THE 2002 OFFICIAL PATIENT'S SOURCEBOOK *on*

PEPTIC ULCER

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Dedication

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

Acknowledgements

The collective knowledge generated from academic and applied research summarized in various references has been critical in the creation of this sourcebook which is best viewed as a comprehensive compilation and collection of information prepared by various official agencies which directly or indirectly are dedicated to peptic ulcer. All of the *Official Patient's Sourcebooks* draw from various agencies and institutions associated with the United States Department of Health and Human Services, and in particular, the Office of the Secretary of Health and Human Services (OS), the Administration for Children and Families (ACF), the Administration on Aging (AOA), the Agency for Healthcare Research and Quality (AHRQ), the Agency for Toxic Substances and Disease Registry (ATSDR), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), the Healthcare Financing Administration (HCFA), the Health Resources and Services Administration (HRSA), the Indian Health Service (IHS), the institutions of the National Institutes of Health (NIH), the Program Support Center (PSC), and the Substance Abuse and Mental Health Services Administration (SAMHSA). In addition to these sources, information gathered from the National Library of Medicine, the United States Patent Office, the European Union, and their related organizations has been invaluable in the creation of this sourcebook. Some of the work represented was financially supported by the Research and Development Committee at INSEAD. This support is gratefully acknowledged. Finally, special thanks are owed to Tiffany LaRochelle for her excellent editorial support.

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- The Official Patient's Sourcebook on Cyclic Vomiting Syndrome
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- The Official Patient's Sourcebook on Diverticular Disease
- The Official Patient's Sourcebook on Fecal Incontinence
- The Official Patient's Sourcebook on Gallstones
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- The Official Patient's Sourcebook on Gastritis
- The Official Patient's Sourcebook on Gastroparesis
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- The Official Patient's Sourcebook on Indigestion
- The Official Patient's Sourcebook on Inguinal Hernia
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- The Official Patient's Sourcebook on Short Bowel Syndrome
- The Official Patient's Sourcebook on Ulcerative Colitis
- The Official Patient's Sourcebook on Whipple Disease
- The Official Patient's Sourcebook on Wilson's Disease
- The Official Patient's Sourcebook on Zollinger-ellison Syndrome

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INTRODUCTION

Overview

Dr. C. Everett Koop, former U.S. Surgeon General, once said, "The best prescription is knowledge."[1] The Agency for Healthcare Research and Quality (AHRQ) of the National Institutes of Health (NIH) echoes this view and recommends that every patient incorporate education into the treatment process. According to the AHRQ:

> Finding out more about your condition is a good place to start. By contacting groups that support your condition, visiting your local library, and searching on the Internet, you can find good information to help guide your treatment decisions. Some information may be hard to find—especially if you don't know where to look.[2]

As the AHRQ mentions, finding the right information is not an obvious task. Though many physicians and public officials had thought that the emergence of the Internet would do much to assist patients in obtaining reliable information, in March 2001 the National Institutes of Health issued the following warning:

> The number of Web sites offering health-related resources grows every day. Many sites provide valuable information, while others may have information that is unreliable or misleading.[3]

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[1] Quotation from **http://www.drkoop.com**.
[2] The Agency for Healthcare Research and Quality (AHRQ): **http://www.ahcpr.gov/consumer/diaginfo.htm**.
[3] From the NIH, National Cancer Institute (NCI): **http://cancertrials.nci.nih.gov/beyond/evaluating.html**.

Since the late 1990s, physicians have seen a general increase in patient Internet usage rates. Patients frequently enter their doctor's offices with printed Web pages of home remedies in the guise of latest medical research. This scenario is so common that doctors often spend more time dispelling misleading information than guiding patients through sound therapies. *The Official Patient's Sourcebook on Peptic Ulcer* has been created for patients who have decided to make education and research an integral part of the treatment process. The pages that follow will tell you where and how to look for information covering virtually all topics related to peptic ulcer, from the essentials to the most advanced areas of research.

The title of this book includes the word "official." This reflects the fact that the sourcebook draws from public, academic, government, and peer-reviewed research. Selected readings from various agencies are reproduced to give you some of the latest official information available to date on peptic ulcer.

Given patients' increasing sophistication in using the Internet, abundant references to reliable Internet-based resources are provided throughout this sourcebook. Where possible, guidance is provided on how to obtain free-of-charge, primary research results as well as more detailed information via the Internet. E-book and electronic versions of this sourcebook are fully interactive with each of the Internet sites mentioned (clicking on a hyperlink automatically opens your browser to the site indicated). Hard copy users of this sourcebook can type cited Web addresses directly into their browsers to obtain access to the corresponding sites. Since we are working with ICON Health Publications, hard copy *Sourcebooks* are frequently updated and printed on demand to ensure that the information provided is current.

In addition to extensive references accessible via the Internet, every chapter presents a "Vocabulary Builder." Many health guides offer glossaries of technical or uncommon terms in an appendix. In editing this sourcebook, we have decided to place a smaller glossary within each chapter that covers terms used in that chapter. Given the technical nature of some chapters, you may need to revisit many sections. Building one's vocabulary of medical terms in such a gradual manner has been shown to improve the learning process.

We must emphasize that no sourcebook on peptic ulcer should affirm that a specific diagnostic procedure or treatment discussed in a research study, patent, or doctoral dissertation is "correct" or your best option. This sourcebook is no exception. Each patient is unique. Deciding on appropriate

options is always up to the patient in consultation with their physician and healthcare providers.

Organization

This sourcebook is organized into three parts. Part I explores basic techniques to researching peptic ulcer (e.g. finding guidelines on diagnosis, treatments, and prognosis), followed by a number of topics, including information on how to get in touch with organizations, associations, or other patient networks dedicated to peptic ulcer. It also gives you sources of information that can help you find a doctor in your local area specializing in treating peptic ulcer. Collectively, the material presented in Part I is a complete primer on basic research topics for patients with peptic ulcer.

Part II moves on to advanced research dedicated to peptic ulcer. Part II is intended for those willing to invest many hours of hard work and study. It is here that we direct you to the latest scientific and applied research on peptic ulcer. When possible, contact names, links via the Internet, and summaries are provided. It is in Part II where the vocabulary process becomes important as authors publishing advanced research frequently use highly specialized language. In general, every attempt is made to recommend "free-to-use" options.

Part III provides appendices of useful background reading for all patients with peptic ulcer or related disorders. The appendices are dedicated to more pragmatic issues faced by many patients with peptic ulcer. Accessing materials via medical libraries may be the only option for some readers, so a guide is provided for finding local medical libraries which are open to the public. Part III, therefore, focuses on advice that goes beyond the biological and scientific issues facing patients with peptic ulcer.

Scope

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

- Chronic Peptic Ulcer and Esophagitis Syndrome
- Columnar-like Esophagus
- Duodenal Ulcer

- Esophagitis-peptic Ulcer
- Gastric Ulcer
- Helicobacter Pylori Gastritis
- Helicobacter Ulcer
- Intestinal Metaplasia of the Lower Esophagus
- Peptic Ulcer

In addition to synonyms and related conditions, physicians may refer to peptic ulcer using certain coding systems. The International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) is the most commonly used system of classification for the world's illnesses. Your physician may use this coding system as an administrative or tracking tool. The following classification is commonly used for peptic ulcer:[4]

- 530.2 barrett's syndrome or ulcer
- 531.3 peptic ulcer, stomach, acute
- 531.7 peptic ulcer, stomach, chronic
- 532.3 peptic ulcer, duodenum, acute
- 532.7 peptic ulcer, duodenum, chronic
- 533 peptic ulcer, site unspecified
- 533.0 acute with hemorrhage
- 533.1 acute with perforation
- 533.2 acute with hemorrhage and perforation
- 533.3 acute without mention of hemorrhage and perforation
- 533.4 chronic or unspecified with hemorrhage
- 533.5 chronic or unspecified with perforation
- 533.6 chronic or unspecified with hemorrhage and perforation
- 533.7 chronic without mention of hemorrhage or perforation
- 533.9 unspecified as acute or chronic, without mention of hemorrhage or perforation
- 536.8 peptic ulcer disease

[4] This list is based on the official version of the World Health Organization's 9th Revision, International Classification of Diseases (ICD-9). According to the National Technical Information Service, "ICD-9CM extensions, interpretations, modifications, addenda, or errata other than those approved by the U.S. Public Health Service and the Health Care Financing Administration are not to be considered official and should not be utilized. Continuous maintenance of the ICD-9-CM is the responsibility of the federal government."

For the purposes of this sourcebook, we have attempted to be as inclusive as possible, looking for official information for all of the synonyms relevant to peptic ulcer. You may find it useful to refer to synonyms when accessing databases or interacting with healthcare professionals and medical librarians.

Moving Forward

Since the 1980s, the world has seen a proliferation of healthcare guides covering most illnesses. Some are written by patients or their family members. These generally take a layperson's approach to understanding and coping with an illness or disorder. They can be uplifting, encouraging, and highly supportive. Other guides are authored by physicians or other healthcare providers who have a more clinical outlook. Each of these two styles of guide has its purpose and can be quite useful.

As editors, we have chosen a third route. We have chosen to expose you to as many sources of official and peer-reviewed information as practical, for the purpose of educating you about basic and advanced knowledge as recognized by medical science today. You can think of this sourcebook as your personal Internet age reference librarian.

Why "Internet age"? All too often, patients diagnosed with peptic ulcer will log on to the Internet, type words into a search engine, and receive several Web site listings which are mostly irrelevant or redundant. These patients are left to wonder where the relevant information is, and how to obtain it. Since only the smallest fraction of information dealing with peptic ulcer is even indexed in search engines, a non-systematic approach often leads to frustration and disappointment. With this sourcebook, we hope to direct you to the information you need that you would not likely find using popular Web directories. Beyond Web listings, in many cases we will reproduce brief summaries or abstracts of available reference materials. These abstracts often contain distilled information on topics of discussion.

While we focus on the more scientific aspects of peptic ulcer, there is, of course, the emotional side to consider. Later in the sourcebook, we provide a chapter dedicated to helping you find peer groups and associations that can provide additional support beyond research produced by medical science. We hope that the choices we have made give you the most options available in moving forward. In this way, we wish you the best in your efforts to incorporate this educational approach into your treatment plan.

The Editors

PART I: THE ESSENTIALS

ABOUT PART I

Part I has been edited to give you access to what we feel are "the essentials" on peptic ulcer. The essentials of a disease typically include the definition or description of the disease, a discussion of who it affects, the signs or symptoms associated with the disease, tests or diagnostic procedures that might be specific to the disease, and treatments for the disease. Your doctor or healthcare provider may have already explained the essentials of peptic ulcer to you or even given you a pamphlet or brochure describing peptic ulcer. Now you are searching for more in-depth information. As editors, we have decided, nevertheless, to include a discussion on where to find essential information that can complement what your doctor has already told you. In this section we recommend a process, not a particular Web site or reference book. The process ensures that, as you search the Web, you gain background information in such a way as to maximize your understanding.

CHAPTER 1. THE ESSENTIALS ON PEPTIC ULCER: GUIDELINES

Overview

Official agencies, as well as federally-funded institutions supported by national grants, frequently publish a variety of guidelines on peptic ulcer. These are typically called "Fact Sheets" or "Guidelines." They can take the form of a brochure, information kit, pamphlet, or flyer. Often they are only a few pages in length. The great advantage of guidelines over other sources is that they are often written with the patient in mind. Since new guidelines on peptic ulcer can appear at any moment and be published by a number of sources, the best approach to finding guidelines is to systematically scan the Internet-based services that post them.

The National Institutes of Health (NIH)[5]

The National Institutes of Health (NIH) is the first place to search for relatively current patient guidelines and fact sheets on peptic ulcer. Originally founded in 1887, the NIH is one of the world's foremost medical research centers and the federal focal point for medical research in the United States. At any given time, the NIH supports some 35,000 research grants at universities, medical schools, and other research and training institutions, both nationally and internationally. The rosters of those who have conducted research or who have received NIH support over the years include the world's most illustrious scientists and physicians. Among them are 97 scientists who have won the Nobel Prize for achievement in medicine.

[5] Adapted from the NIH: **http://www.nih.gov/about/NIHoverview.html**.

There is no guarantee that any one Institute will have a guideline on a specific disease, though the National Institutes of Health collectively publish over 600 guidelines for both common and rare diseases. The best way to access NIH guidelines is via the Internet. Although the NIH is organized into many different Institutes and Offices, the following is a list of key Web sites where you are most likely to find NIH clinical guidelines and publications dealing with peptic ulcer and associated conditions:

- Office of the Director (OD); guidelines consolidated across agencies available at **http://www.nih.gov/health/consumer/conkey.htm**
- National Library of Medicine (NLM); extensive encyclopedia (A.D.A.M., Inc.) with guidelines available at **http://www.nlm.nih.gov/medlineplus/healthtopics.html**
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); guidelines available at **http://www.niddk.nih.gov/health/health.htm**

Among these, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) is particularly noteworthy. The NIDDK's mission is to conduct and support research on many of the most serious diseases affecting public health.[6] The Institute supports much of the clinical research on the diseases of internal medicine and related subspecialty fields as well as many basic science disciplines. The NIDDK's Division of Intramural Research encompasses the broad spectrum of metabolic diseases such as diabetes, inborn errors of metabolism, endocrine disorders, mineral metabolism, digestive diseases, nutrition, urology and renal disease, and hematology. Basic research studies include biochemistry, nutrition, pathology, histochemistry, chemistry, physical, chemical, and molecular biology, pharmacology, and toxicology. NIDDK extramural research is organized into divisions of program areas:

- Division of Diabetes, Endocrinology, and Metabolic Diseases
- Division of Digestive Diseases and Nutrition
- Division of Kidney, Urologic, and Hematologic Diseases

The Division of Extramural Activities provides administrative support and overall coordination. A fifth division, the Division of Nutrition Research Coordination, coordinates government nutrition research efforts. The Institute supports basic and clinical research through investigator-initiated

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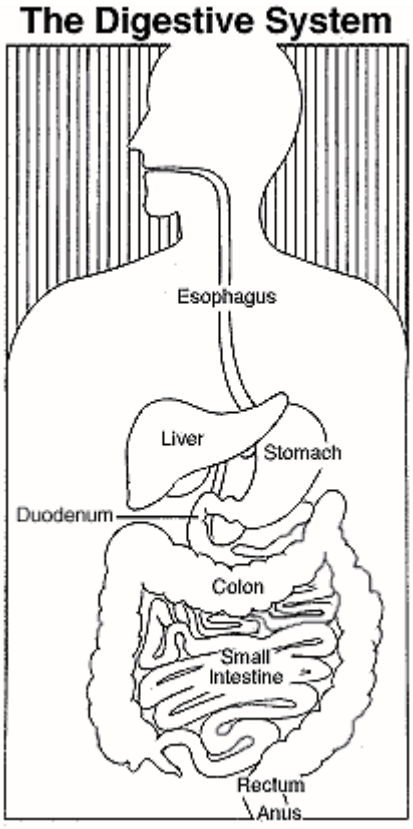
[6] This paragraph has been adapted from the NIDDK: **http://www.niddk.nih.gov/welcome/mission.htm**. "Adapted" signifies that a passage is reproduced exactly or slightly edited for this book.

grants, program project and center grants, and career development and training awards. The Institute also supports research and development projects and large-scale clinical trials through contracts. The following patient guideline was recently published by the NIDDK on peptic ulcer.

What Is a Peptic Ulcer?[7]

A peptic ulcer is a sore on the lining of the stomach or duodenum, which is the beginning of the small intestine. Peptic ulcers are common: One in 10 Americans develops an ulcer at some time in his or her life. One cause of peptic ulcer is bacterial infection, but some ulcers are caused by long-term use of nonsteroidal anti-inflammatory agents (NSAIDs), like aspirin and ibuprofen. In a few cases, cancerous tumors in the stomach or pancreas can cause ulcers. Peptic ulcers are not caused by spicy food or stress.



[7] Adapted from The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK): **http://www.niddk.nih.gov/health/digest/pubs/hpylori/hpylori.htm**.

What Is H. pylori?

Helicobacter pylori (H. pylori) is a type of bacteria. Researchers believe that H. pylori is responsible for the majority of peptic ulcers.

H. pylori infection is common in the United States: About 20 percent of people under 40 years old and half of those over 60 have it. Most infected people, however, do not develop ulcers. Why H. pylori does not cause ulcers in every infected person is not known. Most likely, infection depends on characteristics of the infected person, the type of H. pylori, and other factors yet to be discovered.

Researchers are not certain how people contract H. pylori, but they think it may be through food or water.

Researchers have found H. pylori in some infected people's saliva, so the bacteria may also spread through mouth-to-mouth contact such as kissing.

How Does H. pylori Cause a Peptic Ulcer?

H. pylori weakens the protective mucous coating of the stomach and duodenum, which allows acid to get through to the sensitive lining beneath. Both the acid and the bacteria irritate the lining and cause a sore, or ulcer.
H. pylori is able to survive in stomach acid because it secretes enzymes that neutralize the acid. This mechanism allows H. pylori to make its way to the "safe" area--the protective mucous lining. Once there, the bacterium's spiral shape helps it burrow through the lining.

What Are the Symptoms of an Ulcer?

Abdominal discomfort is the most common symptom. This discomfort usually:

- Is a dull, gnawing ache.
- Comes and goes for several days or weeks.
- Occurs 2 to 3 hours after a meal.
- Occurs in the middle of the night (when the stomach is empty).
- Is relieved by food.

- Is relieved by antacid medications.

Other symptoms include:

- Weight loss
- Poor appetite
- Bloating
- Burping
- Nausea
- Vomiting

Some people experience only very mild symptoms, or none at all.

Emergency Symptoms

If you have any of these symptoms, call your doctor right away:

- Sharp, sudden, persistent stomach pain
- Bloody or black stools
- Bloody vomit or vomit that looks like coffee grounds

They could be signs of a serious problem, such as:

- Perforation--when the ulcer burrows through the stomach or duodenal wall.
- Bleeding--when acid or the ulcer breaks a blood vessel.
- Obstruction--when the ulcer blocks the path of food trying to leave the stomach.

How Is an H. pylori-Related Ulcer Diagnosed?

To see whether symptoms are caused by an ulcer, the doctor may do an upper gastrointestinal (GI) series or an endoscopy. An upper GI series is an x ray of the esophagus, stomach, and duodenum. The patient drinks a chalky liquid called barium to make these organs and any ulcers show up more clearly on the x ray.

An endoscopy is an exam that uses an endoscope, a thin, lighted tube with a tiny camera on the end. The patient is lightly sedated, and the doctor carefully eases the endoscope into the mouth and down the throat to the stomach and duodenum. This allows the doctor to see the lining of the esophagus, stomach, and duodenum. The doctor can use the endoscope to take photos of ulcers or remove a tiny piece of tissue to view under a microscope.

Diagnosing H. pylori

If an ulcer is found, the doctor will test the patient for H. pylori. This test is important because treatment for an ulcer caused by H. pylori is different from that for an ulcer caused by NSAIDs.

H. pylori is diagnosed through blood, breath, stool, and tissue tests. Blood tests are most common. They detect antibodies to H. pylori bacteria. Blood is taken at the doctor's office through a finger stick.

Urea breath tests are mainly used after treatment to see whether it worked, but they can be used in diagnosis too. In the doctor's office, the patient drinks a urea solution that contains a special carbon atom. If H. pylori is present, it breaks down the urea, releasing the carbon. The blood carries the carbon to the lungs, where the patient exhales it. The breath test is 96 percent to 98 percent accurate.

Stool tests may be used to detect H. pylori infection in the patient's fecal matter. Studies have shown that the test, called the Helicobacter pylori stool antigen (HpSA) test, is accurate for diagnosing H. pylori.

Tissue tests are usually done using the biopsy sample that is removed with the endoscope. There are three types:

- The rapid urease test detects the enzyme urease, which is produced by H. pylori.
- A histology test allows the doctor to find and examine the actual bacteria.
- A culture test involves allowing H. pylori to grow in the tissue sample.

In diagnosing H. pylori, blood, breath, and stool tests are often done before tissue tests because they are less invasive. However, blood tests are not used to detect H. pylori following treatment because a patient's blood can show positive results even after H. pylori has been eliminated.

How Are H. pylori Peptic Ulcers Treated?

H. pylori peptic ulcers are treated with drugs that kill the bacteria, reduce stomach acid, and protect the stomach lining. Antibiotics are used to kill the bacteria. Two types of acid-suppressing drugs might be used: H_2 blockers and proton pump inhibitors.

H_2 blockers work by blocking histamine, which stimulates acid secretion. They help reduce ulcer pain after a few weeks. Proton pump inhibitors suppress acid production by halting the mechanism that pumps the acid into the stomach. H_2 blockers and proton pump inhibitors have been prescribed alone for years as treatments for ulcers. But used alone, these drugs do not eradicate H. pylori and therefore do not cure H. pylori-related ulcers. Bismuth subsalicylate, a component of Pepto-Bismol, is used to protect the stomach lining from acid. It also kills H. pylori.

Treatment usually involves a combination of antibiotics, acid suppressors, and stomach protectors. Antibiotic regimens recommended for patients may differ across regions of the world because different areas have begun to show resistance to particular antibiotics.

The use of only one medication to treat H. pylori is not recommended. At this time, the most proven effective treatment is a 2-week course of treatment called triple therapy. It involves taking two antibiotics to kill the bacteria and either an acid suppressor or stomach-lining shield. Two-week triple therapy reduces ulcer symptoms, kills the bacteria, and prevents ulcer recurrence in more than 90 percent of patients.

Unfortunately, patients may find triple therapy complicated because it involves taking as many as 20 pills a day. Also, the antibiotics used in triple therapy may cause mild side effects such as nausea, vomiting, diarrhea, dark stools, metallic taste in the mouth, dizziness, headache, and yeast infections in women. (Most side effects can be treated with medication withdrawal.) Nevertheless, recent studies show that 2 weeks of triple therapy is ideal.

Early results of studies in other countries suggest that 1 week of triple therapy may be as effective as the 2-week therapy, with fewer side effects.

Another option is 2 weeks of dual therapy. Dual therapy involves two drugs: an antibiotic and an acid suppressor. It is not as effective as triple therapy.

Two weeks of quadruple therapy, which uses two antibiotics, an acid suppressor, and a stomach-lining shield, looks promising in research studies. It is also called bismuth triple therapy.

Drugs used to treat h. pylori peptic ulcers include:

- Antibiotics: metronidazole, tetracycline, clarithromycin, amoxicillin
- H_2 blockers: cimetidine, ranitidine, famotidine, nizatidine
- Proton pump inhibitors: omeprazole, lansoprazole, rabeprazole
- Stomach-lining protector: bismuth subsalicylate

Can H. pylori Infection Be Prevented?

No one knows for sure how H. pylori spreads, so prevention is difficult. Researchers are trying to develop a vaccine to prevent infection.

Why Don't All Doctors Automatically Check for H. pylori?

Changing medical belief and practice takes time. For nearly 100 years, scientists and doctors thought that ulcers were caused by stress, spicy food, and alcohol. Treatment involved bed rest and a bland diet. Later, researchers added stomach acid to the list of causes and began treating ulcers with antacids.

Since H. pylori was discovered in 1982, studies conducted around the world have shown that using antibiotics to destroy H. pylori cures peptic ulcers. The prevalence of H. pylori ulcers is changing. The infection is becoming less common in people born in developed countries. The medical community, however, continues to debate H. pylori's role in peptic ulcers. If you have a peptic ulcer and have not been tested for H. pylori infection, talk to your doctor.

Points to Remember

- A peptic ulcer is a sore in the lining of the stomach or duodenum.
- The majority of peptic ulcers are caused by the H. pylori bacterium. Many of the other cases are caused by NSAIDs. None are caused by spicy food or stress.

- H. pylori can be transmitted from person to person through close contact and exposure to vomit.
- Always wash your hands after using the bathroom and before eating.
- A combination of antibiotics and other drugs is the most effective treatment for H. pylori peptic ulcers.

Additional Reading

Graham DY, Rakel RE, Fendrick AM, et al. Recognizing peptic ulcer disease: keys to clinical and laboratory diagnosis. Postgraduate Medicine. 1999;105(3):113-133.

Lahaie RG, Gaudreau C. Helicobacter pylori antibiotic resistance: trends over time. Canadian Journal of Gastroenterology. 2000;14(10):895-899.

Manes G, Balzano A, Iaquinto G, et al. Accuracy of the stool antigen test in the diagnosis of Helicobacter pylori infection before treatment and in patients on omeprazole therapy. Alimentary Pharmacology and Therapeutics. 2001;15(1):73-79.

McManus TJ. Helicobacter pylori: an emerging infectious disease. Nurse Practitioner. 2000;25(8):42-46.

National Institutes of Health, Office of the Director. NIH Consensus Statement: Helicobacter pylori in Peptic Ulcer Disease. Vol. 12, No. 1. Bethesda, MD: National Institutes of Health; 1994.

Saunders CS. H. pylori infection: simplifying management. Patient Care. 1999;(20):118-134.

Vaira D, Holton J, Menegatti M, et al. Review article: Invasive and noninvasive tests for Helicobacter pylori infection. Alimentary Pharmacology and Therapeutics. 2000;14(suppl 3):13-22.

More Guideline Sources

The guideline above on peptic ulcer is only one example of the kind of material that you can find online and free of charge. The remainder of this chapter will direct you to other sources which either publish or can help you find additional guidelines on topics related to peptic ulcer. Many of the

guidelines listed below address topics that may be of particular relevance to your specific situation or of special interest to only some patients with peptic ulcer. Due to space limitations these sources are listed in a concise manner. Do not hesitate to consult the following sources by either using the Internet hyperlink provided, or, in cases where the contact information is provided, contacting the publisher or author directly.

Topic Pages: MEDLINEplus

For patients wishing to go beyond guidelines published by specific Institutes of the NIH, the National Library of Medicine has created a vast and patient-oriented healthcare information portal called MEDLINEplus. Within this Internet-based system are "health topic pages." You can think of a health topic page as a guide to patient guides. To access this system, log on to **http://www.nlm.nih.gov/medlineplus/healthtopics.html**.

If you do not find topics of interest when browsing health topic pages, then you can choose to use the advanced search utility of MEDLINEplus at the following: **http://www.nlm.nih.gov/medlineplus/advancedsearch.html**. This utility is similar to the NIH Search Utility, with the exception that it only includes material linked within the MEDLINEplus system (mostly patient-oriented information). It also has the disadvantage of generating unstructured results. We recommend, therefore, that you use this method only if you have a very targeted search.

The Combined Health Information Database (CHID)

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

- **Peptic Ulcer Disease. [Enfermedad Ulcera Peptica]**

  Source: Camp Hill, PA: Chek-Med Systems, Inc. 1996. 2 p.

Contact: Available from Chek-Med Systems, Inc. 200 Grandview Avenue, Camp Hill, PA 17011. (800) 451-5797. Fax (717) 761-0216. PRICE: $22 per pack of 50 pamphlets for order of 3-10 packs; 3 packet minimum. Discounts available for larger quantities and complete kits of gastroenterology pamphlets.

Summary: This patient brochure, available in English and Spanish, provides information about the causes, symptoms, diagnosis, and treatment of peptic ulcer disease, characterized by open craters or sores that develop in the lining of the stomach, esophagus, or first portion of the small intestine (duodenum). Risk factors include the consumption of caffeine, alcohol, aspirin, certain arthritis medicines, and smoking. Contrary to common belief, emotion and stress are minor considerations for most patients having ulcers. Symptoms include a gnawing, burning pain in the upper stomach, frequently occurring several hours following a meal. Confirmatory diagnosis includes upper intestinal endoscopy or a barium X-ray of the stomach. A number of practical guidelines for the treatment of ulcers are described. Several illustrations are included.

- **What Everyone Should Know About Peptic Ulcers**

  Source: South Deerfield, MA: Channing L. Bete Company, Inc. 1996. 15 p.

  Contact: Available from Channing L. Bete Company, Inc. 200 State Road, South Deerfield, MA 01373. (800) 628-7733. Fax (800) 499-6464. PRICE: $1.25 each for 1-24 copies; discounts available for larger orders.

  Summary: This illustrated brochure discusses what a peptic ulcer is and what causes it. The booklet explains that most ulcers develop as a result of infection with bacteria called Helicobacter pylori (H. pylori), although other factors may also play a role. The difference between the two major kinds of peptic ulcers (duodenal and gastric) is outlined. Other issues discussed include symptoms, emergency symptoms, diagnostic tests, treatment, diet, surgery, preventive measures, and attitude.

- **Treating Your Peptic Ulcer: A Guide for Patients**

  Source: Wayne, PA: Astra Merck. 1996. 16 p.

  Contact: Available from Astra Merck Information Center. 725 Chesterbrook Boulevard, Wayne, PA 19087-5677. (800) 236-9933 or (610) 695-1000. PRICE: Single copy free.

  Summary: This patient education brochure provides basic information about peptic ulcers and how they are treated. Written in a question and answer format, the colorful brochure discusses the two types of peptic ulcers, duodenal and gastric; symptoms; causes, including H. pylori

infection, the use of certain pain medications, and smoking cigarettes; diagnostic tests, including the upper GI endoscopy and an upper GI series (barium X-ray); goals of treatment; treatment options, including antacids, acid suppressors, and antibiotics; and quick tips for relieving peptic ulcer symptoms. The brochure includes a section of common concerns and recommended solutions, as well as guidelines for patient recordkeeping strategies. 3 figures.

- **Peptic Ulcer Disease and Non Ulcer Dyspepsia Diet**

  Source: Camp Hill, PA: Chek-Med Systems, Inc. 1995. 2 p.

  Contact: Available from Chek-Med Systems, Inc. 200 Grandview Avenue, Camp Hill, PA 17011. (800) 451-5797. Fax (717) 761-0216. PRICE: $0.55 each, plus shipping. Order no. D-4.

  Summary: This patient education brochure, one of a series of 17 brochures, provides dietary recommendations for patients with peptic ulcer disease or nonulcer dyspepsia. The brochure explains the purpose of the special diet; summarizes relevant nutrition facts; and lists special considerations for dyspepsia, including both dietary and lifestyle recommendations. The brochure concludes with sample menus for breakfast, lunch, and dinner. The brochure is printed in two colors and contains graphics.

The National Guideline Clearinghouse™

The National Guideline Clearinghouse™ offers hundreds of evidence-based clinical practice guidelines published in the United States and other countries. You can search their site located at **http://www.guideline.gov** by using the keyword "peptic ulcer" or synonyms. The following was recently posted:

- **Peptic ulcer disease.**

  Source: University of Michigan Health System.; 1996 October (revised 1999 May); 6 pages

  http://www.guideline.gov/FRAMESETS/guideline_fs.asp?guideline=001512&sSearch_string=peptic+ulcer

Healthfinder™

Healthfinder™ is an additional source sponsored by the U.S. Department of Health and Human Services which offers links to hundreds of other sites that

contain healthcare information. This Web site is located at **http://www.healthfinder.gov**. Again, keyword searches can be used to find guidelines. The following was recently found in this database:

- **H. pylori and Peptic Ulcer**

  Summary: Researchers recently discovered that H. pylori causes almost all peptic ulcers. This online document provides consumers with basic information on this bacteria and its effect on the digestive tract.

