

# HIATAL HERNIA

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



**JAMES N. PARKER, M.D.**  
**AND PHILIP M. PARKER, PH.D., EDITORS**

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The collective knowledge generated from academic and applied research summarized in various references has been critical in the creation of this book which is best viewed as a comprehensive compilation and collection of information prepared by various official agencies which produce publications on hiatal hernia. 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."<sup>1</sup> 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 hiatal hernia 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 hiatal hernia, 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 hiatal hernia, 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 hiatal hernia. 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 hiatal hernia, 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 hiatal hernia.

*The Editors*

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



## CHAPTER 1. STUDIES ON HIATAL HERNIA

### Overview

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

### The Combined Health Information Database

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

- **Diaphragmatic Hiatal Hernias: Recognizing and Treating the Major Types**

Source: Postgraduate Medicine. 88(1): 113-114, 117-120, 123-124. July 1990.

Summary: This article provides a comprehensive review of the two main types of diaphragmatic hiatal hernias, sliding hiatal hernia and paraesophageal hernia, including the underlying causes, useful diagnostic studies, and preferred treatment. The pathophysiology and treatment of herniations through the esophageal hiatus remain controversial. For the majority of patients with a sliding hiatal hernia, medical treatment is preferred. Because of the high rate of treatment failure after the onset of complications for paraesophageal hernia, elective surgical repair is advisable in all patients, even those without symptoms. Definitive surgical treatment consists of reduction of the hernia, excision of the sac, and partial closure of the widened hiatus anterior to the esophago gastric junction. 5 figures. 21 references. (AA-M).

- **Laparoscopic Repair of Paraesophageal Hiatal Hernias**

Source: Journal of the American College of Surgeons. 186(4): 428-432. April 1998.

Summary: This article reports the University of California (UC) at San Francisco's experience with laparoscopic repair of paraesophageal hiatal hernias, emphasizing the technical steps essential for good results. From May 1993 to September 1997, 55 patients (27 women, 28 men, mean age 67 years) underwent laparoscopic repair of paraesophageal hernias at the UC facility. Symptoms, which had been present an average of 85 months before surgery, consisted mainly of pain (55 percent), heartburn (52 percent), dysphagia (45 percent), and regurgitation (41 percent). Of the four patients who presented with acute illness, two had gastric obstruction, one had severe dyspnea, and one had gastric bleeding. Endoscopy demonstrated esophagitis in 25 (69 percent) of 36 patients, and 24 hour pH monitoring demonstrated acid reflux in 22 (67 percent) of 33 patients. Manometry detected severely impaired distal esophageal peristalsis in 17 (52 percent) of 33 patients. The preferred operation consisted of reduction of the hernia, excision of the sack and the gastric fat pad, closure of the enlarged hiatus without mesh, and construction of a fundoplication anchored by sutures within the abdomen. Of the 55 patients, the operations of 49 were completed laparoscopically; five (9 percent) were converted to laparotomies. The average operating time was 219 minutes; the average blood loss was less than 25 mL; resumption of an unrestricted diet occurred after 27 hours; and mean hospital stay was 58 hours. Intraoperative technical complications occurred in five (9 percent) patients. One patient died during surgery from a sudden pulmonary embolus; two patients (4 percent) required a second operation for recurrent paraesophageal hernias. The authors conclude that laparoscopic repair of paraesophageal hiatal hernias is safe and effective, but the operation is difficult and good results hinge on details of the operative technique and the surgeon's experience. 2 figures. 1 table. 21 references. (AA-M).

- **Impact of Omeprazole and Laparoscopy Upon Hiatal Hernia and Reflux Esophagitis**

Source: Journal of the American College of Surgeons. 183(4): 413-418. October 1996.

Summary: This review article analyzes the treatment successes on hiatal hernia and reflux esophagitis that are attributable to omeprazole and laparoscopy. Both approaches challenge the accepted multimodal, nonoperative therapy of the past two decades and the reproducible efficacy of the open fundoplication procedure. As a proton pump blocker, omeprazole decreases gastric acidity by directly blocking acid production. Omeprazole has a long duration of acid suppression that does not appear to affect gastroesophageal sphincter function or gastric motility. However, long-term use of omeprazole is questionable in terms of both safety and efficacy. The authors note that operative therapy, especially if minimally invasive (as in laparoscopy) is being more widely practiced. Laparoscopic Nissen fundoplication (LNF) has proved to be a very safe operation overall and the principles of reconstruction of the lower esophageal sphincter, which have been learned from open techniques, can be strictly maintained with the minimally invasive approach. The authors conclude with a call for additional studies to fully evaluate the clinical effectiveness of LNF and to define the 'learning curve' required for physicians. 6 tables. 46 references.

## Federally Funded Research on Hiatal Hernia

The U.S. Government supports a variety of research studies relating to hiatal hernia. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.<sup>2</sup> 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](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 hiatal hernia.

For most of the studies, the agencies reporting into CRISP provide summaries or abstracts. As opposed to clinical trial research using patients, many federally funded studies use animals or simulated models to explore hiatal hernia. The following is typical of the type of information found when searching the CRISP database for hiatal hernia:

- **Project Title: ANATOMIC AND MECHANICAL VARIABLES OF THE EGJ IN GERD**

Principal Investigator & Institution: Pandolfino, John E.; Medicine; Northwestern University Office of Sponsored Programs Chicago, IL 60611

Timing: Fiscal Year 2002; Project Start 01-JUL-2002; Project End 30-JUN-2007

Summary: (provided by applicant): The long-term objective of this research proposal is to understand the role of anatomical and mechanical variables of the esophagogastric junction (EGJ) in the pathogenesis of gastroesophageal reflux disease (GERD). The candidate is currently in the first year of a tenure track faculty appointment in the Division of Gastroenterology and Hepatology at Northwestern University Medical School. He is seeking support for full time mentored research. His mentor, Dr. Peter Kahrilas is an NIH funded internationally-recognized expert on esophageal physiology and division head in the department of Gastroenterology and Hepatology. In addition, the candidate will be enrolled in the K30 sponsored Master of Science in Clinical Investigation Program at the Graduate School of Northwestern University. The proposed research study is to define the anatomical and mechanical variables of the EGJ as they relate to GERD. The EGJ is a complex anatomic zone whose functional integrity is sum of its many parts. To date, much of the research on the competence of the EGJ in GERD has been focused on the lower esophageal sphincter. Our hypothesis is that acquired anatomic changes inclusive of, but not restricted to **hiatal hernia** may alter the mechanical characteristics of the EGJ and affect the propensity to reflux. One such variable that will be studied is compliance. Increased compliance may exacerbate reflux in two ways: 1) lowering the incremental increase in intra-abdominal pressure required to open the relaxed or hypotensive EGJ, and 2) the relaxed EGJ may open wider than normal under a given physiological circumstance resulting in a reduced discriminative resistance for liquid as opposed to gas reflux. Compliance will be determined using a customized barostat technique and then correlated with **hiatal hernia** size, intra-abdominal LES length, angle of His and gastroesophageal flap valve grade. In addition, we will be attempting to improve standard pH monitoring technique by measuring acid

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<sup>2</sup> 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).

exposure at the SCJ and converting data to hydrogen ion concentration exposure. These changes will improve diagnostic accuracy of pH monitoring and also help determine the relationship between anatomical and mechanical variants and acid reflux.

Website: [http://crisp.cit.nih.gov/crisp/Crisp\\_Query.Generate\\_Screen](http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen)

- **Project Title: MECHANISM OF GASTROESOPHAGEAL REFLUX AND CLEARANCE**

Principal Investigator & Institution: Massey, Benson T.; Medical College of Wisconsin Po Box26509 Milwaukee, Wi 532264801

Timing: Fiscal Year 2002

Summary: The gastroesophageal junction is the first portal through which noxious gastric contents must pass if they are to cause injury to the upper aerodigestive tract. When reflux occurs excessively and clearance of reflux is impaired, patients can develop esophagitis, ulcers, stricture, adenocarcinoma, laryngitis, and aspiration pneumonia. Unfortunately, the mechanisms for initiating and suppressing reflux and the factors contributing to the altered clearance of the refluxate are poorly understood. The specific objectives of this subproject are to explore the following hypotheses: 1). Intra-gastric pressure is a major determination of whether reflux occurs, with reflux patients having lower threshold pressures for triggering reflux. 2). Afferent sensory pathways in the cardia of the stomach are important in triggering GERD. Agents can be delivered endoscopically to block these pathways and inhibit GER. 3). Esophageal longitudinal muscles play an active role in the reflux event. 4). Esophageal acidification alters the function of longitudinal esophageal muscles, so as to contribute to forming a **hiatal hernia**. 5). Longitudinal esophageal muscle function during primary and secondary peristalsis is abnormal in patients with reflux disease, and these abnormalities contribute to disturbances in esophageal bolus clearance.

Website: [http://crisp.cit.nih.gov/crisp/Crisp\\_Query.Generate\\_Screen](http://crisp.cit.nih.gov/crisp/Crisp_Query.Generate_Screen)

- **Project Title: THE HIGH PRESSURE ZONE OF THE DISTAL ESOPHAGUS**

Principal Investigator & Institution: Miller, Larry S.; Medicine; Temple University 406 Usb, 083-45 Philadelphia, Pa 19122

Timing: Fiscal Year 2001; Project Start 01-JUN-2001; Project End 31-MAY-2004

Summary: (Applicant's Abstract): The PI's hypothesis is that the crural diaphragm interacts with the intrinsic lower esophageal sphincter in a very complex manner. These interactions take two forms: 1) space-time interactions in which the crural diaphragm and intrinsic lower esophageal sphincter (LES) are displaced from each other both in space and in time; and 2) mechanical interactions in which each component of the LES and CD contributes to the pressure generated at the gastroesophageal junction high-pressure zone (GEJHPZ) individually and in combination. When there are abnormalities in either of these interactions, at the GEJHPZ reflux events and retrograde flow of fluids will occur. The purpose of this proposal is to determine the relative physiologic roles of the intrinsic LES and CD in providing an anti-reflux barrier at the GEJHPZ. The PI plans to define the relative motion of the CD to the intrinsic LES the relaxation and contraction of the CD in relationship to the LES, the compressive effect and forces of the CD on the distal esophagus, the role of the CD in antegrade movement of liquids and the role of the CD in induced relaxation of the GEJHPZ and retrograde movement of liquids from the stomach to the esophagus. Simultaneous high-resolution ultrasound and manometry will be utilized to correlate anatomical position (structure) with pressure (function). To achieve these specific aims the PI plans to: 1) determine the effect of respiration on the

position and pressure relationships of the intrinsic LES and CD as components of the GEJHPZ. The investigators hypothesize that respiration causes movement of the crural diaphragm relative to the intrinsic LES and, therefore, effects the anatomical relationship of these two structures to each other; 2) separate the intrinsic LES from the crural diaphragm using physiologic and pharmacologic manipulations. The manometric contribution of the CD to the GEJHPZ will be determined by using pharmacologic and physiologic maneuvers to strengthen, diminish and even ablate the effects of the CD in order to better define the contribution of the CD to the GEJHPZ; 3) determine the effect of esophageal shortening during swallowing on the antireflux barrier GEJHPZ. This will be done by quantitating, the relative displacement of the intrinsic LES and CD to each other, in response to esophageal shortening, during swallowing of various bolus volumes of water; and 4) utilize several conditions in which the CEJHPZ structure and function are distorted to study the relative roles of the LES and CD. These conditions include **hiatal hernia** (displacement of the LES); Nissen fundoplication (reinforced HPZ) prior resection of the gastroesophageal junction (loss of the intrinsic LES); and GERD with and without hypotensive LES. Aim 5 Study the effect of retrograde flow at the GEJHPZ by inducing relaxation of the GEJHPZ and eliciting reflux events. This will be achieved by distending the fluid filled stomach with an air filled balloon, or distending the esophagus with an air filled balloon to induce relaxation of the GEJHPZ and elicit retrograde fluid movement from the stomach to the esophagus in normal controls and patients with GERD with and without a hypotensive LES. They will delineate both the normal and abnormal interactions of the LES and CD, using simultaneous ultrasound and manometry to define the physiology and pathophysiology of the GEJHPZ.

Website: [http://crisp.cit.nih.gov/crisp/Crisp\\_Query.Generate\\_Screen](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.<sup>3</sup> The advantage of PubMed over previously mentioned sources is that it covers a greater number of domestic and foreign references. It is also free to use. If the publisher has a Web site that offers full text of its journals, PubMed will provide links to that site, as well as to sites offering other related data. User registration, a subscription fee, or some other type of fee may be required to access the full text of articles in some journals.

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

- **A 20-year follow-up of children with a partial thoracic stomach (hiatal hernia).**  
 Author(s): Carre I, Astley R, Langmead-Smith R.  
 Source: Aust Paediatr J. 1976 June; 12(2): 92-4. No Abstract Available.  
[http://www.ncbi.nlm.nih.gov/80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=1021100&dopt=Abstract](http://www.ncbi.nlm.nih.gov/80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1021100&dopt=Abstract)

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<sup>3</sup> PubMed was developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM) at the National Institutes of Health (NIH). The PubMed database was developed in conjunction with publishers of biomedical literature as a search tool for accessing literature citations and linking to full-text journal articles at Web sites of participating publishers. Publishers that participate in PubMed supply NLM with their citations electronically prior to or at the time of publication.

- **A 20-year prospective follow-up of childhood hiatal hernia.**  
Author(s): Astley R, Carre IJ, Langmead-Smith R.  
Source: The British Journal of Radiology. 1977 June; 50(594): 400-3.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=871583&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=871583&dopt=Abstract)
- **A clinical and radiological review of 204 hiatal hernia operations.**  
Author(s): Hoffman E, Sumner MC.  
Source: Thorax. 1973 May; 28(3): 379-85.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=4724505&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=4724505&dopt=Abstract)
- **A massive hiatal hernia that mimics a congenital diaphragmatic hernia. An unusual presentation of hiatal hernia in childhood: report of a case.**  
Author(s): Herek O, Yildiran N.  
Source: Surgery Today. 2002; 32(12): 1072-4.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=12541025&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12541025&dopt=Abstract)
- **A new concept of the mechanism of sphincteric failure in sliding esophageal hiatal hernia.**  
Author(s): Dillard DH, Anderson HN.  
Source: Surg Gynecol Obstet. 1966 May; 122(5): 1030-8. No Abstract Available.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=5933385&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5933385&dopt=Abstract)
- **A new principle for the control of cardioesophageal reflux by the transthoracic repair of hiatal hernia.**  
Author(s): Harter JS.  
Source: Bull Soc Int Chir. 1968 November-December; 27(6): 521-7. No Abstract Available.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=5733734&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=5733734&dopt=Abstract)
- **A new surgical procedure for the treatment of gastroesophageal reflux and hiatal hernia.**  
Author(s): Angelchik JP, Cohen R.  
Source: Surg Gynecol Obstet. 1979 February; 148(2): 246-8.  
[http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=154176&dopt=Abstract](http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=154176&dopt=Abstract)
- **A new surgical prosthesis for hiatal hernia repair: radiographic appearance.**  
Author(s): Lewis RA, Angelchik JP, Cohen R.  
Source: Radiology. 1980 June; 135(3): 630.  
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## CHAPTER 2. NUTRITION AND HIATAL HERNIA

### Overview

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

### Finding Nutrition Studies on Hiatal Hernia

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](mailto: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.<sup>4</sup> 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 "hiatal hernia" (or synonyms) into the search box, and click "Go." To narrow the search, you can also select the "Title" field.

