of thin tubes that carry lymph and white blood cells. These tubes branch, like blood vessels, into all the tissues of the body. [NIH]

Lymphoid: Referring to lymphocytes, a type of white blood cell. Also refers to tissue in which lymphocytes develop. [NIH]

Lymphoma: A general term for various neoplastic diseases of the lymphoid tissue. [NIH]

Lysine: An essential amino acid. It is often added to animal feed. [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]

Manometry: Tests that measure muscle pressure and movements in the GI tract. [NIH]

Mediastinitis: Inflammation of the mediastinum, the area between the pleural sacs. [NIH]

Mediastinum: The area between the lungs. The organs in this area include the heart and its large blood vessels, the trachea, the esophagus, the bronchi, and lymph nodes. [NIH]

Medical Records: Recording of pertinent information concerning patient's illness or illnesses. [NIH]

MEDLINE: An online database of MEDLARS, the computerized bibliographic Medical Literature Analysis and Retrieval System of the National Library of Medicine. [NIH]

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

Menopause: Permanent cessation of menstruation. [NIH]

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

Mental Disorders: Psychiatric illness or diseases manifested by breakdowns in the adaptational process expressed primarily as abnormalities of thought, feeling, and behavior producing either distress or impairment of function. [NIH]

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

Mesenteric: Pertaining to the mesentery : a membranous fold attaching various organs to the body wall. [EU]

Mesenteric Veins: Veins which return blood from the intestines; the inferior mesenteric vein empties into the splenic vein, the superior mesenteric vein joins the splenic vein to form the portal vein. [NIH]

Mesentery: A layer of the peritoneum which attaches the abdominal viscera to the abdominal wall and conveys their blood vessels and nerves. [NIH]

Meta-Analysis: A quantitative method of combining the results of independent studies (usually drawn from the published literature) and synthesizing summaries and conclusions which may be used to evaluate therapeutic effectiveness, plan new studies, etc., with application chiefly in the areas of research and medicine. [NIH]

Metastasis: The spread of cancer from one part of the body to another. Tumors formed from cells that have spread are called "secondary tumors" and contain cells that are like those in the original (primary) tumor. The plural is metastases. [NIH]

Metastatic: Having to do with metastasis, which is the spread of cancer from one part of the body to another. [NIH]

Metoclopramide: A dopamine D2 antagonist that is used as an antiemetic. [NIH]

MI: Myocardial infarction. Gross necrosis of the myocardium as a result of interruption of the blood supply to the area; it is almost always caused by atherosclerosis of the coronary arteries, upon which coronary thrombosis is usually superimposed. [NIH]

Microbe: An organism which cannot be observed with the naked eye; e. g. unicellular animals, lower algae, lower fungi, bacteria. [NIH]

Microcirculation: The vascular network lying between the arterioles and venules; includes capillaries, metarterioles and arteriovenous anastomoses. Also, the flow of blood through this network. [NIH]

Milk Thistle: The plant *Silybum marianum* in the family Asteraceae containing the bioflavonoid complex silymarin. For centuries this has been used traditionally to treat liver disease. [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]

Motility: The ability to move spontaneously. [EU]

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

Mydriatic: 1. Dilating the pupil. 2. Any drug that dilates the pupil. [EU]

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]

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]

Neoplastic: Pertaining to or like a neoplasm (= any new and abnormal growth); pertaining to neoplasia (= the formation of a neoplasm). [EU]

Nerve: A cordlike structure of nervous tissue that connects parts of the nervous system with other tissues of the body and conveys nervous impulses to, or away from, these tissues. [NIH]

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

Nitrates: Inorganic or organic salts and esters of nitric acid. These compounds contain the NO_3^- radical. [NIH]

Nitric acid: A toxic, corrosive, colorless liquid used to make fertilizers, dyes, explosives, and other chemicals. [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]