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

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=1454

The NIH Search Utility

After browsing the references listed at the beginning of this chapter, you may want to explore the NIH Search Utility. This allows you to search for documents on over 100 selected Web sites that comprise the NIH-WEB-SPACE. Each of these servers is "crawled" and indexed on an ongoing basis. Your search will produce a list of various documents, all of which will relate in some way to peptic ulcer. 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 that often link to government sites are available to the public. These can also point you in the direction of essential information. The following is a representative sample:

- AOL: **http://search.aol.com/cat.adp?id=168&layer=&from=subcats**
- drkoop.com®: **http://www.drkoop.com/conditions/ency/index.html**
- Family Village: **http://www.familyvillage.wisc.edu/specific.htm**
- Google: **http://directory.google.com/Top/Health/Conditions_and_Diseases/**

- Med Help International: **http://www.medhelp.org/HealthTopics/A.html**
- Open Directory Project: **http://dmoz.org/Health/Conditions_and_Diseases/**
- Yahoo.com: **http://dir.yahoo.com/Health/Diseases_and_Conditions/**
- WebMD®Health: **http://my.webmd.com/health_topics**

Vocabulary Builder

The material in this chapter may have contained a number of unfamiliar words. The following Vocabulary Builder introduces you to terms used in this chapter that have not been covered in the previous chapter:

Abdominal: Pertaining to the abdomen. [EU]

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

Amoxicillin: A broad-spectrum semisynthetic antibiotic similar to ampicillin except that its resistance to gastric acid permits higher serum levels with oral administration. [NIH]

Antibiotic: A chemical substance produced by a microorganism which has the capacity, in dilute solutions, to inhibit the growth of or to kill other microorganisms. Antibiotics that are sufficiently nontoxic to the host are used as chemotherapeutic agents in the treatment of infectious diseases of man, animals and plants. [EU]

Antibodies: Proteins that the body makes to protect itself from foreign substances. In diabetes, the body sometimes makes antibodies to work against pork or beef insulins because they are not exactly the same as human insulin or because they have impurities. The antibodies can keep the insulin from working well and may even cause the person with diabetes to have an allergic or bad reaction to the beef or pork insulins. [NIH]

Biopsy: The removal and examination, usually microscopic, of tissue from the living body, performed to establish precise diagnosis. [EU]

Cimetidine: A histamine congener, it competitively inhibits histamine binding to H2 receptors. Cimetidine has a range of pharmacological actions. It inhibits gastric acid secretion, as well as pepsin and gastrin output. It also blocks the activity of cytochrome P-450. [NIH]

Clarithromycin: A semisynthetic macrolide antibiotic derived from erythromycin that is active against a variety of microorganisms. It can inhibit protein synthesis in bacteria by reversibly binding to the 50S ribosomal

subunits. This inhibits the translocation of aminoacyl transfer-RNA and prevents peptide chain elongation. [NIH]

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

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

Duodenum: The first or proximal portion of the small intestine, extending from the pylorus to the jejunum; so called because it is about 12 fingerbreadths in length. [EU]

Dyspepsia: Impairment of the power of function of digestion; usually applied to epigastric discomfort following meals. [EU]

Endocrinology: A subspecialty of internal medicine concerned with the metabolism, physiology, and disorders of the endocrine system. [NIH]

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

Enzyme: A protein molecule that catalyses chemical reactions of other substances without itself being destroyed or altered upon completion of the reactions. Enzymes are classified according to the recommendations of the Nomenclature Committee of the International Union of Biochemistry. Each enzyme is assigned a recommended name and an Enzyme Commission (EC) number. They are divided into six main groups; oxidoreductases, transferases, hydrolases, lyases, isomerases, and ligases. [EU]

Famotidine: A competitive histamine H2-receptor antagonist. Its main pharmacodynamic effect is the inhibition of gastric secretion. [NIH]

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

Helicobacter: A genus of gram-negative, spiral-shaped bacteria that is pathogenic and has been isolated from the intestinal tract of mammals, including humans. [NIH]

Hematology: A subspecialty of internal medicine concerned with morphology, physiology, and pathology of the blood and blood-forming tissues. [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]

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

Molecular: Of, pertaining to, or composed of molecules : a very small mass of matter. [EU]

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

Nizatidine: A histamine H2 receptor antagonist with low toxicity that inhibits gastric acid secretion. The drug is used for the treatment of duodenal ulcers. [NIH]

Pancreas: An organ behind the lower part of the stomach that is about the size of a hand. It makes insulin so that the body can use glucose (sugar) for energy. It also makes enzymes that help the body digest food. Spread all over the pancreas are areas called the islets of Langerhans. The cells in these areas each have a special purpose. The alpha cells make glucagon, which raises the level of glucose in the blood; the beta cells make insulin; the delta cells make somatostatin. There are also the PP cells and the D1 cells, about which little is known. [NIH]

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

Perforation: 1. the act of boring or piercing through a part. 2. a hole made through a part or substance. [EU]

Prevalence: The number of people in a given group or population who are reported to have a disease. [NIH]

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

Saliva: The clear, viscous fluid secreted by the salivary glands and mucous glands of the mouth. It contains mucins, water, organic salts, and ptylin. [NIH]

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]

Spectrum: A charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction. By extension, a measurable range of activity, such as the range of bacteria affected by an antibiotic (antibacterial s.) or the complete range of manifestations of a disease. [EU]

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]

Tetracycline: An antibiotic originally produced by Streptomyces viridifaciens, but used mostly in synthetic form. It is an inhibitor of aminoacyl-tRNA binding during protein synthesis. [NIH]

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]

Ulcer: A break in the skin; a deep sore. People with diabetes may get ulcers from minor scrapes on the feet or legs, from cuts that heal slowly, or from the rubbing of shoes that do not fit well. Ulcers can become infected. [NIH]

Urea: One of the chief waste products of the body. When the body breaks down food, it uses what it needs and throws the rest away as waste. The kidneys flush the waste from the body in the form of urea, which is in the urine. [NIH]

Urease: An enzyme that catalyzes the conversion of urea and water to carbon dioxide and ammonia. EC 3.5.1.5. [NIH]

Urology: A surgical specialty concerned with the study, diagnosis, and treatment of diseases of the urinary tract in both sexes and the genital tract in the male. It includes the specialty of andrology which addresses both male genital diseases and male infertility. [NIH]

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

Withdrawal: 1. a pathological retreat from interpersonal contact and social involvement, as may occur in schizophrenia, depression, or schizoid avoidant and schizotypal personality disorders. 2. (DSM III-R) a substance-specific organic brain syndrome that follows the cessation of use or reduction in intake of a psychoactive substance that had been regularly used to induce a state of intoxication. [EU]

CHAPTER 2. SEEKING GUIDANCE

Overview

Some patients are comforted by the knowledge that a number of organizations dedicate their resources to helping people with peptic ulcer. These associations can become invaluable sources of information and advice. Many associations offer aftercare support, financial assistance, and other important services. Furthermore, healthcare research has shown that support groups often help people to better cope with their conditions.[8] In addition to support groups, your physician can be a valuable source of guidance and support. Therefore, finding a physician that can work with your unique situation is a very important aspect of your care.

In this chapter, we direct you to resources that can help you find patient organizations and medical specialists. We begin by describing how to find associations and peer groups that can help you better understand and cope with peptic ulcer. The chapter ends with a discussion on how to find a doctor that is right for you.

Associations and Peptic Ulcer

As mentioned by the Agency for Healthcare Research and Quality, sometimes the emotional side of an illness can be as taxing as the physical side.[9] You may have fears or feel overwhelmed by your situation. Everyone has different ways of dealing with disease or physical injury. Your attitude, your expectations, and how well you cope with your condition can all

[8] Churches, synagogues, and other houses of worship might also have groups that can offer you the social support you need.
[9] This section has been adapted from **http://www.ahcpr.gov/consumer/diaginf5.htm**.

influence your well-being. This is true for both minor conditions and serious illnesses. For example, a study on female breast cancer survivors revealed that women who participated in support groups lived longer and experienced better quality of life when compared with women who did not participate. In the support group, women learned coping skills and had the opportunity to share their feelings with other women in the same situation.

In addition to associations or groups that your doctor might recommend, we suggest that you consider the following list (if there is a fee for an association, you may want to check with your insurance provider to find out if the cost will be covered):

- **Digestive Disorders Foundation (UK)**

  Address: Digestive Disorders Foundation (UK) 3 St. Andrews Place, London, NW1 4LB, United Kingdom

  Telephone: 0171 486 0341

  Fax: 0171 224 2012

  Email: ddf@digestivedisorders.org.uk

  Web Site: http://www.digestivedisorders.org.u

  Background: The Digestive Disorders Foundation (DDF) is a voluntary organization in the United Kingdom dedicated to providing information to individuals with digestive disorders and their family members and funding research concerning these disorders. Since the DDF was founded in 1971, it has supported over 95 research fellowships. The Foundation also provides grants for equipment and travel fellowships, enabling researchers to visit laboratories abroad to improve their knowledge and expertise. In addition, the Digestive Disorders Foundation produces patient information leaflets discussing the symptoms, causes, and treatments of a wide range of digestive disorders including celiac disease; pancreatitis; peptic, gastric, and duodenal ulcers; diverticula; and Gilbert's syndrome. The Foundation is also committed to raising professional and public knowledge of digestive diseases through a series of events including scientific and public meetings. The DDF's web site on the Internet provides news updates, a glossary of medical terms, its series of patient information leaflets, and information concerning current research fellowships.

  Relevant area(s) of interest: Celiac Disease, Diverticular Disease, Irritable Bowel Syndrome, Pancreatitis

Finding More Associations

There are a number of directories that list additional medical associations that you may find useful. While not all of these directories will provide different information than what is listed above, by consulting all of them, you will have nearly exhausted all sources for patient associations.

The National Health Information Center (NHIC)

The National Health Information Center (NHIC) offers a free referral service to help people find organizations that provide information about peptic ulcer. For more information, see the NHIC's Web site at **http://www.health.gov/NHIC/** or contact an information specialist by calling 1-800-336-4797.

DIRLINE

A comprehensive source of information on associations is the DIRLINE database maintained by the National Library of Medicine. The database comprises some 10,000 records of organizations, research centers, and government institutes and associations which primarily focus on health and biomedicine. DIRLINE is available via the Internet at the following Web site: **http://dirline.nlm.nih.gov/**. Simply type in "peptic ulcer" (or a synonym) or the name of a topic, and the site will list information contained in the database on all relevant organizations.

The Combined Health Information Database

Another comprehensive source of information on healthcare associations is the Combined Health Information Database. Using the "Detailed Search" option, you will need to limit your search to "Organizations" and "peptic ulcer". Type the following hyperlink into your Web browser: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For publication date, select "All Years." Then, select your preferred language and the format option "Organization Resource Sheet." By making these selections and typing in "peptic ulcer" (or synonyms) into the "For these words:" box, you will only receive results on organizations dealing with peptic ulcer. You should check back periodically with this database since it is updated every 3 months.

The National Organization for Rare Disorders, Inc.

The National Organization for Rare Disorders, Inc. has prepared a Web site that provides, at no charge, lists of associations organized by specific diseases. You can access this database at the following Web site: **http://www.rarediseases.org/cgi-bin/nord/searchpage**. Select the option called "Organizational Database (ODB)" and type "peptic ulcer" (or a synonym) in the search box.

Online Support Groups

In addition to support groups, commercial Internet service providers offer forums and chat rooms for people with different illnesses and conditions. WebMD®, for example, offers such a service at their Web site: **http://boards.webmd.com/roundtable**. These online self-help communities can help you connect with a network of people whose concerns are similar to yours. Online support groups are places where people can talk informally. If you read about a novel approach, consult with your doctor or other healthcare providers, as the treatments or discoveries you hear about may not be scientifically proven to be safe and effective.

Finding Doctors

One of the most important aspects of your treatment will be the relationship between you and your doctor or specialist. All patients with peptic ulcer must go through the process of selecting a physician. While this process will vary from person to person, the Agency for Healthcare Research and Quality makes a number of suggestions, including the following:[10]

- If you are in a managed care plan, check the plan's list of doctors first.
- Ask doctors or other health professionals who work with doctors, such as hospital nurses, for referrals.
- Call a hospital's doctor referral service, but keep in mind that these services usually refer you to doctors on staff at that particular hospital. The services do not have information on the quality of care that these doctors provide.

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

- Some local medical societies offer lists of member doctors. Again, these lists do not have information on the quality of care that these doctors provide.

Additional steps you can take to locate doctors include the following:

- Check with the associations listed earlier in this chapter.
- Information on doctors in some states is available on the Internet at **http://www.docboard.org**. This Web site is run by "Administrators in Medicine," a group of state medical board directors.
- The American Board of Medical Specialties can tell you if your doctor is board certified. "Certified" means that the doctor has completed a training program in a specialty and has passed an exam, or "board," to assess his or her knowledge, skills, and experience to provide quality patient care in that specialty. Primary care doctors may also be certified as specialists. The AMBS Web site is located at **http://www.abms.org/newsearch.asp**.[11] You can also contact the ABMS by phone at 1-866-ASK-ABMS.
- You can call the American Medical Association (AMA) at 800-665-2882 for information on training, specialties, and board certification for many licensed doctors in the United States. This information also can be found in "Physician Select" at the AMA's Web site: **http://www.ama-assn.org/aps/amahg.htm**.

If the previous sources did not meet your needs, you may want to log on to the Web site of the National Organization for Rare Disorders (NORD) at **http://www.rarediseases.org/**. NORD maintains a database of doctors with expertise in various rare diseases. The Metabolic Information Network (MIN), 800-945-2188, also maintains a database of physicians with expertise in various metabolic diseases.

Selecting Your Doctor[12]

When you have compiled a list of prospective doctors, call each of their offices. First, ask if the doctor accepts your health insurance plan and if he or she is taking new patients. If the doctor is not covered by your plan, ask yourself if you are prepared to pay the extra costs. The next step is to

[11] While board certification is a good measure of a doctor's knowledge, it is possible to receive quality care from doctors who are not board certified.

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

schedule a visit with your chosen physician. During the first visit you will have the opportunity to evaluate your doctor and to find out if you feel comfortable with him or her. Ask yourself, did the doctor:

- Give me a chance to ask questions about peptic ulcer?
- Really listen to my questions?
- Answer in terms I understood?
- Show respect for me?
- Ask me questions?
- Make me feel comfortable?
- Address the health problem(s) I came with?
- Ask me my preferences about different kinds of treatments for peptic ulcer?
- Spend enough time with me?

Trust your instincts when deciding if the doctor is right for you. But remember, it might take time for the relationship to develop. It takes more than one visit for you and your doctor to get to know each other.

Working with Your Doctor[13]

Research has shown that patients who have good relationships with their doctors tend to be more satisfied with their care and have better results. Here are some tips to help you and your doctor become partners:

- You know important things about your symptoms and your health history. Tell your doctor what you think he or she needs to know.
- It is important to tell your doctor personal information, even if it makes you feel embarrassed or uncomfortable.
- Bring a "health history" list with you (and keep it up to date).
- Always bring any medications you are currently taking with you to the appointment, or you can bring a list of your medications including dosage and frequency information. Talk about any allergies or reactions you have had to your medications.

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

- Tell your doctor about any natural or alternative medicines you are taking.
- Bring other medical information, such as x-ray films, test results, and medical records.
- Ask questions. If you don't, your doctor will assume that you understood everything that was said.
- Write down your questions before your visit. List the most important ones first to make sure that they are addressed.
- Consider bringing a friend with you to the appointment to help you ask questions. This person can also help you understand and/or remember the answers.
- Ask your doctor to draw pictures if you think that this would help you understand.
- Take notes. Some doctors do not mind if you bring a tape recorder to help you remember things, but always ask first.
- Let your doctor know if you need more time. If there is not time that day, perhaps you can speak to a nurse or physician assistant on staff or schedule a telephone appointment.
- Take information home. Ask for written instructions. Your doctor may also have brochures and audio and videotapes that can help you.
- After leaving the doctor's office, take responsibility for your care. If you have questions, call. If your symptoms get worse or if you have problems with your medication, call. If you had tests and do not hear from your doctor, call for your test results. If your doctor recommended that you have certain tests, schedule an appointment to get them done. If your doctor said you should see an additional specialist, make an appointment.

By following these steps, you will enhance the relationship you will have with your physician.

Broader Health-Related Resources

In addition to the references above, the NIH has set up guidance Web sites that can help patients find healthcare professionals. These include:[14]

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

- Caregivers:
  http://www.nlm.nih.gov/medlineplus/caregivers.html
- Choosing a Doctor or Healthcare Service:
  http://www.nlm.nih.gov/medlineplus/choosingadoctororhealthcareservice.html
- Hospitals and Health Facilities:
  http://www.nlm.nih.gov/medlineplus/healthfacilities.html

Vocabulary Builder

The following vocabulary builder provides definitions of words used in this chapter that have not been defined in previous chapters:

Pancreatitis: Inflammation (pain, tenderness) of the pancreas; it can make the pancreas stop working. It is caused by drinking too much alcohol, by disease in the gallbladder, or by a virus. [NIH]

CHAPTER 3. CLINICAL TRIALS AND PEPTIC ULCER

Overview

Very few medical conditions have a single treatment. The basic treatment guidelines that your physician has discussed with you, or those that you have found using the techniques discussed in Chapter 1, may provide you with all that you will require. For some patients, current treatments can be enhanced with new or innovative techniques currently under investigation. In this chapter, we will describe how clinical trials work and show you how to keep informed of trials concerning peptic ulcer.

What Is a Clinical Trial?[15]

Clinical trials involve the participation of people in medical research. Most medical research begins with studies in test tubes and on animals. Treatments that show promise in these early studies may then be tried with people. The only sure way to find out whether a new treatment is safe, effective, and better than other treatments for peptic ulcer is to try it on patients in a clinical trial.

What Kinds of Clinical Trials Are There?

Clinical trials are carried out in three phases:

[15] The discussion in this chapter has been adapted from the NIH and the NEI: **www.nei.nih.gov/netrials/ctivr.htm**.

- **Phase I.** Researchers first conduct Phase I trials with small numbers of patients and healthy volunteers. If the new treatment is a medication, researchers also try to determine how much of it can be given safely.
- **Phase II.** Researchers conduct Phase II trials in small numbers of patients to find out the effect of a new treatment on peptic ulcer.
- **Phase III.** Finally, researchers conduct Phase III trials to find out how new treatments for peptic ulcer compare with standard treatments already being used. Phase III trials also help to determine if new treatments have any side effects. These trials--which may involve hundreds, perhaps thousands, of people--can also compare new treatments with no treatment.

How Is a Clinical Trial Conducted?

Various organizations support clinical trials at medical centers, hospitals, universities, and doctors' offices across the United States. The "principal investigator" is the researcher in charge of the study at each facility participating in the clinical trial. Most clinical trial researchers are medical doctors, academic researchers, and specialists. The "clinic coordinator" knows all about how the study works and makes all the arrangements for your visits.

All doctors and researchers who take part in the study on peptic ulcer carefully follow a detailed treatment plan called a protocol. This plan fully explains how the doctors will treat you in the study. The "protocol" ensures that all patients are treated in the same way, no matter where they receive care.

Clinical trials are controlled. This means that researchers compare the effects of the new treatment with those of the standard treatment. In some cases, when no standard treatment exists, the new treatment is compared with no treatment. Patients who receive the new treatment are in the treatment group. Patients who receive a standard treatment or no treatment are in the "control" group. In some clinical trials, patients in the treatment group get a new medication while those in the control group get a placebo. A placebo is a harmless substance, a "dummy" pill, that has no effect on peptic ulcer. In other clinical trials, where a new surgery or device (not a medicine) is being tested, patients in the control group may receive a "sham treatment." This treatment, like a placebo, has no effect on peptic ulcer and does not harm patients.

Researchers assign patients "randomly" to the treatment or control group. This is like flipping a coin to decide which patients are in each group. If you choose to participate in a clinical trial, you will not know which group you will be appointed to. The chance of any patient getting the new treatment is about 50 percent. You cannot request to receive the new treatment instead of the placebo or sham treatment. Often, you will not know until the study is over whether you have been in the treatment group or the control group. This is called a "masked" study. In some trials, neither doctors nor patients know who is getting which treatment. This is called a "double masked" study. These types of trials help to ensure that the perceptions of the patients or doctors will not affect the study results.

Natural History Studies

Unlike clinical trials in which patient volunteers may receive new treatments, natural history studies provide important information to researchers on how peptic ulcer develops over time. A natural history study follows patient volunteers to see how factors such as age, sex, race, or family history might make some people more or less at risk for peptic ulcer. A natural history study may also tell researchers if diet, lifestyle, or occupation affects how a disease or disorder develops and progresses. Results from these studies provide information that helps answer questions such as: How fast will a disease or disorder usually progress? How bad will the condition become? Will treatment be needed?

What Is Expected of Patients in a Clinical Trial?

Not everyone can take part in a clinical trial for a specific disease or disorder. Each study enrolls patients with certain features or eligibility criteria. These criteria may include the type and stage of disease or disorder, as well as, the age and previous treatment history of the patient. You or your doctor can contact the sponsoring organization to find out more about specific clinical trials and their eligibility criteria. If you are interested in joining a clinical trial, your doctor must contact one of the trial's investigators and provide details about your diagnosis and medical history.

If you participate in a clinical trial, you may be required to have a number of medical tests. You may also need to take medications and/or undergo surgery. Depending upon the treatment and the examination procedure, you may be required to receive inpatient hospital care. Or, you may have to return to the medical facility for follow-up examinations. These exams help

find out how well the treatment is working. Follow-up studies can take months or years. However, the success of the clinical trial often depends on learning what happens to patients over a long period of time. Only patients who continue to return for follow-up examinations can provide this important long-term information.

Recent Trials on Peptic Ulcer

The National Institutes of Health and other organizations sponsor trials on various diseases and disorders. Because funding for research goes to the medical areas that show promising research opportunities, it is not possible for the NIH or others to sponsor clinical trials for every disease and disorder at all times. The following lists recent trials dedicated to peptic ulcer.[16] If the trial listed by the NIH is still recruiting, you may be eligible. If it is no longer recruiting or has been completed, then you can contact the sponsors to learn more about the study and, if published, the results. Further information on the trial is available at the Web site indicated. Please note that some trials may no longer be recruiting patients or are otherwise closed. Before contacting sponsors of a clinical trial, consult with your physician who can help you determine if you might benefit from participation.

- **Peptic Ulcer Hemorrhage Study**

  Condition(s): Peptic Ulcer Hemorrhage

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Wyeth-Ayerst Research

  Purpose - Excerpt: This study will evaluate the effect of two regimens of intravenous pantoprazole versus intravenous ranitidine on intragastric pH after endoscopic hemostatic therapy in patients with bleeding peptic ulcer.

  Phase(s): Phase II

  Study Type: Interventional

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00037570;jsessionid=04C223E044A301D8C511D2A4136910A4

- **Peptic Ulcer Hemorrhage Study**

  Condition(s): Peptic Ulcer Hemorrhage

[16] These are listed at **www.ClinicalTrials.gov**.

Study Status: This study is currently recruiting patients.

Sponsor(s): Wyeth-Ayerst Research

Purpose - Excerpt: To evaluate the efficacy and safety of intravenous pantoprazole in the prevention of rebleeding in patients with bleeding peptic ulcer disease after successful endoscopic hemostatic therapy.

Phase(s): Phase III

Study Type: Interventional

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00040495;jsessionid=04C223E044A301D8C511D2A4136910A4

Benefits and Risks[17]

What Are the Benefits of Participating in a Clinical Trial?

If you are interested in a clinical trial, it is important to realize that your participation can bring many benefits to you and society at large:

- A new treatment could be more effective than the current treatment for peptic ulcer. Although only half of the participants in a clinical trial receive the experimental treatment, if the new treatment is proved to be more effective and safer than the current treatment, then those patients who did not receive the new treatment during the clinical trial may be among the first to benefit from it when the study is over.
- If the treatment is effective, then it may improve health or prevent diseases or disorders.
- Clinical trial patients receive the highest quality of medical care. Experts watch them closely during the study and may continue to follow them after the study is over.
- People who take part in trials contribute to scientific discoveries that may help other people with peptic ulcer. In cases where certain diseases or disorders run in families, your participation may lead to better care or prevention for your family members.

[17] This section has been adapted from ClinicalTrials.gov, a service of the National Institutes of Health:
http://www.clinicaltrials.gov/ct/gui/c/a1r/info/whatis?JServSessionIdzone_ct=9jmun6f291.

The Informed Consent

Once you agree to take part in a clinical trial, you will be asked to sign an "informed consent." This document explains a clinical trial's risks and benefits, the researcher's expectations of you, and your rights as a patient.

What Are the Risks?

Clinical trials may involve risks as well as benefits. Whether or not a new treatment will work cannot be known ahead of time. There is always a chance that a new treatment may not work better than a standard treatment. There is also the possibility that it may be harmful. The treatment you receive may cause side effects that are serious enough to require medical attention.

How Is Patient Safety Protected?

Clinical trials can raise fears of the unknown. Understanding the safeguards that protect patients can ease some of these fears. Before a clinical trial begins, researchers must get approval from their hospital's Institutional Review Board (IRB), an advisory group that makes sure a clinical trial is designed to protect patient safety. During a clinical trial, doctors will closely watch you to see if the treatment is working and if you are experiencing any side effects. All the results are carefully recorded and reviewed. In many cases, experts from the Data and Safety Monitoring Committee carefully monitor each clinical trial and can recommend that a study be stopped at any time. You will only be asked to take part in a clinical trial as a volunteer giving informed consent.

What Are a Patient's Rights in a Clinical Trial?

If you are eligible for a clinical trial, you will be given information to help you decide whether or not you want to participate. As a patient, you have the right to:

- Information on all known risks and benefits of the treatments in the study.
- Know how the researchers plan to carry out the study, for how long, and where.
- Know what is expected of you.

- Know any costs involved for you or your insurance provider.
- Know before any of your medical or personal information is shared with other researchers involved in the clinical trial.
- Talk openly with doctors and ask any questions.

After you join a clinical trial, you have the right to:

- Leave the study at any time. Participation is strictly voluntary. However, you should not enroll if you do not plan to complete the study.
- Receive any new information about the new treatment.
- Continue to ask questions and get answers.
- Maintain your privacy. Your name will not appear in any reports based on the study.
- Know whether you participated in the treatment group or the control group (once the study has been completed).

What about Costs?

In some clinical trials, the research facility pays for treatment costs and other associated expenses. You or your insurance provider may have to pay for costs that are considered standard care. These things may include inpatient hospital care, laboratory and other tests, and medical procedures. You also may need to pay for travel between your home and the clinic. You should find out about costs before committing to participation in the trial. If you have health insurance, find out exactly what it will cover. If you don't have health insurance, or if your insurance company will not cover your costs, talk to the clinic staff about other options for covering the cost of your care.

What Questions Should You Ask before Deciding to Join a Clinical Trial?

Questions you should ask when thinking about joining a clinical trial include the following:

- What is the purpose of the clinical trial?
- What are the standard treatments for peptic ulcer? Why do researchers think the new treatment may be better? What is likely to happen to me with or without the new treatment?

- What tests and treatments will I need? Will I need surgery? Medication? Hospitalization?
- How long will the treatment last? How often will I have to come back for follow-up exams?
- What are the treatment's possible benefits to my condition? What are the short- and long-term risks? What are the possible side effects?
- Will the treatment be uncomfortable? Will it make me feel sick? If so, for how long?
- How will my health be monitored?
- Where will I need to go for the clinical trial? How will I get there?
- How much will it cost to be in the study? What costs are covered by the study? How much will my health insurance cover?
- Will I be able to see my own doctor? Who will be in charge of my care?
- Will taking part in the study affect my daily life? Do I have time to participate?
- How do I feel about taking part in a clinical trial? Are there family members or friends who may benefit from my contributions to new medical knowledge?

Keeping Current on Clinical Trials

Various government agencies maintain databases on trials. The U.S. National Institutes of Health, through the National Library of Medicine, has developed ClinicalTrials.gov to provide patients, family members, and physicians with current information about clinical research across the broadest number of diseases and conditions.

The site was launched in February 2000 and currently contains approximately 5,700 clinical studies in over 59,000 locations worldwide, with most studies being conducted in the United States. ClinicalTrials.gov receives about 2 million hits per month and hosts approximately 5,400 visitors daily. To access this database, simply go to their Web site (**www.clinicaltrials.gov**) and search by "peptic ulcer" (or synonyms).

While ClinicalTrials.gov is the most comprehensive listing of NIH-supported clinical trials available, not all trials are in the database. The database is updated regularly, so clinical trials are continually being added. The

following is a list of specialty databases affiliated with the National Institutes of Health that offer additional information on trials:

- For clinical studies at the Warren Grant Magnuson Clinical Center located in Bethesda, Maryland, visit their Web site: **http://clinicalstudies.info.nih.gov/**
- For clinical studies conducted at the Bayview Campus in Baltimore, Maryland, visit their Web site: **http://www.jhbmc.jhu.edu/studies/index.html**
- For trials on diseases of the digestive system and kidneys, and diabetes, visit the National Institute of Diabetes and Digestive and Kidney Diseases: **http://www.niddk.nih.gov/patient/patient.htm**

General References

The following references describe clinical trials and experimental medical research. They have been selected to ensure that they are likely to be available from your local or online bookseller or university medical library. These references are usually written for healthcare professionals, so you may consider consulting with a librarian or bookseller who might recommend a particular reference. The following includes some of the most readily available references (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **A Guide to Patient Recruitment : Today's Best Practices & Proven Strategies** by Diana L. Anderson; Paperback - 350 pages (2001), CenterWatch, Inc.; ISBN: 1930624115; **http://www.amazon.com/exec/obidos/ASIN/1930624115/icongroupinterna**
- **A Step-By-Step Guide to Clinical Trials** by Marilyn Mulay, R.N., M.S., OCN; Spiral-bound - 143 pages Spiral edition (2001), Jones & Bartlett Pub; ISBN: 0763715697; **http://www.amazon.com/exec/obidos/ASIN/0763715697/icongroupinterna**
- **The CenterWatch Directory of Drugs in Clinical Trials** by CenterWatch; Paperback - 656 pages (2000), CenterWatch, Inc.; ISBN: 0967302935; **http://www.amazon.com/exec/obidos/ASIN/0967302935/icongroupinterna**
- **The Complete Guide to Informed Consent in Clinical Trials** by Terry Hartnett (Editor); Paperback - 164 pages (2000), PharmSource Information Services, Inc.; ISBN: 0970153309; **http://www.amazon.com/exec/obidos/ASIN/0970153309/icongroupinterna**

- **Dictionary for Clinical Trials** by Simon Day; Paperback - 228 pages (1999), John Wiley & Sons; ISBN: 0471985961; **http://www.amazon.com/exec/obidos/ASIN/0471985961/icongroupinterna**
- **Extending Medicare Reimbursement in Clinical Trials** by Institute of Medicine Staff (Editor), et al; Paperback 1st edition (2000), National Academy Press; ISBN: 0309068886; **http://www.amazon.com/exec/obidos/ASIN/0309068886/icongroupinterna**
- **Handbook of Clinical Trials** by Marcus Flather (Editor); Paperback (2001), Remedica Pub Ltd; ISBN: 1901346293; **http://www.amazon.com/exec/obidos/ASIN/1901346293/icongroupinterna**

Vocabulary Builder

The following vocabulary builder gives definitions of words used in this chapter that have not been defined in previous chapters:

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

Intravenous: Within a vein or veins. [EU]

PART II: ADDITIONAL RESOURCES AND ADVANCED MATERIAL

ABOUT PART II

In Part II, we introduce you to additional resources and advanced research on peptic ulcer. All too often, patients who conduct their own research are overwhelmed by the difficulty in finding and organizing information. The purpose of the following chapters is to provide you an organized and structured format to help you find additional information resources on peptic ulcer. In Part II, as in Part I, our objective is not to interpret the latest advances on peptic ulcer or render an opinion. Rather, our goal is to give you access to original research and to increase your awareness of sources you may not have already considered. In this way, you will come across the advanced materials often referred to in pamphlets, books, or other general works. Once again, some of this material is technical in nature, so consultation with a professional familiar with peptic ulcer is suggested.