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<sup>4</sup> 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 “hiatal hernia” (or a synonym):

- **Congenital esophageal hiatal hernia in the Chinese shar-pei dog.**  
Author(s): Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Philadelphia 19104-6010.  
Source: Callan, M B Washabau, R J Saunders, H M Kerr, L Prymak, C Holt, D J-Vet-Intern-Med. 1993 Jul-August; 7(4): 210-5 0891-6640
- **Hiatal hernia and diaphragmatic eventration in a leopard (*Panthera pardus*).**  
Author(s): Department of Comparative Medicine, College of Veterinary Medicine, University of Tennessee, Knoxville 37901-1071, USA.  
Source: Kearns, K S Jones, M P Bright, R M Toal, R DeNovo, R Orosz, S J-Zoo-Wildl-Med. 2000 September; 31(3): 379-82 1042-7260
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Author(s): Department of Surgery, University of California, San Francisco, 94143-0475, USA.  
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Author(s): Medical Center, Beaver, Pennsylvania.  
Source: Moskovitz, M Fadden, R Min, T Jansma, D Gavalier, J Am-J-Gastroenterol. 1992 May; 87(5): 622-6 0002-9270
- **Long-term outcome of medical and surgical treatment of hiatal hernias in dogs and cats: 27 cases (1978-1996).**  
Author(s): Department of Small Animal Clinical Sciences, College of Veterinary Medicine, University of Tennessee, Knoxville 37901-1071, USA.  
Source: Lorinson, D Bright, R M J-Am-Vet-Med-Assoc. 1998 August 1; 213(3): 381-4 0003-1488
- **Review of the surgical management of recurrent hiatal hernia: 5-year follow-up.**  
Author(s): Department of Surgery, Women's College Hospital, Toronto, Ont.  
Source: Henderson, R D Marryatt, G Henderson, R F Can-J-Surg. 1988 September; 31(5): 341-5 0008-428X
- **What is your diagnosis? Sliding hiatal hernia.**  
Author(s): Allington Veterinary Centre, Maidstone, Kent.  
Source: van Dongen, P J-Small-Anim-Pract. 1997 September; 38(9): 379, 424 0022-4510

## 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](http://www.nutrition.gov)

- The Food and Drug Administration's Web site for federal food safety information: [www.foodsafety.gov](http://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](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. DISSERTATIONS ON HIATAL HERNIA

### Overview

In this chapter, we will give you a bibliography on recent dissertations relating to hiatal hernia. We will also provide you with information on how to use the Internet to stay current on dissertations. **IMPORTANT NOTE:** When following the search strategy described below, you may discover non-medical dissertations that use the generic term “hiatal hernia” (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on hiatal hernia, we have not necessarily excluded non-medical dissertations in this bibliography.

### Dissertations on Hiatal Hernia

*ProQuest Digital Dissertations*, the largest archive of academic dissertations available, is located at the following Web address: <http://wwwlib.umi.com/dissertations>. From this archive, we have compiled the following list covering dissertations devoted to hiatal hernia. You will see that the information provided includes the dissertation’s title, its author, and the institution with which the author is associated. The following covers recent dissertations found when using this search procedure:

- **A Genetic Model of Congenital Diaphragmatic Hernia Created by a Null Mutation in the Slit3 Gene** by Yuan, Wenlin; PhD from Washington University, 2002, 127 pages  
<http://wwwlib.umi.com/dissertations/fullcit/3068503>

### Keeping Current

Ask the medical librarian at your library if it has full and unlimited access to the *ProQuest Digital Dissertations* database. From the library, you should be able to do more complete searches via <http://wwwlib.umi.com/dissertations>.



## CHAPTER 4. PATENTS ON HIATAL HERNIA

### Overview

Patents can be physical innovations (e.g. chemicals, pharmaceuticals, medical equipment) or processes (e.g. treatments or diagnostic procedures). The United States Patent and Trademark Office defines a patent as a grant of a property right to the inventor, issued by the Patent and Trademark Office.<sup>5</sup> Patents, therefore, are intellectual property. For the United States, the term of a new patent is 20 years from the date when the patent application was filed. If the inventor wishes to receive economic benefits, it is likely that the invention will become commercially available within 20 years of the initial filing. It is important to understand, therefore, that an inventor's patent does not indicate that a product or service is or will be commercially available. The patent implies only that the inventor has "the right to exclude others from making, using, offering for sale, or selling" the invention in the United States. While this relates to U.S. patents, similar rules govern foreign patents.

In this chapter, we show you how to locate information on patents and their inventors. If you find a patent that is particularly interesting to you, contact the inventor or the assignee for further information. **IMPORTANT NOTE:** When following the search strategy described below, you may discover non-medical patents that use the generic term "hiatal hernia" (or a synonym) in their titles. To accurately reflect the results that you might find while conducting research on hiatal hernia, we have not necessarily excluded non-medical patents in this bibliography.

### Patents on Hiatal Hernia

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

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<sup>5</sup>Adapted from the United States Patent and Trademark Office:  
<http://www.uspto.gov/web/offices/pac/doc/general/whatis.htm>.

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

- **Anti-reflux/heartburn device**

Inventor(s): Heller; Brian (15 Abington Square, Apt. #26, New York, NY 10014)

Assignee(s): none reported

Patent Number: 6,274,786

Date filed: April 27, 1998

Abstract: The device has a protrusion maintaining sustained pressure to an area of the upper abdomen. This mechanical pressure serves to assist in closing the cardiac sphincter, help induce esophageal relaxation and, in the case of a **hiatal hernia**, to return the stomach to the correct anatomical position. The device is semirigid to allow the device to apply pressure to the user without being pushed outwardly.

Excerpt(s): Many people suffer from gastroesophageal reflux disorder (GERD). Gastroesophageal reflux disorder is a reflux, or backward or return flow, of fluid of gastric or intestinal contents into the esophagus. Heartburn is a symptom of this disorder. This condition arises when the lower esophageal sphincter, between the stomach and esophagus, becomes lax or spastic. This allows gastric acid to move from the stomach into the esophagus. The gastric juices irritate the esophagus lining. Possible causes of the disorder include scleroderma, pregnancy, improper diet, autoimmune disorders or a **hiatal hernia**. Treatment for this disorder typically includes a change in diet and the use of non-prescription antacids or prescription medications. Severe cases may require anti-reflux surgery. Recurrence is common.

Web site: [http://www.delphion.com/details?pn=US06274786\\_\\_](http://www.delphion.com/details?pn=US06274786__)

- **Manometric pressure sensing and liquid evacuating device for intraoperative hiatal hernia repair**

Inventor(s): Hill; Lucius D. (522 McGilvra Blvd. E., Seattle, WA 98102)

Assignee(s): none reported

Patent Number: 4,030,481

Date filed: October 29, 1975

Abstract: A device for making intraoperative pressure studies after repair but while the stomach is being evacuated. The device includes a nasal gastric suction tube having a perforated end region with a closed tip and having secured thereto a pressure-sensing tube with a closed end and which is provided with a pressure-sensing opening a known distance up from the closed tip of the nasal gastric tube.

Excerpt(s): This invention pertains to medical instruments, and more particularly, to a pressure-sensing device suitable for use during **hiatal hernia** repair. Hiatal hernia repair is needed in a large number of patients suffering from esophagitis. A **hiatal hernia** is defined as an enlarged opening at the point where the esophagus goes through the diaphragm. A relatively small hernia will permit the lowest part of the esophagus to slide upward into the chest while a larger hernia will let part of the stomach slide upward. In both cases the sphincter muscle has stretched and lost its capability of holding the stomach's acidic contents from refluxing or flowing back up into the

esophagus. A present repair technique for **hiatal hernia** is described in Hospital Practice, April 1972, Volume 7, No. 4 at pages 116-124 and in Time Magazine, Mar. 28, 1969 as well as in additional other articles in medical journals. The present preferred procedure is to stitch a part of the stomach to form an internal flap that prevents reflux. Ligaments and other tissues are attached where the esophagus joins the stomach (gastroesophageal junction) so that the junction is anchored permanently below the diaphragm. In addition, the sphincter muscle is tightened around the junction to prevent refluxing of the acidic contents of the stomach.

Web site: [http://www.delphion.com/details?pn=US04030481\\_\\_](http://www.delphion.com/details?pn=US04030481__)

- **Medical prosthesis for preventing gastric reflux in the esophagus**

Inventor(s): Godin; Norman (Geneva, CH)

Assignee(s): Biomedix S.A. Switzerland (CH)

Patent Number: 5,861,036

Date filed: September 23, 1997

Abstract: A prosthesis in the form of a flexible tube having a substantially uniform cross section is disclosed. The prosthesis comprises a flange (2) for endoscopically placing stitches or clips in a **hiatal hernia** (3), and a flexible tubular portion (1) enabling the tube to be squeezed by exerting a pressure (F) on the outer surface thereof in order to prevent reflux of the stomach contents into the esophagus. Food can pass freely through the prosthesis in the direction from the esophagus (4) to the stomach (5). The prosthesis is made of a biocompatible polymer optionally containing barium sulphate to make it detectable using X-rays.

Excerpt(s): This application is the national phase of international application PCT/IB96/00149, filed Feb. 28, 1996 which designated the U.S. The present invention relates to a medical prosthesis stopping gastric content from refluxing into the esophagus, including a tube made in a biocompatible polymer material resistant to gastric acid. One end is attached above the stomach and the other one is left free in the stomach. This type of prosthesis, described in WO91 01117, describes the shape of a valve with an opening passage kept closed elastically. The section of the passage is progressively narrowed to a permanent shape so as to close the lower end of the tube so that in a position of maximum opening, the section is approximately as wide as the upper end attached to the lower end of the esophagus. This is a description of a valve that is opened by a force capable of overcoming the elastic forces that tend to keep it closed. Such a concept implies a relatively rigid prosthesis that will allow its closure in the absence of any force capable of opening it, this force being generated by the peristaltic pressure exerted on the food bolus by the esophagus.

Web site: [http://www.delphion.com/details?pn=US05861036\\_\\_](http://www.delphion.com/details?pn=US05861036__)

- **Method for maintaining the reduction of a sliding esophageal hiatal hernia**

Inventor(s): Angelchik; Jean P. (1728 W. Glendale Ave., Suite 401, Phoenix, AZ 85021)

Assignee(s): none reported

Patent Number: 4,271,828

Date filed: September 13, 1979

Abstract: A method for maintaining the intra-abdominal reduction of a sliding esophageal hernia. The method comprises positioning a generally C-shaped cushion prosthesis around the distal esophagus between the diaphragm and stomach. The overall size of the prosthesis is large enough to prevent extension of the gastric fundus into the thoracic cavity through an enlarged esophageal hiatus. The prosthesis is of generally constant cross-sectional area along its entire length to prevent upward migration of the prosthesis through the enlarged esophageal hiatus and to maintain the accentuated curvature of the esophagus induced by emplacement of the prosthesis. Tie means are provided to maintain the prosthesis in operative position.

Excerpt(s): This invention relates to methods for using a surgical prosthesis. More particularly, the invention concerns an improved method for using a surgical prosthesis to maintain the intraabdominal reduction of a sliding esophageal distal hernia. When the esophageal hiatus of the diaphragm muscle becomes enlarged, a portion of the stomach immediately below the gastro esophageal junction (the gastric fundus) may actually slide upwardly through the esophageal hiatus into the chest or thoracic cavity. This anatomical condition, known as a "sliding esophageal hernia" frequently causes gastro esophageal reflux in which stomach acids and food are regurgitated into the esophagus.

Web site: [http://www.delphion.com/details?pn=US04271828\\_\\_](http://www.delphion.com/details?pn=US04271828__)

- **Prosthesis for preventing gastric reflux into the esophagus**

Inventor(s): Godin; Norman J. (14, Quai du Seujet, 1201 Geneva, CH)

Assignee(s): none reported

Patent Number: 5,314,473

Date filed: January 5, 1993

Abstract: The prosthesis is configured like an anti-return valve ranged preferably in the area where the esophagus and the **hiatal hernia** meet. Said valve is comprised of a tubular part associated with an annular fixing element. The tubular part flattens progressively to form two joined lips. It is possible to form said valve with a wall thickness which increases from the free end of the lips towards the annular fixing part in order to avoid an easy returning under the effect of the surging pressure. During the passage of the alimentary bolus, the lips are spaced apart and joined again owing to their natural elasticity. A metal wire embedded in the annular fixing part is used for the radiologic marking.

Excerpt(s): The present invention relates to a prosthesis for preventing gastric reflux in the esophagus, including a valve associated with an annular fixation portion and having an opening that is elastically kept closed. Esophagitis is caused by chronic gastric reflux. Although the mucus of the stomach is capable of withstanding the highly acid pH of the gastric secretions, which is close to 1, this is not the case for the mucus of the esophagus. Consequently, when this reflux is chronic, it attacks the mucus of the esophagus and creates ulcers, which over the long term can cause shrinkage of the esophageal conduit. This gastric reflux is generally associated with a **hiatal hernia**. The most currently used therapy for this type of affliction makes use of medicines. There are three categories: antacids, which tend to make the environment neutral by the intake of an alkaline product, H.sub.2 antihistamines, which fix on the H.sub.2 receptor of the parietal cell. Recently, a new medicine has been proposed that in turn blocks the production of H.sub.+ ions by the parietal cell. However, this medicine has no further effect as soon as

it ceases to be administered, and it cannot be taken continuously, because it might cause tumors, which has been confirmed at least for the rat. Finally, the third class comprises medicines that increase the motility of the esophagus and the stomach and tend to reduce the length of contact of the acid reflux with the esophagus. This therapy does not attack the primary cause of the ailment, which is gastric reflux, which reappears as soon as the treatment with medicine stops, so that the patient is forced to take medication permanently. This solution is clearly unsatisfactory both medically and economically.

Web site: [http://www.delphion.com/details?pn=US05314473\\_\\_](http://www.delphion.com/details?pn=US05314473__)

- **Systems and methods for treating tissue in the crura**

Inventor(s): Gaiser; John (Mountain View, CA), Utley; David (San Carlos, CA)

Assignee(s): Curon Medical, Inc. (Sunnyvale, CA)

Patent Number: 6,547,776

Date filed: January 3, 2000

Abstract: Tissue in the crura is treated by advancing a tissue penetrating element from a catheter tube through a wall of the esophagus. The tissue penetrating element is operated to affect a tightening of the crura, e.g., to treat **hiatal hernia**.

Excerpt(s): In a general sense, the invention is directed to systems and methods for treating interior tissue regions of the body. More specifically, the invention is directed to systems and methods for treating dysfunction in and around the lower esophageal sphincter and cardia of the stomach, and, in particular, hernias of the stomach through the esophageal hiatus and diaphragm, commonly called **hiatal hernias**. The gastrointestinal tract, also called the alimentary canal, is a long tube through which food is taken into the body and digested. The alimentary canal begins at the mouth, and includes the pharynx, esophagus, stomach, small and large intestines, and rectum. In human beings, this passage is about 30 feet (9 meters) long. Small, ring-like muscles, called sphincters, surround portions of the alimentary canal. In a healthy person, these muscles contract or tighten in a coordinated fashion during eating and the ensuing digestive process, to temporarily close off one region of the alimentary canal from another.

Web site: [http://www.delphion.com/details?pn=US06547776\\_\\_](http://www.delphion.com/details?pn=US06547776__)

## Patent Applications on Hiatal Hernia

As of December 2000, U.S. patent applications are open to public viewing.<sup>6</sup> Applications are patent requests which have yet to be granted. (The process to achieve a patent can take several years.) The following patent applications have been filed since December 2000 relating to hiatal hernia:

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<sup>6</sup> This has been a common practice outside the United States prior to December 2000.

- **Hiatal hernia repair patch and method for using the same**

Inventor(s): Rehil, Om P.; (Marion, IN)

Correspondence: Richard C. Litman; Litman Law Offices, LTD.; P.O. Box 15035; Arlington; VA; 22215; US

Patent Application Number: 20010049539

Date filed: January 3, 2001

Abstract: This invention relates to a surgical prosthesis and method of use. The **hiatal hernia** repair patch is a ring with an integral mesh attached to and surrounding the ring. The ring and the mesh have a slit therein extending radially so that the ring may be placed about the esophagus. The ring may be hollow or solid and is flexible so that it may be inserted through a small incision or a laparoscopic port into the abdominal cavity. The patch, including the ring and mesh, is made as a one-piece unit and is made from polypropylene or other biocompatible material. In use, the ring is placed around the esophagus, between the stomach and the diaphragm. Next, the mesh is stapled or sutured to the undersurface of the diaphragm, bridging the **hiatal hernia** defect.