Norepinephrine: Precursor of epinephrine that is secreted by the adrenal medulla and is a widespread central and autonomic neurotransmitter. Norepinephrine is the principal transmitter of most postganglionic sympathetic fibers and of the diffuse projection system in the brain arising from the locus ceruleus. It is also found in plants and is used pharmacologically as a sympathomimetic. [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]

Nutritional Support: The administration of nutrients for assimilation and utilization by a patient by means other than normal eating. It does not include fluid therapy which normalizes body fluids to restore water-electrolyte balance. [NIH]

Octreotide: A potent, long-acting somatostatin octapeptide analog which has a wide range of physiological actions. It inhibits growth hormone secretion, is effective in the treatment of hormone-secreting tumors from various organs, and has beneficial effects in the management of many pathological states including diabetes mellitus, orthostatic hypertension, hyperinsulinism, hypergastrinemia, and small bowel fistula. [NIH]

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

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]

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]

Pancreatic Ducts: Ducts that collect pancreatic juice from the pancreas and supply it to the duodenum. [NIH]

Pancreatic Juice: The fluid containing digestive enzymes secreted by the pancreas in response to food in the duodenum. [NIH]

Papilla: A small nipple-shaped elevation. [NIH]

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

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

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

Pelvis: The lower part of the abdomen, located between the hip bones. [NIH]

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

Peptic Ulcer: An ulceration of the mucous membrane of the esophagus, stomach or duodenum, caused by the action of the acid gastric juice. [NIH]

Peptic Ulcer Hemorrhage: Bleeding from a peptic ulcer. [NIH]

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

Percutaneous: Performed through the skin, as injection of radiopaque material in radiological examination, or the removal of tissue for biopsy accomplished by a needle. [EU]

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]

Peripheral Nervous System: The nervous system outside of the brain and spinal cord. The peripheral nervous system has autonomic and somatic divisions. The autonomic nervous system includes the enteric, parasympathetic, and sympathetic subdivisions. The somatic nervous system includes the cranial and spinal nerves and their ganglia and the peripheral sensory receptors. [NIH]

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]

Petechiae: Pinpoint, unraised, round red spots under the skin caused by bleeding. [NIH]

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

Pharynx: The hollow tube about 5 inches long that starts behind the nose and ends at the top of the trachea (windpipe) and esophagus (the tube that goes to the stomach). [NIH]

Phlebography: Radiographic visualization or recording of a vein after the injection of contrast medium. [NIH]

Physiology: The science that deals with the life processes and functions of organismus, their

cells, tissues, and organs. [NIH]

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

Plants: Multicellular, eukaryotic life forms of the kingdom Plantae. They are characterized by a mainly photosynthetic mode of nutrition; essentially unlimited growth at localized regions of cell divisions (meristems); cellulose within cells providing rigidity; the absence of organs of locomotion; absence of nervous and sensory systems; and an alteration of haploid and diploid generations. [NIH]

Plasma: The clear, yellowish, fluid part of the blood that carries the blood cells. The proteins that form blood clots are in plasma. [NIH]

Plasma protein: One of the hundreds of different proteins present in blood plasma, including carrier proteins (such as albumin, transferrin, and haptoglobin), fibrinogen and other coagulation factors, complement components, immunoglobulins, enzyme inhibitors, precursors of substances such as angiotensin and bradykinin, and many other types of proteins. [EU]

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]

Platinum: Platinum. A heavy, soft, whitish metal, resembling tin, atomic number 78, atomic weight 195.09, symbol Pt. (From Dorland, 28th ed) It is used in manufacturing equipment for laboratory and industrial use. It occurs as a black powder (platinum black) and as a spongy substance (spongy platinum) and may have been known in Pliny's time as "alutiae". [NIH]

Pleural: A circumscribed area of hyaline whorled fibrous tissue which appears on the surface of the parietal pleura, on the fibrous part of the diaphragm or on the pleura in the interlobar fissures. [NIH]

Pneumonia: Inflammation of the lungs. [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]