CHAPTER 4. STUDIES ON PEPTIC ULCER

Overview

Every year, academic studies are published on peptic ulcer or related conditions. Broadly speaking, there are two types of studies. The first are peer reviewed. Generally, the content of these studies has been reviewed by scientists or physicians. Peer-reviewed studies are typically published in scientific journals and are usually available at medical libraries. The second type of studies is non-peer reviewed. These works include summary articles that do not use or report scientific results. These often appear in the popular press, newsletters, or similar periodicals.

In this chapter, we will show you how to locate peer-reviewed references and studies on peptic ulcer. We will begin by discussing research that has been summarized and is free to view by the public via the Internet. We then show you how to generate a bibliography on peptic ulcer and teach you how to keep current on new studies as they are published or undertaken by the scientific community.

The Combined Health Information Database

The Combined Health Information Database summarizes studies across numerous federal agencies. To limit your investigation to research studies and peptic ulcer, you will need to use the advanced search options. First, go to **http://chid.nih.gov/index.html**. From there, select the "Detailed Search" option (or go directly to that page with the following hyperlink: **http://chid.nih.gov/detail/detail.html**). The trick in extracting studies is found in the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the

format option "Journal Article." At the top of the search form, select the number of records you would like to see (we recommend 100) and check the box to display "whole records." We recommend that you type in "peptic ulcer" (or synonyms) into the "For these words:" box. Consider using the option "anywhere in record" to make your search as broad as possible. If you want to limit the search to only a particular field, such as the title of the journal, then select this option in the "Search in these fields" drop box. The following is a sample of what you can expect from this type of search:

- **Helicobacter Pylori Gastritis and Gastric Physiology**

  Source: Gastroenterology Clinics of North America. 29(3): 687-703. September 2000.

  Contact: Available from W.B. Saunders Company. 6277 Sea Harbor Drive, Orlando, FL 32821-9816. (800) 654-2452.

  Summary: This article reviews Helicobacter pylori gastritis and gastric physiology. Helicobacter pylori gastritis (stomach inflammation) can alter stomach physiology, leading to increased or decreased acid secretion, depending on the pattern of gastritis present. These changes in physiology are related to the disease outcome, with increased acid secretion leading to duodenal ulcer disease and reduced acid secretion being a risk factor for gastric (stomach) cancer. Gastric acid secretion also affects the pattern of gastritis induced by the infection, with low acid secretion leading a pangastritis and possibly atrophy. This two way interaction between H. pylori gastritis and gastric acid secretion is important in understanding the role of H. pylori infection in the response to proton pump inhibitor therapy. This interaction explains the more profound control of gastric acid secretion in H. pylori positive patients and why rebound acid hypersecretion is confined to H. pylori negative subjects. 6 figures. 60 references.

- **Gastrointestinal Toxicity of Nonsteroidal Antiinflammatory Drugs**

  Source: New England Journal of Medicine. 340(24): 1888-1899. June 17, 1999.

  Summary: This review article provides health professionals with information on the gastrointestinal toxicity of nonsteroidal anti-inflammatory drugs (NSAIDs). Although the prevalence of gastrointestinal complications may range from 5 to 50 percent, in general, at least 10 to 20 percent of patients will experience gastrointestinal complications. The mortality rate among patients who are hospitalized for NSAID induced upper gastrointestinal bleeding has been reported to be 5 to 10 percent. Risk factors for gastrointestinal complications include

advanced age, higher doses of NSAIDs, a history of gastroduodenal ulcer or gastrointestinal bleeding, concomitant use of corticosteroids, serious coexisting conditions, and concomitant use of anticoagulants. Although topical injury caused by NSAIDs contributes to the development of gastroduodenal mucosal injury, the systemic effects of these agents appear to have the major role in gastroduodenal mucosal injury mainly through the decreased synthesis of mucosal prostaglandins. The clinical spectrum of NSAID related gastroduodenal injury includes a combination of subepithelial hemorrhages, erosions, and ulcerations. In most patients injury is superficial and self-limiting; however, peptic ulcers may develop in some patients and lead to gastroduodenal hemorrhage, perforation, and death. Treatment options for people who have NSAID related dyspepsia include histamine H2-receptor antagonists and proton pump inhibitors. If a gastroduodenal ulcer develops, the most prudent approach is to discontinue the NSAID and substitute therapy with acetaminophen or a nonacetylated salicylate. Strategies for improving the safety of NSAID therapy include the administration of concomitant medication to protect the gastroduodenal mucosa from injury and the development of safer anti-inflammatory agents. 4 figures, 2 tables, and 113 references.

- **Acupuncture for Gastrointestinal and Hepatobiliary Disorders**

  Source: Journal of Alternative and Complementary Medicine: Research on Paradigm, Practice and Policy. 5(1): 27-45. 1999.

  Summary: This journal article provides an overview of the basic scientific data regarding the effects of acupuncture on gastrointestinal (GI) function, areas of clinical application, and promising directions for future research. Extensive research in both animal models and human subjects supports the effect of acupuncture on the physiology of the GI tract, including acid secretion, motility, neurohormonal changes, and changes in sensory thresholds. Much of the neuroanatomic pathway of these effects has been identified in animal models. A large body of clinical evidence supports the effectiveness of acupuncture for suppressing nausea associated with chemotherapy, postoperative state, and pregnancy. Prospective randomized controlled trials have shown the efficacy of acupuncture for analgesia for endoscopic procedures, including colonoscopy and upper endoscopy. Acupuncture also has been used for a variety of other conditions, including postoperative ileus, achalasia, peptic ulcer disease, functional bowel disease, diarrhea, constipation, inflammatory bowel disease, expulsion of gallstones and biliary ascariasis, and pain associated with pancreatitis. Although there are few randomized clinical trials, the author concludes that the well-

documented effects of acupuncture on the physiology of the GI tract and its extensive history of successful clinical use makes this a promising modality that warrants further study. The article has 3 figures and 117 references. (AA-M).

- **Peptic Ulcer Disease: Dietary Factors, Its Repair and Relationship with Helicobacter Pylori Infection: Endoscopic Duodenitis, Gastric Metaplasia and Helicobacter Pylori**

  Source: Journal of Gastroenterology and Hepatology. 16(5): 513-518. May 2001.

  Contact: Available from Blackwell Science. 54 University Street, Carlton South 3053, Victoria, Australia. +61393470300. Fax +61393475001. E-mail: Rob.Turner@blacksci-asia.com.au. Website: www.blackwell-science.com.

  Summary: This article reports on a study undertaken to investigate the relationship between gastric metaplasia (changes in the cell structure in the stomach lining) and Helicobacter pylori in patients with endoscopic duodenitis (inflammation of the first section of the small intestine, as measured by endoscopy). The subjects were 57 patients with endoscopic duodenitis with or without H. pylori associated gastritis. Biopsy specimens were obtained from the stomach and duodenal bulb to assess the histological findings and H. pylori infection. Gastric metaplasia was divided into three types: complete, intermediate, and incomplete, according to the amount of mucus in the metaplastic cells. In 10 H. pylori positive patients, endoscopic and histological findings of duodenitis were compared before and after eradication of the bacteria. There was no significant difference in the extent of gastric metaplasia or the appearance and severity of endoscopic duodenitis between H. pylori positive and H. pylori negative groups. The complete type of gastric metaplasia was frequently detected in the H. pylori negative group, whereas the incomplete type was frequently observed in the H. pylori positive group. After eradication of H. pylori, the incomplete type changed to the complete type with a decrease of histological inflammation. 3 figures. 6 tables. 16 references.

- **Prevalence of Gastric Myoelectrical Abnormalities in Patients with Nonulcer Dyspepsia and H. Pylori Infection: Resolution After H. Pylori Eradication**

  Source: Digestive Diseases and Sciences. 46(4): 739-745. April 2001.

  Contact: Available from Kluwer Academic/Plenum Publishers. 233 Spring Street, New York, NY 10013-1578. (212) 620-8000. Fax (212) 807-1047.

Summary: This article reports on a study undertaken to investigate the effects of Helicobacter pylori (a bacterium) eradication on gastric (stomach) myoelectrical activity and dyspeptic symptoms (including heartburn). The subjects were 62 patients with H. pylori infection and non active peptic ulcer; the study involved three sessions. Anti H. pylori therapy consisting of clarithromycin and omeprazole was given for two weeks. Gastric myoelectrical activity was measured using surface electrogastrography and dyspeptic symptoms were scored at each session. A 14C urea breath test was performed at baseline and one month after treatment. In comparison with baseline, the percentage of normal slow waves was significantly increased and the mean total symptom score was significantly reduced both one and three months after the drug therapy. Approximately 40 percent of patients with nonulcer dyspepsia symptoms and H. pylori infection have abnormal gastric myoelectrical activity, which may be normalized following the eradication of H. pylori infection. The authors conclude that the normalization of gastric myoelectrical activity may be one explanation for the significant symptom improvement in this subset of the dyspepsia population after H. pylori eradication. 5 figures. 41 references.

- **Update on the Role of H Pylori Infection in Gastrointestinal Disorders**

  Source: Canadian Journal of Gastroenterology. 15(4): 251-255. April 2001.

  Contact: Available from Pulsus Group, Inc. 2902 South Sheridan Way, Oakville, Ontario, Canada L6J 7L6. Fax (905) 829-4799. E-mail: pulsus@pulsus.com.

  Summary: Infection with Helicobacter pylori is accepted as the primary cause of peptic ulcer disease (PUD), and there is evidence to suggest its role in other gastrointestinal (GI) disorders. This article offers an update on the role of H. pylori infection in GI disorders. An estimated 20 to 30 percent of the Canadian population is infected with H. pylori; however, clinically relevant diseases is present in only approximately 10 to 20 percent of these individuals. Therefore, it is crucial to identify the diseases for which eradication of H. pylori is beneficial to ensure that patients do not receive unnecessary treatment. In patients with ulcers induced by long term treatment with nonsteroidal antiinflammatory drugs (NSAIDs), preliminary results suggest that eradication of H. pylori may reduce the risk of peptic ulcer bleeding. Furthermore, a benefit has been observed for the eradication of H. pylori before patients commence therapy with an NSAID. An association between the presence of H. pylori and specific dyspeptic symptoms has yet to be established; however, there may be a subset of patients with functional dyspepsia who benefit from the eradication of H. pylori. The relationship between

gastroesophageal reflux disease (GERD) and H. pylori infection remains unclear. In Canada, the recommended therapy for the eradication of H. pylori is seven days of twice daily treatment with a proton pump inhibitor, clarithromycin, and amoxicillin or metronidazole. Although the proton pump inhibitors are treated as a class for use in these regimens, there is suggestion that use of those with a faster onset of action may lead to a higher rate of eradication. 1 figure. 1 table. 31 references.

- **Non-Helicobacter Pylori, Non-NSAID Peptic Ulcer Disease**

  Source: Practical Gastroenterology. 25(9): 15, 18,20, 22. September 2001.

  Contact: Available from Shugar Publishing. 12 Moniebogue Lane, Westhampton Beach, NY 11978. (516) 288-4404. Fax (516) 288-4435.

  Summary: The majority of patients with peptic ulcers are infected with Helicobacter pylori bacteria but the organism may not always be responsible for the ulcer. Most patients have more than one risk factor for ulceration that then makes it difficult to establish the exact cause for the peptic ulcer. This article summarizes the current thinking in the etiology (cause) of peptic ulcer disease (PUD) and updates the reader on the prevalence and management of H. pylori, NSAID (nonsteroidal antiinflammatory drug) negative ulcer disease. Ulcer studies in the United States have found that approximately 20 percent of patients with duodenal ulceration have ulcer recurrence despite successful eradication of H. pylori. The phenomenon of non-H. pylori, non-NSAID mediate ulcer disease is also being increasingly recognized as defining a distinct subgroup of ulcer patients who have true idiopathic (with unknown cause) ulcer disease. The etiology for ulceration in these patients and their management is not well understood. The authors concludes that patients with an idiopathic duodenal ulcer have gastric (stomach) acid hypersecretion and are likely to have a more complicated course than their H. pylori-positive counterparts. 1 table. 18 references.

- **Climate and Upper Gastrointestinal Bleeding: Influence of Climatic Factors in the Incidence of Upper Gastrointestinal Bleeding**

  Source: Journal of Gastroenterology and Hepatology. 16(): 619-623. 2001.

  Contact: Available from Blackwell Science. 54 University Street, Carlton South 3053, Victoria, Australia. +61393470300. Fax +61393475001. E-mail: Rob.Turner@blacksci-asia.com.au. Website: www.blackwell-science.com.

  Summary: Previous reports have indicated seasonal fluctuations in the incidence of peptic ulcer activity, but the reasons for the seasonal pattern are not clear. This article reports on a study that assessed the seasonal incidence of hematemesis (vomiting of blood) caused by peptic ulcers or

gastroesophageal varices (enlarged veins or arteries), and the correlations between those and climatic factors. The authors examined the number of cases of upper gastrointestinal (TI) bleeding caused by gastric ulcer (GU), duodenal ulcer (DU), or gastroesophageal varices diagnosed by urgent endoscopies between January 1996 and December 1999 in the authors' hospital (Tokyo Metropolitan Bokutou Hospital). The authors evaluated the monthly and seasonal incidence of these cases and investigated correlations among the incidence and climatic factors. The study included 441 patients, including 275 patients with GU (62.4 percent), 51 patients with DU (11.6 percent), and 115 patients (26.0 percent) with varices. The number of cases of hematemesis caused by GU showed significant monthly and seasonal fluctuations: it decreased in summer and increased in autumn through winter. Moreover, there were inverse relations between the monthly number of cases of hematemesis caused by GU and the mean temperature and vapor pressure, and a parallel relation to the mean atmospheric pressure. In contrast, the number of cases of hematemesis caused by DU and varices did not show any monthly or seasonal fluctuations. The authors conclude that climatic factors may play an important role in hemorrhage from GU. 3 figures. 1 table. 24 references.

- **Overexpression of Co-Stimulatory Molecules in Peripheral Mononuclear Cells of Helicobacter Pylori-Positive Peptic Ulcer Patients: Possible Difference in Host Responsiveness Compared With Non-Ulcer**

  Source: European Journal of Gastroenterology and Hepatology. 13(1): 11-18. January 2001.

  Contact: Available from Lippincott Williams and Wilkins. 241 Borough High Street, London SE1 1GB, UK 44(0)20-7940-7502. Fax: 44(0)20-7940-7574. Website: http://www.eurojgh.com/.

  Summary: Helicobacter pylori is the principal cause of gastritis and peptic ulcer disease. However, H. pylori positive patients do not always have peptic ulcer. This study was carried out in order to determine the difference in host immune reaction to H. pylori between patients with peptic ulcer and those without. The study included 10 H. pylori positive patients with peptic ulcer, 10 H. pylori positive nonulcer patients, and 10 healthy volunteers who were examined for expression of surface molecules in peripheral blood mononuclear cells. The results showed more mononuclear cells expressed molecules ICAM-1, VLA-4, Leu-M3 in H. pylori positive ulcer patients than in nonulcer patients and healthy volunteers. There were also more cells expressing CD28, SLex, CD4, HLA-DR, and NU-B2 in H. pylori positive ulcer patients than in nonulcer

patients and healthy volunteers. There were fewer cells expressing CD8 in H. pylori positive ulcer patients than in nonulcer patients and healthy volunteers. The authors conclude that H. pylori infection may cause immunological reactions which are reflected in peripheral mononuclear cells. However, the activity and characteristics of peripheral mononuclear cells, in terms of expression of adhesion molecules, may differ between ulcer and nonulcer patients who are infected with H. pylori. 8 figures. 31 references.

- **Ischemic Necrosis of Gastric Wall After Long-Term Ergotamine Pill Abuse: Case Report and Review of the Literature**

  Source: Digestive Diseases and Sciences. 46(5): 981-984. May 2001.

  Contact: Available from Kluwer Academic Publishers. Customer Service Department, P.O. Box 358, Accord Station, Hingham, MA 02018-0358. (781) 871-6600. Fax (781) 681-9045. E-mail: kluwer@wkap.com. Website: www.wkap.nl. Distribution Centre, P.O. Box 322, 3300 AH Dordrecht, The Netherlands. 31 78 6392392. Fax: 31 78 6546474. E-mail: orderdept@wkap.nl.

  Summary: The major pharmacological effects of the ergot alkaloids include smooth muscle stimulation and vasoconstriction. Ergot intoxication can affect any vessel, including vasculature of the upper and lower extremities, as well as the coronary and splanchic circulation. Although cases of intestinal infarction after long term ergotamine pill abuse exist in the medical literature, this case report of gastric ischemia (lack of blood flow) is an extremely unusual manifestation of iatrogenic (caused by medical treatment) ergotism. In this particular case, upon presentation, the 50 year old female patient was suspected to have peptic ulcer disease, and she was treated for this presumed diagnosis. The relation between the patient's clinical and endoscopic picture and the ergotamine poisoning was made late in the course of the disease. Histopathology failed to reveal any specific etiology (cause) for the gastric ischemia (found at surgical exploration); only her 10 year use of up to 5 milligrams of ergotamine per day for headache treatment could explain the local ischemic effect. The patient has no symptoms or signs of ergot intoxication and she is in good health and nutritional status 37 months after surgery (which included gastrectomy, or removal of the stomach). The authors conclude that it seems rather uncommon for the stomach to become involved in the pathology of ergot intoxication because of its rich blood supply. Early discontinuation of the drug should be considered to avoid complications due to long term ergotamine pill abuse. 3 figures. 18 references.

- **Are Genetic Influences on Peptic Ulcer Dependent or Independent of Genetic Influences for Helicobacter Pylori Infection?**

  Source: Archives of Internal Medicine. 160(1): 105-109. January 10, 2000.

  Contact: Available from American Medical Association. Subscriber Services Center, P.O. Box 10946, Chicago, IL 60610-0946. (800) 262-2350. Fax (312) 464-5831. E-mail: ama-subs@ama-assn.org.

  Summary: Genetic factors play a role or roles in the etiology (cause or development) of peptic ulcer disease (PUD) and the acquisition of Helicobacter pylori infection. This article reports on a study undertaken to evaluate the relative importance of genetic and environmental influences as well as the importance of H. pylori on PUD. The cross sectional study included monozygotic (MZ) and dizygotic (DZ) twins, reared apart or together. A total of 258 twin pairs had information regarding H. pylori status and history of peptic ulcer. The intraclass correlations for PUD for MS twins reared apart and together and DZ twins reared apart and together were 0.67, 0.65, 0.22, and 0.35, respectively, which indicates that genetic effects are important for liability to peptic ulcer. The correlation coefficient for MZ twins reared apart (0.67) provides the best single estimate of the relative importance of genetic effects (heritability) for variation in liability to peptic ulcer disease, and structural model fitting analyses confirmed this result. The cross twin cross trait correlations for MZ and DZ twins were examined to determine whether genetic effects for peptic ulcer were shared with or independent of genetic influences for H. pylori. The results suggested that familial environmental rather than genetic influences mediate the association between PUD and H. pylori infection. The authors conclude that genetic influences are of moderate importance for liability to peptic ulcer disease. 3 tables. 33 references.

- **Can Helicobacter Pylori Serology Still Be Applied As a Surrogate Marker to Identify Peptic Ulcer Disease in Dyspepsia?**

  Source: Alimentary Pharmacology and Therapeutics. 14(5): 615-624. May 2000.

  Contact: Available from Alimentary Pharmacology and Therapeutics. Blackwell Science Ltd., Osney Mead, Oxford OX2 OEL, UK. +44(0)1865 206206. Fax +44(0)1865 721205. E-mail: journals.cs@blacksci.co.uk. Website: www.blackwell-science.com.

  Summary: Helicobacter pylori infection and associated peptic ulcer disease (PUD) has become less common in some countries. This article reports on a study undertaken to determine if H. pylori serology alone or combined with a history of ingestion of nonsteroidal antiinflammatory

drugs (NSAIDs) and an age threshold can be used as an indirect ulcer test. The patients (n = 250; 121 males, mean age 52 years) were consecutive Australian patients referred for endoscopy. At endoscopy, eight biopsies were taken for rapid urease test (CLO) testing, culture, and histology. NSAID use over the prior 3 months was recorded. Results showed that 106 (42 percent) of the patients were seropositive for H. pylori; 48 (19 percent) patients had PUD (peptic ulcer disease), and 30 (12 percent) used NSAIDs. Serology alone had a sensitivity of 52 percent and a specificity of 60 percent for identifying PUD; the sensitivity and specificity were 60 percent and 55 percent, respectively, when combined with a history of NSAID use. Serology, regardless of NSAID use, would have saved 23 percent in endoscopy workload but would have missed 17 percent of PUD cases if an age threshold of less than 45 years was chosen for omitting endoscopy. The authors conclude that serology was a poor ulcer test despite an excellent performance for detecting H. pylori. A strategy combining serology and an age threshold with a history of NSAID use to reduce endoscopy workloads may not always be appropriate. 1 figure. 4 tables. 47 references.

- **Gastric Outlet Obstruction Resulting from Peptic Ulcer Disease Requiring Surgical Intervention Is Infrequently Associated with Helicobacter Pylori Infection**

  Source: Journal of the American College of Surgeons. 191(1): 32-37. July 2000.

  Contact: Available from Journal of the American College of Surgeons. P.O. Box 2127, Marion, OH 43306-8227. (800) 214-8489 or (740) 382-3322. Fax (740) 382-5866.

  Summary: Gastric outlet obstruction (GOO) secondary to peptic ulcer disease (PUD) requiring therapeutic intervention remains a common problem. The incident of Helicobacter pylori infection in this cohort has not been well defined. Pneumatic dilation (PD) has been proposed as first line therapy before surgical intervention. If H. pylori infection in patients with GOO is infrequent, PD may not offer permanent control without the need for long term antacid therapy. This article reports on a study undertaken to examine the incidence of H. pylori infection and surgical outcomes in patients undergoing resection for GOO. The records of all patients having resection (vagotomy and antrectomy) for benign disease from 1993 to 1998 for GOO at the University of Tennessee hospitals were reviewed retrospectively. Smoking history, NSAID use, weight loss, previous ulcer treatment, previous treatment for H. pylori, and previous attempts at PD were among the factors examined. Surgical complications and patient satisfaction were ascertained from inpatient records,

postoperative clinical notes, and followup telephone surveys. During the study period, 24 patients underwent surgical resection. There were 16 men and 8 women, with a mean age of 61 years (range 40 to 87 years). Weight loss was documented in 58 percent and averaged 27 pounds. Five of 24 patients had previous attempts at PD, 3 of whom were H. pylori negative. All five had further weight loss after these failed attempts. Of the 24 patients reviewed, only 8 (33 percent) were H. pylori positive. There were no procedure related deaths. Long term clinical followup was possible in 16 of 24 patients, and all but one demonstrated dramatic clinical improvement by Visick score. The authors concluded that patients with H. pylori negative GOO resulting from peptic ulcer disease should be strongly considered for an early, definitive, acid reducing surgical procedure. 1 figure. 3 tables. 22 references.

- **Third Line Treatment for Helicobacter Pylori: A Prospective, Culture-Guided Study in Peptic Ulcer Patients**

  Source: Alimentary Pharmacology and Therapeutics. 14(10): 1335-1338. October 2000.

  Contact: Available from Alimentary Pharmacology and Therapeutics. Blackwell Science Ltd., Osney Mead, Oxford OX2 OEL, UK. +44(0)1865 206206. Fax +44(0)1865 721205. E-mail: journals.cs@blacksci.co.uk. Website: www.blackwell-science.com.

  Summary: The first line treatment of Helicobacter pylori bacterial infection cures the infection in the majority of patients. However, failures are common and 5 to 25 percent of patients remain infected in spite of using current recommended regimens. Even after two courses of treatment, 2 to 5 percent of patients remain infected. This article reports on a prospective study undertaken to investigate the effectiveness of third line treatment of H. pylori infection in patients with ulcers. Two week quadruple, culture guided, combinations were used in 31 consecutive patients. Susceptibility to metronidazole and clarithromycin were studies by E test, and thereafter a predetermined treatment regimen was used. Compliance was evaluated by pill count, and eradication defined by negative urea breath test at 6 weeks. Two main quadruple regimens were used in 29 patients. In spite of good compliance, the combination of omeprazole, tetracycline, bismuth and clarithromycin (OTBC) showed an eradication rate of 36 percent (five patients out of 14). If amoxycillin was used in place of the clarithromycin, the rate was 67 percent (eight patients out of 12). The difference was not significant. No clinical factor was found to be associated with failure to eradicate. The authors conclude that third line treatment often fails to eradicate H.

pylori infection. New strategies need to be developed and tested for this common clinical situation. 2 tables. 15 references.

Federally-Funded Research on Peptic Ulcer

The U.S. Government supports a variety of research studies relating to peptic ulcer and associated conditions. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.[18] CRISP (Computerized Retrieval of Information on Scientific Projects) is a searchable database of federally-funded biomedical research projects conducted at universities, hospitals, and other institutions. Visit the CRISP Web site at **http://commons.cit.nih.gov/crisp3/CRISP.Generate_Ticket**. You can perform targeted searches by various criteria including geography, date, as well as topics related to peptic ulcer and related conditions.

For most of the studies, the agencies reporting into CRISP provide summaries or abstracts. As opposed to clinical trial research using patients, many federally-funded studies use animals or simulated models to explore peptic ulcer and related conditions. In some cases, therefore, it may be difficult to understand how some basic or fundamental research could eventually translate into medical practice. The following sample is typical of the type of information found when searching the CRISP database for peptic ulcer:

- **Project Title: Aspirin, Helicobacter Pylori, and Peptic Ulcer Disease**

  Principal Investigator & Institution: Lew, Edward A.; Medicine; Harvard University (Medical School) Medical School Campus Boston, Ma 02115

  Timing: Fiscal Year 2002; Project Start 1-FEB-2002; Project End 1-JAN-2004

  Summary: Aspirin and other non-steroidal anti-inflammatory drugs are widely used to treat pain and inflammation, and at low doses, aspirin is also increasingly being used for cardiovascular prophylaxis. However, these drugs have substantial gastrointestinal toxicity and a significant number of patients develop peptic ulcers and GI bleeding. Although infection with Helicobacter pylori is another major risk factor for ulcers, the relationships between aspirin and H. pylori in the development of

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

ulcers remain highly controversial. It is unclear, for example, whether there is an addictive or synergistic interaction between these factors in conferring ulcer risk such that aspirin interacts with H. pylori to increase ulcer complications. Aspirin impairs mucosal protective mechanisms by decreasing prostaglandin production, whereas H. pylori promotes mucosal injury through cytokines and inflammation to form ulcers. Past studies have provided conflicting data on the ulcer risks associated with both factors but they have been limited by recall bias of aspirin use, selection bias, and small sample sizes with short follow-up. The primary goals of the proposed research are to determine the risk of peptic ulcers associated with the joint effects of low dose aspirin and H. pylori infection, the ulcer risk associated with low dose aspirin and a specific virulent strain of H. pylori, known as cagA+ H. pylori, and the risk of GI bleeding associated with low dose aspirin and H. pylori (especially cagA+ H. pylori strains) as compared to those without infection. We will have 80% power to detect a difference of 1.56 in the odds ratio, when comparing the association of aspirin use and ulcer formation in H. pylori positive and negative subjects. As the US population grows older, the chronic use of aspirin for cardiovascular prophylaxis and the subsequent development of ulcers are likely to increase, involving health care costs. The proposed study will provide important information to make an informed decision about aspirin related GI complications and whether H. pylori infected patients are at risk for ulcers and GI bleeding while on aspirin. These results may help identify high-risk patients and lead to strategies that will reduce ulcer complications among aspirin users.

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

- **Project Title: Management of Dyspepsia, Peptic Ulcer Disease, and Gerd**

  Principal Investigator & Institution: Kuo, Braden; ; Massachusetts General Hospital 55 Fruit St Boston, Ma 02114

  Timing: Fiscal Year 2001; Project Start 1-JUL-2001

  Summary: Dyspepsia has a prevalence of approximately 25% of the US population and is a primary symptom in 2 to 4% of primary care office visits. Proton pump inhibitors (PPIs) account for an increasing percent of pharmacy expenditures and the effects of their long-term use on patient outcomes is uncertain. Additional GI disease which utilize a significant portion of the expenditure of PPIs are peptic ulcer disease and gastroesophageal reflex disease. The direct cost of diagnosis and treatment and the indirect costs of time lost from work total greater than four billion dollars. Systematic medical management of populations with a specific disease, disease management, is intended to facilitate the

adoption and continued use of standards for appropriate testing, treating, and follow-up of patients. The proposed study uses a group-randomized design to test a system designed to improve the care of patients with upper GI symptoms utilizing acid suppression therapy and to evaluate the impact of physician management of upper GI symptoms. The program is designed: to increase appropriate testing for H. pylori among patients with dyspepsia or peptic disease, decrease inappropriate chronic use of acid suppression therapy, and assess the effect of the program on patient function, satisfaction, and resource use as well as physician satisfaction. The study will evaluate if such a program can be effective in managing upper GI symptoms in terms of quality of care and cost.

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

- **Project Title: Cure: Digestive Diseases Research Center**

  Principal Investigator & Institution: Tache, Yvette F.; Professor; Medicine; University of California Los Angeles Box 951361, 405 Hilgard Ave Los Angeles, Ca 90095

  Timing: Fiscal Year 2000; Project Start 5-JAN-1990; Project End 0-NOV-2004

  Summary: (Taken from the application) The CURE: Digestive Diseases Research Center is composed of a cohesive group of physicians and basic scientists with strong independent grant-supported research programs in the biology of the gut, with special emphasis upon regulation of mucosal cell function and gut neuroscience. CURE first received NIDDK funding in 1974 as a center to study peptic ulcer disease and became a Digestive Disease Core Center in 1989. The research emphasis of the center is acquisition of new knowledge about cellular and physiological processes that control gut function and translation of this knowledge into development of therapy for patients with gastrointestinal diseases. CURE initially established its reputation for work in clinical peptic ulcer disease, physiological regulation of acid secretion, and parietal cell mechanisms for secreting acid. Demonstration that Helicobacter pylori is an essential factor in pathogenesis of ordinary peptic ulcer disease brought new aspects of mucosal cell biology into the forefront of research at CURE. The interests and activities of center members have evolved along with science in this area and now include several facets of gastrointestinal regulatory physiology and cell biology. CURE's new name reflects more appropriately the broad interests of its members, including gastroduodenal mucosal physiology and disease; intestinal transport, intestinal inflammation, nutrition, and pancreatic secretion; neurophysiology and neuroenteric disease; and hormones, receptors, and signal transduction. The five Biomedical Research Cores outlined in this

proposal provide ready access to technology and to clinical and biological materials that are essential to the programs of center members. These cores provide custom antibody production, sophisticated peptide chemistry techniques, access to modem cellular imaging to study membrane proteins and their functions, animal models for studying physiology and pathophysiology, and access to a broad range of techniques and patients for clinical studies. The Administrative Core provides a wide range of administrative support for members and for center activities including a dynamic enrichment program. The Pilot and Feasibility Program has provided a successful mechanism for aiding development of new research programs by young investigators, and recipients usually have obtained independent funding. The center provides an optimal environment for cooperation and collaboration among its investigators, who have had a major impact on mucosal biology and on peptic ulcer disease over the past two decades and promise to have an even larger impact upon expanded research areas with continued support from the center.