Excerpt(s): This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/179,149, filed Jan. 31, 2000. The present invention relates to a method, and a prosthesis, for use in maintaining the intra-abdominal reduction of a sliding esophageal **hiatal hernia**. In humans, there is no anatomical valve, or discrete sphincter at the esophago-gastric (EG) junction. When anatomy in the area is normal, esophageal peristalsis pushes food through the EG junction. The stomach fills, like a sack, pulling the EG junction tighter. Normal, intact esophageal hiatal muscles prevent reflux. However, a gaping hiatal muscle sling creates a large defect around the esophagus, thereby interfering with the EG junction mechanism. This may lead to a **hiatal hernia**.

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

- **METHOD AND APPARATUS FOR ENDOSCOPIC DISRUPTION OF LOWER ESOPHAGEAL RING AND STRICTURES**

Inventor(s): RANDALL, CHARLES W.; (SAN ANTONIO, TX)

Correspondence: Wayne J Colton Inc; The Milam Building Suite 1032; 115 East Travis Street; San Antonio; TX; 78205; US

Patent Application Number: 20020128675

Date filed: November 1, 1999

Abstract: An improved tool for endoscopic disruption of lower esophageal ring generally comprises scissors adapted to be inserted into a patient's esophagogastric junction through a flexible endoscope. The scissors pair comprises a blunt tipped instrument having a pair of short cutting edges operable through an axially disposed cable or the like. In practice, the instrument is inserted into a flexible endoscope and thereby orally inserted into the patient's lower esophagus. Once inserted into the lower esophagus, the instrument is utilized to precisely sever a lower esophageal ring at a plurality of radial locations. Once effectively disrupted, any associated shelf effect will generally self-correct. Other procedures, such as **hiatal hernia** repair, may then be completed, whereafter the endoscope may be removed from the patient. The procedure should require only about 20 minutes to complete and will result in a minimum of patient discomfort as well as instant relief from the symptoms of LER.

Excerpt(s): This application claims, under 35 USC.sctn.119(e), all available benefit of the filing of U.S. provisional patent application Serial No. 60/134,435 filed May 17, 1999. By this reference, the full disclosure, including the drawings, of U.S. provisional patent application Serial No. 60/134,435 is incorporated herein as though now set forth in its entirety. The present invention relates to an apparatus for use in endoscopic surgery. More particularly, the invention relates to an endoscopic apparatus specifically adapted for surgical disruption of the lower esophageal, or Schatzki's, ring. First reported in 1953 by Schatzki and Gary as a ring-like structure at the juncture of the esophageal and gastric mucosa, lower esophageal, or Schatzki's, ring ("LER") remains controversial as to exact location, etiology and clinical importance. It is generally agreed, however, that if left untreated the incomplete diaphragm in the lower esophageal lumen that characterizes this thin, submucosal, scar can result in serious complications of swallowing. In most cases, LER presents as episodic or progressive dysphagia although, in the extreme, it can progress into a total obstruction of the esophagus. In any case, it is generally accepted standard of care to treat symptomatic LER through surgical interruption or dilation of the ring.

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

- **PROSTHETIC REPAIR FABRIC**

Inventor(s): Darois, Roger E.; (Foster, RI), Eldridge, Stephen N.; (Exeter, RI), Lee, Michael J.; (Barrington, RI)

Correspondence: Wolf Greenfield & Sacks, PC; Federal Reserve Plaza; 600 Atlantic Avenue; Boston; MA; 02210-2211; US

Patent Application Number: 20030212460

Date filed: May 10, 2002

Abstract: An implantable prosthesis is provided for repairing or augmenting anatomical weaknesses or defects, and is particularly suitable for the repair of soft tissue and muscle wall openings. The prosthesis is configured to promote enhanced tissue ingrowth thereto, while limiting the incidence of post-operative adhesions between the fabric and tissue or organs. The prosthesis may include a layer of fabric that is constructed and arranged to allow tissue ingrowth and is susceptible to the formation of adhesions for tissue and organs. One or more barriers may be provided on selected portions of the fabric to inhibit the formation of adhesions with tissues and organs. The prosthesis may have an opening that is adapted to receive the esophagus or other tube-like structure, or other projection, that passes through an opening in or projects from a tissue, muscle or organ wall requiring repair and/or augmentation. The prosthesis may be configured for use in **hiatal hernia** repair and/or treatment of GERD. A method is also provided for the treatment of GERD.

Excerpt(s): The present invention relates to an implantable prosthesis, and more particularly to a prosthetic repair fabric for use in soft tissue repair and reconstruction. Gastroesophageal reflux disease ("GERD") and **hiatal hernia** commonly occur together. A **hiatal hernia** occurs when a natural opening, or "hiatus," in the diaphragm through which the esophagus extends, becomes enlarged, allowing the stomach to pass through the hiatus into the thoracic cavity. GERD indicates a backflow of acid from the stomach into the esophagus. Although GERD may be an independent affliction, GERD is often a symptom of, or a co-affliction with, a **hiatal hernia**. Representative surgical treatments for GERD and/or **hiatal hernia** may include one or more of the following: a fundoplication, more specifically an open or laparoscopic Nissen fundoplication, where

part of the fundus of the stomach is wrapped around the lower end of the esophagus to recreate or augment the lower esophageal sphincter (LES); a cruroplasty, which involves tightening the crura of the diaphragm around the esophagus; and an endoscopic gastroplication where pleats are formed within the esophagus at or near the LES, reducing the size of the internal diameter of the lower esophagus. It has been known to use a prosthetic repair fabric in the surgical treatment of GERD and/or **hiatal hernia**. Typically, a sheet of surgical mesh fabric, such as BARD MESH, commercially available in rectangular stock sheets, is custom fashioned by a surgeon into a shape suitable for a particular patient's hiatal repair, such as a rectangular or oval shape. The surgeon forms a keyhole opening in the patch by cutting a slit from one edge of the implant and then forming an opening at the end of the slit that is large enough to receive the esophagus. The adjacent flaps of mesh formed by the slit running through the edge, known as "tails" or "fins", may be stitched together after the esophagus has been positioned in the keyhole opening, recreating a hiatal ring about the esophagus to help prevent the stomach from reentering the thoracic cavity.

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

## Keeping Current

In order to stay informed about patents and patent applications dealing with hiatal hernia, you can access the U.S. Patent Office archive via the Internet at the following Web address: <http://www.uspto.gov/patft/index.html>. You will see two broad options: (1) Issued Patent, and (2) Published Applications. To see a list of issued patents, perform the following steps: Under "Issued Patents," click "Quick Search." Then, type "hiatal hernia" (or synonyms) into the "Term 1" box. After clicking on the search button, scroll down to see the various patents which have been granted to date on hiatal hernia.

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

## CHAPTER 5. BOOKS ON HIATAL HERNIA

### Overview

This chapter provides bibliographic book references relating to hiatal hernia. In addition to online booksellers such as [www.amazon.com](http://www.amazon.com) and [www.bn.com](http://www.bn.com), excellent sources for book titles on hiatal hernia 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 "hiatal hernia" (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 hiatal hernia:

- **Indigestion: Living Better with Upper Intestinal Problems from Heartburn to Ulcers and Gallstones**

Source: New York, NY: Oxford University Press. 1992. 227 p.

Contact: Available from Oxford University Press. Order Department, 2001 Evans Road, Cary, NC 27513. (800) 451-7556. Fax (919) 677-1303. PRICE: \$11.95 plus shipping and handling. ISBN: 019508554X.

Summary: This book offers advice on how to take care of and avoid a whole complex of disturbances categorized as indigestion. The author begins with an overview of the anatomy and physiology of digestion, including a chapter on terminology and definitions. After an additional chapter on diagnostic testing, the author turns to specific problems, including acid related problems (heartburn, esophagitis, and hiatal hernia), peptic ulcers, nonulcer dyspepsia, chest pain, gallbladder problems and gallstones, pancreatic diseases, jaundice, malabsorption and maldigestion, food intolerance and

food allergies, the impact of aging on the upper digestive tract (including the role of medications and drug interactions), and the brain gut connection. The appendices of the book offer coverage of related problems, including belching, nausea and vomiting, dry mouth and bitter taste, difficulty in tasting, lump in the throat, butterflies, difficulties in swallowing, delayed stomach emptying, the effects of diabetes on the upper digestive system, and the controversy over yeast. The author hopes to foster a cooperative dialogue between patients and their physicians as they work together to diagnose and manage upper digestive tract problems. A subject index concludes the book. 8 figures. 6 tables.

- **Medical Advisor Home Edition: The Complete Guide to Alternative and Conventional Treatments**

Source: Alexandria, VA: Time-Life Books. 1997. 960 p.

Contact: Available from Time-Life Books. 400 Keystone Industrial Park, Dunsmore, PA 18512. PRICE: \$20.00. ISBN: 0783552505.

Summary: This book offers information about 300 health problems, ranging from relatively benign conditions to the most serious diseases. There are symptoms charts which name several related problems and help readers decide which ailment entry to look up. Ailment entries provide a more complete list of symptoms, plus guidelines to discern whether the condition is potentially serious or requires a doctor's attention. Each entry describes the ailment and how it affects the body. Next, the entry outlines the underlying causes of the ailment and the tests and procedures a doctor may use to confirm the diagnosis. The treatment segment presents conventional and alternative recommendations for curing the problem or alleviating the symptoms. Most ailment entries conclude with advice on preventive measures that can be used to maintain health. Alternative treatments discussed include bodywork, acupuncture and acupressure, herbal therapies, homeopathy, lifestyle changes, and nutrition and diet. The book begins with a section on emergency medicine. Also included is a visual diagnostic guide, an atlas to the body, a medicine chest section (describing herbs, homeopathic remedies, and over the counter drugs), a glossary, a subject index, a bibliography, and a list of health associations and organizations. Topics related to digestive diseases include abdominal pain, AIDS, allergies, anal bleeding, anal fissure, anorexia nervosa, bad breath, bowel movement abnormalities, bulimia, celiac disease, cholesterol problems, colitis, colorectal cancer, constipation, Crohn's disease, diarrhea, diverticulitis, flu, food poisoning, gallstones, gas and gas pains, gastritis, gastroenteritis, heartburn, **hiatal hernia**, hiccups, incontinence, indigestion, irritable bowel syndrome, lactose intolerance, lupus, obesity, pancreatic cancer, pancreatic problems, stomach cancer, stomach ulcers, swallowing difficulty, trichomoniasis, vomiting, and worms. The book is illustrated with line drawings and full-color photographs.

- **Gastrointestinal Diseases and Disorders Sourcebook**

Source: Detroit, MI: Omnigraphics, Inc. 1996. 413 p.

Contact: Available from Omnigraphics, Inc. Penobscot Building, Detroit, MI 48226. (800) 234-1340 or (313) 961-1340. Fax (800) 875-1340 or (313) 961-1383. PRICE: \$75.00. ISBN: 0780800788.

Summary: This health reference book provides nontechnical information about gastrointestinal diseases and disorders. This sourcebook describes the signs and symptoms of many digestive system problems, discusses ongoing research and treatment, provides statistical data, and recommends dietary and lifestyle changes. The

book has 46 chapters arranged in five sections: general information, including how the digestive system works, how to maintain healthy digestion, and statistical data; esophageal problems, including **hiatal hernia**, heartburn, and chronic pulmonary aspiration in children; stomach problems, notably ulcers and their treatment; intestinal and anorectal disorders; and liver, pancreatic, and gallbladder diseases and disorders, including liver function tests, liver transplants, and liver biopsy. The sourcebook includes numerous charts and graphs; a subject index concludes the volume.

- **Foods That Harm, Foods That Heal: An A-Z Guide to Safe and Healthy Eating**

Source: Pleasantville, NY: Reader's Digest. 1997. 400 p.

Contact: Available from Customer Service, Reader's Digest. Pleasantville, NY 10570. (800) 846-2100. PRICE: \$30.00. ISBN: 0895779129.

Summary: This nutrition reference book features more than 400 photographs and illustrations with more than 400 A to Z entries on a vast range of foods and health concerns, include caffeine, cancer, diabetes, fast food, garlic, heart disease, influenza, osteoporosis, pregnancy, sexually transmitted diseases, and vegetarianism. The book is designed to provide families with information to help understand the close links between foods and wellness. Each food entry provides at-a-glance information on its nutrients (or lack of) and its benefits and drawbacks. Each ailment is accompanied by a list of foods and beverages that are considered safe, and what foods or beverages should be cut down or avoided altogether. Personalized case studies help to illustrate various topics. There are special features on eating during different life stages, from infancy to old age, as well as such issues as genetically altered foods, irradiation, pesticides, and pollution. Other topics include how to cook foods to achieve maximum nutritional benefits; which dietary supplements really work; tips on exercising, storing food, and reading food labels; an instructive analysis of the most popular diet regimens; and controversial foods and additives such as eggs, nitrites, bran, cheese, milk, fat, wine, and alcohol. A glossary defines unfamiliar or technical terms; there is also a listing of organizations that can provide further information and resources. Topics specifically related to digestive diseases include allergic reactions to food, anorexia nervosa, antioxidants, appetite loss, basic food groups, carbohydrates, celiac disease, childhood and adolescent nutrition, cholesterol, constipation, convenience foods, Crohn's disease, diarrhea, dieting and weight control, digestive and malabsorption disorders, diverticulitis, fats, fiber, food poisoning, gastritis, gastroenteritis, gout, **hiatal hernia**, indigestion and heartburn, intolerance to milk and other foods, irritable bowel syndrome, malnutrition, medicine-food interactions, minerals, obesity, organic and health foods, preparation and storage of food, restaurants and eating out, smoking and diet, sports nutrition, supplements, traveler's health, ulcers, vitamins, and worms and other parasites.

- **Instructions for Patients. 5th ed**

Source: Philadelphia, PA: W.B. Saunders Company. 1994. 598 p.

Contact: Available from W.B. Saunders Company. Book Order Fulfillment, 6277 Sea Harbor Drive, Orlando, FL 32887-4430. (800) 545-2522. Fax (800) 874-6418. PRICE: \$49.95. ISBN: 0721649300 (English); 0721669972 (Spanish).

Summary: This paper-bound book presents a number of patient instruction fact sheets. Each fact sheet includes three sections: basic information on signs and symptoms, causes, risk factors, etc.; treatment; and when to contact one's health care provider. Digestive system topics include food allergy, anal fissure, celiac disease, appendicitis,

Crohn's disease, constipation, ulcerative colitis, cirrhosis of the liver, cholecystitis or cholangitis, diarrhea, diverticular disease, gallstones, gastritis, **hiatal hernia**, hemorrhoids, heartburn, irritable bowel syndrome, and lactose intolerance, among others. The fact sheets are designed to be photocopied and distributed to patients as a reinforcement of oral instructions and as a teaching tool. The book is available in English or Spanish.