Polyposis: The development of numerous polyps (growths that protrude from a mucous membrane). [NIH]

Portacaval: Surgical creation of an anastomosis between the portal and caval veins. [NIH]

Portal Hypertension: High blood pressure in the portal vein. This vein carries blood into the liver. Portal hypertension is caused by a blood clot. This is a common complication of cirrhosis. [NIH]

Portal Pressure: The venous pressure measured in the portal vein. [NIH]

Portography: Examination of the portal circulation by the use of X-ray films after injection of radiopaque material. [NIH]

Portosystemic Shunt: An operation to create an opening between the portal vein and other veins around the liver. [NIH]

Posterior: Situated in back of, or in the back part of, or affecting the back or dorsal surface of the body. In lower animals, it refers to the caudal end of the body. [EU]

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

Practice Guidelines: Directions or principles presenting current or future rules of policy for

the health care practitioner to assist him in patient care decisions regarding diagnosis, therapy, or related clinical circumstances. The guidelines may be developed by government agencies at any level, institutions, professional societies, governing boards, or by the convening of expert panels. The guidelines form a basis for the evaluation of all aspects of health care and delivery. [NIH]

Precursor: Something that precedes. In biological processes, a substance from which another, usually more active or mature substance is formed. In clinical medicine, a sign or symptom that heralds another. [EU]

Predictive factor: A situation or condition that may increase a person's risk of developing a certain disease or disorder. [NIH]

Prednisolone: A glucocorticoid with the general properties of the corticosteroids. It is the drug of choice for all conditions in which routine systemic corticosteroid therapy is indicated, except adrenal deficiency states. [NIH]

Prednisone: A synthetic anti-inflammatory glucocorticoid derived from cortisone. It is biologically inert and converted to prednisolone in the liver. [NIH]

Primary Biliary Cirrhosis: A chronic liver disease. Slowly destroys the bile ducts in the liver. This prevents release of bile. Long-term irritation of the liver may cause scarring and cirrhosis in later stages of the disease. [NIH]

Primary Prevention: Prevention of disease or mental disorders in susceptible individuals or populations through promotion of health, including mental health, and specific protection, as in immunization, as distinguished from the prevention of complications or after-effects of existing disease. [NIH]

Primary Sclerosing Cholangitis: Irritation, scarring, and narrowing of the bile ducts inside and outside the liver. Bile builds up in the liver and may damage its cells. Many people with this condition also have ulcerative colitis. [NIH]

Probe: An instrument used in exploring cavities, or in the detection and dilatation of strictures, or in demonstrating the potency of channels; an elongated instrument for exploring or sounding body cavities. [NIH]

Procollagen: A biosynthetic precursor of collagen containing additional amino acid sequences at the amino-terminal ends of the three polypeptide chains. Protocollagen, a precursor of procollagen consists of procollagen peptide chains in which proline and lysine have not yet been hydroxylated. [NIH]

Progression: Increase in the size of a tumor or spread of cancer in the body. [NIH]

Progressive: Advancing; going forward; going from bad to worse; increasing in scope or severity. [EU]

Proline: A non-essential amino acid that is synthesized from glutamic acid. It is an essential component of collagen and is important for proper functioning of joints and tendons. [NIH]

Prophylaxis: An attempt to prevent disease. [NIH]

Propranolol: A widely used non-cardioselective beta-adrenergic antagonist. Propranolol is used in the treatment or prevention of many disorders including acute myocardial infarction, arrhythmias, angina pectoris, hypertension, hypertensive emergencies, hyperthyroidism, migraine, pheochromocytoma, menopause, and anxiety. [NIH]

Prospective study: An epidemiologic study in which a group of individuals (a cohort), all free of a particular disease and varying in their exposure to a possible risk factor, is followed over a specific amount of time to determine the incidence rates of the disease in the exposed and unexposed groups. [NIH]

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]

Pruritus: An intense itching sensation that produces the urge to rub or scratch the skin to obtain relief. [NIH]