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

- **Project Title: Duodenal Mucosal Defense Mechanism**

  Principal Investigator & Institution: Kaunitz, Jonathan D.; Professor of Medicine; Medicine; University of California Los Angeles Box 951361, 405 Hilgard Ave Los Angeles, Ca 90095

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

  Summary: Peptic ulcer disease is a major cause of morbidity and mortality in elderly and chronically ill populations. The past decade, with the re-discovery and emerging realization that peptic ulcer disease is most likely the result of infection with the organism H. pylori (Hp), has radically changed the direction of ulcer research. Despite the enormous amount of effort spent of basic and clinical aspects of Hp infection, the pathogenesis of ulcers due to this organism remains largely undefined. Many key questions, such as why only a small fraction of Hp infected hosts develop ulcer disease, are mostly unanswered. Despite these uncertainties, a consensus regarding the pathogenesis of duodenal ulcers to Hp has evolved. This theory, stated in the simplest terms, is that gastric Hp colonization disrupts the normal endocrine/neural feedback mechanisms regulating acid secretion, leading to a hypersecretory response to neural and endocrine secretory stimuli. This mild but chronic elevation of acid secretion produces gastric metaplasia of the duodenum, which then becomes colonized with Hp migrating from their gastric location. These duodenal Hp produce duodenitis, which then in some

fashion impair mucosal defense, producing duodenal ulcers. Our hypothesis is that enhanced mast cell degranulation is part or actually a cause of Hp-related duodenitis, and that elevated histamine release from mast cells increases the susceptibility of the duodenal mucosa to acid injury by suppressing epithelial bicarbonate secretion and mucosal blood flow. In this proposal, we present a research plan designed to study the effects of mast cell activation on duodenal defense mechanisms. This alteration of duodenal function has been established in experimental models in the literature; our aim is to study its effect on duodenal defense mechanisms so as to replicate the inflamed state of the duodenum in Hp-infected, ulcer prone patients. To accomplish these ends, duodenal mucosal defense mechanisms will be measured in a standard acid injury and bicarbonate secretion perfusion model. Furthermore, a novel technique developed in our laboratory over the past seven year to measure gastric defensive mechanisms will be modified so that we will be able to measure duodenal defense mechanisms, including intracellular pH and mucosal blood flow. By accomplishing these aims, we hope to increase understanding of what is now virtually unknown---the impact of Hp infection in duodenal host defense factors.

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

- **Project Title: Evaluation of Botanicals for H .Pylori Infections**

  Principal Investigator & Institution: Mahady, Gail B.; Assistant Professor; Prog/Collab Res/Pharmactl Scis; University of Illinois at Chicago at Chicago Chicago, Il 60612

  Timing: Fiscal Year 2001; Project Start 1-FEB-2001; Project End 1-DEC-2002

  Summary: (Applicant's Abstract): After more than a decade of research and controversy, it has been conclusively demonstrated that Helicobacter pylori is the main cause of peptic ulcer disease. High infection rates around the world pose serious health and economic problems. In the U. S. alone, 500,000 new cases, and 4 million recurrences are reported annually, at a cost of $3 to $4 billion dollars. Current therapies for H. pylori infections consist of combinations of antibiotics, and H2 blockers. However, due to the serious adverse reactions, patient compliance is low, leading to the development of antibiotic resistance. Thus, new approaches to the treatment H. pylori infections are urgently needed. For thousand of years traditional systems of medicine have successfully used botanicals (plant-based medicines) for the treatment of dyspepsia, gastritis and peptic ulcers. However, most of these botanicals have not been systematically screened for anti-H. pylori activity. This proposal describes an international, multidisciplinary approach to investigating

botanical extracts for the treatment and prevention of H. pylori infections. The work is designed to generate sufficient preliminary data to serve as the basis of more definitive studies. The major goal of the project is to identify and standardize botanical extracts and combinations of extracts for the treatment of H. pylori infections. To accomplish this goal, the project involves (1) selection and procurement of botanicals to be tested (2) extraction of the source materials, (3) short-term in vitro and fn vivo testing biological studies to determine activity and mechanistic information (4) in vivo evaluations to establish safety and efficacy, and (5) determination of the major chemical constituents for standardization of the active extracts. Over the two-year period, approximately 60 new botanicals will be selected and evaluated for antibacterial activity against H. pylori. The list of high priority botanicals for testing will be generated based on data analysis from the Napralertsm database, Medline, German Commission E Monographs and other data sources. The success of this method for plant selection is seen in our preliminary results where an initial testing of 25 identified botanicals led to 13 active extracts. In this project, the botanicals will be procured and extracts prepared. The botanical extracts will be subjected to in vitro bioassay protocols using 15 H. pylori strains. Active extracts will be utilized for in vivo studies. The long-term objectives are to develop safe and effective botanical extracts for the treatment and prevention of H. pylori infections.

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

- **Project Title: Gastric Enterochromaffin-like Cell in Ulcer Disease**

  Principal Investigator & Institution: Sachs, George; Professor; Physiology; University of California Los Angeles Box 951361, 405 Hilgard Ave Los Angeles, Ca 90095

  Timing: Fiscal Year 2000; Project Start 1-MAY-1994; Project End 0-APR-2004

  Summary: Gastric acid secretion is a major factor in causation of GERD and peptic ulcer disease. H. pylori modifies secretion of gastrin and somatostatin and is also a major contributor to ulcerogenesis. Understanding of the pathways involved in stimulation of parietal and peptic cell function is important in defining the pathogenesis of ulcer disease. Studies of regulation of secretion have used various models. Intact animal studies have defined some neural pathways and endocrine and paracrine effectors. These models cannot usually define the cells directly involved in changes of gastric acid secretion. Isolated cell models have in general confirmed what has been found in animal models, but without high purity or video imaging the contribution of cell specific receptors and signaling has not been possible. To date, we have used

video-imaging of calcium signals coupled with studies of histamine release to define receptors on the ECL cells at 85 percent purity and also shown Cai responses of individual G and D cells to ligands such as aromatic amino acids. With our recent (3 months) acquisition of a Zeiss confocal microscope, we now propose to continue these studies on isolated cells and now mainly to investigate more integrated models of gastric function, using isolated superfused fundic glands and segments of fundic epithelium, isolated perfused and superfused antral glands and antral segments. The responses of the individual cells in these models, i.e. ECL and fundic D cells, parietal and peptic cells for fundic models and G and D and peptic cells for antral models will enable studies of stimulation-secretion coupling as applied to endocrine-secretory cell coupling for the first time by direct visualization using appropriate dyes for Ca (mag-fluo-4) and pH (carboxy-SNARF-1) and acid secretion (acridine orange and 9-amino acridine). From this approach, the pathways involved with effects of PACAP, carbachol, CCK-8 and gastrin as possible neural or endocrine mediators of secretory stimulation and somatostatin, galanin, secretin and PYY as possible paracrine, neural or endocrine mediators of secretory inhibition will be determined. Preliminary confocal data, some of which are displayed in this application, show that this approach is technically feasible and conceptually rewarding. Hence this approach will provide additional insights into mechanisms of regulation of gastric secretion and enable illuminated interpretation of the pathophysiology of peptic ulcer disease.

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

- **Project Title: H. Pylori Breath Test with Infrared Spectral Detection**

  Principal Investigator & Institution: Micheels, Ronald H.; ; Polestar Technologies, Inc. 220 Reservoir St, Ste 32 Needham Heights, Ma 02194

  Timing: Fiscal Year 2000; Project Start 0-SEP-1996; Project End 1-AUG-2002

  Summary: (Adapted from the applicant's abstract) Helicobacter pylori, an organism that colonizes the mucus gel layer of the gastric antrum, is associated with recurrent peptic ulcer disease and gastric malignancies. One of the preferred methods for diagnosis of H. pylori infection is the 13CO2-urea breath test. This non-invasive test is both sensitive and specific, but currently requires equipment that is costly and difficult to maintain. An analysis system based on infrared absorption spectroscopy is proposed in place of isotope ratio mass spectrometry for the analysis of breath 13CO2/13CO2 ratios as part of the 13C-urea breath test. Advantages of this system over conventional mass spectrometry analysis include substantially reduced equipment and maintenance costs, as well

as greatly simplified measurement and sample preparation procedures. The proposed system incorporates a novel infrared sample cell for obtaining high signal/noise. Based on the preliminary results, we plan to develop a commercial instrument that should make the 13C-urea breath test, as well as other breath tests utilizing 13CO2/13CO2 ratio analysis, accessible to a wide range of medical laboratories, physician offices, and clinics. This improved instrument should in turn lead to substantial reductions in medical costs and analysis turn-around time associated with H. pylori testing or other testing employing 13CO2 analysis. PROPOSED COMMERCIAL APPLICATION: The infrared spectral analysis system for H. pylori detection proposed in this program would lead to an inexpensive, safe, and reliable commercial instrument easily used in small and large medical laboratories and physician offices. This instrument would also allow diagnosis of a variety of other types of digestive disorders for which 13C breath tests are used and could be employed in underdeveloped countries in H. pylori eradication programs.

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

- **Project Title: Heat Shock Proteins and Helicobacter Pylori Pathogenesis**

  Principal Investigator & Institution: Kurt-Jones, Evelyn A.; Associate Professor; Medicine; Univ of Massachusetts Med Sch Worcester 55 Lake Ave N Worcester, Ma 01655

  Timing: Fiscal Year 2002; Project Start 5-MAY-2002; Project End 0-APR-2007

  Summary: (provided by applicant): Helicobacter pylori infection causes gastritis, peptic ulcer disease, gastric atrophy and gastric cancer. The World Health Organization has classified H. pylori as a Class I carcinogen. In animal models, the progression of H. pylori disease from superficial gastritis to gastric cancer is related to the severity of the host inflammatory response. The identification of H. pylori components and host factors that contribute to the inflammatory response may lead to important insights into the mechanism of peptic ulcer disease and/or gastric malignancy. Heat shock proteins are potent activators of inflammatory cytokine production. Heat shock proteins produced by bacteria and endogenous heat shock proteins produced by damaged tissue cell accumulate in foci of infection and inflammation. Our recent data indicate that Toll-like receptors and CD14 are important in the innate immune response to bacterial heat shock proteins. In this proposal we will investigate the role of Toll-like receptors in the recognition of bacterial heat shock proteins and in the control of bacterial infection and

inflammation. Specifically, we will use in vitro and in vivo approaches to investigate the role of heat shock proteins in H. pylori infection and pathogenesis and development of tumors.

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

- **Project Title: Involvement of Tnf-Alpha in Intestinal Inflammation in a Model of Colitis**

  Principal Investigator & Institution: Appleyard, Caroline B.; ; Ponce School of Medicine G.P.O. Box 7004 Ponce, Pr 00731

  Timing: Fiscal Year 2001; Project Start 0-SEP-1986; Project End 1-MAY-2005

  Summary: Description (provided by applicant): Ailments of the gastrointestinal tract are often very debilitating yet despite decades of research, the basic pathogenic mechanisms involved in inflammatory bowel diseases (IBD) are unknown with no cure for diseases such as Crohn?s and Ulcerative Colitis. Until now the lack of a clinically relevant animal model which mimics the periods of remission and relapse seen in the human condition has limited our understanding of the disease pathogenesis. The recent development of a "reactivated" model of colitis represents a more realistic model for the study of colitis-induced inflammation and ulceration. Previous investigations have shown significantly increased levels of inflammatory mediators in inflammatory bowel disease (IBD). This has led to the suggestion that cytokines, prostaglandins and leukotrienes may play an important role in the pathogenesis of IBD. Recent data suggest that the proinflammatory mediator tumor necrosis factor alpha (TNF-alpha) may be a key player in thc inflammatory process. Three sets of experiments will test this central hypothesis: (1) Absolute levels of TNF-alpha will be measured in a reactivated animal model of colitis and the possible cellular source will be investigated (hypothesis: TNF-alpha levels are increased in periods of relapse and inflammation in inflammatory bowel disease). (2) The underlying mechanism of action of TNF-alpha will be characterized by the administration of various inhibitors, drugs or antibodies (hypothesis: involvement of TNF-alpha in this reactivated model of colitis is an essential step in the inflammatory process and resultant ulceration; moreover this is regulated by the nuclear transcription factor kappa beta, NF-kB). (3) The effect of TNF-alpha on ion transport will be investigated using Ussing chambers (hypothesis: TNF-alpha contributes to the pathogenesis of one of the major symptoms of IBD, diarrhea). This research will advance our understanding of the cytokine network and interactions involved in inflammatory bowel disease. It will provide new avenues for potential therapeutic intervention and, ultimately, offer a

preferable alternative to the pharmacologic agents and surgical procedures currently employed.

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

- **Project Title: Pathogenesis of H Pylori Induced Gastric Inflammation**

  Principal Investigator & Institution: Peek, Richard M.; Assistant Professor of Medicine; Medicine; Vanderbilt University 2101 W End Ave Nashville, Tn 37240

  Timing: Fiscal Year 2000; Project Start 1-JUL-1996; Project End 0-JUN-2001

  Summary: Helicobacter pylori infection results in chronic superficial gastritis and plays an important role in the pathogenesis of duodenal and gastric ulcer disease. The chronic inflammatory process associated with the infection has also been linked to atrophic gastritis, gastric adenocarcinoma and non-Hodgkins lymphoma of the stomach. Infection is clinically silent in many, if not most, persons but its high prevalence worldwide results in substantial morbidity and mortality from peptic ulcer disease and gastric cancer. The factors that lead infected persons to develop clinical disease or remain asymptomatic are poorly understood. H. pylori strain-specific differences or variations in the host response to the infection alone, or in combination, may determine a particular pathologic outcome. The long term goals of this project are to gain an understanding of the inflammatory and immunologic events which develop in response to H. pylori infection, to identify host responses and strain-specific products that lead to distinct pathological outcomes, and to define the mechanisms by which specific bacterial products lead to divergent outcomes. To achieve these goals, the specific aims proposed are 1) to determine whether in vivo expression of the products of H. pylori strain-specific genes such as cagA and particular alleles of vacA, encoding the vacuolating cytotoxin induces characteristic patterns of cytokine production that are associated with peptic ulcer disease; 2) to identify and clone novel H. pylori genes that are induced by adherence to gastric epithelium, correlate gene expression with pathologic outcome, and examine the function of these genes; 3) to examine the effect of isogenic mutations within H. pylori virulence genes on cytokine production in vitro.

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

- **Project Title: Prevention of Recurrent Ulcer in Patients Infected with H Pylori**

  Principal Investigator & Institution: Savides, Thomas J.; ; University of California San Diego 9500 Gilman Dr San Diego, Ca 92093

Timing: Fiscal Year 2000

Summary: Determine whether daily gastric acid suppression with histamine-2-receptor antagonists will reduce the recurrence rate of peptic ulcer bleeding in patients who have had helicobacter pylori eradicated.

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

- **Project Title: Prevention/Treatment of H. Pylori with Lactoferrin**

  Principal Investigator & Institution: Schroder, Bruce G.; ; Dairilean, Inc. Box 88647 Sioux Falls, Sd 57105

  Timing: Fiscal Year 2001; Project Start 1-SEP-2001; Project End 8-FEB-2002

  Summary: (Scanned from the applicant's description) An estimated 25 million persons in the United States have had peptic ulcer disease during their lifetimes. A high proportion, over 90 percent, of these cases are caused by infection with helicobacter pylori (H. pylori). Preliminary research has found that bovine lactoferrin, a native antibiotic in bovine milk, is inhibitory to the growth of H. pylori and lactoferrin is a potential therapeutic agent for the prevention and treatment of H. pylori infection. The proposed Phase I research will investigate the feasibility of using native bovine lactoferrin to treat and prevent H. pyloric infections and ulcers in humans. The study will determine if consuming milk or milk-based nutraceutical beverage containing high levels of bovine lactoferrin is bacteriostatic or bactericidal to H. pylori bacteria in volunteers with H. pylori infection but no preexisting ulcers. Volunteers will be screened to determine the presence of H. pylori and placed on a 21-day regime of consuming the proposed high lactoferrin nutraceutical beverage. The effect of the lactoferrin treatment on the H. pylori will be monitored. If successful, Phase II research will involve a larger and longer-term prevention study as well as a study on the use of the high lactoferrin nutraceutical beverage in conjunction with current treatment regimes for ulcers. PROPOSED COMMERCIAL APPLICATION: Sales of one proton pump inhibitor, Losec/Prilosec, used to treat ulcers were $4.4 billion during 9 months in 1999. The market for a nutraceutical that prevents or is effective in treating ulcers would be huge. Trans Ova Genetics and Dairilean have current business relationships with several large pharmaceutical and nutraceutical companies that would facilitate commercialization of the product.

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

- **Project Title: Stomach-Specific Anti-H. Pylori Therapy**

  Principal Investigator & Institution: Hwang, George C.; ; Eds Pharmaceutical Corporation 3 Bluestone Path Natick, Ma 01760

Timing: Fiscal Year 2000; Project Start 1-AUG-2000; Project End 1-JAN-2001

Summary: Since it is known that Helicobacter pylori resides in the gastric mucus layer and at the epithelial cell interface, rationale approach of complete eradication would be to deliver acid-stable antibiotics locally at the site of infection. The specific aims of Phase I are: (1) preparation and characterization of antibiotic-containing chitosan microspheres, (2) optimization of the drug release in vitro, (4) examine the gastric residence time of the formulation, and (5) examine the in vivo efficacy of the antibiotic formulation. Amoxicillin-containing porous chitosan microspheres, formed by spray- drying, will be formulated for stomach-specific delivery. Amoxicillin is known have low minimum inhibitory concentrations against H. pylori in vitro, but fails to eradicate the infection when administered alone in vivo. The release profiles of amoxicillin from the microspheres will be optimized in vitro by adjusting the formulation variables such that all of the drug is released in 2.0 h or less. The gastric residence time of the optimized delivery system after oral administration in mice will be determined by fluorescent staining technique. The antibiotic efficacy will be evaluated in vivo in an H. pylori mice model. This novel drug delivery system will increase the concentration of the drug available at the site of infection and decrease the probability of H. pylori resistance. PROPOSED COMMERCIAL APPLICATIONS: Peptic ulcer disease (PUD) affects as many as 10-15% of the U.S. population. The annual cost of hospitalization and treatment is over $2.0 billion. The cost-of chronic pharmacotherapy is approximately $500 million a year or 12% of the total pharmacy costs. Significant potential for revenue generation exists in the development of a stomach-specific antibiotic delivery system for H. pylori infection.

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

- **Project Title: Structure and Regulation of H Pylori Cytotoxin**

  Principal Investigator & Institution: Cover, Timothy L.; Associate Professor of Medicine; Medicine; Vanderbilt University 2101 W End Ave Nashville, Tn 37240

  Timing: Fiscal Year 2000; Project Start 1-MAY-1996; Project End 9-SEP-2001

  Summary: (Adapted from applicant's abstract): Helicobacter pylori is a Gram-negative bacterium that is present in the stomach of at least half of the world's human population. In this niche, it persists for decades unless treated, and consistently induces gastric inflammation. Infection with this organism is a significant risk factor for the development of peptic ulcer disease, gastric carcinoma, and gastric lymphoproliferative diseases. The

long-term objective of this project is to elucidate pathogenic mechanisms whereby H. pylori causes human disease, and to develop effective means for prevention and treatment of infection. In an effort to accomplish these goals, this proposal focuses investigation upon an important virulence determinant of H. pylori: the vacuolating cytotoxin. Although nearly all isolates contain a gene (vacA) encoding the cytotoxin, only about 50% produce vacuolating cytotoxin activity in vitro. Infection with cytotoxin-producing (tox+) strains is associated with an increased risk for peptic ulcer disease; moreover, administration of the purified cytotoxin intragastrically to mice induces gastric ulceration. In preliminary studies, it has been demonstrated that vacA structural gene sequences in tox+ strains differ substantially from those in tox- strains. In addition, it has been demonstrated that levels of vacA transcription are increased in tox+ strains compared to tox- strains. Finally, it has been demonstrated that the cytotoxin binds to epithelial cells and is internalized prior to inducing cytoplasmic vacuolation. The hypotheses of this proposal are (i) that the tox+ phenotype is dependent upon the presence of specific vacA structural gene domains which are absent from vacA homologs in tox- strains, (ii) that vacA transcription is regulated differently in tox+ and tox- strains, and (iii) that specific vacA domains or subunits are required for binding of the toxin to cells, intracellular trafficking, and induction of vacuolation. The specific aims are: to determine the basis for differences among H. pylori strains in levels of vacuolating cytotoxin activity, and to identify antigenic and functionally important domains of the cytotoxin. To accomplish the first objective, a series of chimeric vacA genes, derived in part from a tox+ strain and in part from a tox- strain, will be constructed and analyzed. In addition, a trans- acting vacA regulatory element will be sought. To accomplish the second objective, a series of recombinant vacA peptides will be synthesized, and polyclonal antisera prepared for these peptides. The antisera will be tested for the capacity to block binding and intracellular trafficking of the cytotoxin, as well as vacuole formation. In addition, the products of a series of vacA deletion mutants will be tested for functional activity. Finally, the regions of vacA that elicit an antibody response in humans will be determined by testing human sera for reactivity with the panel of recombinant vacA peptides. Understanding the structure and regulation of the vacuolating cytotoxin may aid in the development of strategies to prevent and treat H. pylori-associated gastroduodenal illnesses.

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

E-Journals: PubMed Central[19]

PubMed Central (PMC) is a digital archive of life sciences journal literature developed and managed by the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM).[20] Access to this growing archive of e-journals is free and unrestricted.[21] To search, go to **http://www.pubmedcentral.nih.gov/index.html#search**, and type "peptic ulcer" (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for peptic ulcer in the PubMed Central database:

- **CagA Antibodies in Japanese Children with Nodular Gastritis or Peptic Ulcer Disease** by Seiichi Kato, Toshiro Sugiyama, Mineo Kudo, Kenji Ohnuma, Kyoko Ozawa, Kazuie Iinuma, Masahiro Asaka, and Martin J. Blaser; 2000 January
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=86021&rendertype=external
- **Clustering of South African Helicobacter pylori Isolates from Peptic Ulcer Disease Patients Is Demonstrated by Repetitive Extragenic Palindromic-PCR Fingerprinting** by M. Kidd, J. C. Atherton, A. J. Lastovica, and J. A. Louw; 2001 May
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=88034&rendertype=external
- **Consensus and Variable Region PCR Analysis of Helicobacter pylori 3[prime prime or minute] Region of cagA Gene in Isolates from Individuals with or without Peptic Ulcer** by Claudia Augustin Rota, Julio C. Pereira-Lima, Carolina Blaya, and Nance Beyer Nardi; 2001 February
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=87784&rendertype=external
- **Differences in Surface-Exposed Antigen Expression between Helicobacter pylori Strains Isolated from Duodenal Ulcer Patients and from Asymptomatic Subjects** by Ann-Catrin E. Thoreson, Annika

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

[20] With PubMed Central, NCBI is taking the lead in preservation and maintenance of open access to electronic literature, just as NLM has done for decades with printed biomedical literature. PubMed Central aims to become a world-class library of the digital age.

[21] The value of PubMed Central, in addition to its role as an archive, lies the availability of data from diverse sources stored in a common format in a single repository. Many journals already have online publishing operations, and there is a growing tendency to publish material online only, to the exclusion of print.

Hamlet, Janet Celik, Mona Bystrom, Susanne Nystrom, Lars Olbe, and Ann-Mari Svennerholm; 2000 September
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=87400&rendertype=external

- **Immunoblot Analysis of Humoral Immune Response to Helicobacter pylori in Children with and without Duodenal Ulcer** by Gifone A. Rocha, Andreia M. R. Oliveira, Dulciene M. M. Queiroz, Anfrisina S. T. Carvalho, and Ana M. M. F. Nogueira; 2000 May
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=86586&rendertype=external
- **Platelets modulate gastric ulcer healing: Role of endostatin and vascular endothelial growth factor release** by Li Ma, Susan N. Elliott, Giuseppe Cirino, Andre Buret, Louis J. Ignarro, and John L. Wallace; 2001 May 22
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=33492
- **Slaughter Pigs Are Commonly Infected by Closely Related but Distinct Gastric Ulcerative Lesion-Inducing Gastrospirilla** by Robert Roosendaal, Jan H. Vos, Thijs Roumen, Rene van Vugt, Giovanni Cattoli, Aldert Bart, Henricus L. B. M. Klaasen, Ernst J. Kuipers, Christina M. J. E. Vandenbroucke-Grauls, and Johannes G. Kusters; 2000 July
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=86991&rendertype=external
- **Testing for Helicobacter pylori in dyspeptic patients suspected of peptic ulcer disease in primary care: cross sectional study** by Catherine F Weijnen, Mattijs E Numans, Niek J de Wit, Andre J P M Smout, Karel G M Moons, Theo J M Verheij, and Arno W Hoes; 2001 July 14
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=34540
- **vacA Genotypes in Helicobacter pylori Strains Isolated from Children with and without Duodenal Ulcer in Brazil** by Valquiria Ribeiro De Gusmao, Edilberto Nogueira Mendes, Dulciene Maria De Magalhaes Queiroz, Gifone Aguiar Rocha, Andreia Maria Camargos Rocha, Abdussalam Ali Ramadan Ashour, and Anfrisina Sales Teles Carvalho; 2000 August
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=87127&rendertype=external

The National Library of Medicine: PubMed

One of the quickest and most comprehensive ways to find academic studies in both English and other languages is to use PubMed, maintained by the

National Library of Medicine. The advantage of PubMed over previously mentioned sources is that it covers a greater number of domestic and foreign references. It is also free to the public.[22] If the publisher has a Web site that offers full text of its journals, PubMed will provide links to that site, as well as to sites offering other related data. User registration, a subscription fee, or 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 peptic ulcer, simply go to the PubMed Web site at **www.ncbi.nlm.nih.gov/pubmed**. Type "peptic ulcer" (or synonyms) into the search box, and click "Go." The following is the type of output you can expect from PubMed for "peptic ulcer" (hyperlinks lead to article summaries):

- **Curcuma longa Linn. in the treatment of gastric ulcer comparison to liquid antacid: a controlled clinical trial.**
  Author(s): Kositchaiwat C, Kositchaiwat S, Havanondha J.
  Source: J Med Assoc Thai. 1993 November; 76(11): 601-5. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7964234&dopt=Abstract

- **Effect of Centella asiatica Linn on physical and chemical factors induced gastric ulceration and secretion in rats.**
  Author(s): Sairam K, Rao CV, Goel RK.
  Source: Indian J Exp Biol. 2001 February; 39(2): 137-42.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11480209&dopt=Abstract

- **Effect of Convolvulus pluricaulis Chois on gastric ulceration and secretion in rats.**
  Author(s): Sairam K, Rao CV, Goel RK.
  Source: Indian J Exp Biol. 2001 April; 39(4): 350-4.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11491580&dopt=Abstract

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

- **Effect of evening primrose oil on gastric ulceration and secretion induced by various ulcerogenic and necrotizing agents in rats.**
  Author(s): al-Shabanah OA.
  Source: Food and Chemical Toxicology : an International Journal Published for the British Industrial Biological Research Association. 1997 August; 35(8): 769-75.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9350221&dopt=Abstract

- **Effect of Piper longum Linn, Zingiber officianalis Linn and Ferula species on gastric ulceration and secretion in rats.**
  Author(s): Agrawal AK, Rao CV, Sairam K, Joshi VK, Goel RK.
  Source: Indian J Exp Biol. 2000 October; 38(10): 994-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11324171&dopt=Abstract

- **Effect of the antiulcer polysaccharide fraction from Bupleurum falcatum L. on the healing of gastric ulcer induced by acetic acid in rats.**
  Author(s): Matsumoto T, Sun XB, Hanawa T, Kodaira H, Ishii K, Yamada H.
  Source: Phytotherapy Research : Ptr. 2002 February; 16(1): 91-3.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11807976&dopt=Abstract

- **Effect of the chloroform extract of Tanacetum vulgare and one of its active principles, parthenolide, on experimental gastric ulcer in rats.**
  Author(s): Tournier H, Schinella G, de Balsa EM, Buschiazzo H, Manez S, Mordujovich de Buschiazzo P.
  Source: The Journal of Pharmacy and Pharmacology. 1999 February; 51(2): 215-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10217322&dopt=Abstract

- **Effects of a polysaccharide fraction from the roots of Bupleurum falcatum L. on experimental gastric ulcer models in rats and mice.**
  Author(s): Sun XB, Matsumoto T, Yamada H.
  Source: The Journal of Pharmacy and Pharmacology. 1991 October; 43(10): 699-704.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1682444&dopt=Abstract

- **Effects of an essential oil from the bark of Croton cajucara Benth. on experimental gastric ulcer models in rats and mice.**
  Author(s): Hiruma-Lima CA, Gracioso JS, Nunes DS, Souza Brito AR.
  Source: The Journal of Pharmacy and Pharmacology. 1999 March; 51(3): 341-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10344636&dopt=Abstract

- **Effects of human epidermal growth factor on natural and delayed healing of acetic acid-induced gastric ulcers in rats.**
  Author(s): Kuwahara Y, Okabe S.
  Source: Scand J Gastroenterol Suppl. 1989; 162: 162-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2595289&dopt=Abstract

- **Effects of methanol, cyclohexane and methylene chloride extracts of Bidens pilosa on various gastric ulcer models in rats.**
  Author(s): Tan PV, Dimo T, Dongo E.
  Source: Journal of Ethnopharmacology. 2000 December; 73(3): 415-21.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11090994&dopt=Abstract

- **Effects of orally administered human epidermal growth factor on natural and delayed healing of acetic acid-induced gastric ulcers in rats.**
  Author(s): Kuwahara Y, Sunagawa Y, Imoto Y, Okabe S.
  Source: Jpn J Pharmacol. 1990 January; 52(1): 164-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2308236&dopt=Abstract

- **Effects of Pteleopsis suberosa extracts on experimental gastric ulcers and Helicobacter pylori growth.**
  Author(s): Germano MP, Sanogo R, Guglielmo M, De Pasquale R, Crisafi G, Bisignano G.
  Source: Journal of Ethnopharmacology. 1998 January; 59(3): 167-72.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9507900&dopt=Abstract

- **Evaluation of the gastroprotective effect of Laurus nobilis seeds on ethanol induced gastric ulcer in rats.**
  Author(s): Afifi FU, Khalil E, Tamimi SO, Disi A.