## Book Summaries: Online Booksellers

Commercial Internet-based booksellers, such as Amazon.com and Barnes&Noble.com, offer summaries which have been supplied by each title's publisher. Some summaries also include customer reviews. Your local bookseller may have access to in-house and commercial databases that index all published books (e.g. Books in Print®). **IMPORTANT NOTE:** Online booksellers typically produce search results for medical and non-medical books. When searching for "hiatal hernia" at online booksellers' Web sites, you may discover non-medical books that use the generic term "hiatal hernia" (or a synonym) in their titles. The following is indicative of the results you might find when searching for "hiatal hernia" (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **Hiatal Hernia & Chronic Fatigue Syndrome** by Patricia Ann Hellinger (2003); ISBN: 0974251003;  
<http://www.amazon.com/exec/obidos/ASIN/0974251003/icongroupinterna>
- **Hiatal Hernia Syndrome**; ISBN: 0938257064;  
<http://www.amazon.com/exec/obidos/ASIN/0938257064/icongroupinterna>
- **Hiatal Hernia Syndrome: Insidious Link to Major Illness Guide to Healing** by Theodore A. Baroody, Janice R. Swanger (Illustrator) (1987); ISBN: 0961959525;  
<http://www.amazon.com/exec/obidos/ASIN/0961959525/icongroupinterna>
- **Hiatal Hernia: The Natural Approach to Overcoming Hiatal and Other Gastro-Intestinal Disorders** by Jack Ritchason; ISBN: 1885670346;  
<http://www.amazon.com/exec/obidos/ASIN/1885670346/icongroupinterna>
- **The Official Patient's Sourcebook on Hiatal Hernia: A Revised and Updated Directory for the Internet Age** by Icon Health Publications (2002); ISBN: 0597833923;  
<http://www.amazon.com/exec/obidos/ASIN/0597833923/icongroupinterna>

## The National Library of Medicine Book Index

The National Library of Medicine at the National Institutes of Health has a massive database of books published on healthcare and biomedicine. Go to the following Internet site, <http://locatorplus.gov/>, and then select "Search LOCATORplus." Once you are in the search area, simply type "hiatal hernia" (or synonyms) into the search box, and select "books only." From there, results can be sorted by publication date, author, or relevance. The following was recently catalogued by the National Library of Medicine:<sup>7</sup>

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<sup>7</sup> In addition to LOCATORPlus, in collaboration with authors and publishers, the National Center for Biotechnology Information (NCBI) is currently adapting biomedical books for the Web. The books may be accessed in two ways: (1) by searching directly using any search term or phrase (in the same way as the bibliographic database PubMed), or (2) by following the links to PubMed abstracts. Each PubMed abstract has a "Books" button that displays a facsimile of the abstract in which some phrases are hypertext links. These phrases are also found in

- **Gastroesophageal reflux and hiatal hernia, by nine authors. Edited by David B. Skinner [et al.].** Author: Skinner, David B.; Year: 1974; Boston, Little, Brown [c1972]; ISBN: 031679677
- **Hiatal hernia: follow-up of a ten-year material** Author: Jacobsson, Sven-Ingemar.; Year: 1981; Stockholm: [s.n.]: distributed by Almqvist; Wiksell, 1976
- **The association of diaphragmatic hiatal hernia and gastroesophageal malignancy.** Author: Michel, Javier Ochoa;; Year: 1978; [Minneapolis] 1965
- **Traumatic diaphragmatic hernia, by Erkki Laustela and Pekka Tala. [Tr. from the Finnish].** Author: Laustela, Erkki.; Year: 1979; Helsinki, 1959

## Chapters on Hiatal Hernia

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

- **Sliding Hiatal Hernia**

Source: in Fitzgibbons, R.J.; Greenberg, A.G., eds. *Nyhus and Condon's Hernia*. Philadelphia, PA: Lippincott Williams and Wilkins. 2002. p.479-492.

Contact: Available from Lippincott Williams and Wilkins. P.O. Box 1600, Hagerstown, MD 21741. (800) 638-3030 or (301) 223-2300. Fax (301) 223-2365. PRICE: \$179.00 plus shipping and handling. ISBN: 0781719623.

Summary: Hiatal hernia, a common finding at radiography, was first diagnosed at autopsy and was considered a congenital defect. Occasionally trauma was the causative factor, but hiatal hernia formation and its high incidence of occurrence was not appreciated until the technology of radiographic imaging was refined. This chapter on sliding hiatal hernia is from a lengthy textbook on the surgical management of hernias. The authors note that the association of sliding hiatal hernia with gastroesophageal reflux disease (GERD) was first noted in the late 1940s and the cause-and-effect relationship of the two remains controversial. The authors focus on the pathogenesis of GERD as it relates to hiatal hernia. Laparoscopic surgery has irreversibly altered the therapeutic approach to GERD. The authors review the laparoscopic surgical treatment of hiatal hernia and the causes of recurrence of the hernia. Topics include anatomy and physiology, pathophysiology, clinical presentation, radiology, endoscopy, pH monitoring, treatment strategies, surgical indications, laparoscopic technique, hiatal hernia recurrence, short esophagus, mesh repair, and technical considerations. The authors conclude that the diagnosis of hiatal hernia is usually straightforward, but the optimal method of repair is yet to be determined as hernia recurrence rates are high. 9 figures. 3 tables. 31 references.

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the books available at NCBI. Click on hyperlinked results in the list of books in which the phrase is found. Currently, the majority of the links are between the books and PubMed. In the future, more links will be created between the books and other types of information, such as gene and protein sequences and macromolecular structures. See <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Books>.

- **Acid in the Gullet: Heartburn, Esophagitis, and Hiatal Hernia**

Source: in Janowitz, H.D. *Indigestion: Living Better with Upper Intestinal Problems from Heartburn to Ulcers and Gallstones*. New York, NY: Oxford University Press. 1992. p. 41-57.

Contact: Available from Oxford University Press. Order Department, 2001 Evans Road, Cary, NC 27513. (800) 451-7556. Fax (919) 677-1303. PRICE: \$11.95 plus shipping and handling. ISBN: 019508554X.

Summary: This chapter on acid related problems (heartburn, esophagitis, and hiatal hernia) is from a book that offers advice on how to take care of and avoid the whole complex of disturbances categorized as indigestion. The author reviews each of these three problems, covering their causes, symptoms, and the physiology of what is happening. Heartburn arises in the esophagus and results from the presence of the stomach's acid contents in the lower end of the esophagus. The acid has a direct irritating result because tissues there are not normally exposed to or prepared for the acid (compared to the stomach, which has a protective mucosal lining). The most important anatomical device protecting against heartburn is the lower esophageal sphincter (LES, which guards the opening between the esophagus and the stomach). The author explores the problem that can arise with a hiatal hernia, which can impair the LES's ability to prevent reflux of the stomach's contents into the esophagus. The LES pressure is also affected after a meal of fatty foods, by smoking, and by the presence of acid in the stomach (including the role of stomach emptying). The author also discusses diagnostic testing for acid reflux; treatment options, including habits and dietary modifications, and drug therapy; and general measures for relieving heartburn, including the role of exercise. Following is a discussion of the condition of active inflammation of the esophagus (esophagitis), including its diagnosis, medical treatment, surgery, and the problem of Barrett's esophagus. The chapter concludes with a discussion of the treatment options for hiatal hernia, focusing on the decision about surgical treatment for the condition.

- **Paraesophageal Hiatal Hernia**

Source: in Fitzgibbons, R.J.; Greenberg, A.G., eds. *Nyhus and Condon's Hernia*. Philadelphia, PA: Lippincott Williams and Wilkins. 2002. p.493-502.

Contact: Available from Lippincott Williams and Wilkins. P.O. Box 1600, Hagerstown, MD 21741. (800) 638-3030 or (301) 223-2300. Fax (301) 223-2365. PRICE: \$179.00 plus shipping and handling. ISBN: 0781719623.

Summary: This chapter on paraesophageal hiatal hernia is from a lengthy textbook on the surgical management of hernias. The authors briefly discuss the four subtypes of abdominal visceral herniation, then consider incidence, pathogenesis, clinical presentation, diagnostic studies, indications for surgery, surgical management, laparoscopic technique, and complications. Symptomatic patients are candidates for paraesophageal hernia repair after careful evaluation. Although laparotomy and thoracotomy are successful approaches, laparoscopy is favored by experienced laparoscopic surgeons due to the short length of hospitalization and low complication rate and mortality. On average, patients return to normal activities within 2 to 3 weeks. The authors conclude by recommending the laparoscopic technique combined with an antireflux procedure. 10 figures. 1 table. 42 references.

## CHAPTER 6. MULTIMEDIA ON HIATAL HERNIA

### Overview

In this chapter, we show you how to keep current on multimedia sources of information on hiatal hernia. 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 hiatal hernia is the Combined Health Information Database. You will need to limit your search to "Videorecording" and "hiatal hernia" 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 "hiatal hernia" (or synonyms) into the "For these words:" box. The following is a typical result when searching for video recordings on hiatal hernia:

- **Extinguishing Heartburn**

Source: Madison, WI: University of Wisconsin Hospitals and Clinics, Department of Outreach Education. 1995. (videocassette).

Contact: Available from University of Wisconsin Hospital and Clinics. Picture of Health, 702 North Blackhawk Avenue, Suite 215, Madison, WI 53705-3357. (800) 757-4354 or (608) 263-6510. Fax (608) 262-7172. PRICE: \$19.95 plus shipping and handling; bulk copies available. Order number 091395A.

Summary: Heartburn, or acid indigestion, can limit daily activities and productivity. This videotape is one in a series of health promotion programs called 'Picture of Health,' produced by the University of Wisconsin. In this program, moderated by Mary Lee and featuring gastroenterologist John Wyman, the common symptoms, diagnosis, and management of heartburn are covered. Dr. Wyman stresses that any chest pain requires a medical evaluation to rule out other causes such as heart disease. Dr. Wyman defines heartburn as a symptom of gastroesophageal reflux disease (GERD), which is the reflux

or return of stomach contents into the esophagus. Dr. Wyman reviews the anatomy and physiology of the gastrointestinal (GI) tract, including the lower esophageal sphincter (LES) and LES pressures. Risk factors for GERD include certain diet and lifestyle choices, smoking, obesity, pregnancy, and the regular use of certain foods and beverages. The program then reviews tips to control heartburn, including elevate the head of the bed, lose any excess weight, do not lie down immediately following a meal, and decrease portion size at mealtimes. Dr. Wyman recommends that people coping with heartburn eliminate acidic foods and any other foods that cause individual symptoms from their diet. The program briefly covers the use of antacids and the role of **hiatal hernia** and reflux. The program concludes by referring viewers to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

### **Bibliography: Multimedia on Hiatal Hernia**

The National Library of Medicine is a rich source of information on healthcare-related multimedia productions including slides, computer software, and databases. To access the multimedia database, go to the following Web site: <http://locatorplus.gov/>. Select "Search LOCATORplus." Once in the search area, simply type in hiatal hernia (or synonyms). Then, in the option box provided below the search box, select "Audiovisuals and Computer Files." From there, you can choose to sort results by publication date, author, or relevance. The following multimedia has been indexed on hiatal hernia:

- **Collis-Nissen hiatal hernia operation [videorecording]** Source: author, Mark B. Orringer; produced by DG, Davis & Geck, Medical Device Division; Year: 1988; Format: Videorecording; [Wayne, N.J.]: American Cyanamid, c1988
- **Hiatal hernia [sound recording]: a panel discussion** Source: American College of Surgeons; Year: 1980; Format: Sound recording; [Chicago]: The College, [1980]
- **Laparoscopic repair of paraesophageal hernia [videorecording]; Totally endoscopic transhiatal esophagectomy; Laparoscopic repair of incarcerated paraesophageal hernia** Source: Society American Gastrointestinal Endoscopic Surgeons, SAGES; produced by Ciné-Med; Year: 1997; Format: Videorecording; Woodbury, Conn.: Ciné-Med, [1997?]
- **Paraesophageal diaphragmatic hernia through enlarged esophageal hiatus [motion picture]** Source: [production company unknown]; S.W. Harrington; Year: 1935; Format: Motion picture; [S.l.: s.n., 1935]
- **Paraesophageal diaphragmatic hernia through enlarged esophageal hiatus [motion picture]**. Year: 1935; Format: Motion picture; [Rochester, Minn.?: s.n., 1935]
- **Reconstruction of the cardia and hiatal hernia repair [motion picture]: Belsey Mark IV technique** Source: David B. Skinner; produced by the Dept. of Photography, Johns Hopkins Univ. School of Medicine; Year: 1969; Format: Motion picture; [Baltimore]: Skinner; [Danbury, Conn.: for loan by Davis and Geck], 1969

## CHAPTER 7. PERIODICALS AND NEWS ON HIATAL HERNIA

### Overview

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

### News Services and Press Releases

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

- **Hiatal hernias less likely to recur when patch used during laparoscopic repair**  
Source: Reuters Medical News  
Date: June 21, 2002
- **GERD symptoms and hiatal hernia are risk factors for Barrett's esophagus**  
Source: Reuters Medical News  
Date: January 29, 2002

- **Recurrence associated with laparoscopic repair of large type III hiatal hernia**  
Source: Reuters Medical News  
Date: May 10, 2000
- **Progression of Barrett's esophagus related to presence of hiatal hernia**  
Source: Reuters Medical News  
Date: December 24, 1999
- **Hiatal hernia, common cause of heartburn, may be inherited**  
Source: Reuters Health eLine  
Date: October 22, 1999

### 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](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](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 "hiatal hernia" (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/](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 "hiatal hernia" (or synonyms). If you know the name of a company that is relevant to hiatal hernia, 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 “hiatal hernia” (or synonyms).

## Newsletter Articles

Use the Combined Health Information Database, and limit your search criteria to “newsletter articles.” Again, you will need to use the “Detailed Search” option. Go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. Go to the bottom of the search page where “You may refine your search by.” Select the dates and language that you prefer. For the format option, select “Newsletter Article.” Type “hiatal hernia” (or synonyms) into the “For these words:” box. You should check back periodically with this database as it is updated every three months. The following is a typical result when searching for newsletter articles on hiatal hernia:

- **Answers to Your Questions About Digestive Health: GERD, Hiatal Hernia, and Surgery**

Source: Digestive Health Matters. 4(3): 1-2. Fall 2002.

Contact: Available from International Foundation for Functional Gastrointestinal Disorders (IFFGD). P.O. Box 170864, Milwaukee, WI 53217. (888) 964-2001 or (414) 964-1799. Fax (414) 964-7176. Website: [www.iffgd.org](http://www.iffgd.org).

Summary: This newsletter article answers a question from a reader who is coping with gastroesophageal reflux disease (GERD, the return of stomach acid back into the esophagus) and a hiatal hernia. The reader has been advised to have surgery for the hernia and is interested in finding out the impact of surgery on the GERD, as well as other risk factors. The author first explains the basic anatomy and physiology of the esophagus, the lower esophageal sphincter (LES), and the stomach, then describes how surgical therapy can correct the underlying physical anomalies. The author then describes postoperative complications, followup data from research studies on this type of surgery, and areas of controversy. One sidebar describes the laparoscopic approach to this type of surgery. The author concludes by explaining the circumstances in which surgery would be an appropriate answer to the problems described.

## Academic Periodicals covering Hiatal Hernia

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

If you want complete details about the historical contents of a journal, you can also visit the following Web site: <http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi>. Here, type in the name of the journal or its abbreviation, and you will receive an index of published articles. At <http://locatorplus.gov/>, you can retrieve more indexing information on medical

periodicals (e.g. the name of the publisher). Select the button "Search LOCATORplus." Then type in the name of the journal and select the advanced search option "Journal Title Search."

## CHAPTER 8. RESEARCHING MEDICATIONS

### Overview

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

### U.S. Pharmacopeia

Because of historical investments by various organizations and the emergence of the Internet, it has become rather simple to learn about the medications recommended for hiatal hernia. 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<sup>®</sup> Advice for the Patient<sup>®</sup> 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 hiatal hernia. 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 hiatal hernia:

#### **Antacids**

- **Oral - U.S. Brands:** Advanced Formula Di-Gel; Alamag; Alamag Plus; Alenic Alka; Alenic Alka Extra Strength; Alka-Mints; Alkets; Alkets Extra Strength; Almacone; Almacone II; AlternaGEL; Alu-Cap; Aludrox; Alu-Tab; Amitone; Amphojel; Antacid Gecaps; Antacid Liquid; Antacid L  
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202047.html>

#### **Caffeine**

- **Systemic - U.S. Brands:** Cafcit; Caffeine Caplets; Dexitac Stay Alert Stimulant; Enerjets; Keep Alert; Maximum Strength SnapBack Stimulant Powders; NoDoz Maximum Strength Caplets; Pep-Back; Quick Pep; Ultra Pep-Back; Vivarin  
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202105.html>

#### **Omeprazole**

- **Systemic - U.S. Brands:** Prilosec  
<http://www.nlm.nih.gov/medlineplus/druginfo/uspdi/202423.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](http://www.pdrhealth.com/drug_info/index.html).