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

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]

Pupil: The aperture in the iris through which light passes. [NIH]

Purpura: Purplish or brownish red discoloration, easily visible through the epidermis, caused by hemorrhage into the tissues. [NIH]

Putrefaction: The process of decomposition of animal and vegetable matter by living organisms. [NIH]

Radiological: Pertaining to radiodiagnostic and radiotherapeutic procedures, and interventional radiology or other planning and guiding medical radiology. [NIH]

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

Random Allocation: A process involving chance used in therapeutic trials or other research endeavor for allocating experimental subjects, human or animal, between treatment and control groups, or among treatment groups. It may also apply to experiments on inanimate objects. [NIH]

Randomization: Also called random allocation. Is allocation of individuals to groups, e.g., for experimental and control regimens, by chance. Within the limits of chance variation, random allocation should make the control and experimental groups similar at the start of an investigation and ensure that personal judgment and prejudices of the investigator do not influence allocation. [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]

Reagent: A substance employed to produce a chemical reaction so as to detect, measure, produce, etc., other substances. [EU]

Rectum: The last 8 to 10 inches of the large intestine. [NIH]

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

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

Reflux: The term used when liquid backs up into the esophagus from the stomach. [NIH]

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

Regurgitation: A backward flowing, as the casting up of undigested food, or the backward flowing of blood into the heart, or between the chambers of the heart when a valve is incompetent. [EU]

Remission: A decrease in or disappearance of signs and symptoms of cancer. In partial remission, some, but not all, signs and symptoms of cancer have disappeared. In complete remission, all signs and symptoms of cancer have disappeared, although there still may be cancer in the body. [NIH]

Resection: Removal of tissue or part or all of an organ by surgery. [NIH]

Respiration: The act of breathing with the lungs, consisting of inspiration, or the taking into the lungs of the ambient air, and of expiration, or the expelling of the modified air which contains more carbon dioxide than the air taken in (Blakiston's Gould Medical Dictionary, 4th ed.). This does not include tissue respiration (= oxygen consumption) or cell respiration (= cell respiration). [NIH]

Respiratory distress syndrome: A lung disease that occurs primarily in premature infants; the newborn must struggle for each breath and blueing of its skin reflects the baby's inability to get enough oxygen. [NIH]

Resuscitation: The restoration to life or consciousness of one apparently dead; it includes such measures as artificial respiration and cardiac massage. [EU]

Retrograde: 1. Moving backward or against the usual direction of flow. 2. Degenerating, deteriorating, or catabolic. [EU]

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

Retrospective study: A study that looks backward in time, usually using medical records and interviews with patients who already have or had a disease. [NIH]

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

Rods: One type of specialized light-sensitive cells (photoreceptors) in the retina that provide side vision and the ability to see objects in dim light (night vision). [NIH]

Rubber: A high-molecular-weight polymeric elastomer derived from the milk juice (latex) of *Hevea brasiliensis* and other trees. It is a substance that can be stretched at room temperature to at least twice its original length and after releasing the stress, retract rapidly, and recover its original dimensions fully. Synthetic rubber is made from many different chemicals, including styrene, acrylonitrile, ethylene, propylene, and isoprene. [NIH]

Sclerosis: A pathological process consisting of hardening or fibrosis of an anatomical structure, often a vessel or a nerve. [NIH]

Sclerotherapy: Treatment of varicose veins, hemorrhoids, gastric and esophageal varices, and peptic ulcer hemorrhage by injection or infusion of chemical agents which cause localized thrombosis and eventual fibrosis and obliteration of the vessels. [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]

Selenium: An element with the atomic symbol Se, atomic number 34, and atomic weight 78.96. It is an essential micronutrient for mammals and other animals but is toxic in large amounts. Selenium protects intracellular structures against oxidative damage. It is an essential component of glutathione peroxidase. [NIH]

Serous: Having to do with serum, the clear liquid part of blood. [NIH]