Source: Journal of Ethnopharmacology. 1997 September; 58(1): 9-14.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9323999&dopt=Abstract

- **Experimental evaluation of Bocopa monniera on rat gastric ulceration and secretion.**
  Author(s): Rao CV, Sairam K, Goel RK.
  Source: Indian J Physiol Pharmacol. 2000 October; 44(4): 435-41.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11214498&dopt=Abstract

- **Gastric ulcer formation in cold-stressed mice related to a central calcium-dependent-dopamine synthesizing system.**
  Author(s): Sutoo D, Akiyama K, Matsui A.
  Source: Neuroscience Letters. 1998 June 12; 249(1): 9-12.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9672376&dopt=Abstract

- **Gastric ulcers and Helicobacter heilmannii.**
  Author(s): Debongnie JC, Donnay M, Mairesse J, Lamy V, Dekoninck X, Ramdani B.
  Source: European Journal of Gastroenterology & Hepatology. 1998 March; 10(3): 251-4.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9585030&dopt=Abstract

- **Gastroprotective effect of aparisthman, a diterpene isolated from Aparisthmium cordatum, on experimental gastric ulcer models in rats and mice.**
  Author(s): Hiruma-Lima CA, Gracioso JS, Toma W, Almeida AB, Paula AC, Brasil DS, Muller AH, Souza Brito AR.
  Source: Phytomedicine : International Journal of Phytotherapy and Phytopharmacology. 2001 March; 8(2): 94-100.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11315762&dopt=Abstract

- **Gastroprotective effect of Copaifera langsdorffii oleo-resin on experimental gastric ulcer models in rats.**
  Author(s): Paiva LA, Rao VS, Gramosa NV, Silveira ER.

Source: Journal of Ethnopharmacology. 1998 August; 62(1): 73-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9720615&dopt=Abstract

- **Influence of age on natural and delayed healing of experimentally-induced gastric ulcers in rats.**
  Author(s): Penney AG, Andrews FJ, O'Brien PE.
  Source: Digestive Diseases and Sciences. 1996 September; 41(9): 1838-44.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8794804&dopt=Abstract

- **Investigations on the protective action of Condonopsis pilosula (Dangshen) extract on experimentally-induced gastric ulcer in rats.**
  Author(s): Wang ZT, Du Q, Xu GJ, Wang RJ, Fu DZ, Ng TB.
  Source: General Pharmacology. 1997 March; 28(3): 469-73.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9068993&dopt=Abstract

- **Observations on the effects of massage on experimental gastric ulcer in rats.**
  Author(s): Li Z, Yan J, Yang X, Li D.
  Source: J Tradit Chin Med. 1996 June; 16(2): 147-50. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9389146&dopt=Abstract

- **Ocimum sanctum Linn--a study on gastric ulceration and gastric secretion in rats.**
  Author(s): Mandal S, Das DN, De K, Ray K, Roy G, Chaudhuri SB, Sahana CC, Chowdhuri MK.
  Source: Indian J Physiol Pharmacol. 1993 January; 37(1): 91-2.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8449557&dopt=Abstract

- **Proactive actions of psychological stress on gastric ulceration in rats--real psychobiology.**
  Author(s): Murison R, Overmier JB.
  Source: Annals of the New York Academy of Sciences. 1990; 597: 191-200. Review. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2201239&dopt=Abstract

- **Protective effect of Swertia chirata against indomethacin and other ulcerogenic agent-induced gastric ulcers.**
  Author(s): Rafatullah S, Tariq M, Mossa JS, al-Yahya MA, al-Said MS, Ageel AM.
  Source: Drugs Exp Clin Res. 1993; 19(2): 69-73.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8223145&dopt=Abstract

- **Protective effects of Acanthopanax senticosus Harms from Hokkaido and its components on gastric ulcer in restrained cold water stressed rats.**
  Author(s): Fujikawa T, Yamaguchi A, Morita I, Takeda H, Nishibe S.
  Source: Biol Pharm Bull. 1996 September; 19(9): 1227-30.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8889047&dopt=Abstract

- **Protective effects of Hange-shashin-to on water-immersion restraint stress-induced gastric ulcers.**
  Author(s): Li J, Takeda H, Inazu M, Hayashi M, Tsuji M, Ikoshi H, Takada K, Matsumiya T.
  Source: Methods Find Exp Clin Pharmacol. 1998 January-February; 20(1): 31-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9575480&dopt=Abstract

- **The antiulcer activity of Garcinia cambogia extract against indomethacin-induced gastric ulcer in rats.**
  Author(s): Mahendran P, Vanisree AJ, Shyamala Devi CS.
  Source: Phytotherapy Research : Ptr. 2002 February; 16(1): 80-3.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11807973&dopt=Abstract

- **The protective effect of liquorice components and their derivatives against gastric ulcer induced by aspirin in rats.**
  Author(s): Dehpour AR, Zolfaghari ME, Samadian T, Vahedi Y.
  Source: The Journal of Pharmacy and Pharmacology. 1994 February; 46(2): 148-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8021806&dopt=Abstract

- **The role of antioxidant activity of Phyllanthus emblica fruits on prevention from indomethacin induced gastric ulcer.**
  Author(s): Bandyopadhyay SK, Pakrashi SC, Pakrashi A.
  Source: Journal of Ethnopharmacology. 2000 May; 70(2): 171-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10771207&dopt=Abstract

- **Treatment of gastric ulcers and diarrhea with the Amazonian herbal medicine sangre de grado.**
  Author(s): Miller MJ, MacNaughton WK, Zhang XJ, Thompson JH, Charbonnet RM, Bobrowski P, Lao J, Trentacosti AM, Sandoval M.
  Source: American Journal of Physiology. Gastrointestinal and Liver Physiology. 2000 July; 279(1): G192-200.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10898763&dopt=Abstract

Vocabulary Builder

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

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

Alkaloid: One of a large group of nitrogenous basis substances found in plants. They are usually very bitter and many are pharmacologically active. Examples are atropine, caffeine, coniine, morphine, nicotine, quinine, strychnine. The term is also applied to synthetic substances (artificial a's) which have structures similar to plant alkaloids, such as procaine. [EU]

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

Antibacterial: A substance that destroys bacteria or suppresses their growth or reproduction. [EU]

Antibody: An immunoglobulin molecule that has a specific amino acid sequence by virtue of which it interacts only with the antigen that induced its synthesis in cells of the lymphoid series (especially plasma cells), or with antigen closely related to it. Antibodies are classified according to their ode of action as agglutinins, bacteriolysins, haemolysins, opsonins, precipitins, etc. [EU]

Anticoagulants: Agents that prevent blood clotting. Naturally occurring

agents in the blood are included only when they are used as drugs. [NIH]

Antioxidant: One of many widely used synthetic or natural substances added to a product to prevent or delay its deterioration by action of oxygen in the air. Rubber, paints, vegetable oils, and prepared foods commonly contain antioxidants. [EU]

Aqueous: Watery; prepared with water. [EU]

Aromatic: Having a spicy odour. [EU]

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

Ascariasis: Infection by nematodes of the genus ASCARIS. Ingestion of infective eggs causes diarrhea and pneumonitis. Its distribution is more prevalent in areas of poor sanitation and where human feces are used for fertilizer. [NIH]

Asymptomatic: No symptoms; no clear sign of disease present. [NIH]

Atrophy: A wasting away; a diminution in the size of a cell, tissue, organ, or part. [EU]

Bacteriostatic: 1. inhibiting the growth or multiplication of bacteria. 2. an agent that inhibits the growth or multiplication of bacteria. [EU]

Benign: Not malignant; not recurrent; favourable for recovery. [EU]

Carbachol: A slowly hydrolyzed cholinergic agonist that acts at both muscarinic and nicotinic receptors. [NIH]

Cardiovascular: Pertaining to the heart and blood vessels. [EU]

Chemotherapy: The treatment of disease by means of chemicals that have a specific toxic effect upon the disease - producing microorganisms or that selectively destroy cancerous tissue. [EU]

Chloroform: A commonly used laboratory solvent. It was previously used as an anesthetic, but was banned from use in the U.S. due to its suspected carcinogenecity. [NIH]

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

Colitis: Inflammation of the colon. [EU]

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

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

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

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

Cysteamine: A radiation-protective agent that oxidizes in air to form cystamine. It can be given intravenously or orally to treat radiation sickness.

The bitartrate has been used for the oral treatment of nephropathic cystinosis. [NIH]

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

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

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

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

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

Epithelium: The covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. Epithelium is classified into types on the basis of the number of layers deep and the shape of the superficial cells. [EU]

Ergotamine: A vasoconstrictor found in ergot of Central Europe. It is an alpha-1 selective adrenergic agonist and is commonly used in the treatment of migraine headaches. [NIH]

Ergotism: Chronic poisoning from excessive or misdirected use of ergot as a medicine, or from eating ergotized grain; it is marked by cerebrospinal symptoms, spasms, and cramps, or by a kind of dry gangrene. Called also St. Anthony's fire. [EU]

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

Ethnopharmacology: The study of the actions and properties of drugs, usually derived from medicinal plants, indigenous to a population or ethnic group. [NIH]

Extraction: The process or act of pulling or drawing out. [EU]

Ferula: A genus of umbelliferous plants, including Ferula asafoetida, that yields pungent oils and resins used formerly as carminatives and now as cat and dog repellents. A related plant, F. galbanum, is used similarly. F. foetida is used as a fresh vegetable. [NIH]

Fibrosis: The formation of fibrous tissue; fibroid or fibrous degeneration [EU]

Gastritis: Inflammation of the stomach. [EU]

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

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

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

Hematemesis: Vomiting of blood. [NIH]

Hepatobiliary: Pertaining to the liver and the bile or the biliary ducts. [EU]

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

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

Hypersecretion: Excessive secretion. [EU]

Iatrogenic: Resulting from the activity of physicians. Originally applied to disorders induced in the patient by autosuggestion based on the physician's examination, manner, or discussion, the term is now applied to any adverse condition in a patient occurring as the result of treatment by a physician or surgeon, especially to infections acquired by the patient during the course of treatment. [EU]

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

Ileus: Obstruction of the intestines. [EU]

Immersion: The placing of a body or a part thereof into a liquid. [NIH]

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

Infarction: 1. the formation of an infarct. 2. an infarct. [EU]

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

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

Intoxication: Poisoning, the state of being poisoned. [EU]

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

Lesion: Any pathological or traumatic discontinuity of tissue or loss of function of a part. [EU]

Leukotrienes: A family of biologically active compounds derived from arachidonic acid by oxidative metabolism through the 5-lipoxygenase pathway. They participate in host defense reactions and pathophysiological conditions such as immediate hypersensitivity and inflammation. They have potent actions on many essential organs and systems, including the cardiovascular, pulmonary, and central nervous system as well as the gastrointestinal tract and the immune system. [NIH]

Lipid: Any of a heterogeneous group of flats and fatlike substances characterized by being water-insoluble and being extractable by nonpolar (or fat) solvents such as alcohol, ether, chloroform, benzene, etc. All contain as a major constituent aliphatic hydrocarbons. The lipids, which are easily stored in the body, serve as a source of fuel, are an important constituent of cell structure, and serve other biological functions. Lipids may be considered to include fatty acids, neutral fats, waxes, and steroids. Compound lipids comprise the glycolipids, lipoproteins, and phospholipids. [EU]

Lymphoma: Any neoplastic disorder of the lymphoid tissue, the term lymphoma often is used alone to denote malignant lymphoma. [EU]

Mediator: An object or substance by which something is mediated, such as (1) a structure of the nervous system that transmits impulses eliciting a specific response; (2) a chemical substance (transmitter substance) that induces activity in an excitable tissue, such as nerve or muscle; or (3) a substance released from cells as the result of the interaction of antigen with antibody or by the action of antigen with a sensitized lymphocyte. [EU]

Membrane: A thin layer of tissue which covers a surface, lines a cavity or divides a space or organ. [EU]

Metaplasia: The change in the type of adult cells in a tissue to a form which is not formal for that tissue. [EU]

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

Microspheres: Small uniformly-sized spherical particles frequently labeled with radioisotopes or various reagents acting as tags or markers. [NIH]

Motility: The ability to move spontaneously. [EU]

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

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

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

Neurophysiology: The scientific discipline concerned with the physiology of the nervous system. [NIH]

Oral: Pertaining to the mouth, taken through or applied in the mouth, as an oral medication or an oral thermometer. [EU]

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]

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]

Perfusion: 1. the act of pouring over or through, especially the passage of a fluid through the vessels of a specific organ. 2. a liquid poured over or through an organ or tissue. [EU]

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

Postoperative: Occurring after a surgical operation. [EU]

Prophylaxis: The prevention of disease; preventive treatment. [EU]

Prostaglandins: A group of compounds derived from unsaturated 20-carbon fatty acids, primarily arachidonic acid, via the cyclooxygenase pathway. They are extremely potent mediators of a diverse group of physiological processes. [NIH]

Proteins: Polymers of amino acids linked by peptide bonds. The specific sequence of amino acids determines the shape and function of the protein. [NIH]

Psychosomatic: Pertaining to the mind-body relationship; having bodily symptoms of psychic, emotional, or mental origin; called also psychophysiologic. [EU]

Receptor: 1. a molecular structure within a cell or on the surface characterized by (1) selective binding of a specific substance and (2) a specific physiologic effect that accompanies the binding, e.g., cell-surface receptors for peptide hormones, neurotransmitters, antigens, complement

fragments, and immunoglobulins and cytoplasmic receptors for steroid hormones. 2. a sensory nerve terminal that responds to stimuli of various kinds. [EU]

Recombinant: 1. a cell or an individual with a new combination of genes not found together in either parent; usually applied to linked genes. [EU]

Reflex: 1; reflected. 2. a reflected action or movement; the sum total of any particular involuntary activity. [EU]

Reflux: A backward or return flow. [EU]

Remission: A diminution or abatement of the symptoms of a disease; also the period during which such diminution occurs. [EU]

Resection: Excision of a portion or all of an organ or other structure. [EU]

Serology: The study of serum, especially of antigen-antibody reactions in vitro. [NIH]

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

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]

Standardize: To compare with or conform to a standard; to establish standards. [EU]

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

Systemic: Pertaining to or affecting the body as a whole. [EU]

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

Toxicity: The quality of being poisonous, especially the degree of virulence of a toxic microbe or of a poison. [EU]

Ulceration: 1. the formation or development of an ulcer. 2. an ulcer. [EU]

Ulcerogenic: Causing ulceration; leading to the production of ulcers. [EU]

Vasoconstriction: The diminution of the calibre of vessels, especially constriction of arterioles leading to decreased blood flow to a part. [EU]

Veins: The vessels carrying blood toward the heart. [NIH]

Virulence: The degree of pathogenicity within a group or species of microorganisms or viruses as indicated by case fatality rates and/or the ability of the organism to invade the tissues of the host. [NIH]

CHAPTER 5. BOOKS ON PEPTIC ULCER

Overview

This chapter provides bibliographic book references relating to peptic ulcer. You have many options to locate books on peptic ulcer. The simplest method is to go to your local bookseller and inquire about titles that they have in stock or can special order for you. Some patients, however, feel uncomfortable approaching their local booksellers and prefer online sources (e.g. **www.amazon.com** and **www.bn.com**). In addition to online booksellers, excellent sources for book titles on peptic ulcer include the Combined Health Information Database and the National Library of Medicine. Once you have found a title that interests you, visit your local public or medical library to see if it is available for loan.

Book Summaries: Federal Agencies

The Combined Health Information Database collects various book abstracts from a variety of healthcare institutions and federal agencies. To access these summaries, go 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 "peptic ulcer" (or synonyms) into the "For these words:" box. You will only receive results on books. You should check back periodically with this database which is updated every 3 months. The following is a typical result when searching for books on peptic ulcer:

- **Clinical Practice of Gastroenterology. Volume Two**

  Source: Philadelphia, PA: Current Medicine. 1999. 861 p.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: This lengthy textbook brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. This second volume includes 113 chapters in five sections: liver, gallbladder and biliary tract, pancreas, pediatric gastroenterology, and special topics. Specific topics include hepatic (liver) structure and function, jaundice, viral hepatitis, alcoholic liver injury, liver tumors, parasitic diseases of the liver, Wilson's disease, hemochromatosis, the pregnancy patient with liver disease, portal hypertension, hepatic encephalopathy, fulminant hepatic failure, liver transplantation, the anatomy of the gallbladder and biliary tract, gallstones, laparoscopic cholecystectomy (gallbladder removal), cholecystitis (gallbladder infection), primary sclerosing cholangitis, biliary obstruction, pancreatic anatomy and physiology, acute pancreatitis, pancreatic fistulas and ascites (fluid accumulation), chronic pancreatitis, cancer of the pancreas, endoscopic retrograde cholangiopancreatography, esophageal atresia, gastroesophageal reflux in infants and children, achalasia and esophageal motility disorders, caustic and foreign body ingestion, vomiting, chronic abdominal pain, gastritis and peptic ulcer disease in children, malabsorption syndromes in children, inflammatory bowel disease in children and adolescents, acute appendicitis, cystic fibrosis, constipation and fecal soiling (incontinence), hepatitis in children, liver transplantation in children, failure to thrive, pediatric AIDS, the gastrointestinal manifestations of AIDS, the evaluation and management of acute upper gastrointestinal bleeding, principles of endoscopy, eating disorders, nutritional assessment, enteral and parenteral nutrition, gastrointestinal diseases in the elderly and in pregnancy, nosocomial infections, and the psychosocial aspects of gastroenterology (doctor patient interactions). The chapters include figures, algorithms, charts, graphs, radiographs, endoscopic pictures, intraoperative photographs, photomicrographs, tables, and extensive references. The volume concludes with a detailed subject index and a section of color plates.

- **Gastrointestinal and Hepatobiliary Pathophysiology**

  Source: Madison, CT: Fence Creek Publishing. 1998. 475 p.

Contact: Available from Blackwell Science, Inc. 350 Main Street, Malden, MA 02148. (800) 215-1000 or (781) 388-8250. Fax (781) 388-8270. E-mail: csbooks@blacksci.com. Website: www.blackwellscience.com. PRICE: $27.95 plus shipping and handling. ISBN: 1889325015.

Summary: This book on gastrointestinal and hepatobiliary pathophysiology is one from a series designed to meet the second and third year medical students' needs for a concise but comprehensive resource that focuses on organ system pathophysiology. The test covers the pathogenesis, diagnosis, treatment, and management of common diseases, using a format that includes one or more clinical cases integrated throughout the chapters to foster direct application of clinical problem solving skills; extensive use of margin notes that concisely highlight important concepts, define key terms, and pinpoint clinical correlations; questions at the end of each chapter, using the NBME format, that offer a means for accurate self assessment; and wide margins to accommodate note taking by students as they study. Thirty chapters cover an overview of gastrointestinal and hepatobiliary function; regulation of the digestive system; the anatomy, histology, and embryology of the gastrointestinal tract; an overview of gastrointestinal motility; gastrointestinal electrolyte and fluid secretion; digestion and absorption; management of water and electrolytes; liver anatomy and physiology; liver metabolism, physiology of bile formation, and gallstones; normal and disordered swallowing; peptic ulcer disease; small bowel disorders; acute and chronic pancreatitis; functional bowel disorders; the mucosal immune system; inflammatory bowel disease; infectious disorders of the gastrointestinal tract; viral hepatitis; hereditary liver disease; autoimmune liver disease; pathogenesis and consequences of portal hypertension; disorders of cholestasis, bilirubin metabolism, and jaundice; orthotopic liver transplantation; alcohol and the gastrointestinal tract; the pathophysiology of abdominal pain and pain syndromes; gastrointestinal disorders in pregnancy; the molecular biology of gastrointestinal malignancies and overview of neoplasms of the gastrointestinal tract; pharmacology; principles of nutritional support in the gastrointestinal patient; and gastrointestinal bleeding. A subject index concludes the textbook.

- **Diagnosis and Management of Peptic Ulcer Disease. 2nd ed**

  Source: West Islip, NY: Professional Communications, Inc. 1997. 203 p.

  Contact: Available from Professional Communications, Inc. 400 Center Bay Drive, West Islip, NY 11795. (800) 337-9838. PRICE: $17.95. ISBN: 1884735304.

Summary: This handbook reviews the diagnosis and management of peptic ulcer disease. The author emphasizes its functional and structural setting, causes, complications, and therapy, with particular attention to H. pylori, the worldwide infection known to account for the majority of duodenal and gastric ulcers. Both of these types of ulcers are now seen as common chronic diseases which are multifactorial, involving both genetic and environmental factors. The handbook, in pocket-size for ease of reference, includes 17 chapters in six sections: gastrointestinal structure and function, including etiology; the role of H. pylori, including epidemiology and natural history; NSAIDs (nonsteroidal anti-inflammatory drugs) and stress-induced ulcers; diagnostic considerations, including clinical presentation, laboratory tests, and radiology and endoscopy; treatment, including general therapeutic measures and drug therapy; and complications, including bleeding ulcers, perforation, penetration, and gastric outlet obstruction. The association of both duodenal and gastric ulcers with antral inflammation and, perhaps most influential, the discovery of Helicobacter pylori as a cause of antral gastritis has alerted clinicians to the importance of mucosal inflammation in the pathogenesis and recurrent nature of peptic ulceration. The finding that H. pylori can usually be eliminated by antibiotics carries potentially revolutionary therapeutic implications. Black and white photographs and charts illustrate the handbook, each chapter includes references, and a subject index concludes the volume. 30 figures. 13 tables. (AA-M).

- **Gastroenterology and Hepatology: The Comprehensive Visual Reference. Volume 4: Pediatric GI Problems**

  Source: Philadelphia, PA: Current Medicine. 1997. [200 p.].

  Contact: Available from Current Medicine. 400 Market Street, Suite 700, Philadelphia, PA 19106. (800) 427-1796 or (215) 574-2266. Fax (215) 574-2270. E-mail: inquiry@phl.cursci.com. Website: current-medicine.com. PRICE: $125.00 plus shipping and handling. ISBN: 0443078521.

  Summary: This atlas is one in an 8-volume collection of images that pictorially displays the gastrointestinal tract, liver, biliary tree, and pancreas in health and disease, both in children and adults. This volume includes 11 chapters on pediatric gastrointestinal (GI) problems, each written by experts in their respective fields. Topics include the newborn, nutrition, neonatal surgery and the acute abdomen, gastroesophageal reflux, peptic ulcer disease and Helicobacter pylori related gastroduodenal disease, diarrheal disease in infants and children, pediatric inflammatory bowel disease (IBD) and functional bowel disorders, cystic fibrosis, anorectal malformations, and pediatric liver

disease. The editor emphasizes that, in pediatric gastroenterology, there is an emphasis on assuring optimal nutritional support for every child because a child's potential for growth and development must be maximized, even in the presence of digestive disease. The chapters emphasize the medical, surgical, and nutritional management care of infants and children with gastrointestinal and liver disease. The format of the atlas is visual images supported by relatively brief text. Tables, charts, diagrams, and photomicrographs are used extensively.

- **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.

- **Development of American Gastroenterology**

  Source: New York, NY: Raven Press, Ltd. 1990. 466 p.

  Contact: Available from Raven Press. 1185 Avenue of the Americas, Dept. 5B, New York, NY 10036. (800) 777-2836 or (212) 930-9500. Fax (212) 869-3495. PRICE: $69 plus shipping (as of 1995). ISBN: 0881676039.

Summary: This volume describes the 300-year history of American gastroenterology from mysticism and empiricism to clinical excellence and scientific responsibility and its development to a prominent place in American medicine. Seven chapters cover American beginnings of gastroenterology, the Nineteenth Century, the early Twentieth Century, the blossoming of American gastroenterology in the Twentieth Century, the further growth of American gastroenterology, and the development of gastrointestinal tubes and x-rays, including early observations on appendicitis, peptic ulcer, cholelithiasis, and liver disease. Extensive appendices present conference proceedings, statistical information, and editorials from experts in the field of gastroenterology. A detailed subject index is included. 49 references.

Book Summaries: Online Booksellers

Commercial Internet-based booksellers, such as Amazon.com and Barnes & Noble.com, offer summaries which have been supplied by each title's publisher. Some summaries also include customer reviews. Your local bookseller may have access to in-house and commercial databases that index all published books (e.g. Books in Print®). The following have been recently listed with online booksellers as relating to peptic ulcer (sorted alphabetically by title; follow the hyperlink to view more details at Amazon.com):

- **A Century of Ulcer Surgery: Medical and Surgical Therapy Today** by Hermann and Langhas, Peter Bunte (Editor) (1984); ISBN: 0806723912; http://www.amazon.com/exec/obidos/ASIN/0806723912/icongroupinterna
- **Antacids in Peptic Ulcer Disease State of the Art (Perspectives in Digestive Disease Series)** by Bianchi, Richardson (1988); ISBN: 8877490373; http://www.amazon.com/exec/obidos/ASIN/8877490373/icongroupinterna
- **Atlas of Gastric Surgery (Surgical Practice Illustrated)** by Michael J. Zinner, Gwynne Gloege (Illustrator) (1991); ISBN: 0443087709; http://www.amazon.com/exec/obidos/ASIN/0443087709/icongroupinterna
- **Campylobacter Pylori in Gastritis and Peptic Ulcer Disease** (1989); ISBN: 4260141627; http://www.amazon.com/exec/obidos/ASIN/4260141627/icongroupinterna

- **Campylobacter Pylori in Gastritis and Peptic Ulcer Disease** by Martin J. Blaser (Editor) (1989); ISBN: 0896401626; http://www.amazon.com/exec/obidos/ASIN/0896401626/icongroupinterna
- **De-Nol: Mucosal Protection and Peptic Ulcer Disease** by G.N.J. Tytgat (Editor) (1987); ISBN: 3805546173; http://www.amazon.com/exec/obidos/ASIN/3805546173/icongroupinterna
- **Drugs and Peptic Ulcer: Therapeutic Agents for Peptic Ulcer Diseases** by C. J. Pfeiffer (Editor) (1982); ISBN: 0849362113; http://www.amazon.com/exec/obidos/ASIN/0849362113/icongroupinterna
- **Endogenous Mediators of Gastrointestinal Disease** by John L. Wallace (Editor) (1990); ISBN: 084934574X; http://www.amazon.com/exec/obidos/ASIN/084934574X/icongroupinterna
- **European Anti-Peptic Ulcer Pharmaceuticals Markets: Booming Proton Pump Inhibitor Sector Leads Dramatic Market Growth** (1995); ISBN: 0788902814; http://www.amazon.com/exec/obidos/ASIN/0788902814/icongroupinterna
- **Famotidine: A Further Development in the Modern Treatment of Peptic Ulcer Disease (Digestion, Vol 32)** by A. Bettarello (Editor) (1985); ISBN: 3805542542; http://www.amazon.com/exec/obidos/ASIN/3805542542/icongroupinterna
- **For Gourmets With Ulcers** by Toni Marsh Bruy Ere (1980); ISBN: 0393086453; http://www.amazon.com/exec/obidos/ASIN/0393086453/icongroupinterna
- **Gastric Cytoprotection: A Clinician's Guide** by Daniel Hollander, Andrzej S. Tarnawski (1989); ISBN: 0306432668; http://www.amazon.com/exec/obidos/ASIN/0306432668/icongroupinterna
- **Helicobacter Pylori, Gastritis and Peptic Ulcer** (1990); ISBN: 3540520309; http://www.amazon.com/exec/obidos/ASIN/3540520309/icongroupinterna
- **Helicobacter Pylori, Gastritis and Peptic Ulcer** by P. Malfertheiner, H. Ditschuneit (Editor) (1990); ISBN: 0387520309;

http://www.amazon.com/exec/obidos/ASIN/0387520309/icongroupinterna

- **Indigestion: Living Better With Upper Intestinal Problems from Heartburn to Ulcers and Gallstones** by Henry D. Janowitz (1992); ISBN: 0195063082; http://www.amazon.com/exec/obidos/ASIN/0195063082/icongroupinterna
- **Living With Your Ulcer** by Theodore Berland (1974); ISBN: 0312492456; http://www.amazon.com/exec/obidos/ASIN/0312492456/icongroupinterna
- **M1 Selective Muscarinic Antagonists in Peptic Ulcer Therapy** by W. Kromer, et al (1988); ISBN: 3805549253; http://www.amazon.com/exec/obidos/ASIN/3805549253/icongroupinterna
- **Manual of Upper Gastrointestinal Surgery (Comprehensive Manuals of Surgical Specialties)** by William Hervey Remine (1986); ISBN: 0387961488; http://www.amazon.com/exec/obidos/ASIN/0387961488/icongroupinterna
- **Mechanisms of Injury, Protection and Repair of the Upper Gastrointestinal Tract** by Andrew Garner (Editor), Paul E. O'Brien (Editor) (1991); ISBN: 0471930784; http://www.amazon.com/exec/obidos/ASIN/0471930784/icongroupinterna
- **Mechanisms of Peptic Ulcer Healing: Proceedings of the 59th Falk Symposium Held in Freiburg-Im-Breisgau, Germany, October 15-17, 1990 (Falk symposium** by F. Halter, et al (1991); ISBN: 0792389557; http://www.amazon.com/exec/obidos/ASIN/0792389557/icongroupinterna
- **Neuroendocrinology of Gastrointestinal Ulceration (Hans Selye Symposia on Neuroendocrinology and Stress, Vol 2)** by Sandor Szabo, et al (1995); ISBN: 0306449889; http://www.amazon.com/exec/obidos/ASIN/0306449889/icongroupinterna
- **Peptic Ulcer** by Douglas W. Piper (1982); ISBN: 0867920017; http://www.amazon.com/exec/obidos/ASIN/0867920017/icongroupinterna
- **Peptic Ulcer & Its Drug Causation: The Role of Non-Steroidal Anti-Inflammatory Drugs** by David Clinch (1986); ISBN: 0709934823;

http://www.amazon.com/exec/obidos/ASIN/0709934823/icongroupinterna

- **Peptic Ulcer Disease (Contemporary Issues in Gastroenterology, Vol 3)** by Frank P. Brooks (Editor) (1985); ISBN: 0443083681; http://www.amazon.com/exec/obidos/ASIN/0443083681/icongroupinterna
- **Peptic Ulcer Disease and Other Acid-Related Disorders** by David Zakim, Andrew J. Dannenberg (1991); ISBN: 0962918008; http://www.amazon.com/exec/obidos/ASIN/0962918008/icongroupinterna
- **Peptic Ulcer Disease: Basic and Clinical Aspects: Proceedings of the Symposium Peptic Ulcer Today, 21-23 November (Developments in Gastroenterology,** by Symposium Peptic Ulcer Today (1986); ISBN: 0898387590; http://www.amazon.com/exec/obidos/ASIN/0898387590/icongroupinterna
- **Peptic Ulcer: Clinical Surgery International Series** by D.C. Carter (Editor) (1984); ISBN: 0443027285; http://www.amazon.com/exec/obidos/ASIN/0443027285/icongroupinterna
- **Pharmacology of Peptic Ulcer Disease** (1991); ISBN: 3540528407; http://www.amazon.com/exec/obidos/ASIN/3540528407/icongroupinterna
- **Pharmacology of Peptic Ulcer Disease (Handbook of Experimental Pharmacology, Vol 99)** by Martin J. Collen, Stanley B. Benjamin (1991); ISBN: 0387528407; http://www.amazon.com/exec/obidos/ASIN/0387528407/icongroupinterna
- **Ranitidine: Proceedings of an International Symposium Held in the Context of the Seventh World Congress of Gastroenterology** by A.J. and Salmon, P.R. Riley (1983); ISBN: 0444903194; http://www.amazon.com/exec/obidos/ASIN/0444903194/icongroupinterna
- **Receptors and the Upper Gi Tract** by Basil I. and Spenney, Jerry G. Hirschowitz (1983); ISBN: 0911741097; http://www.amazon.com/exec/obidos/ASIN/0911741097/icongroupinterna
- **The Expert and Medical Progress: Experts' Influence on the Views of Peptic Ulcer and Dyspepsia and Its Treatment in Scandinavia During Five Decades)** by Herdis Molinder (1999); ISBN: 9155445829;

http://www.amazon.com/exec/obidos/ASIN/9155445829/icongroupinterna

- **The Ulcer Story: The Authoritative Guide to Ulcers, Dyspepsia, and Heartburn** by W. Grant Thompson (1996); ISBN: 0306452758; http://www.amazon.com/exec/obidos/ASIN/0306452758/icongroupinterna
- **Topics in Peptic Ulcer Disease (Perspectives in Digestive Disease Series, Vol 1/Cv0013)** by G. Bianchi Porro, K.D. Bardhan (Editor) (1987); ISBN: 8877490217; http://www.amazon.com/exec/obidos/ASIN/8877490217/icongroupinterna
- **Twenty-Five Years of Peptic Ulcer Research in Hungary: From Basic Sciences to Clinical Practices** by Nagy Mozsik, et al (1997); ISBN: 9630574365; http://www.amazon.com/exec/obidos/ASIN/9630574365/icongroupinterna
- **Ulcer and Non-Ulcer Dyspepsias (Practical Clinical Medicine)** by Michael Lancaster-Smith (Editor) (1987); ISBN: 0852009704; http://www.amazon.com/exec/obidos/ASIN/0852009704/icongroupinterna
- **Understanding and Managing Ulcers (The Reliable Healthcare Companions)** by John L. Decker, Paul N. Maton (1988); ISBN: 0380754282; http://www.amazon.com/exec/obidos/ASIN/0380754282/icongroupinterna
- **Vagotomy Testing** by Richard P. Saik (1983); ISBN: 0879931892; http://www.amazon.com/exec/obidos/ASIN/0879931892/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 "peptic ulcer" (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:[23]

- **Acid-peptic disorders of the upper gastrointestinal tract: diagnosis and management.** Author: Harris R. Clearfield and Margaret R. Khouri; Year: 1995; Newtown, Pa.: Handbooks in Health Care, 1995; ISBN: 188406504X http://www.amazon.com/exec/obidos/ASIN/188406504X/icongroupinterna
- **Basic and clinical aspects of Helicobacter pylori infection.** Author: G. Gasbarrini, S. Pretolani (eds.); Year: 1994; Berlin; New York: Springer-Verlag, c1994; ISBN: 3540567208 (alk. paper) http://www.amazon.com/exec/obidos/ASIN/3540567208/icongroupinterna
- **Capsaicin-sensitive afferent nerves in gastric mucosal damage and protection.** Author: by Gy. Mózsik, O.M.E. Abdel-Salam, and J. Szolcsányi; Year: 1997; Budapest: Akadémiai Kiadó, c1997; ISBN: 9630574373 http://www.amazon.com/exec/obidos/ASIN/9630574373/icongroupinterna
- **Contemporary diagnosis and management of H pylori-associated gastrointestinal diseases.** Author: Kathleen S. Graham, David Y. Graham; Year: 1998; Newtown, Pa.: Handbooks in Health Care, c1998; ISBN: 1884065260 http://www.amazon.com/exec/obidos/ASIN/1884065260/icongroupinterna
- **Diseases of the gastroesophageal mucosa: the acid-related disorders.** Author: edited by James W. Freston; Year: 2001; Totowa, N.J.: Humana Press, c2001; ISBN: 089603965X (alk. paper) http://www.amazon.com/exec/obidos/ASIN/089603965X/icongroupinterna
- **Dyspepesia, peptic ulcer and heliocobacter pylori: summary.** Author: Heatley, Richard; Year: 1996; Aberdeen: Scottish Health Purchasing Information Centre, [1996?]