#### **Other Web Sites**

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

If you have any questions about a medical treatment, the FDA may have an office near you. Look for their number in the blue pages of the phone book. You can also contact the FDA through its toll-free number, 1-888-INFO-FDA (1-888-463-6332), or on the World Wide Web at **[www.fda.gov](http://www.fda.gov)**.



# APPENDICES



## APPENDIX A. PHYSICIAN RESOURCES

### Overview

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

### NIH Guidelines

Commonly referred to as “clinical” or “professional” guidelines, the National Institutes of Health publish physician guidelines for the most common diseases. Publications are available at the following by relevant Institute<sup>8</sup>:

- 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/>

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<sup>8</sup> 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](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](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](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](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.<sup>9</sup> 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:<sup>10</sup>

- **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](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](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](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](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](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](http://www.nlm.nih.gov/databases/databases_medline.html)

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<sup>9</sup> 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>).

<sup>10</sup> 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](http://www.nlm.nih.gov/research/visible/visible_human.html)

### The Combined Health Information Database

A comprehensive source of information on clinical guidelines written for professionals is the Combined Health Information Database. You will need to limit your search to one of the following: Brochure/Pamphlet, Fact Sheet, or Information Package, and “hiatal hernia” using the “Detailed Search” option. Go directly to the following hyperlink: <http://chid.nih.gov/detail/detail.html>. To find associations, use the drop boxes at the bottom of the search page where “You may refine your search by.” For the publication date, select “All Years.” Select your preferred language and the format option “Fact Sheet.” Type “hiatal hernia” (or synonyms) into the “For these words:” box. The following is a sample result:

- **Sensitive Gut: A Harvard Health Letter Special Report**

Source: Boston, MA: Harvard Medical School Health Publications Group. 1996. 39 p.

Contact: Available from Harvard Medical School Health Publications Group.  
Department GUT, P.O. Box 380, Boston, MA 02117. (617) 432-1485. Fax (617) 432-1506.  
PRICE: \$16.00 (as of 1996); bulk discounts available.

Summary: This report focuses on five functional gastrointestinal (GI) disorders: gastroesophageal reflux disease (GERD), nonulcer dyspepsia, irritable bowel syndrome (IBS), constipation, and excessive gas. The author first introduces the anatomy and physiology of the GI tract, emphasizing the process of digestion. The following five sections present a discussion of the definition, causes, diagnosis, and therapy for each of the disorders. Specific topics include the **hiatal hernia** connection to GERD, antireflux drug therapy, surgery, *Helicobacter pylori* infection, psychological factors in dyspepsia, the role of stress in IBS, the types of constipation, belching, and flatulence. The report concludes with an overview of recommended good gut hygiene, an appendix summarizing drugs used to treat functional gastrointestinal disorders, and a glossary of terms. 10 figures. 5 tables.

### The NLM Gateway<sup>11</sup>

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.<sup>12</sup> To use the NLM Gateway, simply go to the search site at <http://gateway.nlm.nih.gov/gw/Cmd>. Type “hiatal hernia” (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.

<sup>11</sup> Adapted from NLM: <http://gateway.nlm.nih.gov/gw/Cmd?Overview.x>.

<sup>12</sup> 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).

### Results Summary

Category	Items Found
Journal Articles	3473
Books / Periodicals / Audio Visual	42
Consumer Health	364
Meeting Abstracts	0
Other Collections	1
Total	3880

#### HSTAT<sup>13</sup>

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.<sup>14</sup> 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.<sup>15</sup> Simply search by "hiatal hernia" (or synonyms) at the following Web site: <http://text.nlm.nih.gov>.

#### Coffee Break: Tutorials for Biologists<sup>16</sup>

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.<sup>17</sup> 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.<sup>18</sup> 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/Coffeekbreak/>.

<sup>13</sup> Adapted from HSTAT: <http://www.nlm.nih.gov/pubs/factsheets/hstat.html>.

<sup>14</sup> The HSTAT URL is <http://hstat.nlm.nih.gov/>.

<sup>15</sup> 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.

<sup>16</sup> Adapted from <http://www.ncbi.nlm.nih.gov/Coffeekbreak/Archive/FAQ.html>.

<sup>17</sup> 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.

<sup>18</sup> 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.

## 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/>.

## 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 hiatal hernia 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 hiatal hernia. 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 hiatal hernia. 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 “hiatal hernia”:

- Other guides

- **Abdominal Aortic Aneurysm**

- <http://www.nlm.nih.gov/medlineplus/tutorials/abdominalaorticaneurysmloader.tml>

- **Aneurysms**

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

- **Birth Defects**

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

- **Esophagus Disorders**

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

- **Gastroesophageal Reflux/Hiatal Hernia**

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

- **Movement Disorders**

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

- **Stomach Disorders**

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

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

- General/Overviews

- **Gastroesophageal Reflux Disease**

- <http://www.nlm.nih.gov/medlineplus/tutorials/gerdloader.html>

- **Gastroesophageal Reflux Disease**

- Source: Society of Thoracic Surgeons

- <http://www.sts.org/doc/4119>

- **What Is a Hiatal Hernia?**

- Source: Mayo Foundation for Medical Education and Research

- <http://www.mayoclinic.com/invoke.cfm?id=DS00099>

- Diagnosis/Symptoms

- **Esophageal Muscle Test (Manometry)**

- Source: Mayo Foundation for Medical Education and Research

- <http://www.mayoclinic.com//invoke.cfm?id=AN00340>

- **Gastric Analysis**

- Source: National Institutes of Health, Clinical Center

- [http://www.cc.nih.gov/ccc/patient\\_education/procdiag/gastricanaly.pdf](http://www.cc.nih.gov/ccc/patient_education/procdiag/gastricanaly.pdf)

- **Radiography - Upper GI Tract**

- Source: American College of Radiology, Radiological Society of North America

- [http://www.radiologyinfo.org/content/upper\\_gi.htm](http://www.radiologyinfo.org/content/upper_gi.htm)

- Treatment
  - FDA Approves an Implant for Gastroesophageal Reflux Disease**  
Source: Food and Drug Administration  
<http://www.fda.gov/bbs/topics/ANSWERS/2003/ANS01216.html>
  - Information about Anti-Reflux Surgery**  
Source: Mayo Foundation for Medical Education and Research  
<http://www.mayoclinic.org/gerd-jax/refluxsurgery.html>
  
- Specific Conditions/Aspects
  - Dyspepsia--What It Is and What to Do about It**  
Source: American Academy of Family Physicians  
<http://familydoctor.org/474.xml>
  
- Children
  - FAQ on Infant Gastroesophageal Reflux**  
Source: La Leche League International  
<http://www.lalecheleague.org/FAQ/ger.html>
  - Gastroesophageal Reflux Disease (GERD)**  
Source: Nemours Foundation  
[http://kidshealth.org/parent/system/surgical/gerd\\_reflux\\_p6.html](http://kidshealth.org/parent/system/surgical/gerd_reflux_p6.html)
  - Gastroesophageal Reflux in Children**  
Source: American Medical Association  
[http://www.medem.com/medlb/article\\_detailb.cfm?article\\_ID=ZZZSTM4D9CC&sub\\_cat=195](http://www.medem.com/medlb/article_detailb.cfm?article_ID=ZZZSTM4D9CC&sub_cat=195)
  - Have You Heard of GERD?**  
Source: Nemours Foundation  
[http://kidshealth.org/kid/health\\_problems/stomach/gerd.html](http://kidshealth.org/kid/health_problems/stomach/gerd.html)
  - Spitting Up in Babies**  
Source: American Academy of Family Physicians  
<http://familydoctor.org/218.xml>
  
- From the National Institutes of Health
  - Heartburn, Hiatal Hernia, and Gastroesophageal Reflux Disease (GERD)**  
Source: National Digestive Diseases Information Clearinghouse  
<http://digestive.niddk.nih.gov/ddiseases/pubs/gerd/index.htm>
  
- Latest News
  - Reflux Link to Airway Problems in Kids Unclear**  
Source: 11/24/2003, Reuters Health  
[http://www.nlm.nih.gov//www.nlm.nih.gov/medlineplus/news/fullstory\\_14807.html](http://www.nlm.nih.gov//www.nlm.nih.gov/medlineplus/news/fullstory_14807.html)

- Organizations

- **American College of Gastroenterology**

- <http://www.acg.gi.org/>

- **National Institute of Diabetes and Digestive and Kidney Diseases**

- <http://www.niddk.nih.gov/>

- **Society of Thoracic Surgeons**

- <http://www.sts.org/section/stspatientinfo/>

- Research

- **Esophageal Cancer Is Uncommon, Heartburn Common**

- Source: American Cancer Society

- [http://www.cancer.org/docroot/nws/content/nws\\_1\\_1x\\_esophageal\\_cancer\\_is\\_uncommon\\_heartburn\\_common.asp](http://www.cancer.org/docroot/nws/content/nws_1_1x_esophageal_cancer_is_uncommon_heartburn_common.asp)

- Teenagers

- **Hiatal Hernias**

- Source: Nemours Foundation

- [http://kidshealth.org/teen/diseases\\_conditions/digestive/hernias\\_hiatal.html](http://kidshealth.org/teen/diseases_conditions/digestive/hernias_hiatal.html)

You may also choose to use the search utility provided by MEDLINEplus at the following Web address: <http://www.nlm.nih.gov/medlineplus/>. Simply type a keyword into the search box and click "Search." This utility is similar to the NIH search utility, with the exception that it only includes materials that are linked within the MEDLINEplus system (mostly patient-oriented information). It also has the disadvantage of generating unstructured results. We recommend, therefore, that you use this method only if you have a very targeted search.

### **The Combined Health Information Database (CHID)**

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

- **Hiatal Hernia**

- Source: in Sodeman, W.A., Jr. Instructions for Geriatric Patients. Philadelphia, PA: W.B. Saunders Company. 1995. p. 105-106.

- Contact: Available from W.B. Saunders Company. Order Fulfillment, 6277 Sea Harbor Drive, Orlando, FL 32887. (800) 545-2522. Fax (800) 874-6418 or (407) 352-3445. PRICE: \$38.95. ISBN: 0721643353.

- Summary: This chapter, from a book of instructions for geriatric patients, provides a basic information sheet on hiatal hernia. A hiatal hernia occurs when the stomach protrudes through the opening in the diaphragm. Sliding hiatal hernia seems to occur

with increasing frequency in elderly patients. Reflux of acid into the esophagus is common with a sliding hiatal hernia. The information sheet reviews treatment options, including elevating the head of the bed, avoiding food and drink for 2 hours before going to bed, not wearing tight or restricting garments, and not bending over to pick up objects from the floor. The information sheet notes that, in addition to these lifestyle modifications, patients may be placed on medications that can decrease the acid production in the stomach, neutralize the acid, or strengthen the muscle in the lower esophagus to prevent reflux. The information sheet concludes by reminding readers to contact their health care provider if they experience frequent, persistent heartburn, if they experience regurgitation of food into the mouth, or if they awaken with a bitter taste in the mouth or hoarseness. The instructions are designed to supplement and reinforce physician instructions to their patients. (AA-M).

- **Gastroesophageal Disease (Hiatal Hernia and Heartburn)**

Source: Bethesda, MD: National Digestive Diseases Information Clearinghouse. 2001. 6 p.

Contact: Available from National Digestive Diseases Information Clearinghouse (NDDIC). 2 Information Way, Bethesda, MD 20892-3570. (800) 891-5389 or (301) 654-3810. Fax (301) 634-0716. E-mail: [nddic@info.niddk.nih.gov](mailto:nddic@info.niddk.nih.gov). Website: [www.niddk.nih.gov](http://www.niddk.nih.gov). PRICE: Full-text available online at no charge; single copy free; bulk copies available. Order number: DD-160.

Summary: This fact sheet provides information on gastroesophageal reflux disease (GERD), a digestive disorder that affects the lower esophageal sphincter (LES) that connects the esophagus with the stomach. Written in a question-and-answer format, the fact sheet addresses causes, symptoms, treatment, and long-term complications of GERD. Specific topics include the role of hiatal hernia; how dietary and lifestyle choices may contribute to GERD; heartburn pain and how to control it; non-pharmaceutical treatment options for GERD; and diagnostic tests used to establish a diagnosis of GERD, including upper GI series, endoscopy, the Bernstein test, and esophageal manometry. The fact sheet also includes a description of the National Digestive Diseases Information Clearinghouse. 2 figures. 4 references.

- **Hiatal Hernia: Understanding a Common Problem**

Source: San Bruno, CA: StayWell Company. 1999. [2 p.].

Contact: Available from StayWell Company. Order Department, 1100 Grundy Lane, San Bruno, CA 94066-9821. (800) 333-3032. Fax (650) 244-4512. E-mail: [email@staywell.com](mailto:email@staywell.com). Website: [www.staywell.com](http://www.staywell.com). PRICE: \$17.95 for pack of 50; plus shipping and handling.

Summary: This patient education brochure describes hiatal hernia and its treatment. Written in nontechnical language, the brochure first describes hiatal hernia as a common problem that occurs when the stomach bulges into the chest. Most hiatal hernias cause no symptoms and need no treatment. Sometimes, hiatal hernias can cause reflux (return) of the gastric acid in the stomach back up into the esophagus. In these cases, symptoms can include heartburn or other chest discomfort; frequent burping; acid taste in the mouth; problems swallowing; and nighttime choking, coughing, or wheezing. Often a hiatal hernia is found during an examination or tests for another health problem. Diagnosis will include the patient's medical history and some diagnostic tests such as upper GI barium x ray, endoscopy, esophageal manometry, and 24 hour acid (pH) monitoring. Most treatment plans focus on lifestyle and behavior changes including: lose excess weight, avoid LES (lower esophageal sphincter) relaxers, avoid foods or

drinks that cause symptoms, and try acid reducing medications. The brochure notes that surgery is rarely needed to treat hiatal hernias. One section of the brochure illustrates and describes the physiology of the connection between the esophagus and stomach (the LES) and what happens in hiatal hernia. The last page of the brochure summarizes strategies for coping with a hiatal hernia. The brochure is illustrated with full color line drawings. 8 figures.

### **Healthfinder™**

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

- **Gastroesophageal Reflux Disease: (Hiatal Hernia and Heartburn)**

Summary: Gastroesophageal reflux disease (GERD) is a digestive disorder that affects the lower esophageal sphincter (LES)--the muscle connecting the esophagus with the stomach.