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

Shunt: A surgically created diversion of fluid (e.g., blood or cerebrospinal fluid) from one area of the body to another area of the body. [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]

Sigmoid: 1. Shaped like the letter S or the letter C. 2. The sigmoid colon. [EU]

Sigmoid Colon: The lower part of the colon that empties into the rectum. [NIH]

Silymarin: A mixture of flavonoids extracted from seeds of the milk thistle, *Silybum marianum*. It consists primarily of three isomers: silicristin, silidianin, and silybin, its major component. Silymarin displays antioxidant and membrane stabilizing activity. It protects various tissues and organs against chemical injury, and shows potential as an antihepatotoxic agent. [NIH]

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

Somatostatin: A polypeptide hormone produced in the hypothalamus, and other tissues and organs. It inhibits the release of human growth hormone, and also modulates important physiological functions of the kidney, pancreas, and gastrointestinal tract. Somatostatin receptors are widely expressed throughout the body. Somatostatin also acts as a neurotransmitter in the central and peripheral nervous systems. [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]

Sphincters: Any annular muscle closing an orifice. [NIH]

Spleen: An organ that is part of the lymphatic system. The spleen produces lymphocytes, filters the blood, stores blood cells, and destroys old blood cells. It is located on the left side of the abdomen near the stomach. [NIH]

Splenectomy: An operation to remove the spleen. [NIH]

Splenic Vein: Vein formed by the union (at the hilus of the spleen) of several small veins from the stomach, pancreas, spleen and mesentery. [NIH]

Squamous: Scaly, or platelike. [EU]

Squamous cell carcinoma: Cancer that begins in squamous cells, which are thin, flat cells resembling fish scales. Squamous cells are found in the tissue that forms the surface of the skin, the lining of the hollow organs of the body, and the passages of the respiratory and

digestive tracts. Also called epidermoid carcinoma. [NIH]

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Squamous cells: Flat cells that look like fish scales under a microscope. These cells cover internal and external surfaces of the body. [NIH]

Stenosis: Narrowing or stricture of a duct or canal. [EU]

Stent: A device placed in a body structure (such as a blood vessel or the gastrointestinal tract) to provide support and keep the structure open. [NIH]

Stomach: An organ of digestion situated in the left upper quadrant of the abdomen between the termination of the esophagus and the beginning of the duodenum. [NIH]

Stool: The waste matter discharged in a bowel movement; feces. [NIH]

Stress: Forcibly exerted influence; pressure. Any condition or situation that causes strain or tension. Stress may be either physical or psychological, or both. [NIH]

Stricture: The abnormal narrowing of a body opening. Also called stenosis. [NIH]

Styrene: A colorless, toxic liquid with a strong aromatic odor. It is used to make rubbers, polymers and copolymers, and polystyrene plastics. [NIH]

Subcutaneous: Beneath the skin. [NIH]

Superior vena cava: Vein which returns blood from the head and neck, upper limbs, and thorax. It is formed by the union of the two brachiocephalic veins. [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]

Synapse: The region where the processes of two neurons come into close contiguity, and the nervous impulse passes from one to the other; the fibers of the two are intermeshed, but, according to the general view, there is no direct contiguity. [NIH]

Systemic: Affecting the entire body. [NIH]

Systolic: Indicating the maximum arterial pressure during contraction of the left ventricle of the heart. [EU]

Tachycardia: Excessive rapidity in the action of the heart, usually with a heart rate above 100 beats per minute. [NIH]

Tachypnea: Rapid breathing. [NIH]

Tamponade: The inserting of a tampon; a dressing is inserted firmly into a wound or body cavity, as the nose, uterus or vagina, principally for stopping hemorrhage. [NIH]

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

Thermal: Pertaining to or characterized by heat. [EU]

Thioctic Acid: A vitamin-like antioxidant that acts as a free-radical scavenger. [NIH]

Thorax: A part of the trunk between the neck and the abdomen; the chest. [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]