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[23] In addition to LOCATORPlus, in collaboration with authors and publishers, the National Center for Biotechnology Information (NCBI) is adapting biomedical books for the Web. The books may be accessed in two ways: (1) by searching directly using any search term or phrase (in the same way as the bibliographic database PubMed), or (2) by following the links to PubMed abstracts. Each PubMed abstract has a "Books" button that displays a facsimile of the abstract in which some phrases are hypertext links. These phrases are also found in the books available at NCBI. Click on hyperlinked results in the list of books in which the phrase is found. Currently, the majority of the links are between the books and PubMed. In the future, more links will be created between the books and other types of information, such as gene and protein sequences and macromolecular structures. See **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Books.**

- **Economic evaluation of alternative therapies in the long term management of peptic ulcer disease and gastroesophageal reflux disease.** Author: Bernie O'Brien ... [et al.]; Year: 1996; [Ottawa]: Canadian Coordinating Office for Health Technology Assessment, [1996]; ISBN: 1895561353
- **Gastric ulcer.** Author: G. Battaglia, F. Di Mario, F. Vianello; Year: 1995; [Italy]: Piccin, c1995; ISBN: 8829911798 http://www.amazon.com/exec/obidos/ASIN/8829911798/icongroupinterna
- **Helicobacter pylori: biology and clinical practice.** Author: edited by C. Stewart Goodwin, Bryan W. Worsley; Year: 1993; Boca Raton: CRC Press, c1993; ISBN: 0849364515 (alk. paper) http://www.amazon.com/exec/obidos/ASIN/0849364515/icongroupinterna
- **Helicobacter pylori handbook.** Author: Richard V. Heatley; Year: 1998; Oxford, England; Malden, Mass.: Blackwell Science, 1998; ISBN: 0632051760 http://www.amazon.com/exec/obidos/ASIN/0632051760/icongroupinterna
- **Helicobacter pylori in peptic ulcer disease: January 1988 through November 1993: 1191 citations.** Author: prepared by Marian E. Beratan; Year: 1993; Bethesda, Md. (8600 Rockville Pike): U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health, National Library of Medicine, Reference Section; Pittsburgh, Pa.: Sold by the Supt. of Docs., U.S. G.P.O., 1993
- **Helicobacter pylori infection: pathophysiology, epidemiology, and management.** Author: edited by T.C. Northfield, M. Mendall and P.M. Goggin; Year: 1993; Dordrecht; Boston: Kluwer Academic Publishers, c1993; ISBN: 0792388259 (casebound) http://www.amazon.com/exec/obidos/ASIN/0792388259/icongroupinterna
- **Helicobacter pylori infection in gastroduodenal lesions: the second decade.** Author: editors, J.M. Pajares García, P. Correa, G.I. Pérez Pérez; Year: 2000; Barcelona; Philadelphia: Prous Science, c2000; ISBN: 8481241733
- **Herbal treatment for peptic ulcer.** Author: Vaidya Bhagwan Dash; Year: 1987; New Delhi: B. Jain Publishers, 1987
- **Management of peptic ulcer disease and acid-related disorders: clinical aspects of antacids in the 1990s: Bermuda, November 15-16, 1991.** Author: Beratan, Marian E; Year: 1992; [New York?]: Raven Press, c1992
- **Mechanisms of injury and sequelae of Helicobacter pylori infection: proceedings of an international workshop at Deerhurst, Huntsville, Ontario, Canada, 21-24 February 1991.** Author: edited by Richard H. Hunt; Year: 1991; Oslo: Universitetsforlaget, c1991

- **Neuroendocrinology of gastrointestinal ulceration.** Author: edited by Sandor Szabó and Yvette Taché; associate editor, Gary B. Glavin; Year: 1995; New York: Plenum Press, c1995; ISBN: 0306449889
  http://www.amazon.com/exec/obidos/ASIN/0306449889/icongroupinterna
- **Peptic ulcer therapy II, mucosally active drugs: proceedings of a symposium at the World Congresses of Gastroenterology: an official publication of the 1990 World Congresses of Gastroenterology, Sydney, Australia, 29 August 1990.** Author: edited by C. Tasman-Jo; Year: 1991; Oslo, Norway: Universitetsforlaget, c1991
- **Pharmaceutical management of peptic ulcer disease.** Author: prepared by Christine Perras and Nicolaas Otten; Year: 1996; Ottawa, Ont.: Canadian Coordinating Office for Health Technology Assessment, [1996]
- **Potent acid suppression--when is it appropriate?: proceedings of an extended panel discussion held in Ascot on July 28, 1989.** Author: edited by John G. Williams; Year: 1990; [London]: Royal Society of Medicine Services, c1990; ISBN: 1853151270
- **Safe and effective control of acid secretion: international symposium, Fort-de-France.** Author: La Martinique, January 12-16, 1988 / presidents, S. Bonfils, Ch. Laverdant; scientific organization, M. Mignon, J.P. Galmiche [editors]; scientific secretaries, Ph. R; Year: 1988; London: J. Libbey Eurotext, c1988; ISBN: 0861961765
- **Therapeutic endoscopy and bleeding ulcers.** Author: NIH Consensus Development Conference, March 6-8, 1989, Masur Auditorium, Warren Grant Magnuson Clinical Center, National Institutes of Health; sponsored by the National Institute of Diabetes andDigestive and Ki; Year: 1989; [Bethesda, Md.: National Institutes of Health, 1989]
- **Twenty five years of peptic ulcer research in Hungary: from basic sciences to clinical practice (1971-1995).** Author: editors, Gy. Mózsik, L. Nagy, A. Kir´ly; Year: 1997; Budapest: Akadémiai Kiadó, c1997; ISBN: 9630574365
  http://www.amazon.com/exec/obidos/ASIN/9630574365/icongroupinterna
- **Ulcer disease: investigation and basis for therapy.** Author: edited by Edward A. Swabb, Sandor Szabo; Year: 1991; New York: M. Dekker, c1991; ISBN: 0824782267
  http://www.amazon.com/exec/obidos/ASIN/0824782267/icongroupinterna
- **Ulcer story: the authoritative guide to ulcers, dyspepsia, and heartburn.** Author: W. Grant Thompson; Year: 1996; New York: Plenum Press, c1996; ISBN: 0306452758

http://www.amazon.com/exec/obidos/ASIN/0306452758/icongroupinterna

- **Update in gastric surgery.** Author: 11th Grenzland Symposium, Düsseldorf, 1994; edited by H.-D. Röher ... [et al.]; Year: 1994; Stuttgart; New York: G. Thieme Verlag, 1994; ISBN: 313101041X http://www.amazon.com/exec/obidos/ASIN/313101041X/icongroupinterna
- **Update, H2 receptor antagonists: proceedings of an international symposium, 24, 25, 26 August 1983, at the Royal Society of Medicine in London.** Author: Sidney Cohen, editor; Year: 1984; New York, NY: Biomedical Information Corp., c1984; ISBN: 0935404848

Chapters on Peptic Ulcer

Frequently, peptic ulcer will be discussed within a book, perhaps within a specific chapter. In order to find chapters that are specifically dealing with peptic ulcer, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and peptic ulcer using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find book chapters, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Book Chapter." By making these selections and typing in "peptic ulcer" (or synonyms) into the "For these words:" box, you will only receive results on chapters in books. The following is a typical result when searching for book chapters on peptic ulcer:

- **Duodenal Ulcer**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume One. Philadelphia, PA: Current Medicine. 1999. p. 273-281.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: Despite a decrease in incidence since the 1950s, duodenal ulcer disease continues to affect 200,000 to 400,000 people each year, with estimated direct and indirect costs approaching $3 to $4 billion. This chapter on duodenal ulcer is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. The authors review the

physiology of gastric acid secretion, the pathophysiology and clinical features of duodenal ulcers, and the evolution of therapy for this condition. Gastric acid plays a critical role in the pathophysiology of duodenal ulcer; people with duodenal ulcers secrete 70 percent more acid during the day (meal stimulated) and 150 percent more acid at night (basally stimulated) than people without ulcer. Etiologic factors include Helicobacter pylori infection, nonsteroidal anti-inflammatory drug (NSAID) use, and hypersecretory states (e.g., Zollinger Ellison syndrome). Epigastric pain (abdominal pain above the stomach) is the most common symptom of duodenal ulcer, but is neither sensitive nor specific for the disease. Usually, the diagnosis is made either by upper gastrointestinal series or by esophagogastroduodenoscopy (EGD); the latter is the preferred method. Important general measures in the treatment of duodenal ulcer disease include the cessation of smoking and the discontinuation of NSAID use, if possible. Drug therapy, used for both acute phases and maintenance therapy, is effective in healing duodenal ulcers and reducing recurrence rates. 6 figures. 3 tables. 53 references.

- **NSAID-Induced Gastrointestinal Injury: Pathophysiology, Treatment, and Prevention**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume One. Philadelphia, PA: Current Medicine. 1999. p. 288-295.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: This chapter on gastrointestinal injury from nonsteroidal antiinflammatory drugs (NSAIDs) is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. NSAID use may be complicated by uncommon, but potentially severe, gastrointestinal events. The scope of NSAID use makes even uncommon NSAID related events a source of considerable morbidity and expense. Gastric and duodenal ulcers develop from a combination of local and systemic effects of NSAIDs. The pathogenic role of Helicobacter pylori infection in the setting of NSAID use is controversial. NSAID induced ulcers should be treated by discontinuation of the NSAID and initiation of acid reduction therapy. Ulcers may heal with acid reduction, even if discontinuation of the NSAID is not possible. NSAID induced ulcers and complications can be reduced by coadministration of misoprostol. The role of acid reduction

prophylactic (preventive) therapy remains controversial and is under study. Careful patient selection is necessary for prophylactic therapy to be cost effective. Injury to other parts of the gastrointestinal tract also may occur with NSAID use. 7 figures. 4 tables. 23 references.

- **Gastric Surgery**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume One. Philadelphia, PA: Current Medicine. 1999. p. 395-403.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: This chapter on gastric surgery is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. The author reviews the indications for surgery in duodenal ulcer, gastric ulcer, and gastric adenocarcinoma (cancer). Before the advent of effective drug agents (H2 receptor antagonists and proton pump inhibitors), recurrence or intractability of duodenal ulcer was an indication for surgery. In carefully selected patients, however, a number of surgical procedures can affect acid secretion while minimizing postoperative complications and long term sequelae. Coexisting complications of the ulcer also must be addressed intraoperatively. The indications for surgery in patients with gastric ulcer tend to be the same as for those patients with duodenal ulcer. In patients with stomach cancer, the use of more aggressive endoscopic stent placement, laser therapy, and photodynamic therapy may achieve symptomatic improvement without exposing the patient to the morbidity and mortality associated with operative resection (surgery). 11 figures. 20 references.

- **Gastric Ulcer**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume One. Philadelphia, PA: Current Medicine. 1999. p. 264-272.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: Gastric ulcer is a common condition that can be challenging to diagnose because of its many clinical manifestations, which range from

asymptomatic iron deficiency to abdominal pain to life threatening hemorrhage or perforation. This chapter on gastric ulcer is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. The authors review the pathophysiology of gastric ulcers and emphasize their possible causes, diagnosis, and treatment. The gastric mucosa (stomach lining) is protected against injury from acid and pepsin by several layers of defense, called the gastric mucosal barrier; damaged cells in the mucosa are rapidly replaced. Gastric ulcer can develop when aggressive factors overwhelm protective mechanisms. The incidence and prevalence of gastric ulcer are related to two major causes of the disease: Helicobacter pylori infection and nonsteroidal antiinflammatory drug (NSAID) use. Other risk factors, such as smoking, alcohol use, and socioeconomic status, disappear when these primary causes are taken into account. Because gastric ulcer can present with a myriad of clinical features that may overlap with other disorders, its diagnosis can be a clinical challenge. High quality imaging of the upper gastrointestinal (GI) tract (barium upper GI study or endoscopy) is required for diagnosis. The acute treatment of gastric ulcers aims to restore the balance between aggressive and protective factors. Patients taking NSAIDs who have gastric ulcers should stop taking the drugs to ensure healing. The advent of highly effective antisecretory therapy has made surgery unnecessary in most uncomplicated cases. Most gastric ulcers heal within 8 to 12 weeks. 7 figures. 3 tables. 34 references.

- **Diet and Gastrointestinal Problems**

  Source: in Townsend, C.E. and Roth, R.A. Nutrition and Diet Therapy. 7th ed. Albany, NY: Delmar Publishers. 1999. 343-360 p.

  Contact: Available from Delmar Publishers. 3 Columbia Circle, Albany, NY 12212. (800) 865-5840. E-mail: info@delmar.com. PRICE: $44.95 plus shipping and handling. ISBN: 0766802965.

  Summary: This chapter on diet and gastrointestinal problems is from an undergraduate textbook on nutrition and diet therapy. The chapter describes the uses of diet therapy in gastrointestinal illness; identifies foods allowed and disallowed in the therapeutic diets covered; and helps readers learn to adapt normal diets to meet the requirements of various illnesses. The authors note that disturbances of the gastrointestinal tract require many different therapeutic diets. Peptic ulcers are treated with drugs, and diet therapy generally involves only avoiding alcohol and caffeine. Diverticulosis may be treated with a high fiber diet, whereas diverticulitis is treated with a gradual progression from a clear liquid to a high fiber diet. Ulcerative colitis may require a low residue diet combined

with high protein and high kcal. Cirrhosis (liver scarring) requires a substantial, balanced diet, with occasional restrictions on fat, protein, salt, or fluids. Diet therapy for hepatitis can include a full, well balanced diet, although protein may be restricted, depending on the patient's condition. Patients with cholecystitis (gallbladder infection) and cholelithiasis (gallstones) require a fat restricted diet and, in cases of overweight, a kcal restricted diet as well. Pancreatitis diet therapy ranges from total parenteral nutrition to an individualized diet as tolerated. The chapter includes lists of key terms to learn, recommended discussion topics, and suggested supplemental activities, and a section of review questions so readers can test their comprehension of the material. Two illustrative case studies are appended. 1 figure. 8 tables.

- **Gastritis and Ulcers in Children**

  Source: in Wyllie, R. and Hyams, J.S., eds. Pediatric Gastrointestinal Disease. 2nd ed. Philadelphia, PA: W.B. Saunders Company. 1999. p. 221-243.

  Contact: Available from W.B. Saunders Company. Book Order Fulfillment Department, 11830 Westline Industrial Drive, Saint Louis, MO 63146-9988. (800) 545-2522 or (314) 453-7010. Fax (800) 568-5136 or (314) 453-7095. E-mail: wbsbcs@harcourt.com. Website: customerservice.wbsaunders.com. PRICE: $155.00 plus shipping and handling. ISBN: 0721674615.

  Summary: This chapter on gastritis and ulcers in children is from a medical textbook that covers all facets of clinical pediatric gastrointestinal disease. The text emphasizes a clinical focus and incorporates anatomy and physiology considerations into each chapter rather than a separate section. The authors of this chapter maintain that although the overall prevalence of gastritis in children is not defined, an understanding of the causes of pediatric gastritis and mucosal ulceration is critical for the management of children with abdominal pain. The authors review the pathogenesis of gastritis, including acid secretion, the bicarbonate mucus barrier, and genetic factors; and causes of secondary peptic ulcer disease (PUD), including excessive acid secretion (due to Zollinger Ellison syndrome, or gastrinoma), other disorders of acid hypersecretion, Crohn's disease, eosinophilic gastroenteritis, Menetrier's disease (hypertrophic gastritis), autoimmune gastritis, and stress related gastritis and ulcers. The authors then discuss drug related gastritis and ulcers, primarily those due to nonsteroidal antiinflammatory agents. The role of Helicobacter pylori is explored next, including its epidemiology, pathogenesis, microbiology, methods for detection, H. pylori associated gastroduodenal disease in children (including gastric cancer and gastric

lymphomas), treatment of H. pylori infection and vaccine development, and indications for treatment (patient selection). The authors then review the clinical findings (including diagnosis, histopathology, classification) of primary and secondary gastritis and primary and secondary peptic ulcer disease. The chapter concludes with a brief discussion of treatment strategies for gastric inflammation, including mucosal cytoprotection, enhancement of mucosal barrier function, and acid secretion inhibition and acid neutralization. 7 figures. 4 tables. 348 references.

- **Control of Gastric Acid Secretion**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume One. Philadelphia, PA: Current Medicine. 1999. p. 180-188.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: Gastric acid secretion plays a crucial role in the breakdown of ingested food and in the digestion of proteins and peptides. Peptic digestion also can damage the gastric mucosa (stomach lining) if gastric secretions are particularly aggressive or if mucosal defenses are impaired. This chapter on the control of gastric acid secretion is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. The author reviews functional anatomy and histology, techniques for studying gastric secretion, and secretory functions of the stomach, including regulation of gastric acid secretion. The author stresses that knowledge of acid secretion physiology is necessary for the physician who aims to make a refined diagnosis and to prescribe the most specific treatments. Acid causes the gastric, duodenal, and jejunal ulcers that are the hallmark of Zollinger Ellison syndrome. Although most duodenal ulcers are associated with Helicobacter pylori infection, it is still not known why only a small fraction of infected patients develop peptic ulcer disease. Acid also probably plays a role in functional dyspepsia, in gastroesophageal reflux disease (GERD), and in the genesis or maintenance of ulcers related to administration of nonsteroidal antiinflammatory drugs. The author concludes that further progress in understanding upper gastrointestinal diseases may require the development of novel and more physiologic methods to determine acid output in the clinical setting. 12 figures. 1 table. 26 references.

- **Gastritis and Peptic Ulcer Disease in Children**

  Source: in Brandt, L., et al., eds. Clinical Practice of Gastroenterology. Volume Two. Philadelphia, PA: Current Medicine. 1999. p. 1294-1300.

  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. Website: www.wbsaunders.com. PRICE: $235.00 plus shipping and handling. ISBN: 0443065209 (two volume set); 0443065217 (volume 1); 0443065225 (volume 2).

  Summary: Gastritis in children remains underrecognized and poorly characterized. This chapter on gastritis and peptic ulcer disease in children is from a lengthy textbook that brings practitioners up to date on the complexities of gastroenterology practice, focusing on the essentials of patient care. This chapter covers anatomy and physiology; etiology, pathology and clinical features; nonerosive, nonspecific gastritis or chronic active gastritis; specific and distinctive types of gastritis; peptic ulcer disease (PUD), and duodenitis. Specific types of gastritis covered include Crohn's disease, chronic granulomatous disease, eosinophilic gastropathy, allergic gastropathy, Menetrier's disease, chronic varioliform gastritis, graft versus host disease, and cytomegalovirus. The author notes that in children with chronic peptic ulcer disease, duodenal ulcers are far more prevalent than are gastric ulcers. Secondary PUD usually occurs in association with an identifiable ulcerogenic agent or circumstance, including ulcers caused by physiologic stress, drugs, and those associated with other diseases. The ulcers are more often acute and are more prevalent in the stomach than in the duodenum. The treatment of specific disorders in children is similar to that in adults. The difference in treatment results from the issues specific to children: the management of fluid and electrolyte balance in resuscitation; dosage, palatability and appropriate form of medications; and the potential adverse effects of medications. 3 tables. 34 references.

- **Gastrointestinal Problems Including Colon Cancer**

  Source: in Rosenfeld, J.A., ed. Women's Health in Primary Care. Baltimore, MD: Williams and Wilkins. 1997. p. 633-660.

  Contact: Available from Williams and Wilkins. 351 West Camden Street, Baltimore, MD 21201-2436. (800) 638-0672 or (410) 528-8555. Fax (800) 447-8438. PRICE: $59.95 (paperback). ISBN: 0683073664.

  Summary: This chapter, from a book on women's health for primary care providers, reviews gastrointestinal problems in women. The chapter covers diseases of the upper GI tract, including gastroesophageal reflux disease (GERD), peptic ulcer disease, and gastric carcinoma; gallstones;

liver diseases, including primary biliary cirrhosis, autoimmune liver disease, drug-induced liver disease, and alcoholic liver disease; and lower GI disease, including irritable bowel syndrome, inflammatory bowel disease, and colon cancer. For each disease, the author discusses incidence, risk factors, clinical symptoms, diagnosis, and treatment options. 1 figure. 8 tables. 90 references.

- **Gastrointestinal Disorders**

  Source: in Lysen, L.K. Quick Reference to Clinical Dietetics. Gaithersburg, MD: Aspen Publishers, Inc. 1997. p. 43-57.

  Contact: Available from Aspen Publishers, Inc. Fulfillment, 7201 McKinney Circle, Frederick, MD 21704. (800) 234-1660 or (800) 638-8437. PRICE: $35.00. ISBN: 0834206293.

  Summary: This section on gastrointestinal disorders is from a reference book on clinical dietetics and is part of a chapter on the use of nutrition management for specific medical conditions. Gastrointestinal (GI) disorders often result in maldigestion and malabsorption of nutrients and present as diarrhea. Diarrhea can have severe nutritional consequences through loss of essential nutrients such as water, minerals, vitamins, electrolytes, and micronutrients. Severe diarrhea can disrupt nutrient absorption to such an extent that malnutrition can occur. GI disorders can be both the cause and result of life threatening conditions. Disruption of the normal processes of nutrient digestion and absorption causes malnutrition, which may lead to serious clinical complications. After a brief review of the anatomy of the GI tract, the author discusses digestion, absorption, secretion, motility, adaptation, the immunologic barrier of the GI tract (the mucosa), nutritional implications in the assessment of the GI tract, factors that may affect the ability to deliver appropriate nutritional support, and specific disorders. These include swallowing difficulties (dysphagia); reflux esophagitis or gastroesophageal reflux disease (GERD); achalasia (motility disorder of the esophagus); esophageal perforation, obstruction, and varices; peptic ulcer disease; gastritis; vomiting; hiatal hernia; gastric outlet obstruction; GI bleeding; dumping syndrome; bezoar formation; absorption disorders; obstruction of the small intestine; lactase deficiency; inflammatory bowel disease; and short bowel syndrome. 7 tables. 10 references.

- **Peptic Ulcer Disease**

  Source: in Carlson, K.J.; Eisenstat, S.A.; Ziporyn, T. Harvard Guide to Women's Health. Cambridge, MA: Harvard University Press. 1996. p. 469-471.

Contact: Available from Harvard University Press. Customer Service Department, 79 Garden Street, Cambridge, MA 02138. (800) 448-2242. Fax (800) 962-4983. PRICE: $24.95 (paperback). ISBN: 0674367693 (paperback).

Summary: This chapter on peptic ulcer disease is from a consumer handbook on women's health. Topics include a definition of peptic ulcer disease, risk factors, symptoms, evaluation, treatment options (including dietary modifications and the use of antacids), and prevention. The chapter concludes with a reference to related chapters in the book.

General Home References

In addition to references for peptic ulcer, you may want a general home medical guide that spans all aspects of home healthcare. The following list is a recent sample of such guides (sorted alphabetically by title; hyperlinks provide rankings, information, and reviews at Amazon.com):

- **The Digestive System (21st Century Health and Wellness)** by Regina Avraham; Library Binding (February 2000), Chelsea House Publishing (Library); ISBN: 0791055264; **http://www.amazon.com/exec/obidos/ASIN/0791055264/icongroupinterna**
- **American College of Physicians Complete Home Medical Guide (with Interactive Human Anatomy CD-ROM)** by David R. Goldmann (Editor), American College of Physicians; Hardcover - 1104 pages, Book & CD-Rom edition (1999), DK Publishing; ISBN: 0789444127; **http://www.amazon.com/exec/obidos/ASIN/0789444127/icongroupinterna**
- **The American Medical Association Guide to Home Caregiving** by the American Medical Association (Editor); Paperback - 256 pages 1 edition (2001), John Wiley & Sons; ISBN: 0471414093; **http://www.amazon.com/exec/obidos/ASIN/0471414093/icongroupinterna**
- **Anatomica : The Complete Home Medical Reference** by Peter Forrestal (Editor); Hardcover (2000), Book Sales; ISBN: 1740480309; **http://www.amazon.com/exec/obidos/ASIN/1740480309/icongroupinterna**
- **The HarperCollins Illustrated Medical Dictionary : The Complete Home Medical Dictionary** by Ida G. Dox, et al; Paperback - 656 pages 4th edition (2001), Harper Resource; ISBN: 0062736469; **http://www.amazon.com/exec/obidos/ASIN/0062736469/icongroupinterna**
- **Mayo Clinic Guide to Self-Care: Answers for Everyday Health Problems** by Philip Hagen, M.D. (Editor), et al; Paperback - 279 pages, 2nd edition (December 15, 1999), Kensington Publishing Corp.; ISBN: 0962786578; **http://www.amazon.com/exec/obidos/ASIN/0962786578/icongroupinterna**

- **The Merck Manual of Medical Information : Home Edition (Merck Manual of Medical Information Home Edition (Trade Paper)** by Robert Berkow (Editor), Mark H. Beers, M.D. (Editor); Paperback - 1536 pages (2000), Pocket Books; ISBN: 0671027263; **http://www.amazon.com/exec/obidos/ASIN/0671027263/icongroupinterna**

Vocabulary Builder

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

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

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

Ascites: Effusion and accumulation of serous fluid in the abdominal cavity; called also abdominal or peritoneal dropsy, hydroperitonia, and hydrops abdominis. [EU]

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]

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

Butterflies: Slender-bodies diurnal insects having large, broad wings often strikingly colored and patterned. [NIH]

Caustic: An escharotic or corrosive agent. Called also cauterant. [EU]

Cholangitis: Inflammation of a bile duct. [EU]

Cholecystectomy: Surgical removal of the gallbladder. [NIH]

Cholecystitis: Inflammation of the gallbladder. [EU]

Cholelithiasis: The presence or formation of gallstones. [EU]

Cholestasis: Impairment of biliary flow at any level from the hepatocyte to Vater's ampulla. [NIH]

Cirrhosis: Liver disease characterized pathologically by loss of the normal microscopic lobular architecture, with fibrosis and nodular regeneration. The term is sometimes used to refer to chronic interstitial inflammation of any organ. [EU]

Cytomegalovirus: A genus of the family herpesviridae, subfamily betaherpesvirinae, infecting the salivary glands, liver, spleen, lungs, eyes, and other organs, in which they produce characteristically enlarged cells with intranuclear inclusions. Infection with Cytomegalovirus is also seen as

an opportunistic infection in AIDS. [NIH]

Dietetics: The study and regulation of the diet. [NIH]

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

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]

Diverticulitis: Inflammation of a diverticulum, especially inflammation related to colonic diverticula, which may undergo perforation with abscess formation. Sometimes called left-sided or L-sides appendicitis. [EU]

Dysphagia: Difficulty in swallowing. [EU]

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

Embryology: The study of the development of an organism during the embryonic and fetal stages of life. [NIH]

Encephalopathy: Any degenerative disease of the brain. [EU]

Enteritis: Inflammation of the intestine, applied chiefly to inflammation of the small intestine; see also enterocolitis. [EU]

Epigastric: Pertaining to the epigastrium. [EU]

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

Fistula: An abnormal passage or communication, usually between two internal organs, or leading from an internal organ to the surface of the body; frequently designated according to the organs or parts with which it communicates, as anovaginal, brochocutaneous, hepatopleural, pulmonoperitoneal, rectovaginal, urethrovaginal, and the like. Such passages are frequently created experimentally for the purpose of obtaining body secretions for physiologic study. [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]

Hepatic: Pertaining to the liver. [EU]

Hepatitis: Inflammation of the liver. [EU]

Hernia: (he protrusion of a loop or knuckle of an organ or tissue through an abnormal opening. [EU]

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

Incontinence: Inability to control excretory functions, as defecation (faecal i.) or urination (urinary i.). [EU]

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

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]

Malabsorption: Impaired intestinal absorption of nutrients. [EU]

Malformation: A morphologic defect resulting from an intrinsically abnormal developmental process. [EU]

Microbiology: The study of microorganisms such as fungi, bacteria, algae, archaea, and viruses. [NIH]

Micronutrients: Essential dietary elements or organic compounds that are required in only small quantities for normal physiologic processes to occur. [NIH]

Misoprostol: A synthetic analog of natural prostaglandin E1. It produces a dose-related inhibition of gastric acid and pepsin secretion, and enhances mucosal resistance to injury. It is an effective anti-ulcer agent and also has oxytocic properties. [NIH]

Mysticism: A philosophy based upon spiritual intuition that is believed to transcend ordinary sensory experiences or understanding. [NIH]

Neonatal: Pertaining to the first four weeks after birth. [EU]

Neoplasms: New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms. [NIH]

Neutralization: An act or process of neutralizing. [EU]

Nosocomial: Pertaining to or originating in the hospital, said of an infection not present or incubating prior to admittance to the hospital, but generally occurring 72 hours after admittance; the term is usually used to refer to patient disease, but hospital personnel may also acquire nosocomial infection. [EU]

Parasitic: Pertaining to, of the nature of, or caused by a parasite. [EU]

Parenteral: Not through the alimentary canal but rather by injection through some other route, as subcutaneous, intramuscular, intraorbital, intracapsular,

intraspinal, intrasternal, intravenous, etc. [EU]

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

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

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

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

Transplantation: The grafting of tissues taken from the patient's own body or from another. [EU]

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

CHAPTER 6. MULTIMEDIA ON PEPTIC ULCER

Overview

Information on peptic ulcer can come in a variety of formats. Among multimedia sources, video productions, slides, audiotapes, and computer databases are often available. In this chapter, we show you how to keep current on multimedia sources of information on peptic ulcer. We start with sources that have been summarized by federal agencies, and then show you how to find bibliographic information catalogued by the National Library of Medicine. If you see an interesting item, visit your local medical library to check on the availability of the title.