Source: National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

<http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=736>

### **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 hiatal hernia. 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/](http://directory.google.com/Top/Health/Conditions_and_Diseases/)
- Med Help International: <http://www.medhelp.org/HealthTopics/A.html>
- Open Directory Project: [http://dmoz.org/Health/Conditions\\_and\\_Diseases/](http://dmoz.org/Health/Conditions_and_Diseases/)
- Yahoo.com: [http://dir.yahoo.com/Health/Diseases\\_and\\_Conditions/](http://dir.yahoo.com/Health/Diseases_and_Conditions/)

- WebMD®Health: [http://my.webmd.com/health\\_topics](http://my.webmd.com/health_topics)

## Associations and Hiatal Hernia

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

- **CHERUBS - The Association of Congenital Diaphragmatic Hernia Research, Advocacy and Support**

Telephone: (919) 693-8158

Fax: (707) 924-1114

Email: [dawntorrence@cherubs-cdh.org](mailto:dawntorrence@cherubs-cdh.org)

Web Site: [www.cherubs-cdh.org](http://www.cherubs-cdh.org)

Background: **CHERUBS - The Association of Congenital Diaphragmatic Hernia Research, Advocacy and Support** is an international support group for the families of children who are born with Congenital **Diaphragmatic Hernias** (CDH) and their caregivers and physicians. Congenital **Diaphragmatic Hernia** is a rare condition that is present at birth and characterized by the protrusion of organs from the abdomen into the chest through an abnormal opening (hernia) in the muscle that divides the chest from the abdominal cavity. Established in 1993, **CHERUBS** is a volunteer organization associated with the March of Dimes, the Association of Birth Defect Children, Inc., and the California Birth Defects Monitoring Program. The Association serves people in the United States, Canada, Great Britain, and Ireland. **CHERUBS** offers a 'Parent Reference Guide,' periodic newsletters, and brochures; has a parent-to-parent matchup program; and provides referrals. Memberships are available, although medical professionals are asked to pay a one-time fee. In addition, the organization maintains a research library and compiles data from research surveys (e.g., Congenital **Diaphragmatic Hernia** Research Survey).

## Finding Associations

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

### 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 hiatal hernia. 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 "hiatal hernia" (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 "hiatal hernia". 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 "hiatal hernia" (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 "hiatal hernia" (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.<sup>19</sup>

### 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

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<sup>19</sup> 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)<sup>20</sup>:

- **Alabama:** Health InfoNet of Jefferson County (Jefferson County Library Cooperative, Lister Hill Library of the Health Sciences), <http://www.uab.edu/infonet/>
- **Alabama:** Richard M. Scrushy Library (American Sports Medicine Institute)
- **Arizona:** Samaritan Regional Medical Center: The Learning Center (Samaritan Health System, Phoenix, Arizona), <http://www.samaritan.edu/library/bannerlibs.htm>
- **California:** Kris Kelly Health Information Center (St. Joseph Health System, Humboldt), <http://www.humboldt1.com/~kkhic/index.html>
- **California:** Community Health Library of Los Gatos, <http://www.healthlib.org/orgresources.html>
- **California:** Consumer Health Program and Services (CHIPS) (County of Los Angeles Public Library, Los Angeles County Harbor-UCLA Medical Center Library) - Carson, CA, <http://www.colapublib.org/services/chips.html>
- **California:** Gateway Health Library (Sutter Gould Medical Foundation)
- **California:** Health Library (Stanford University Medical Center), <http://www-med.stanford.edu/healthlibrary/>
- **California:** Patient Education Resource Center - Health Information and Resources (University of California, San Francisco), <http://sfghdean.ucsf.edu/barnett/PERC/default.asp>
- **California:** Redwood Health Library (Petaluma Health Care District), <http://www.phcd.org/rdwdlib.html>
- **California:** Los Gatos PlaneTree Health Library, <http://planetreesanjose.org/>
- **California:** Sutter Resource Library (Sutter Hospitals Foundation, Sacramento), <http://suttermedicalcenter.org/library/>
- **California:** Health Sciences Libraries (University of California, Davis), <http://www.lib.ucdavis.edu/healthsci/>
- **California:** ValleyCare Health Library & Ryan Comer Cancer Resource Center (ValleyCare Health System, Pleasanton), <http://gaenet.stmarys-ca.edu/other.libs/gbal/east/vchl.html>
- **California:** Washington Community Health Resource Library (Fremont), <http://www.healthlibrary.org/>
- **Colorado:** William V. Gervasini Memorial Library (Exempla Healthcare), <http://www.saintjosephdenver.org/yourhealth/libraries/>
- **Connecticut:** Hartford Hospital Health Science Libraries (Hartford Hospital), <http://www.harthosp.org/library/>
- **Connecticut:** Healthnet: Connecticut Consumer Health Information Center (University of Connecticut Health Center, Lyman Maynard Stowe Library), <http://library.uchc.edu/departm/hnet/>

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<sup>20</sup> 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](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](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](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](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](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](http://www.lvcld.org/special_collections/medical/index.htm)
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library, Hanover), <http://www.dartmouth.edu/~biomed/resources.html#conshealth.html#d/>
- **New Jersey:** Consumer Health Library (Rahway Hospital, Rahway), <http://www.rahwayhospital.com/library.htm>
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center, Englewood), <http://www.englewoodhospital.com/links/index.htm>
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center, Englewood), <http://www.geocities.com/ResearchTriangle/9360/>
- **New York:** Choices in Health Information (New York Public Library) - NLM Consumer Pilot Project participant, <http://www.nypl.org/branch/health/links.html>
- **New York:** Health Information Center (Upstate Medical University, State University of New York, Syracuse), <http://www.upstate.edu/library/hic/>
- **New York:** Health Sciences Library (Long Island Jewish Medical Center, New Hyde Park), <http://www.lij.edu/library/library.html>
- **New York:** ViaHealth Medical Library (Rochester General Hospital), <http://www.nyam.org/library/>
- **Ohio:** Consumer Health Library (Akron General Medical Center, Medical & Consumer Health Library), <http://www.akrongeneral.org/hwlibrary.htm>
- **Oklahoma:** The Health Information Center at Saint Francis Hospital (Saint Francis Health System, Tulsa), <http://www.sfh-tulsa.com/services/healthinfo.asp>
- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center, The Dalles), <http://www.mcmc.net/phrc/>
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center, Hershey), <http://www.hmc.psu.edu/commhealth/>
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center, Danville), <http://www.geisinger.edu/education/commmlib.shtml>
- **Pennsylvania:** HealthInfo Library (Moses Taylor Hospital, Scranton), <http://www.mth.org/healthwellness.html>
- **Pennsylvania:** Hopwood Library (University of Pittsburgh, Health Sciences Library System, Pittsburgh), [http://www.hsls.pitt.edu/guides/chi/hopwood/index\\_html](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.shscars.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](http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a)). The NIH suggests the following Web sites in the ADAM Medical Encyclopedia when searching for information on hiatal hernia:

- **Basic Guidelines for Hiatal Hernia**

### **Diaphragmatic hernia**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/001135.htm>

### **Diaphragmatic hernia repair - congenital**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002936.htm>

### **Esophagitis**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/001153.htm>

### **Hiatal hernia**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/001137.htm>

### **Hiatal hernia repair**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002925.htm>

### **Peptic ulcer**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000206.htm>

- **Signs & Symptoms for Hiatal Hernia**

**Belching**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003080.htm>

**Bluish coloration of the skin**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003215.htm>

**Bowel sounds**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003137.htm>

**Breath sounds**

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

**Breathing difficulty**

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

**Burping**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003080.htm>

**Chest pain**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003079.htm>

**Dysphagia**

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

**Dyspnea**

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

**Heartburn**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003114.htm>

**Hernia**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003100.htm>

**Lung disease**

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

**Muscle**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003193.htm>

**Obesity**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003101.htm>

**Problems breathing**

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

**Swallowing difficulty**

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

**Vomiting**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003117.htm>

**Wheezing**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003070.htm>

- **Diagnostics and Tests for Hiatal Hernia**

**ALT**

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

**ANA**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003535.htm>

**Barium swallow X-ray**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003816.htm>

**Chest x-ray**

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

**Chest X-rays**

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

**Differential**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003657.htm>

**EGD (esophagogastroduodenoscopy)**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003888.htm>

**Endoscopy**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003338.htm>

**Esophageal manometry**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003884.htm>

**Gastric acid**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003883.htm>

**Prenatal ultrasound**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/003778.htm>

**X-ray**

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

- **Background Topics for Hiatal Hernia**

**Aspiration**

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

**Bleeding**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000045.htm>

**Chronic**

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

**Palpation**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002284.htm>

**Pulmonary (lung) aspiration**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/000036.htm>

**Respiratory**

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

**Smoking**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002032.htm>

**Symptomatic**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/002293.htm>

**Weight reduction**

Web site: <http://www.nlm.nih.gov/medlineplus/ency/article/001940.htm>

## Online Dictionary Directories

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

- Medical Dictionaries: Medical & Biological (World Health Organization): <http://www.who.int/hlt/virtuallibrary/English/diction.htm#Medical>
- MEL-Michigan Electronic Library List of Online Health and Medical Dictionaries (Michigan Electronic Library): <http://mel.lib.mi.us/health/health-dictionaries.html>
- Patient Education: Glossaries (DMOZ Open Directory Project): [http://dmoz.org/Health/Education/Patient\\_Education/Glossaries/](http://dmoz.org/Health/Education/Patient_Education/Glossaries/)
- Web of Online Dictionaries (Bucknell University): <http://www.yourdictionary.com/diction5.html#medicine>

## HIATAL HERNIA 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]

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

**Ablate:** In surgery, is to remove. [NIH]

**Abscess:** Accumulation of purulent material in tissues, organs, or circumscribed spaces, usually associated with signs of infection. [NIH]

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

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

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

**Adhesions:** Pathological processes consisting of the union of the opposing surfaces of a wound. [NIH]

**Adolescent Nutrition:** Nutrition of children aged 13-18 years. [NIH]

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

**Airway:** A device for securing unobstructed passage of air into and out of the lungs during general anesthesia. [NIH]

**Alendronate:** A nonhormonal medication for the treatment of postmenopausal osteoporosis in women. This drug builds healthy bone, restoring some of the bone loss as a result of osteoporosis. [NIH]

**Alertness:** A state of readiness to detect and respond to certain specified small changes occurring at random intervals in the environment. [NIH]

**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]

**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]

**Amenorrhea:** Absence of menstruation. [NIH]

**Amine:** An organic compound containing nitrogen; any member of a group of chemical compounds formed from ammonia by replacement of one or more of the hydrogen atoms by organic (hydrocarbon) radicals. The amines are distinguished as primary, secondary, and tertiary, according to whether one, two, or three hydrogen atoms are replaced. The amines

include allylamine, amylamine, ethylamine, methylamine, phenylamine, propylamine, and many other compounds. [EU]

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

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

**Anal Fissure:** A small tear in the anus that may cause itching, pain, or bleeding. [NIH]

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

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

**Anesthesia:** A state characterized by loss of feeling or sensation. This depression of nerve function is usually the result of pharmacologic action and is induced to allow performance of surgery or other painful procedures. [NIH]

**Aneurysm:** A sac formed by the dilatation of the wall of an artery, a vein, or the heart. [NIH]

**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]

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

**Anomalies:** Birth defects; abnormalities. [NIH]

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

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

**Anorexia Nervosa:** The chief symptoms are inability to eat, weight loss, and amenorrhea. [NIH]

**Antagonism:** Interference with, or inhibition of, the growth of a living organism by another living organism, due either to creation of unfavorable conditions (e. g. exhaustion of food supplies) or to production of a specific antibiotic substance (e. g. penicillin). [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]

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

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

**Antioxidants:** Naturally occurring or synthetic substances that inhibit or retard the oxidation of a substance to which it is added. They counteract the harmful and damaging effects of oxidation in animal tissues. [NIH]

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

**Aorta:** The main trunk of the systemic arteries. [NIH]

**Appendicitis:** Acute inflammation of the vermiform appendix. [NIH]

**Arrhythmia:** Any variation from the normal rhythm or rate of the heart beat. [NIH]

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

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

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

**Aspiration:** The act of inhaling. [NIH]

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

**Atrial:** Pertaining to an atrium. [EU]

**Atrium:** A chamber; used in anatomical nomenclature to designate a chamber affording entrance to another structure or organ. Usually used alone to designate an atrium of the heart. [EU]

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

**Autopsy:** Postmortem examination of the body. [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]

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

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

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

**Belching:** Noisy release of gas from the stomach through the mouth. Also called burping. [NIH]

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

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

**Bile Acids:** Acids made by the liver that work with bile to break down fats. [NIH]

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

**Bile Ducts:** Tubes that carry bile from the liver to the gallbladder for storage and to the small intestine for use in digestion. [NIH]

**Bile Pigments:** Pigments that give a characteristic color to bile including: bilirubin, biliverdine, and bilicyanin. [NIH]

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

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

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

**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]

**Bladder:** The organ that stores urine. [NIH]

**Bloating:** Fullness or swelling in the abdomen that often occurs after meals. [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]

**Bolus:** A single dose of drug usually injected into a blood vessel over a short period of time. Also called bolus infusion. [NIH]

**Bolus infusion:** A single dose of drug usually injected into a blood vessel over a short period of time. Also called bolus. [NIH]

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

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

**Brachytherapy:** A collective term for interstitial, intracavity, and surface radiotherapy. It uses small sealed or partly-sealed sources that may be placed on or near the body surface or within a natural body cavity or implanted directly into the tissues. [NIH]

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

**Breakdown:** A physical, metal, or nervous collapse. [NIH]

**Bronchi:** The larger air passages of the lungs arising from the terminal bifurcation of the trachea. [NIH]

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

**Bronchioles:** The tiny branches of air tubes in the lungs. [NIH]

**Bronchiolitis:** Inflammation of the bronchioles. [NIH]

**Bronchitis:** Inflammation (swelling and reddening) of the bronchi. [NIH]

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

**Bulimia:** Episodic binge eating. The episodes may be associated with the fear of not being able to stop eating, depressed mood, or self-deprecating thoughts (binge-eating disorder) and may frequently be terminated by self-induced vomiting (bulimia nervosa). [NIH]

**Butterflies:** Slender-bodied diurnal insects having large, broad wings often strikingly

colored and patterned. [NIH]

**Cafe-au-Lait Spots:** Light brown pigmented macules associated with neurofibromatosis and Albright's syndrome (see fibrous dysplasia, polyostotic). [NIH]

**Caffeine:** A methylxanthine naturally occurring in some beverages and also used as a pharmacological agent. Caffeine's most notable pharmacological effect is as a central nervous system stimulant, increasing alertness and producing agitation. It also relaxes smooth muscle, stimulates cardiac muscle, stimulates diuresis, and appears to be useful in the treatment of some types of headache. Several cellular actions of caffeine have been observed, but it is not entirely clear how each contributes to its pharmacological profile. Among the most important are inhibition of cyclic nucleotide phosphodiesterases, antagonism of adenosine receptors, and modulation of intracellular calcium handling. [NIH]

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

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

**Carbohydrates:** The largest class of organic compounds, including starches, glycogens, cellulose, gums, and simple sugars. Carbohydrates are composed of carbon, hydrogen, and oxygen in a ratio of  $C_n(H_2O)_n$ . [NIH]

**Carbon Dioxide:** A colorless, odorless gas that can be formed by the body and is necessary for the respiration cycle of plants and animals. [NIH]

**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]

**Cardiology:** The study of the heart, its physiology, and its functions. [NIH]

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

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

**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]

**Cations:** Positively charged atoms, radicals or groups of atoms which travel to the cathode or negative pole during electrolysis. [NIH]

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

**Cecum:** The beginning of the large intestine. The cecum is connected to the lower part of the small intestine, called the ileum. [NIH]

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

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

**Cell Respiration:** The metabolic process of all living cells (animal and plant) in which oxygen is used to provide a source of energy for the cell. [NIH]

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

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

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

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

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

**Chest Pain:** Pressure, burning, or numbness in the chest. [NIH]

**Chest wall:** The ribs and muscles, bones, and joints that make up the area of the body between the neck and the abdomen. [NIH]

**Cholangitis:** Inflammation of a bile duct. [NIH]

**Cholecystitis:** Inflammation of the gallbladder. [NIH]

**Cholesterol:** The principal sterol of all higher animals, distributed in body tissues, especially the brain and spinal cord, and in animal fats and oils. [NIH]

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

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

**Colitis:** Inflammation of the colon. [NIH]

**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]

**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]

**Conception:** The onset of pregnancy, marked by implantation of the blastocyst; the formation of a viable zygote. [EU]

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

**Connective Tissue:** Tissue that supports and binds other tissues. It consists of connective

tissue cells embedded in a large amount of extracellular matrix. [NIH]