Thrombocytopenia: A decrease in the number of blood platelets. [NIH]

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

Thrombus: An aggregation of blood factors, primarily platelets and fibrin with entrapment of cellular elements, frequently causing vascular obstruction at the point of its formation. Some authorities thus differentiate thrombus formation from simple coagulation or clot formation. [EU]

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

Timolol: A beta-adrenergic antagonist similar in action to propranolol. The levo-isomer is the more active. Timolol has been proposed as an antihypertensive, antiarrhythmic, antiangina, and antiglaucoma agent. It is also used in the treatment of migraine and tremor. [NIH]

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

Tomography: Imaging methods that result in sharp images of objects located on a chosen plane and blurred images located above or below the plane. [NIH]

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

Topical: On the surface of the body. [NIH]

Torsion: A twisting or rotation of a bodily part or member on its axis. [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]

Toxin: A poison; frequently used to refer specifically to a protein produced by some higher plants, certain animals, and pathogenic bacteria, which is highly toxic for other living organisms. Such substances are differentiated from the simple chemical poisons and the vegetable alkaloids by their high molecular weight and antigenicity. [EU]

Trachea: The cartilaginous and membranous tube descending from the larynx and branching into the right and left main bronchi. [NIH]

Tracheoesophageal Fistula: Abnormal communication between the esophagus and the trachea, acquired or congenital, often associated with esophageal atresia. [NIH]

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

Transplantation: Transference of a tissue or organ, alive or dead, within an individual, between individuals of the same species, or between individuals of different species. [NIH]

Trauma: Any injury, wound, or shock, must frequently physical or structural shock, producing a disturbance. [NIH]

Trees: Woody, usually tall, perennial higher plants (Angiosperms, Gymnosperms, and some Pterophyta) having usually a main stem and numerous branches. [NIH]

Tremor: Cyclical movement of a body part that can represent either a physiologic process or

a manifestation of disease. Intention or action tremor, a common manifestation of cerebellar diseases, is aggravated by movement. In contrast, resting tremor is maximal when there is no attempt at voluntary movement, and occurs as a relatively frequent manifestation of Parkinson disease. [NIH]

Tunica: A rather vague term to denote the lining coat of hollow organs, tubes, or cavities. [NIH]

Ulcerative colitis: Chronic inflammation of the colon that produces ulcers in its lining. This condition is marked by abdominal pain, cramps, and loose discharges of pus, blood, and mucus from the bowel. [NIH]

Ultrasonography: The visualization of deep structures of the body by recording the reflections of echoes of pulses of ultrasonic waves directed into the tissues. Use of ultrasound for imaging or diagnostic purposes employs frequencies ranging from 1.6 to 10 megahertz. [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]

Vagina: The muscular canal extending from the uterus to the exterior of the body. Also called the birth canal. [NIH]

Varices: Stretched veins such as those that form in the esophagus from cirrhosis. [NIH]

Varicose: The common ulcer in the lower third of the leg or near the ankle. [NIH]

Varicose vein: An abnormal swelling and tortuosity especially of the superficial veins of the legs. [EU]

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

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

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

Vena: A vessel conducting blood from the capillary bed to the heart. [NIH]

Venous: Of or pertaining to the veins. [EU]

Venous Pressure: The blood pressure in a vein. It is usually measured to assess the filling pressure to the ventricle. [NIH]

Venules: The minute vessels that collect blood from the capillary plexuses and join together to form veins. [NIH]

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]

Viral Hepatitis: Hepatitis caused by a virus. Five different viruses (A, B, C, D, and E) most commonly cause this form of hepatitis. Other rare viruses may also cause hepatitis. [NIH]

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]

Vivo: Outside of or removed from the body of a living organism. [NIH]

Wound Healing: Restoration of integrity to traumatized tissue. [NIH]

X-ray: High-energy radiation used in low doses to diagnose diseases and in high doses to treat cancer. [NIH]

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