Video Recordings

Most diseases do not have a video dedicated to them. If they do, they are often rather technical in nature. An excellent source of multimedia information on peptic ulcer is the Combined Health Information Database. You will need to limit your search to "video recording" and "peptic ulcer" using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find video productions, use the drop boxes at the bottom of the search page where "You may refine your search by." Select the dates and language you prefer, and the format option "Videorecording (videotape, videocassette, etc.)." By making these selections and typing "peptic ulcer" (or synonyms) into the "For these words:" box, you will only receive results on video productions. The following is a typical result when searching for video recordings on peptic ulcer:

- **Clinical Case Reviews: Management of H. Pylori in Gastrointestinal Disease**

  Source: Secaucus, NJ: Network for Continuing Medical Education. 1995. (videocassette).

  Contact: Available from Network for Continuing Medical Education. 1425 Broad Street, Clifton, NJ 07013. (800) 223-0272 or (973) 473-9500. Fax (973) 591-1224. Order Number: S102. PRICE: Call for pricing information.

  Summary: Helicobacter pylori (H. pylori) is now known to be an etiology in more than 90 percent of peptic ulcer cases. This knowledge has led to the evolution of therapies that make it possible to cure nearly all ulcers. This medical continuing education program reviews the management of H. pylori in gastrointestinal disease and presents three case studies involving H. pylori in peptic ulcer disease. The first section explores the discovery of H. pylori as an etiologic factor in peptic ulcer, including the history and evolution of this discovery (Marshall and Warren's research). The next section discusses the three possible mechanisms of gastric mucosal injury caused by H. pylori (ammonia, cytotoxins, and mucosal immune response). The instructional portion of the videotape also covers the types of illnesses related to H. pylori (from asymptomatic gastritis to PUD), the incidence and other epidemiologic factors of the infection, transmission, the role of H. pylori infection in ulcer recurrence rates, diagnostic tests, drug therapy regimens, and patient selection issues. The remaining portion of the tape presents three case studies. The video features live action of real physicians and patients, and graphics and anatomic illustrations.

- **Peptic Ulcers**

  Source: Camp Hill, PA: Chek-Med Systems, Inc. 1994.

  Contact: Available from Chek-Med Systems, Inc. 200 Grandview Avenue, Camp Hill, PA 17011. (800) 451-5797. Fax (717) 761-0216. PRICE: $89 for 1-10 copies; $84 for 11-50 copies; $59 for 51 or more copies (as of 1995). Item Number CV-90.

  Summary: This patient education videotape is from a series designed for patients, families or groups. The program reviews peptic ulcers that commonly occur in the stomach or duodenum. Peptic ulcers can be very painful and, in rarer cases, serious complications can occur. The program explains the causes, symptoms, diagnostic procedures such as barium x-ray and gastroscopy, and treatment of peptic ulcers. The program shows actual patients and medical situations and presents information in simple, non-technical language. (AA-M).

- **Gastroenterology for the Primary Care Physician**

  Source: Mount Laurel, NJ: CME Conference Video, Inc. 1994. (instructional package).

  Contact: Available from CME Conference Video, Inc. 2000 Crawford Place, Suite 100, Mount Laurel, NJ 08054. (800) 284-8433. Fax (800) 284-5964. PRICE: $450 plus $12.25 shipping and handling (as of 1995); group practice package available. Program No. 153.

  Summary: This continuing education course is designed to update internists, family practitioners, and other primary care physicians on new developments in gastroenterology. The format of the course focuses on case presentations emphasizing important and evolving concepts in gastroenterology. The emphasis is on practical diagnostic and therapeutic choices and the development of cost effective management algorithms. Topics include hepatitis C, non-cardiac chest pain, psychopharmacologic approaches to acid reduction, peptic ulcer disease, Helicobacter pylori, risk factors for NSAID injury, Clostridium difficile, travelers' diarrhea, constipation in the elderly, pancreatitis, endoscopic ultrasound, gastroesophageal reflux disease, Barrett's esophagus, liver disease, GI manifestations in AIDS, esophagitis, fecal incontinence, diagnostic testing, irritable bowel syndrome, inflammatory bowel disease, drug therapy, chronic diarrhea, gallstone disease, colon cancer, cirrhosis, and ascites. The program offers 11 hours of AMA-PRA Category 1 credit. (AA-M).

- **What You Really Need to Know About Peptic Ulcers**

  Source: [Toronto, Ontario, Canada]: Videos for Patients. 1994. (videocassette).

  Contact: Available from Medical Audio Visual Communications, Inc. Suite 240, 2315 Whirlpool Street, Niagara Falls, NY 14305. Or P.O. Box 84548, 2336 Bloor Street West, Toronto, Ontario M6S 1TO, Canada. (800) 757-4868 or (905) 602-1160. Fax (905) 602-8720. PRICE: $99.00 (Canadian); contact producer for current price in American dollars. Order Number VFP022.

  Summary: This patient education videotape provides information about peptic ulcers. The videotape begins with a brief sketch featuring comedian John Cleese and narrator Dr. Robert Buckman illustrating the difficulties sometimes experienced by patients during the traditional doctor's explanation. Topics include how the stomach and duodenum work, how acid produced normally in the stomach may be associated with injury and the formation of an ulcer, symptoms of peptic ulcer, the advantages and disadvantages of various treatments, and how to reduce

the risks of ulcer recurrence. Dr. Buckman presents the medical facts, using models, simple diagrams, and graphics to supplement his explanation, and avoiding medical jargon as much as possible.

- **Helicobacter Pylori in Peptic Ulcer Disease**

  Source: Secaucus, NJ: Network for Continuing Medical Education. 1994. (videocassette).

  Contact: Available from Network for Continuing Medical Education. 1425 Broad Street, Clifton, NJ 07013. (800) 223-0272 or (973) 473-9500. Fax (973) 591-1224. Order Number: 671. PRICE: Call for pricing information.

  Summary: Peptic ulcer disease is a chronic inflammatory condition of the stomach and duodenum that affects as many as 10 percent of Americans at some time in their lives. This medical continuing education program reviews the role of H. pylori in peptic ulcer disease. The program describes the pathogenesis of H. pylori infection, progression of disease, epidemiology, related nomenclature, transmission, invasive (endoscopy, gastric biopsy) and noninvasive (serology, urease breath test) diagnostic tests used to confirm H. pylori infection, patient selection, treatment regimens, and factors that affect healing. The program emphasizes that all patients who have PUD and test positive for H. pylori should be treated with an antibiotic regimen; patients who are H. pylori positive but are asymptomatic should not be treated prophylactically. The video features live action of real physicians and patients, and graphics and anatomic illustrations.

- **Postgraduate Gastroenterology Program**

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

  Contact: Available from P.O. Box 5077, Cherry Hill, NJ 08034-5077. (800) 284-8433. Fax (800) 284-5964. PRICE: $675. Group practice packages available.

  Summary: This continuing education video series is designed to enhance understanding of pathophysiology and patient management of gastrointestinal (GI) organ systems and GI disorders and to improve viewers' diagnostic and treatment abilities. Six sections cover gastroduodenal disorders; clinical applications of research; liver diseases; pancreatic and biliary tract diseases; inflammatory bowel syndrome (IBS); and esophageal disorders. Specific topics include helicobacter pylori and peptic ulcer disease; gastric emptying; gastroparesis; hormones and neuropeptides; interferon therapy of chronic liver disease; liver transplantation; hepatic encephalopathy; sclerosing cholangitis;

chronic pancreatitis; endoscopic retrograde cholangiopancreatography (ECRP); colorectal polyps; surgical therapy for IBS; IBS and constipation; swallowing physiology; and Barrett's esophagus. The video includes interactive sessions between experts in the field of gastroenterology. (AA-M).

- **Peptic Ulcer**

  Source: Timonium, MD: Milner Fenwick. 1990.

  Contact: Available from Milner Fenwick. 2125 Greenspring Drive, Timonium, MD 21093. (800) 432-8433. PRICE: $250.

  Summary: An introduction for the patient with duodenal or gastric ulcers, this film helps the patient identify ulcer symptoms, explains tests that may be required, and discusses medications. It also covers side effects of medications and possible complications of ulcers. It also provides an explanation of the bacteria campylobacter pylori recently found to be associated with ulcers. (AA-M).

Audio Recordings

The Combined Health Information Database contains abstracts on audio productions. To search CHID, go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find audio 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 "Sound Recordings." By making these selections and typing "peptic ulcer" (or synonyms) into the "For these words:" box, you will only receive results on sound recordings (again, most diseases do not have results, so do not expect to find many). The following is a typical result when searching for sound recordings on peptic ulcer:

- **Peptic Ulcer Disease**

  Source: Timonium, MD: Milner-Fenwick, Inc. 199x. (Audiocassette).

  Contact: Available from Milner-Fenwick, Inc. 2125 Greenspring Drive, Timonium, MD 21093-9989. (800) 638-8652 or (301) 252-1700. PRICE: $14.95. Order number CAS 16.

  Summary: This audiocassette includes four programs about peptic ulcer disease. Chaired by Dr. Walter J. Hogan, the topics are: proton-pump inhibitors (Dr. George Sachs, Los Angeles, CA); treatment status of peptic ulcer disease and gastroesophageal reflux disease (GERD) (Dr. Walter Peterson, Dallas, TX); use of oral/IV omeprazole in the treatment of

hypersecretory states (Dr. Robert Jensen, Bethesda, MD); and long-term effects of hypergastrinemia (Dr. W. Creutzfeldt, Goettingen, West Germany). The audiocassette concludes with a question and answer panel. (AA-M).

Bibliography: Multimedia on Peptic Ulcer

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 peptic ulcer (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 peptic ulcer. For more information, follow the hyperlink indicated:

- **Clinical case reviews : management of H. pylori in gastrointestinal disease.** Source: moderator, Anthony F. Vuturo; faculty, M. Brian Fennerty, Cynthia M. Yoshida, David A. Peura; Year: 1995; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, 1995
- **Clinical implications of H. pylori infection : new approaches for the investigation and treatment of patients with ulcer disease.** Source: developed by Henry Ford Health System; Year: 1997; Format: Videorecording; Jamesburg, NJ: Medical World Communications, c1997
- **Current agents and therapy in peptic ulcer disease.** Source: [presented by] Marshfield Clinic, Saint Joseph's Hospital [and] Marshfield Medical Research Foundation; Year: 1989; Format: Videorecording; Marshfield, WI: Marshfield Video Network, [1989]
- **Endoscopic heater probe therapy of bleeding peptic ulcers.** Source: Audio-Video Digest Foundation; produced in cooperation with the Division of Learning Resources, University of Mississippi Medical Center, Jackson, Mississippi; Year: 1998; Format: Videorecording; Timonium, MD: Milner-Fenwick, [1998]
- **Epinephrine injection of bleeding ulcers.** Source: Audio-Video Digest Foundation; Year: 1998; Format: Videorecording; Timonium, MD: Milner-Fenwick, [1998]
- **Evaluation and management of acid related disorders : current trends and future directions.** Source: Gardiner-Caldwell SynerMed; Year: 1990; Format: Videorecording; [West Point, Pa.: Merck Sharp & Dohme, 1990]

- **Gastroenterology section.** Source: American Medical Association; Year: 1994; Format: Electronic resource; Norwood, MA: SilverPlatter Education, c1994
- **Gastrointestinal disease in the elderly patient : a casebook for today.** Source: produced by Medical and Professional Education, Glaxo, Inc.; a Vision Associates production; Year: 1993; Format: Videorecording; Research Triangle Park, NC: Glaxo Video Library, c1993
- **Helicobacter pylori : epidemiology and diagnosis: recorded at DDW 1995 in San Diego.** Source: AGA; Year: 1995; Format: Sound recording; [Bethesda, Md.]: American Gastroenterological Association, [1995?]
- **Helicobacter pylori : eradication: recorded at DDW 1995 in San Diego.** Source: AGA; Year: 1995; Format: Sound recording; [Bethesda, Md.]: American Gastroenterological Association, [1995?]
- **Helicobacter pylori : pathogenesis: recorded at DDW 1994 in New Orleans.** Source: AGA; Year: 1994; Format: Sound recording; [Bethesda, Md.]: The Association, [1994?]
- **Helicobacter pylori : pathogenesis: recorded at DDW 1995 in San Diego.** Source: AGA; Year: 1995; Format: Sound recording; [Bethesda, Md.: American Gastroenterological Association, [1995?]
- **Helicobacter pylori : therapy: recorded at DDW 1995 in San Diego.** Source: AGA; Year: 1995; Format: Sound recording; [Bethesda, Md.]: American Gastroenterological Association, [1995?]
- **Helicobacter pylori in peptic ulcer disease.** Source: Steven J. Czinn; Year: 1994; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, 1994
- **NSAIDS and the peptic ulcer risk : recorded at DDW 1995 in San Diego.** Source: AGA; Year: 1995; Format: Sound recording; [Bethesda, Md.]: American Gastroenterological Association, [1995?]
- **Peptic ulcer disease : new frontiers.** Year: 1991; Format: Slide; [Columbus, Ohio]: Ohio Medical Education Network, [1991]
- **Peptic ulcer disease : recorded at DDW 1990, San Antonio.** Year: 1990; Format: Sound recording; [Bethesda, Md.]: American Gastroenterological Association, c1990
- **Peptic ulcer disease .** Year: 1996; Format: Slide; [Thorofare, N.J.?]: American Gastroenterological Association, c1996
- **Peptic ulcer disease management : an update.** Source: [presented by] American Academy of Family Physicians; produced by Gardiner-Caldwell SynerMed; Year: 1992; Format: Videorecording; Kansas City, Mo.: The Academy, c1992
- **Peptic ulcer diseases.** Source: authors, Jon I. Isenberg, John H. Walsh, Leonard R. Johnson; produced by American Gastroenterological

Association; Year: 1991; Format: Slide; [Bethesda, Md.]: The Association, c1991

- **Perforated ulcers : options in management.** Source: [presented by] the Emory Medical Television Network, Emory University School of Medicine of the Woodruff Health Sciences Center; Year: 1992; Format: Videorecording; Atlanta, Ga.: The Network, c1992
- **Successful closure of a giant tracheogastric tube fistula by a penetrated peptic ulcer after esophageal replacement.** Source: American College of Surgeons; Year: 1993; Format: Videorecording; Woodbury, CT: Ciné Med, 1993
- **Thoracoscopic management of recurrent peptic ulcer disease.** Source: Henry L. Laws, Michael J. Naughton, J. Barry McKernan. Laparoscopic gastroenterostomy / Dennis L. Fowler, Sharon A. White; Year: 1992; Format: Videorecording; [United States]: Society [of] American Gastrointestinal Endoscopic Surgeons, c1993
- **Ulcer disease : new insights into patient management.** Source: [presented by] the American Academy of Family Physicians and its Commission on Continuing Medical Education, Subcommittee on CME Production and Development; developed and produced fo; Year: 1987; Format: Videorecording; [Kansas City, Mo.]: The Academy, c1987

Vocabulary Builder

Ammonia: Ammonia. A colorless alkaline gas. It is formed in the body during decomposition of organic materials during a large number of metabolically important reactions. [NIH]

Cardiac: Pertaining to the heart. [EU]

Clostridium: A genus of motile or nonmotile gram-positive bacteria of the family bacillaceae. Many species have been identified with some being pathogenic. They occur in water, soil, and in the intestinal tract of humans and lower animals. [NIH]

Colorectal: Pertaining to or affecting the colon and rectum. [EU]

Cytotoxins: Substances elaborated by microorganisms, plants or animals that are specifically toxic to individual cells; they may be involved in immunity or may be contained in venoms. [NIH]

Gastroenterostomy: Surgical construction of a channel between the stomach and intestines. [NIH]

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

CHAPTER 7. PERIODICALS AND NEWS ON PEPTIC ULCER

Overview

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

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

News Services & Press Releases

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

PR Newswire

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

Reuters

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

- **APACHE II helps predict perforated peptic ulcer outcomes**
  Source: Reuters Medical News
  Date: January 23, 2001
  http://www.reuters.gov/archive/2001/01/23/professional/links/20010123clin008.html
- **H. pylori eradication prevents peptic ulcer rebleeding over long term**
  Source: Reuters Medical News
  Date: August 17, 2000
  http://www.reuters.gov/archive/2000/08/17/professional/links/20000817clin007.html
- **High-dose omeprazole prevents rebleeding after peptic ulcer treatment**
  Source: Reuters Industry Breifing
  Date: August 03, 2000
  http://www.reuters.gov/archive/2000/08/03/business/links/20000803clin004.html
- **Peptic ulcers linked to H. pylori expression of Lewis antigens in Chinese**
  Source: Reuters Medical News
  Date: July 06, 2000
  http://www.reuters.gov/archive/2000/07/06/professional/links/20000706epid005.html

- **Heart failure, diabetes, anticoagulants increase risk of peptic ulcer bleeding**
  Source: Reuters Medical News
  Date: January 17, 2000
  http://www.reuters.gov/archive/2000/01/17/professional/links/20000117publ003.html
- **Finger-prick H. pylori test has low sensitivity for diagnosing peptic ulcer**
  Source: Reuters Medical News
  Date: January 10, 2000
  http://www.reuters.gov/archive/2000/01/10/professional/links/20000110prof001.html
- **H. pylori may not be as prevalent in gastric ulcer as previously thought**
  Source: Reuters Medical News
  Date: October 25, 1999
  http://www.reuters.gov/archive/1999/10/25/professional/links/19991025epid003.html
- **H. pylori infection plus NSAID use synergistically increases peptic ulcer risk**
  Source: Reuters Industry Breifing
  Date: January 03, 2002
  http://www.reuters.gov/archive/2002/01/03/business/links/20020103clin009.html
- **High-dose acetaminophen associated with high risk of peptic ulcer**
  Source: Reuters Industry Breifing
  Date: September 11, 2001
  http://www.reuters.gov/archive/2001/09/11/business/links/20010911epid002.html
- **Majority of individuals with peptic ulcer symptoms do not seek medical attention**
  Source: Reuters Medical News
  Date: June 01, 1999
  http://www.reuters.gov/archive/1999/06/01/professional/links/19990601publ002.html
- **Antibiotic therapy prevents hemorrhage linked to duodenal ulcer**
  Source: Reuters Medical News
  Date: April 27, 1999
  http://www.reuters.gov/archive/1999/04/27/professional/links/19990427clin007.html

- **Gastric neutrophils increase risk of NSAID-induced peptic ulcers**
  Source: Reuters Medical News
  Date: February 18, 1999
  http://www.reuters.gov/archive/1999/02/18/professional/links/19990218clin006.html
- **H. pylori testing does not predict presence or absence of peptic ulcer in elderly**
  Source: Reuters Medical News
  Date: February 11, 1999
  http://www.reuters.gov/archive/1999/02/11/professional/links/19990211clin004.html
- **Severe peptic ulcer bleeding: endoscopic therapy superior to medical-surgical approach**
  Source: Reuters Medical News
  Date: November 23, 1998
  http://www.reuters.gov/archive/1998/11/23/professional/links/19981123clin005.html
- **H pylori eradication may slow healing of gastric ulcers in chronic NSAID users**
  Source: Reuters Medical News
  Date: September 25, 1998
  http://www.reuters.gov/archive/1998/09/25/professional/links/19980925clin015.html
- **H. pylori eradication without acid suppression enough for peptic ulcer healing**
  Source: Reuters Medical News
  Date: July 28, 1998
  http://www.reuters.gov/archive/1998/07/28/professional/links/19980728clin005.html
- **H. pylori uncommon cause of peptic ulcer in HIV-infected patients**
  Source: Reuters Medical News
  Date: June 30, 1998
  http://www.reuters.gov/archive/1998/06/30/professional/links/19980630epid003.html
- **H. pylori eradication lowers follow-up costs in peptic ulcer disease**
  Source: Reuters Medical News
  Date: June 16, 1998
  http://www.reuters.gov/archive/1998/06/16/professional/links/19980616econ001.html

- **Lifestyle Factors More Than Genetics Influence Peptic Ulcer Risk**
  Source: Reuters Medical News
  Date: April 13, 1998
  http://www.reuters.gov/archive/1998/04/13/professional/links/19980413publ003.html
- **Peptic Ulcer Disease Adversely Affects Quality Of Life**
  Source: Reuters Medical News
  Date: January 28, 1998
  http://www.reuters.gov/archive/1998/01/28/professional/links/19980128clin010.html
- **Somatostatin, Octreotide Reduce Peptic Ulcer Bleeding**
  Source: Reuters Medical News
  Date: December 22, 1997
  http://www.reuters.gov/archive/1997/12/22/professional/links/19971222clin005.html
- **Americans Unaware Of Primary Cause Of Peptic Ulcer Disease**
  Source: Reuters Medical News
  Date: October 24, 1997
  http://www.reuters.gov/archive/1997/10/24/professional/links/19971024epid002.html
- **NIH Endorsement Of Antibiotics For Treatment Of Elderly With Peptic Ulcer Disease Ignored**
  Source: Reuters Medical News
  Date: May 14, 1997
  http://www.reuters.gov/archive/1997/05/14/professional/links/19970514clin006.html
- **Peptic Ulcer Cure Would Bring Large Economic And Medical Savings**
  Source: Reuters Medical News
  Date: May 07, 1997
  http://www.reuters.gov/archive/1997/05/07/professional/links/19970507publ001.html
- **Omeprazole Effective In Patients With Bleeding Peptic Ulcers**
  Source: Reuters Medical News
  Date: April 10, 1997
  http://www.reuters.gov/archive/1997/04/10/professional/links/19970410clin001.html

- **Adrenaline-Thrombin Combination Effective In Peptic Ulcer Hemorrhage**
  Source: Reuters Medical News
  Date: September 20, 1996
  http://www.reuters.gov/archive/1996/09/20/professional/links/19960920clin002.html
- **Gastric Ulcers Increase Risk Of Stomach Cancer; H. Pylori Implicated**
  Source: Reuters Medical News
  Date: July 25, 1996
  http://www.reuters.gov/archive/1996/07/25/professional/links/19960725clin003.html
- **Famotidine Prevents Peptic Ulcers In Patients Receiving Long-Term NSAIDs**
  Source: Reuters Medical News
  Date: May 30, 1996
  http://www.reuters.gov/archive/1996/05/30/professional/links/19960530clin005.html
- **Additions Made To Peptic Ulcer Treatment Guidelines<P&**
  Source: Reuters Medical News
  Date: March 01, 1996
  http://www.reuters.gov/archive/1996/03/01/professional/links/19960301clin012.html
- **Risk Factors For Refractory Peptic Ulcers Identified**
  Source: Reuters Medical News
  Date: October 11, 1995
  http://www.reuters.gov/archive/1995/10/11/professional/links/19951011clin005.html
- **Chili Protects Gastric Mucosa Against Peptic Ulcer Disease**
  Source: Reuters Medical News
  Date: April 13, 1995
  http://www.reuters.gov/archive/1995/04/13/professional/links/19950413clin009.html

The NIH

Within MEDLINEplus, the NIH has made an agreement with the New York Times Syndicate, the AP News Service, and Reuters to deliver news that can be browsed by the public. Search news releases at **http://www.nlm.nih.gov/medlineplus/alphanews_a.html.** MEDLINEplus allows you to browse across an alphabetical index. Or you can search by date

at the following Web page: **http://www.nlm.nih.gov/medlineplus/newsbydate.html**. Often, news items are indexed by MEDLINEplus within their 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.

Internet Wire

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

Search Engines

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

BBC

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

Newsletter Articles

If you choose not to subscribe to a newsletter, you can nevertheless find references to newsletter articles. We recommend that you use the Combined Health Information Database, while limiting your search criteria to "newsletter articles." Again, you will need to use the "Detailed Search" option. Go to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. Go to the bottom of the search page where "You may refine your search by." Select the dates and language that you prefer. For the format option, select "Newsletter Article."

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

- **Peptic Ulcer: A Twentieth Century Disease**

  Source: Digestive Health Matters. 2(4): 1-2. Winter 2000.

  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.

  Summary: This article reviews the history of peptic ulcer disease (PUD), its diagnosis, incidence, and treatments. The greatest accomplishment of gastric acid research was the development of drugs that control stomach acid secretion. After the 1970s, the need for elective surgery declined in response to the use of H2 antagonists (cimetidine, Tagamet, and then others). In the 1990s came the development of proton pump inhibitors (omeprazole, Prilosec, and then others), which could heal almost any ulcer by powerful acid suppression. However, it was not until the discovery of a bacteria called Helicobacter pylori when a peptic ulcer cure became possible. The author concludes by noting that although effective treatments are available, Helicobacter and the resulting ulcers and other diseases are still very common as lingering sources of disease, particularly in the developing world. In addition, the use of nonsteroidal antiinflammatory drugs (given for pain and arthritis) contributes markedly to the incidence of ulcers. The author emphasizes the need for continuing support of research with adequate funding, in order to maintain quality and advancement in medical care. 1 figure.

- **Peptic Ulcers: New Understandings, New Treatments**

  Source: Mayo Clinic Health Letter. 17(9): 1-2. September 1999.

  Contact: Available from Mayo Clinic Health Letter. Subscription Services, P.O. Box 53889, Boulder, CO 80322-3889. (800) 333-9037 or (303) 604-1465.

  Summary: Peptic ulcers are no longer necessarily considered a chronic condition that the patient must learn to live with. They can now often be cured, and for many people, treatment involves only a week or two of antibiotic therapy. This health newsletter article explores new understanding of and new treatments for peptic ulcers. The article first describes the symptoms of peptic ulcers (gastric or duodenal), which can include gnawing pain under the breastbone, flare ups of pain at night, pain relieved by eating food or by taking antacids or acid blockers, and, less commonly, vomiting blood, dark blood in stools, nausea or vomiting, unexplained weight loss, and pain in the upper back. The author then describe the bacteria Helicobacter pylori and its role as the cause of most peptic ulcers. Peptic ulcers can also be caused by daily use of pain relievers (nonsteroidal antiflammatory drugs), smoking, and other risk factors. Doctors use two methods to locate ulcers: an upper gastrointestinal (GI) series, and endoscopy. Other tests may be used to determine the presence of H. pylori, including blood and breath tests. Doctors typically use a two pronged treatment approach of antibiotics to kill H. pylori and acid reducing drugs to limit the amount of digestive acids in the GI tract. Acid reducing drugs can include H2 blockers and proton pump inhibitors. One table summarizes old beliefs about ulcers and the new understanding of each topic (for example, that stress causes ulcers when in fact H. pylori is responsible for 80 percent of ulcers). One sidebar compares the symptoms of peptic ulcer and gastroesophageal reflux disease (GERD). 1 figure. 1 table.

- **Are Ulcers Contagious?**

  Source: University of California at Berkeley Wellness Letter. 11(4): 1. January 1995.

  Contact: Available from Health Letter Associates. P.O. Box 412, Prince Street Station, New York, NY 10012-0007. (904) 445-6414.

  Summary: This very brief newsletter article presents basic information about Helicobacter pylori (H. pylori) and the role it plays in peptic ulcers. Topics include the discovery of H. pylori; other risk factors for ulcers; stomach cancer and H. pylori; the transmission of H. pylori; and the importance of establishing the presence of H. pylori before treatment with antibiotics.

Academic Periodicals covering Peptic Ulcer

Academic periodicals can be a highly technical yet valuable source of information on peptic ulcer. We have compiled the following list of periodicals known to publish articles relating to peptic ulcer and which are currently indexed within the National Library of Medicine's PubMed database (follow hyperlinks to view more information, summaries, etc., for each). In addition to these sources, to keep current on articles written on peptic ulcer published by any of the periodicals listed below, you can simply follow the hyperlink indicated or go to the following Web site: **www.ncbi.nlm.nih.gov/pubmed**. Type the periodical's name into the search box to find the latest studies published.