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

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

**Constipation:** Infrequent or difficult evacuation of feces. [NIH]

**Constriction:** The act of constricting. [NIH]

**Consumption:** Pulmonary tuberculosis. [NIH]

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

**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 Circulation:** The circulation of blood through the coronary vessels of the heart. [NIH]

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

**Corpus:** The body of the uterus. [NIH]

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

**Criterion:** A standard by which something may be judged. [EU]

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

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

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

**Databases, Bibliographic:** Extensive collections, reputedly complete, of references and citations to books, articles, publications, etc., generally on a single subject or specialized subject area. Databases can operate through automated files, libraries, or computer disks. The concept should be differentiated from factual databases which is used for collections of data and facts apart from bibliographic references to them. [NIH]

**Decarboxylation:** The removal of a carboxyl group, usually in the form of carbon dioxide, from a chemical compound. [NIH]

**Deuterium:** Deuterium. The stable isotope of hydrogen. It has one neutron and one proton in the nucleus. [NIH]

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

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

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

**Diarrhoea:** Abnormal frequency and liquidity of faecal discharges. [EU]

**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]

**Dilatation:** The act of dilating. [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]

**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]

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

**Diuresis:** Increased excretion of urine. [EU]

**Diurnal:** Occurring during the day. [EU]

**Diverticula:** Plural form of diverticulum. [NIH]

**Diverticulitis:** Inflammation of a diverticulum or diverticula. [NIH]

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

**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]

**Duodenal Ulcer:** An ulcer in the lining of the first part of the small intestine (duodenum). [NIH]

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

**Dyspepsia:** Impaired digestion, especially after eating. [NIH]

**Dysphagia:** Difficulty in swallowing. [EU]

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

**Dyspnea:** Difficult or labored breathing. [NIH]

**Dyspnoea:** Difficult or laboured breathing. [EU]

**Ectopic:** Pertaining to or characterized by ectopia. [EU]

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

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

**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]

**Electrolytes:** Substances that break up into ions (electrically charged particles) when they are dissolved in body fluids or water. Some examples are sodium, potassium, chloride, and calcium. Electrolytes are primarily responsible for the movement of nutrients into cells, and the movement of wastes out of cells. [NIH]

**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]

**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 Medicine:** A branch of medicine concerned with an individual's resuscitation, transportation and care from the point of injury or beginning of illness through the hospital or other emergency treatment facility. [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]

**Emulsion:** A preparation of one liquid distributed in small globules throughout the body of a second liquid. The dispersed liquid is the discontinuous phase, and the dispersion medium is the continuous phase. When oil is the dispersed liquid and an aqueous solution is the continuous phase, it is known as an oil-in-water emulsion, whereas when water or aqueous solution is the dispersed phase and oil or oleaginous substance is the continuous phase, it is known as a water-in-oil emulsion. Pharmaceutical emulsions for which official standards have been promulgated include cod liver oil emulsion, cod liver oil emulsion with malt, liquid petrolatum emulsion, and phenolphthalein in liquid petrolatum emulsion. [EU]

**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]

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

**Epigastric:** Having to do with the upper middle area of the abdomen. [NIH]

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

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

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

**Esophageal Manometry:** A test to measure muscle tone in the esophagus. [NIH]

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

**Esophagectomy:** An operation to remove a portion of the esophagus. [NIH]

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

**Esophagogastroduodenoscopy:** Exam of the upper digestive tract using an endoscope. [NIH]

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

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

**Evacuation:** An emptying, as of the bowels. [EU]

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

**Expiration:** The act of breathing out, or expelling air from the lungs. [EU]

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

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

**Fat:** Total lipids including phospholipids. [NIH]

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

**Fetus:** The developing offspring from 7 to 8 weeks after conception until birth. [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]

**Fixation:** 1. The act or operation of holding, suturing, or fastening in a fixed position. 2. The condition of being held in a fixed position. 3. In psychiatry, a term with two related but distinct meanings : (1) arrest of development at a particular stage, which like regression (return to an earlier stage), if temporary is a normal reaction to setbacks and difficulties but if protracted or frequent is a cause of developmental failures and emotional problems, and (2) a close and suffocating attachment to another person, especially a childhood figure, such as one's mother or father. Both meanings are derived from psychoanalytic theory and refer to 'fixation' of libidinal energy either in a specific erogenous zone, hence fixation at the oral, anal, or phallic stage, or in a specific object, hence mother or father fixation. 4. The use of a fixative (q.v.) to preserve histological or cytological specimens. 5. In chemistry, the process whereby a substance is removed from the gaseous or solution phase and localized, as in carbon dioxide fixation or nitrogen fixation. 6. In ophthalmology, direction of the gaze so that the visual image of the object falls on the fovea centralis. 7. In film processing, the chemical removal of all undeveloped salts of the film emulsion, leaving only the developed silver to form a permanent image. [EU]

**Flatulence:** Production or presence of gas in the gastrointestinal tract which may be expelled through the anus. [NIH]

**Flatus:** Gas passed through the rectum. [NIH]

**Fovea:** The central part of the macula that provides the sharpest vision. [NIH]

**Fundus:** The larger part of a hollow organ that is farthest away from the organ's opening. The bladder, gallbladder, stomach, uterus, eye, and cavity of the middle ear all have a fundus. [NIH]

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

**Gallstones:** The solid masses or stones made of cholesterol or bilirubin that form in the gallbladder or bile ducts. [NIH]

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

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

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

**Gastric Emptying:** The evacuation of food from the stomach into the duodenum. [NIH]

**Gastric Fundus:** The superior portion of the body of the stomach above the level of the cardiac notch. [NIH]

**Gastric Juices:** Liquids produced in the stomach to help break down food and kill bacteria. [NIH]

**Gastric Mucosa:** Surface epithelium in the stomach that invaginates into the lamina propria, forming gastric pits. Tubular glands, characteristic of each region of the stomach (cardiac, gastric, and pyloric), empty into the gastric pits. The gastric mucosa is made up of several different kinds of cells. [NIH]

**Gastritis:** Inflammation of the stomach. [EU]

**Gastrocolic Reflex:** Increase of muscle movement in the gastrointestinal tract when food enters an empty stomach. May cause the urge to have a bowel movement right after eating. [NIH]

**Gastroduodenal:** Pertaining to or communicating with the stomach and duodenum, as a gastroduodenal fistula. [EU]

**Gastroenteritis:** An acute inflammation of the lining of the stomach and intestines, characterized by anorexia, nausea, diarrhoea, abdominal pain, and weakness, which has various causes, including food poisoning due to infection with such organisms as *Escherichia coli*, *Staphylococcus aureus*, and *Salmonella* species; consumption of irritating food or drink; or psychological factors such as anger, stress, and fear. Called also enterogastritis. [EU]

**Gastroenterologist:** A doctor who specializes in diagnosing and treating disorders of the digestive system. [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 tract:** The stomach and intestines. [NIH]

**Gastroplasty:** Surgical treatment of the stomach or lower esophagus used to decrease the size of the stomach. The procedure is used mainly in the treatment of morbid obesity and to correct defects in the lower esophagus or the stomach. Different procedures employed include vertical (mesh) banded gastroplasty, silicone elastomer ring vertical gastroplasty and horizontal banded gastroplasty. [NIH]

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

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

[NIH]

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

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

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

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

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

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

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

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

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

**Health Promotion:** Encouraging consumer behaviors most likely to optimize health potentials (physical and psychosocial) through health information, preventive programs, and access to medical care. [NIH]

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

**Heartburn:** Substernal pain or burning sensation, usually associated with regurgitation of gastric juice into the esophagus. [NIH]

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

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

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

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

**Hernia:** Protrusion of a loop or knuckle of an organ or tissue through an abnormal opening. [NIH]

**Hiatal Hernia:** A small opening in the diaphragm that allows the upper part of the stomach to move up into the chest. Causes heartburn from stomach acid flowing back up through the opening. [NIH]

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

**Histidine:** An essential amino acid important in a number of metabolic processes. It is required for the production of histamine. [NIH]

**Hoarseness:** An unnaturally deep or rough quality of voice. [NIH]

**Homeopathic remedies:** Small doses of medicines, herbs, or both that are believed to stimulate the immune system. [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]

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

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

**Hyperbilirubinemia:** Pathologic process consisting of an abnormal increase in the amount of bilirubin in the circulating blood, which may result in jaundice. [NIH]

**Hypertelorism:** Abnormal increase in the interorbital distance due to overdevelopment of the lesser wings of the sphenoid. [NIH]

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

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

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

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

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

**Incarceration:** Abnormal retention or confinement of a body part; specifically : a constriction of the neck of a hernial sac so that the hernial contents become irreducible. [EU]

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

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

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

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

**Indigestion:** Poor digestion. Symptoms include heartburn, nausea, bloating, and gas. Also called dyspepsia. [NIH]

**Infancy:** The period of complete dependency prior to the acquisition of competence in

walking, talking, and self-feeding. [NIH]

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

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

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

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

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

**Ingestion:** Taking into the body by mouth [NIH]

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

**Inorganic:** Pertaining to substances not of organic origin. [EU]

**Insecticides:** Pesticides designed to control insects that are harmful to man. The insects may be directly harmful, as those acting as disease vectors, or indirectly harmful, as destroyers of crops, food products, or textile fabrics. [NIH]

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

**Interorbital:** Between the orbits. [NIH]

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

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

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

**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]

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

**Iodine-131:** Radioactive isotope of iodine. [NIH]

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

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

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

**Jaundice:** A clinical manifestation of hyperbilirubinemia, consisting of deposition of bile pigments in the skin, resulting in a yellowish staining of the skin and mucous membranes. [NIH]

**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]

**Keyhole:** A carrier molecule. [NIH]

**Lactose Intolerance:** The disease state resulting from the absence of lactase enzyme in the mucosal cells of the gastrointestinal tract, and therefore an inability to break down the disaccharide lactose in milk for absorption from the gastrointestinal tract. It is manifested by indigestion of a mild nature to severe diarrhea. It may be due to inborn defect genetically conditioned or may be acquired. [NIH]

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

**Laparotomy:** A surgical incision made in the wall of the abdomen. [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]

**Laryngitis:** Inflammation of the larynx. This condition presents itself with dryness and soreness of the throat, difficulty in swallowing, cough, and hoarseness. [NIH]

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

**Least-Squares Analysis:** A principle of estimation in which the estimates of a set of parameters in a statistical model are those quantities minimizing the sum of squared differences between the observed values of a dependent variable and the values predicted by the model. [NIH]

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

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

**Ligament:** A band of fibrous tissue that connects bones or cartilages, serving to support and

strengthen joints. [EU]

**Likelihood Functions:** Functions constructed from a statistical model and a set of observed data which give the probability of that data for various values of the unknown model parameters. Those parameter values that maximize the probability are the maximum likelihood estimates of the parameters. [NIH]

**Linear Models:** Statistical models in which the value of a parameter for a given value of a factor is assumed to be equal to  $a + bx$ , where  $a$  and  $b$  are constants. The models predict a linear regression. [NIH]

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

**Lobe:** A portion of an organ such as the liver, lung, breast, or brain. [NIH]

**Lobectomy:** The removal of a lobe. [NIH]

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

**Logistic Models:** Statistical models which describe the relationship between a qualitative dependent variable (that is, one which can take only certain discrete values, such as the presence or absence of a disease) and an independent variable. A common application is in epidemiology for estimating an individual's risk (probability of a disease) as a function of a given risk factor. [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 Ring:** An abnormal ring of tissue that may partially block the lower esophagus. Also called Schatzki's ring. [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]

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

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

**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]

**Magnetic Resonance Imaging:** Non-invasive method of demonstrating internal anatomy based on the principle that atomic nuclei in a strong magnetic field absorb pulses of radiofrequency energy and emit them as radiowaves which can be reconstructed into computerized images. The concept includes proton spin tomographic techniques. [NIH]

**Malabsorption:** Impaired intestinal absorption of nutrients. [EU]

**Malignancy:** A cancerous tumor that can invade and destroy nearby tissue and spread to other parts of the body. [NIH]

**Malignant:** Cancerous; a growth with a tendency to invade and destroy nearby tissue and spread to other parts of the body. [NIH]

**Malnutrition:** A condition caused by not eating enough food or not eating a balanced diet. [NIH]

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

**Membrane Proteins:** Proteins which are found in membranes including cellular and intracellular membranes. They consist of two types, peripheral and integral proteins. They include most membrane-associated enzymes, antigenic proteins, transport proteins, and drug, hormone, and lectin receptors. [NIH]

**Memory:** Complex mental function having four distinct phases: (1) memorizing or learning, (2) retention, (3) recall, and (4) recognition. Clinically, it is usually subdivided into immediate, recent, and remote memory. [NIH]

**Meninges:** The three membranes that cover and protect the brain and spinal cord. [NIH]

**Menopause:** Permanent cessation of menstruation. [NIH]

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

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

**Mitral Valve:** The valve between the left atrium and left ventricle of the heart. [NIH]

**Mitral Valve Prolapse:** Abnormal protrusion of one or both of the leaflets of the mitral valve into the left atrium during systole. This may be accompanied by mitral regurgitation, systolic murmur, nonejection click, or cardiac arrhythmia. [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]

**Monoclonal:** An antibody produced by culturing a single type of cell. It therefore consists of a single species of immunoglobulin molecules. [NIH]

**Motility:** The ability to move spontaneously. [EU]

**Motion Sickness:** Sickness caused by motion, as sea sickness, train sickness, car sickness, and air sickness. [NIH]

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

**Mucosal Lining:** The lining of GI tract organs that makes mucus. [NIH]

**Mucus:** The viscous secretion of mucous membranes. It contains mucin, white blood cells, water, inorganic salts, and exfoliated cells. [NIH]

**Myalgia:** Pain in a muscle or muscles. [EU]

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

**Myocardial Ischemia:** A disorder of cardiac function caused by insufficient blood flow to the muscle tissue of the heart. The decreased blood flow may be due to narrowing of the coronary arteries (coronary arteriosclerosis), to obstruction by a thrombus (coronary thrombosis), or less commonly, to diffuse narrowing of arterioles and other small vessels within the heart. Severe interruption of the blood supply to the myocardial tissue may result in necrosis of cardiac muscle (myocardial infarction). [NIH]

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

**Myopia:** That error of refraction in which rays of light entering the eye parallel to the optic axis are brought to a focus in front of the retina, as a result of the eyeball being too long from front to back (axial m.) or of an increased strength in refractive power of the media of the eye (index m.). Called also nearsightedness, because the near point is less distant than it is in emmetropia with an equal amplitude of accommodation. [EU]

**Nasal Mucosa:** The mucous membrane lining the nasal cavity. [NIH]

**Nausea:** An unpleasant sensation in the stomach usually accompanied by the urge to vomit. Common causes are early pregnancy, sea and motion sickness, emotional stress, intense pain, food poisoning, and various enteroviruses. [NIH]

**Nearsightedness:** The common term for myopia. [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]

**Need:** A state of tension or dissatisfaction felt by an individual that impels him to action toward a goal he believes will satisfy the impulse. [NIH]

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

**Nervous System:** The entire nerve apparatus composed of the brain, spinal cord, nerves and ganglia. [NIH]

**Neutrons:** Electrically neutral elementary particles found in all atomic nuclei except light hydrogen; the mass is equal to that of the proton and electron combined and they are unstable when isolated from the nucleus, undergoing beta decay. Slow, thermal, epithermal, and fast neutrons refer to the energy levels with which the neutrons are ejected from heavier nuclei during their decay. [NIH]

**Nitrogen:** An element with the atomic symbol N, atomic number 7, and atomic weight 14. Nitrogen exists as a diatomic gas and makes up about 78% of the earth's atmosphere by volume. It is a constituent of proteins and nucleic acids and found in all living cells. [NIH]

**Nonulcer Dyspepsia:** Constant pain or discomfort in the upper GI tract. Symptoms include burning, nausea, and bloating, but no ulcer. Possibly caused by muscle spasms. [NIH]

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

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

**Oesophagitis:** Inflammation of the esophagus. [EU]

**Ophthalmology:** A surgical specialty concerned with the structure and function of the eye and the medical and surgical treatment of its defects and diseases. [NIH]

**Osteoporosis:** Reduction of bone mass without alteration in the composition of bone, leading to fractures. Primary osteoporosis can be of two major types: postmenopausal osteoporosis and age-related (or senile) osteoporosis. [NIH]

**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]

**Oxygen Consumption:** The oxygen consumption is determined by calculating the difference between the amount of oxygen inhaled and exhaled. [NIH]

**Palliative:** 1. Affording relief, but not cure. 2. An alleviating medicine. [EU]

**Pancreas:** A mixed exocrine and endocrine gland situated transversely across the posterior abdominal wall in the epigastric and hypochondriac regions. The endocrine portion is comprised of the Islets of Langerhans, while the exocrine portion is a compound acinar gland that secretes digestive enzymes. [NIH]

**Pancreatic:** Having to do with the pancreas. [NIH]

**Pancreatic cancer:** Cancer of the pancreas, a salivary gland of the abdomen. [NIH]

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

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

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

**Papillary:** Pertaining to or resembling papilla, or nipple. [EU]

**Paralysis:** Loss of ability to move all or part of the body. [NIH]

**Parasite:** An animal or a plant that lives on or in an organism of another species and gets at least some of its nutrition from that other organism. [NIH]

**Parietal:** 1. Of or pertaining to the walls of a cavity. 2. Pertaining to or located near the parietal bone, as the parietal lobe. [EU]

**Parietal Lobe:** Upper central part of the cerebral hemisphere. [NIH]

**Paroxysmal:** Recurring in paroxysms (= spasms or seizures). [EU]

**Patch:** A piece of material used to cover or protect a wound, an injured part, etc.: a patch over the eye. [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]

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

**Pepsin:** An enzyme made in the stomach that breaks down proteins. [NIH]

**Pepsin A:** Formed from pig pepsinogen by cleavage of one peptide bond. The enzyme is a single polypeptide chain and is inhibited by methyl 2-diazoacetamidohexanoate. It cleaves peptides preferentially at the carbonyl linkages of phenylalanine or leucine and acts as the principal digestive enzyme of gastric juice. [NIH]

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

**Peptic Ulcer:** Ulcer that occurs in those portions of the alimentary tract which come into contact with gastric juice containing pepsin and acid. It occurs when the amount of acid and pepsin is sufficient to overcome the gastric mucosal barrier. [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]

**Perforation:** 1. The act of boring or piercing through a part. 2. A hole made through a part or substance. [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]

**Pericardium:** The fibroserous sac surrounding the heart and the roots of the great vessels. [NIH]

**Peristalsis:** The rippling motion of muscles in the intestine or other tubular organs characterized by the alternate contraction and relaxation of the muscles that propel the contents onward. [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]

**Peritonitis:** Inflammation of the peritoneum; a condition marked by exudations in the peritoneum of serum, fibrin, cells, and pus. It is attended by abdominal pain and tenderness, constipation, vomiting, and moderate fever. [EU]

**Pesticides:** Chemicals used to destroy pests of any sort. The concept includes fungicides (industrial fungicides), insecticides, rodenticides, etc. [NIH]

**Phallic:** Pertaining to the phallus, or penis. [EU]

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

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

**Phospholipids:** Lipids containing one or more phosphate groups, particularly those derived from either glycerol (phosphoglycerides; glycerophospholipids) or sphingosine (sphingolipids). They are polar lipids that are of great importance for the structure and function of cell membranes and are the most abundant of membrane lipids, although not stored in large amounts in the system. [NIH]

**Physiologic:** Having to do with the functions of the body. When used in the phrase "physiologic age," it refers to an age assigned by general health, as opposed to calendar age. [NIH]

**Physiology:** The science that deals with the life processes and functions of organismus, their cells, tissues, and organs. [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]

**Pneumonitis:** A disease caused by inhaling a wide variety of substances such as dusts and molds. Also called "farmer's disease". [NIH]

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

**Polymers:** Compounds formed by the joining of smaller, usually repeating, units linked by covalent bonds. These compounds often form large macromolecules (e.g., polypeptides,

proteins, plastics). [NIH]

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

**Polytetrafluoroethylene:** Homopolymer of tetrafluoroethylene. Nonflammable, tough, inert plastic tubing or sheeting; used to line vessels, insulate, protect or lubricate apparatus; also as filter, coating for surgical implants or as prosthetic material. Synonyms: Fluoroflex; Fluoroplast; Ftoroplast; Halon; Polyfene; PTFE; Tetron. [NIH]

**Port:** An implanted device through which blood may be withdrawn and drugs may be infused without repeated needle sticks. Also called a port-a-cath. [NIH]

**Port-a-cath:** An implanted device through which blood may be withdrawn and drugs may be infused without repeated needle sticks. Also called a port. [NIH]

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

**Postmenopausal:** Refers to the time after menopause. Menopause is the time in a woman's life when menstrual periods stop permanently; also called "change of life." [NIH]

**Postoperative:** After surgery. [NIH]

**Postoperative Complications:** Pathologic processes that affect patients after a surgical procedure. They may or may not be related to the disease for which the surgery was done, and they may or may not be direct results of the surgery. [NIH]

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

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

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

**Projection:** A defense mechanism, operating unconsciously, whereby that which is emotionally unacceptable in the self is rejected and attributed (projected) to others. [NIH]

**Prosthesis:** An artificial replacement of a part of the body. [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]

**Proton Pump:** Integral membrane proteins that transport protons across a membrane against a concentration gradient. This transport is driven by hydrolysis of ATP by H(+)-transporting ATP synthase. [NIH]

**Protons:** Stable elementary particles having the smallest known positive charge, found in the nuclei of all elements. The proton mass is less than that of a neutron. A proton is the nucleus of the light hydrogen atom, i.e., the hydrogen ion. [NIH]

**Proximal:** Nearest; closer to any point of reference; opposed to distal. [EU]

**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 Fibrosis:** Chronic inflammation and progressive fibrosis of the pulmonary alveolar walls, with steadily progressive dyspnea, resulting finally in death from oxygen lack or right heart failure. [NIH]

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

**Purulent:** Consisting of or containing pus; associated with the formation of or caused by pus. [EU]

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

**Radiation:** Emission or propagation of electromagnetic energy (waves/rays), or the waves/rays themselves; a stream of electromagnetic particles (electrons, neutrons, protons, alpha particles) or a mixture of these. The most common source is the sun. [NIH]

**Radiation therapy:** The use of high-energy radiation from x-rays, gamma rays, neutrons, and other sources to kill cancer cells and shrink tumors. Radiation may come from a machine outside the body (external-beam radiation therapy), or it may come from radioactive material placed in the body in the area near cancer cells (internal radiation therapy, implant radiation, or brachytherapy). Systemic radiation therapy uses a radioactive substance, such as a radiolabeled monoclonal antibody, that circulates throughout the body. Also called radiotherapy. [NIH]

**Radioactive:** Giving off radiation. [NIH]

**Radiography:** Examination of any part of the body for diagnostic purposes by means of roentgen rays, recording the image on a sensitized surface (such as photographic film). [NIH]

**Radiolabeled:** Any compound that has been joined with a radioactive substance. [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]

**Radiotherapy:** The use of ionizing radiation to treat malignant neoplasms and other benign conditions. The most common forms of ionizing radiation used as therapy are x-rays, gamma rays, and electrons. A special form of radiotherapy, targeted radiotherapy, links a cytotoxic radionuclide to a molecule that targets the tumor. When this molecule is an antibody or other immunologic molecule, the technique is called radioimmunotherapy. [NIH]

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

**Receptor:** A molecule inside or on the surface of a cell that binds to a specific substance and causes a specific physiologic effect in the cell. [NIH]

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

**Recur:** To occur again. Recurrence is the return of cancer, at the same site as the original (primary) tumor or in another location, after the tumor had disappeared. [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]

**Refraction:** A test to determine the best eyeglasses or contact lenses to correct a refractive

error (myopia, hyperopia, or astigmatism). [NIH]

**Refractive Power:** The ability of an object, such as the eye, to bend light as light passes through it. [NIH]

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

**Regression Analysis:** Procedures for finding the mathematical function which best describes the relationship between a dependent variable and one or more independent variables. In linear regression (see linear models) the relationship is constrained to be a straight line and least-squares analysis is used to determine the best fit. In logistic regression (see logistic models) the dependent variable is qualitative rather than continuously variable and likelihood functions are used to find the best relationship. In multiple regression the dependent variable is considered to depend on more than a single independent variable. [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]

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

**Retina:** The ten-layered nervous tissue membrane of the eye. It is continuous with the optic nerve and receives images of external objects and transmits visual impulses to the brain. Its outer surface is in contact with the choroid and the inner surface with the vitreous body. The outer-most layer is pigmented, whereas the inner nine layers are transparent. [NIH]

**Retractor:** An instrument designed for pulling aside tissues to improve exposure at operation; an instrument for drawing back the edge of a wound. [NIH]

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

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

**Rodenticides:** Substances used to destroy or inhibit the action of rats, mice, or other rodents. [NIH]

**Salivary:** The duct that convey saliva to the mouth. [NIH]

**Salivary glands:** Glands in the mouth that produce saliva. [NIH]

**Scleroderma:** A chronic disorder marked by hardening and thickening of the skin. Scleroderma can be localized or it can affect the entire body (systemic). [NIH]

**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]

**Senile:** Relating or belonging to old age; characteristic of old age; resulting from infirmity of old age. [NIH]

**Sexually Transmitted Diseases:** Diseases due to or propagated by sexual contact. [NIH]

**Shock:** The general bodily disturbance following a severe injury; an emotional or moral upset occasioned by some disturbing or unexpected experience; disruption of the circulation, which can upset all body functions: sometimes referred to as circulatory shock. [NIH]

**Side effect:** A consequence other than the one(s) for which an agent or measure is used, as the adverse effects produced by a drug, especially on a tissue or organ system other than the one sought to be benefited by its administration. [EU]

**Signs and Symptoms:** Clinical manifestations that can be either objective when observed by a physician, or subjective when perceived by the patient. [NIH]

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

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

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

**Soft tissue:** Refers to muscle, fat, fibrous tissue, blood vessels, or other supporting tissue of the body. [NIH]

**Spastic:** 1. Of the nature of or characterized by spasms. 2. Hypertonic, so that the muscles are stiff and the movements awkward. 3. A person exhibiting spasticity, such as occurs in spastic paralysis or in cerebral palsy. [EU]

**Spasticity:** A state of hypertonicity, or increase over the normal tone of a muscle, with heightened deep tendon reflexes. [EU]

**Specialist:** In medicine, one who concentrates on 1 special branch of medical science. [NIH]

**Species:** A taxonomic category subordinate to a genus (or subgenus) and superior to a subspecies or variety, composed of individuals possessing common characters distinguishing them from other categories of individuals of the same taxonomic level. In taxonomic nomenclature, species are designated by the genus name followed by a Latin or Latinized adjective or noun. [EU]

**Sphenoid:** An unpaired cranial bone with a body containing the sphenoid sinus and forming the posterior part of the medial walls of the orbits. [NIH]

**Sphincter:** A ringlike band of muscle fibres that constricts a passage or closes a natural orifice; called also musculus sphincter. [EU]

**Spinal cord:** The main trunk or bundle of nerves running down the spine through holes in the spinal bone (the vertebrae) from the brain to the level of the lower back. [NIH]

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

**Stimulus:** That which can elicit or evoke action (response) in a muscle, nerve, gland or other excitable tissue, or cause an augmenting action upon any function or metabolic process. [NIH]

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

**Stomach Ulcer:** An open sore in the lining of the stomach. Also called gastric ulcer. [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 psychologic, or both. [NIH]

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

**Subacute:** Somewhat acute; between acute and chronic. [EU]

**Subclinical:** Without clinical manifestations; said of the early stage(s) of an infection or other disease or abnormality before symptoms and signs become apparent or detectable by clinical examination or laboratory tests, or of a very mild form of an infection or other disease or abnormality. [EU]

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

**Suction:** The removal of secretions, gas or fluid from hollow or tubular organs or cavities by means of a tube and a device that acts on negative pressure. [NIH]

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

**Suppression:** A conscious exclusion of disapproved desire contrary with repression, in which the process of exclusion is not conscious. [NIH]

**Surgical Mesh:** Any woven or knit material of open texture used in surgery for the repair, reconstruction, or substitution of tissue. The mesh is usually a synthetic fabric made of various polymers. It is occasionally made of metal. [NIH]

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

**Syncope:** A temporary suspension of consciousness due to generalized cerebral ischemia, a faint or swoon. [EU]

**Systemic:** Affecting the entire body. [NIH]

**Systole:** Period of contraction of the heart, especially of the ventricles. [NIH]

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

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

**Thoracic:** Having to do with the chest. [NIH]

**Thoracotomy:** Surgical incision into the chest wall. [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]

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

**Thyroid:** A gland located near the windpipe (trachea) that produces thyroid hormone,

which helps regulate growth and metabolism. [NIH]

**Tips to control heartburn:** ? Avoid foods and beverages that affect lower esophageal sphincter pressure or irritate the esophagus lining. [NIH]

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

**Toxins:** Specific, characterizable, poisonous chemicals, often proteins, with specific biological properties, including immunogenicity, produced by microbes, higher plants, or animals. [NIH]

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

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

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

**Treatment Failure:** A measure of the quality of health care by assessment of unsuccessful results of management and procedures used in combating disease, in individual cases or series. [NIH]

**Trichomoniasis:** An infection with the protozoan parasite *Trichomonas vaginalis*. [NIH]

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

**Ulcer:** A localized necrotic lesion of the skin or a mucous surface. [NIH]

**Ulceration:** 1. The formation or development of an ulcer. 2. An ulcer. [EU]

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

**Unconscious:** Experience which was once conscious, but was subsequently rejected, as the "personal unconscious". [NIH]

**Uraemia:** 1. An excess in the blood of urea, creatinine, and other nitrogenous end products of protein and amino acids metabolism; more correctly referred to as azotemia. 2. In current usage the entire constellation of signs and symptoms of chronic renal failure, including nausea, vomiting, anorexia, a metallic taste in the mouth, a uraemic odour of the breath, pruritus, uraemic frost on the skin, neuromuscular disorders, pain and twitching in the muscles, hypertension, edema, mental confusion, and acid-base and electrolyte imbalances. [EU]

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

**Urinary:** Having to do with urine or the organs of the body that produce and get rid of

urine. [NIH]

**Urine:** Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra. [NIH]

**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]

**Vagotomy:** The interruption or removal of any part of the vagus (10th cranial) nerve. Vagotomy may be performed for research or for therapeutic purposes. [NIH]

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

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

**Vasculitis:** Inflammation of a blood vessel. [NIH]

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

**Vegetarianism:** Dietary practice of consuming only vegetables, grains, and nuts. [NIH]

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

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

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

**Vertebral:** Of or pertaining to a vertebra. [EU]

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

**Villous:** Of a surface, covered with villi. [NIH]

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

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

**Volvulus:** A twisting of the stomach or large intestine. May be caused by the stomach being in the wrong position, a foreign substance, or abnormal joining of one part of the stomach or intestine to another. Volvulus can lead to blockage, perforation, peritonitis, and poor blood flow. [NIH]

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

**White blood cell:** A type of cell in the immune system that helps the body fight infection and disease. White blood cells include lymphocytes, granulocytes, macrophages, and others. [NIH]

**Windpipe:** A rigid tube, 10 cm long, extending from the cricoid cartilage to the upper border of the fifth thoracic vertebra. [NIH]

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

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



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