If you want complete details about the historical contents of a periodical, you can also visit the 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." The following is a sample of periodicals which publish articles on peptic ulcer:

- **American Journal of Physiology. Gastrointestinal and Liver Physiology. (Am J Physiol Gastrointest Liver Physiol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=American+Journal+of+Physiology.+Gastrointestinal+and+Liver+Physiology&dispmax=20&dispstart=0

- **Annals of the New York Academy of Sciences. (Ann N Y Acad Sci)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Annals+of+the+New+York+Academy+of+Sciences&dispmax=20&dispstart=0

- **Digestive Diseases and Sciences. (Dig Dis Sci)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Digestive+Diseases+and+Sciences&dispmax=20&dispstart=0

- **European Journal of Gastroenterology & Hepatology. (Eur J Gastroenterol Hepatol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=European+Journal+of+Gastroenterology+&+Hepatology&dispmax=20&dispstart=0

- **Food and Chemical Toxicology : an International Journal Published for the British Industrial Biological Research Association. (Food Chem Toxicol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Food+and+Chemical+Toxicology+:+an+International+Journal+Published+for+the+British+Industrial+Biological+Research+Association&dispmax=20&dispstart=0

- **General Pharmacology. (Gen Pharmacol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=General+Pharmacology&dispmax=20&dispstart=0

- **International Journal of Nursing Studies. (Int J Nurs Stud)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=International+Journal+of+Nursing+Studies&dispmax=20&dispstart=0

- **Journal of Ethnopharmacology. (J Ethnopharmacol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Journal+of+Ethnopharmacology&dispmax=20&dispstart=0

- **Journal of Gastroenterology and Hepatology. (J Gastroenterol Hepatol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Journal+of+Gastroenterology+and+Hepatology&dispmax=20&dispstart=0

- **Journal of Manipulative and Physiological Therapeutics. (J Manipulative Physiol Ther)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Journal+of+Manipulative+and+Physiological+Therapeutics&dispmax=20&dispstart=0

- **Neuroscience Letters. (Neurosci Lett)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Neuroscience+Letters&dispmax=20&dispstart=0

- **Phytomedicine : International Journal of Phytotherapy and Phytopharmacology. (Phytomedicine)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Phytomedicine+:+International+Journal+of+Phytotherapy+and+Phytopharmacology&dispmax=20&dispstart=0

- **Phytotherapy Research : Ptr. (Phytother Res)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Phytotherapy+Research+:+Ptr&dispmax=20&dispstart=0

- **Psychosomatic Medicine. (Psychosom Med)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=Psychosomatic+Medicine&dispmax=20&dispstart=0

- **The Journal of Pharmacy and Pharmacology. (J Pharm Pharmacol)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=The+Journal+of+Pharmacy+and+Pharmacology&dispmax=20&dispstart=0

- **The Medical Clinics of North America. (Med Clin North Am)**
  http://www.ncbi.nlm.nih.gov/entrez/jrbrowser.cgi?field=0&regexp=The+Medical+Clinics+of+North+America&dispmax=20&dispstart=0

Vocabulary Builder

Antigens: Substances that cause an immune response in the body. The body "sees" the antigens as harmful or foreign. To fight them, the body produces antibodies, which attack and try to eliminate the antigens. [NIH]

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

Ketoprofen: An ibuprofen-type anti-inflammatory analgesic and antipyretic. It is used in the treatment of rheumatoid arthritis and osteoarthritis. [NIH]

Naproxen: An anti-inflammatory agent with analgesic and antipyretic properties. Both the acid and its sodium salt are used in the treatment of rheumatoid arthritis and other rheumatic or musculoskeletal disorders, dysmenorrhea, and acute gout. [NIH]

Neutrophil: Having an affinity for neutral dyes. [EU]

Octreotide: A potent, long-acting somatostatin octapeptide analog which has a wide range of physiological actions. It inhibits growth hormone

secretion, is effective in the treatment of hormone-secreting tumors from various organs, and has beneficial effects in the management of many pathological states including diabetes mellitus, orthostatic hypertension, hyperinsulinism, hypergastrinemia, and small bowel fistula. [NIH]

Refractory: Not readily yielding to treatment. [EU]

Sciatica: A syndrome characterized by pain radiating from the back into the buttock and into the lower extremity along its posterior or lateral aspect, and most commonly caused by prolapse of the intervertebral disk; the term is also used to refer to pain anywhere along the course of the sciatic nerve. [EU]

CHAPTER 8. PHYSICIAN GUIDELINES AND DATABASES

Overview

Doctors and medical researchers rely on a number of information sources to help patients with their conditions. Many will subscribe to journals or newsletters published by their professional associations or refer to specialized textbooks or clinical guides published for the medical profession. In this chapter, we focus on databases and Internet-based guidelines created or written for this professional audience.

NIH Guidelines

For the more common diseases, The National Institutes of Health publish guidelines that are frequently consulted by physicians. Publications are typically written by one or more of the various NIH Institutes. For physician guidelines, commonly referred to as "clinical" or "professional" guidelines, you can visit the following Institutes:

- Office of the Director (OD); guidelines consolidated across agencies available at **http://www.nih.gov/health/consumer/conkey.htm**
- National Institute of General Medical Sciences (NIGMS); fact sheets available at **http://www.nigms.nih.gov/news/facts/**
- National Library of Medicine (NLM); extensive encyclopedia (A.D.A.M., Inc.) with guidelines: **http://www.nlm.nih.gov/medlineplus/healthtopics.html**
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); guidelines available at **http://www.niddk.nih.gov/health/health.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.[24] 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:[25]

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

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

[25] See **http://www.nlm.nih.gov/databases/databases.html**.

- **Profiles in Science:** Offering the archival collections of prominent twentieth-century biomedical scientists to the public through modern digital technology: **http://www.profiles.nlm.nih.gov/**
- **Chemical Information:** Provides links to various chemical databases and references: **http://sis.nlm.nih.gov/Chem/ChemMain.html**
- **Clinical Alerts:** Reports the release of findings from the NIH-funded clinical trials where such release could significantly affect morbidity and mortality: **http://www.nlm.nih.gov/databases/alerts/clinical_alerts.html**
- **Space Life Sciences:** Provides links and information to space-based research (including NASA): **http://www.nlm.nih.gov/databases/databases_space.html**
- **MEDLINE:** Bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the healthcare system, and the pre-clinical sciences: **http://www.nlm.nih.gov/databases/databases_medline.html**
- **Toxicology and Environmental Health Information (TOXNET):** Databases covering toxicology and environmental health: **http://sis.nlm.nih.gov/Tox/ToxMain.html**
- **Visible Human Interface:** Anatomically detailed, three-dimensional representations of normal male and female human bodies: **http://www.nlm.nih.gov/research/visible/visible_human.html**

While all of the above references may be of interest to physicians who study and treat peptic ulcer, the following are particularly noteworthy.

The Combined Health Information Database

A comprehensive source of information on clinical guidelines written for professionals is the Combined Health Information Database. You will need to limit your search to "Brochure/Pamphlet," "Fact Sheet," or "Information Package" and peptic ulcer using the "Detailed Search" option. Go directly to the following hyperlink: **http://chid.nih.gov/detail/detail.html**. To find associations, use the drop boxes at the bottom of the search page where "You may refine your search by." For the publication date, select "All Years," select your preferred language, and the format option "Fact Sheet." By making these selections and typing "peptic ulcer" (or synonyms) into the "For these words:" box above, you will only receive results on fact sheets dealing with peptic ulcer. The following is a sample result:

- **Digestive Diseases in the United States: Epidemiology and Impact**

  Source: Bethesda, MD: National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). 1994. 799 p.

  Contact: Available from National Digestive Diseases Information Clearinghouse. 2 Information Way, Bethesda, MD 20892-3570. (800) 891-5389 or (301) 654-3810. E-mail: nddic@info.niddk.nih.gov. PRICE: $15.00.

  Summary: This monograph is a compendium of descriptive statistics about the scope and impact of digestive diseases in the United States. Each chapter provides national and population data based on the prevalence, incidence, medical care, disability, mortality, and research needs. Twenty chapters cover the following conditions: infectious diarrheas, viral hepatitis, esophageal cancer, gastric cancer, colorectal cancer, liver cancer, pancreatic cancer, hemorrhoids, esophageal diseases, peptic ulcer, gastritis and nonulcer dyspepsia, acute appendicitis, abdominal wall hernia, inflammatory bowel diseases, diverticular disease of the colon, constipation, irritable bowel syndrome, chronic liver disease and cirrhosis, gallstones, and pancreatitis. These chapters compare the impact and costs of the disease to other diseases. The book also includes an overview chapter, a chapter about the cost of digestive diseases in the United States, and a listing of all digestive diseases diagnostic codes for the ninth and tenth editions of the International Classification of Diseases. Extensive figures are used throughout the volume. 3 appendices.

- **Peptic Ulcers**

  Source: New York, NY: Nidus Information Services, Inc. 1994. 8 p.

  Contact: Available from Nidus Information Services, Inc. 175 Fifth Avenue, Suite 2338, New York, NY 10010. (800) 334-9355 or (212) 260-4268. PRICE: $5.95 if mailed first class; $9.95 if faxed (as of 1995). Bulk discounts available.

  Summary: This publication provides detailed information about peptic ulcers. Written in a question and answer format, the fact sheet defines peptic ulcers and then discusses the causes of peptic ulcers, including Helicobacter pylori infection, nonsteroidal antiinflammatory drugs, and Zollinger-Ellison syndrome. Other topics include symptoms; risk factors; diagnostic tests; treatment options, including drug therapy used to eradicate H. pylori infection, self help treatment, and surgery; and prevention. The report concludes with a list of references for readers wishing to obtain more information, as well as the address and contact information for the National Digestive Diseases Information Clearinghouse.

- **Therapeutic Endoscopy and Bleeding Ulcers. National Institutes of Health Consensus Development Conference Statement**

  Source: Bethesda, MD: National Institutes of Health. Volume 7(6). March 6-8, 1989. 23 p.

  Contact: Available from National Digestive Diseases Information Clearinghouse. 2 Information Way, Bethesda, MD 20892-3570. (800) 891-5389 or (301) 654-3810. E-mail: nddic@info.niddk.nih.gov. PRICE: Single copy free. Order Number: DD-41.

  Summary: This consensus statement is the result of an NIH-sponsored conference on Therapeutic Endoscopy and Bleeding Ulcers held in March, 1989. Following two days of presentations and discussion by invited experts and the audience, members of a consensus panel drawn from the health care and medical communities weighed the scientific evidence in formulating this statement. Topics include differentiating which bleeding ulcer patients are at risk for rebleeding and emergency surgery; the effectiveness of endoscopic hemostatic therapy; the safety of endoscopic hemostatic therapy; which bleeding patients should be treated; and directions for further research. The conference focused specifically on the question of therapeutic endoscopy for the treatment of bleeding peptic ulcer, excluding other causes of upper gastrointestinal bleeding.

- **Help for Common Digestive Problems**

  Source: Zetland, New South Wales, Australia: Multicultural Health Communication Service. 1998. (web brochure).

  Contact: Available from Multicultural Health Communication Service. Royal South Sydney Community Health Complex, Joynton Avenue, Zetland, New South Wales, Australia 2107. (02) 9382 8111. E-mail: mhcs@sesahs.nsw.gov.au. Website: mhcs.health.nsw.gov.au/. Item is available only through the website and can be found under Diseases and Conditions.

  Summary: This brochure, available online through the Multicultural Health Communication Service, is one of a series of health information publications available in languages other than English. The Service facilitates the communication of quality information about health issues and services to people of non-English-speaking backgrounds. This brochure offers suggestions for handling common digestive problems, including heartburn, peptic ulcer, irritable bowel syndrome (IBS), and constipation. A burning pain (heartburn) just behind the breastbone is usually a symptom of acid reflux, a condition where gastric acid backs up into the esophagus. The brochure describes the differences in the

sensations caused by heartburn and the symptoms of a heart attack. Acid reflux can be caused by some foods and drinks or by a stomach ulcer. The brochure discusses the role of Helicobacter pylori in stomach ulcers. The brochure then briefly describes IBS, including the symptoms and risk factors, and encourages readers to contact their health care providers when certain symptoms (blood in the bowel movements, weight loss, or family history of bowel cancer) are present . The section on constipation warns readers not to rely on laxatives, but instead to increase their consumption of dietary fiber and fluids and to exercise regularly. The brochure concludes by reminding readers of the importance of following a balanced diet that includes plenty of cereals and grains, and of the positive impact on the digestive system of ceasing to smoke. The brochure is not illustrated and is written in straightforward, nontechnical language.

- **Helicobacter Pylori in Gastrointestinal Disease**

  Source: Arlington, VA: American College of Gastroenterology. 1995. 24 p.

  Contact: Available from American College of Gastroenterology. 4900 B South 31st Street, Arlington, VA 22206. (703) 549-4440. PRICE: Single copy free.

  Summary: This continuing education booklet helps physicians understand the role of Helicobacter pylori in peptic ulcer disease, gastric cancer, and nonulcer dyspepsia. Topics include the invasive and noninvasive methods for diagnosing H. pylori; the various treatment options for H. pylori, including traditional and emerging therapies; issues of resistance and compliance as they relate to H. pylori therapies; and the purpose, findings, and recommendations of the NIH Consensus Panel for H. pylori. The booklet includes a posttest with which readers can qualify for 1 hour of continuing medical education credit. 9 figures. 40 references.

- **NIH Consensus Statement: Helicobacter Pylori in Peptic Ulcer Disease**

  Source: Bethesda, MD: NIH Office of Medical Applications of Research. 1994. 24 p.

  Contact: Available from NIH Consensus Program Information Service. P.O. Box 2577 Kensington, MD 20891. (800) 644-6627. PRICE: Single copy free.

  Summary: This document presents the National Institutes of Health Consensus Statement from a Consensus Development Conference held in February 1994 on Helicobacter pylori (H. pylori) in peptic ulcer disease. The Conference addressed six areas: the causal relationship of H. pylori

to upper gastrointestinal disease; the diagnosis and eradication of H. pylori infection; how eradication of H. pylori infection benefits the patient with peptic ulcer disease; the relationship between H. pylori infection and gastric malignancy; which H. pylori-infected patients should be treated; and the questions that must be addressed by future research in this area. The Consensus Statement lists three conclusions: ulcer patients with H. pylori infection require treatment with antimicrobial agents in addition to anti-secretory drugs whether on first presentation with the illness or on recurrence; the value of treating non-ulcer dyspepsia patients with H. pylori infection remains to be determined; and the interesting relationship between H. pylori infection and stomach cancers requires further exploration. The document concludes with a list of the panel members and their affiliations. 1 table. (AA-M).

- **Digestive Do's and Don'ts**

  Source: Bethesda, MD: National Institute on Aging. 1992. 4 p.

  Contact: Available from National Institute on Aging (NIA) Information Center. P.O. Box 8057, Gaithersburg, MD 20898-8057. (800) 222-2225 or (301) 495-3450. Fax (301) 589-3014. TTY (800) 222-4225. E-mail: niainfo@access.digex.net. PRICE: Single copy free; bulk copies available.

  Summary: This Age Page explains the digestive system, how it works and how to take care of the system in order to help avoid future difficulties. Information is provided on the types of symptoms requiring a doctor's attention. Following the symptomatic conditions, several digestive diseases are listed and described, along with their possible treatment plans. The digestive disorders discussed are constipation, diarrhea, diverticulosis and diverticulitis, functional disorders, gallbladder disease, gas, gastritis, heartburn, peptic ulcer, indigestion, hemorrhoids, hiatal hernia, milk intolerance, and ulcerative colitis.

The NLM Gateway[26]

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

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

many of NLM's information resources or databases.[27] One target audience for the Gateway is the Internet user who is new to NLM's online resources and does not know what information is available or how best to search for it. This audience may include physicians and other healthcare providers, researchers, librarians, students, and, increasingly, patients, their families, and the public.[28] To use the NLM Gateway, simply go to the search site at **http://gateway.nlm.nih.gov/gw/Cmd**. Type "peptic ulcer" (or synonyms) into the search box and click "Search." The results will be presented in a tabular form, indicating the number of references in each database category.

Results Summary

Category	Items Found
Journal Articles	343326
Books / Periodicals / Audio Visual	2561
Consumer Health	292
Meeting Abstracts	3093
Other Collections	100
Total	349372

HSTAT[29]

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.[30] HSTAT's audience includes healthcare providers, health service researchers, policy makers, insurance companies, consumers, and the information professionals who serve these groups. HSTAT provides access to a wide variety of publications, including clinical practice guidelines, quick-reference guides for clinicians,

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[27] 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).

[28] Other users may find the Gateway useful for an overall search of NLM's information resources. Some searchers may locate what they need immediately, while others will utilize the Gateway as an adjunct tool to other NLM search services such as PubMed® and MEDLINEplus®. The Gateway connects users with multiple NLM retrieval systems while also providing a search interface for its own collections. These collections include various types of information that do not logically belong in PubMed, LOCATORplus, or other established NLM retrieval systems (e.g., meeting announcements and pre-1966 journal citations). The Gateway will provide access to the information found in an increasing number of NLM retrieval systems in several phases.

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

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

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.[31] Simply search by "peptic ulcer" (or synonyms) at the following Web site: **http://text.nlm.nih.gov**.

Coffee Break: Tutorials for Biologists[32]

Some patients may wish to have access to a general healthcare site that takes a scientific view of the news and covers recent breakthroughs in biology that may one day assist physicians in developing treatments. To this end, we recommend "Coffee Break," a collection of short reports on recent biological discoveries. Each report incorporates interactive tutorials that demonstrate how bioinformatics tools are used as a part of the research process. Currently, all Coffee Breaks are written by NCBI staff.[33] 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.[34] This site has new articles every few weeks, so it can be considered an online magazine of sorts, and intended for general background information. You can access the Coffee Break Web site at the following hyperlink: **http://www.ncbi.nlm.nih.gov/Coffeebreak/**.

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[31] 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.

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

[33] 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.

[34] 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 a few examples that may interest you:

- **CliniWeb International:** Index and table of contents to selected clinical information on the Internet; see **http://www.ohsu.edu/cliniweb/**.
- **Image Engine:** Multimedia electronic medical record system that integrates a wide range of digitized clinical images with textual data stored in the University of Pittsburgh Medical Center's MARS electronic medical record system; see the following Web site: **http://www.cml.upmc.edu/cml/imageengine/imageEngine.html**.
- **Medical World Search:** Searches full text from thousands of selected medical sites on the Internet; see **http://www.mwsearch.com/**.
- **MedWeaver:** Prototype system that allows users to search differential diagnoses for any list of signs and symptoms, to search medical literature, and to explore relevant Web sites; see **http://www.med.virginia.edu/~wmd4n/medweaver.html**.
- **Metaphrase:** Middleware component intended for use by both caregivers and medical records personnel. It converts the informal language generally used by caregivers into terms from formal, controlled vocabularies; see the following Web site: **http://www.lexical.com/Metaphrase.html**.

The Genome Project and Peptic Ulcer

With all the discussion in the press about the Human Genome Project, it is only natural that physicians, researchers, and patients want to know about how human genes relate to peptic ulcer. In the following section, we will discuss databases and references used by physicians and scientists who work in this area.

Online Mendelian Inheritance in Man (OMIM)

The Online Mendelian Inheritance in Man (OMIM) database is a catalog of human genes and genetic disorders authored and edited by Dr. Victor A. McKusick and his colleagues at Johns Hopkins and elsewhere. OMIM was developed for the World Wide Web by the National Center for

Biotechnology Information (NCBI).[35] The database contains textual information, pictures, and reference information. It also contains copious links to NCBI's Entrez database of MEDLINE articles and sequence information.

To search the database, go to **http://www.ncbi.nlm.nih.gov/Omim/searchomim.html**. Type "peptic ulcer" (or synonyms) in the search box, and click "Submit Search." If too many results appear, you can narrow the search by adding the word "clinical." Each report will have additional links to related research and databases. By following these links, especially the link titled "Database Links," you will be exposed to numerous specialized databases that are largely used by the scientific community. These databases are overly technical and seldom used by the general public, but offer an abundance of information. The following is an example of the results you can obtain from the OMIM for peptic ulcer:

- **Duodenal Ulcer, Hyperpepsinogenemic I**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?126850

Genes and Disease (NCBI - Map)

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

- **Immune System:** Fights invaders.
  Examples: Asthma, autoimmune polyglandular syndrome, Crohn's disease, DiGeorge syndrome, familial Mediterranean fever, immunodeficiency with Hyper-IgM, severe combined immunodeficiency.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Immune.html**
- **Metabolism:** Food and energy.
  Examples: Adreno-leukodystrophy, Atherosclerosis, Best disease,

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

Gaucher disease, Glucose galactose malabsorption, Gyrate atrophy, Juvenile onset diabetes, Obesity, Paroxysmal nocturnal hemoglobinuria, Phenylketonuria, Refsum disease, Tangier disease, Tay-Sachs disease.
Web site: **http://www.ncbi.nlm.nih.gov/disease/Metabolism.html**

- **Muscle and Bone:** Movement and growth.
  Examples: Duchenne muscular dystrophy, Ellis-van Creveld syndrome, Marfan syndrome, myotonic dystrophy, spinal muscular atrophy.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Muscle.html**
- **Signals:** Cellular messages.
  Examples: Ataxia telangiectasia, Baldness, Cockayne syndrome, Glaucoma, SRY: sex determination, Tuberous sclerosis, Waardenburg syndrome, Werner syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Signals.html**
- **Transporters:** Pumps and channels.
  Examples: Cystic Fibrosis, deafness, diastrophic dysplasia, Hemophilia A, long-QT syndrome, Menkes syndrome, Pendred syndrome, polycystic kidney disease, sickle cell anemia, Wilson's disease, Zellweger syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Transporters.html**

Entrez

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

- **PubMed:** Biomedical literature (PubMed),
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed**
- **Nucleotide Sequence Database (Genbank):**
  Web site:
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Nucleotide
- **Protein Sequence Database:**
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Protein**
- **Structure:** Three-dimensional macromolecular structures,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Structure**
- **Genome:** Complete genome assemblies,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Genome**

- **PopSet:** Population study data sets,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Popset**
- **OMIM:** Online Mendelian Inheritance in Man,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=OMIM**
- **Taxonomy:** Organisms in GenBank,
  Web site:
  http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Taxonomy
- **Books:** Online books,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=books**
- **ProbeSet:** Gene Expression Omnibus (GEO),
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo**
- **3D Domains:** Domains from Entrez Structure,
  Web site: **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=geo**
- **NCBI's Protein Sequence Information Survey Results:**
  Web site: **http://www.ncbi.nlm.nih.gov/About/proteinsurvey/**

To access the Entrez system at the National Center for Biotechnology Information, go to **http://www.ncbi.nlm.nih.gov/entrez**, and then select the database that you would like to search. The databases available are listed in the drop box next to "Search." In the box next to "for," enter "peptic ulcer" (or synonyms) and click "Go."

Jablonski's Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes Database[36]

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

At the following Web site you can also search across syndromes using an alphabetical index: **http://www.nlm.nih.gov/mesh/jablonski/syndrome_toc/toc_a.html.** You can search by keywords at this Web site: **http://www.nlm.nih.gov/mesh/jablonski/syndrome_db.html**.

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

The Genome Database[37]

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

To access the GDB, simply go to the following hyperlink: **http://www.gdb.org/**. Search "All Biological Data" by "Keyword." Type "peptic ulcer" (or synonyms) into the search box, and review the results. If more than one word is used in the search box, then separate each one with the word "and" or "or" (using "or" might be useful when using synonyms). This database is extremely technical as it was created for specialists. The articles are the results which are the most accessible to non-professionals and often listed under the heading "Citations." The contact names are also accessible to non-professionals.

Specialized References

The following books are specialized references written for professionals interested in peptic ulcer (sorted alphabetically by title, hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Blackwell's Primary Care Essentials: Gastointestinal Disease** by David W. Hay; Paperback, 1st edition (December 15, 2001), Blackwell Science Inc; ISBN: 0632045035; **http://www.amazon.com/exec/obidos/ASIN/0632045035/icongroupinterna**
- **Gastrointestinal Problems** by Martin S. Lipsky, M.D. (Editor), Richard Sadovsky, M.D. (Editor); Paperback - 194 pages, 1st edition (August 15,

[37] Adapted from the Genome Database: **http://gdbwww.gdb.org/gdb/aboutGDB.html#mission**.

2000), Lippincott, Williams & Wilkins Publishers; ISBN: 0781720540; **http://www.amazon.com/exec/obidos/ASIN/0781720540/icongroupinterna**

- **Rome II: The Functional Gastrointestinal Disorders** by Douglas A. Drossman (Editor); Paperback - 800 pages, 2nd edition (March 1, 2000), Degnon Associates Inc.; ISBN: 0965683729; **http://www.amazon.com/exec/obidos/ASIN/0965683729/icongroupinterna**

Vocabulary Builder

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

Artery: A large blood vessel that carries blood from the heart to other parts of the body. Arteries are thicker and have walls that are stronger and more elastic than the walls of veins. [NIH]

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

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

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

Nicotine: Nicotine is highly toxic alkaloid. It is the prototypical agonist at nicotinic cholinergic receptors where it dramatically stimulates neurons and ultimately blocks synaptic transmission. Nicotine is also important medically because of its presence in tobacco smoke. [NIH]

Nitrosamines: A class of compounds that contain a -NH2 and a -NO radical. Many members of this group have carcinogenic and mutagenic properties. [NIH]

CHAPTER 9. DISSERTATIONS ON PEPTIC ULCER

Overview

University researchers are active in studying almost all known diseases. The result of research is often published in the form of Doctoral or Master's dissertations. You should understand, therefore, that applied diagnostic procedures and/or therapies can take many years to develop after the thesis that proposed the new technique or approach was written.

In this chapter, we will give you a bibliography on recent dissertations relating to peptic ulcer. You can read about these in more detail using the Internet or your local medical library. We will also provide you with information on how to use the Internet to stay current on dissertations.

Dissertations on Peptic Ulcer

ProQuest Digital Dissertations is the largest archive of academic dissertations available. From this archive, we have compiled the following list covering dissertations devoted to peptic ulcer. You will see that the information provided includes the dissertation's title, its author, and the author's institution. To read more about the following, simply use the Internet address indicated. The following covers recent dissertations dealing with peptic ulcer:

- **Helicobacter Pylori Infection in a Mouse Model: Development, Optimization and Inhibitory Effects of Antioxidants** by Wang, Xin; , Phd from Lunds Universitet (sweden), 2001, 128 pages
  http://wwwlib.umi.com/dissertations/fullcit/f101905

- **Selected Charged Film Capsules: Preparation, Characterization, and Assessment As to Their Utility As Gastric-retentive Delivery Systems** by Kemmerer, Christopher James; Phd from Temple University, 2001, 312 pages
  http://wwwlib.umi.com/dissertations/fullcit/3031536
- **Shared Responsibility for Medication Use: an Experiment (gastrointestinal Disease)** by Tessner, Marjorie Jo, Drph from Loma Linda University, 1992, 205 pages
  http://wwwlib.umi.com/dissertations/fullcit/9318372
- **Structure/function Analysis of the Helicobacter Pylori Vacuolating Cytotoxin (vaca)** by Vinion-dubiel, Arlene Denise; Phd from Vanderbilt University, 2001, 120 pages
  http://wwwlib.umi.com/dissertations/fullcit/3025846
- **The Regulation of Urease Activity in the Gastric Pathogen Helicobacter Pylori** by Weeks, David Lewis; Phd from University of California, Los Angeles, 2001, 78 pages
  http://wwwlib.umi.com/dissertations/fullcit/3005998

Keeping Current

As previously mentioned, an effective way to stay current on dissertations dedicated to peptic ulcer is to use the database called *ProQuest Digital Dissertations* via the Internet, located at the following Web address: **http://wwwlib.umi.com/dissertations.** The site allows you to freely access the last two years of citations and abstracts. Ask your medical librarian if the library has full and unlimited access to this database. From the library, you should be able to do more complete searches than with the limited 2-year access available to the general public.

Vocabulary Builder

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]

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

PART III. APPENDICES

ABOUT PART III

Part III is a collection of appendices on general medical topics which may be of interest to patients with peptic ulcer and related conditions.

APPENDIX A. RESEARCHING YOUR MEDICATIONS

Overview

There are a number of sources available on new or existing medications which could be prescribed to patients with peptic ulcer. While a number of hard copy or CD-Rom resources are available to patients and physicians for research purposes, a more flexible method is to use Internet-based databases. In this chapter, we will begin with a general overview of medications. We will then proceed to outline official recommendations on how you should view your medications. You may also want to research medications that you are currently taking for other conditions as they may interact with medications for peptic ulcer. Research can give you information on the side effects, interactions, and limitations of prescription drugs used in the treatment of peptic ulcer. Broadly speaking, there are two sources of information on approved medications: public sources and private sources. We will emphasize free-to-use public sources.

Your Medications: The Basics[38]

The Agency for Health Care Research and Quality has published extremely useful guidelines on how you can best participate in the medication aspects of peptic ulcer. Taking medicines is not always as simple as swallowing a pill. It can involve many steps and decisions each day. The AHCRQ recommends that patients with peptic ulcer take part in treatment decisions. Do not be afraid to ask questions and talk about your concerns. By taking a moment to ask questions early, you may avoid problems later. Here are some points to cover each time a new medicine is prescribed**:**

[38] This section is adapted from AHCRQ: **http://www.ahcpr.gov/consumer/ncpiebro.htm**.

- Ask about all parts of your treatment, including diet changes, exercise, and medicines.
- Ask about the risks and benefits of each medicine or other treatment you might receive.
- Ask how often you or your doctor will check for side effects from a given medication.

Do not hesitate to ask what is important to you about your medicines. You may want a medicine with the fewest side effects, or the fewest doses to take each day. You may care most about cost, or how the medicine might affect how you live or work. Or, you may want the medicine your doctor believes will work the best. Telling your doctor will help him or her select the best treatment for you.

Do not be afraid to "bother" your doctor with your concerns and questions about medications for peptic ulcer. You can also talk to a nurse or a pharmacist. They can help you better understand your treatment plan. Feel free to bring a friend or family member with you when you visit your doctor. Talking over your options with someone you trust can help you make better choices, especially if you are not feeling well. Specifically, ask your doctor the following:

- The name of the medicine and what it is supposed to do.
- How and when to take the medicine, how much to take, and for how long.
- What food, drinks, other medicines, or activities you should avoid while taking the medicine.
- What side effects the medicine may have, and what to do if they occur.
- If you can get a refill, and how often.
- About any terms or directions you do not understand.
- What to do if you miss a dose.
- If there is written information you can take home (most pharmacies have information sheets on your prescription medicines; some even offer large-print or Spanish versions).

Do not forget to tell your doctor about all the medicines you are currently taking (not just those for peptic ulcer). This includes prescription medicines and the medicines that you buy over the counter. Then your doctor can avoid giving you a new medicine that may not work well with the medications you take now. When talking to your doctor, you may wish to

prepare a list of medicines you currently take, the reason you take them, and how you take them. Be sure to include the following information for each:

- Name of medicine
- Reason taken
- Dosage
- Time(s) of day

Also include any over-the-counter medicines, such as:

- Laxatives
- Diet pills
- Vitamins
- Cold medicine
- Aspirin or other pain, headache, or fever medicine
- Cough medicine
- Allergy relief medicine
- Antacids
- Sleeping pills
- Others (include names)

Learning More about Your Medications

Because of historical investments by various organizations and the emergence of the Internet, it has become rather simple to learn about the medications your doctor has recommended for peptic ulcer. One such source is the United States Pharmacopeia. In 1820, eleven physicians met in Washington, D.C. to establish the first compendium of standard drugs for the United States. They called this compendium the "U.S. Pharmacopeia (USP)." Today, the USP is a non-profit organization consisting of 800 volunteer scientists, eleven elected officials, and 400 representatives of state associations and colleges of medicine and pharmacy. The USP is located in Rockville, Maryland, and its home page is located at **www.usp.org**. The USP currently provides standards for over 3,700 medications. The resulting USP DI® Advice for the Patient® can be accessed through the National Library of Medicine of the National Institutes of Health. The database is partially

derived from lists of federally approved medications in the Food and Drug Administration's (FDA) Drug Approvals database.[39]

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

Of course, we as editors cannot be certain as to what medications you are taking. Therefore, we have compiled a list of medications associated with the treatment of peptic ulcer. Once again, due to space limitations, we only list a sample of medications and provide hyperlinks to ample documentation (e.g. typical dosage, side effects, drug-interaction risks, etc.). The following drugs have been mentioned in the Pharmacopeia and other sources as being potentially applicable to peptic ulcer:

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 Gelcaps; Antacid Liquid; Antacid L
  http://www.nlm.nih.gov/medlineplus/druginfo/antacidsoral202047.html

Anticholinergics/Antispasmodics

- **Systemic - U.S. Brands:** Anaspaz; A-Spas S/L; Banthine; Bentyl; Cantil; Cystospaz; Cystospaz-M; Donnamar; ED-SPAZ; Gastrosed; Homapin; Levbid; Levsin; Levsin/SL; Levsinex Timecaps; Pro-Banthine; Quarzan; Robinul; Robinul Forte; Symax SL; Transderm-Scop
  http://www.nlm.nih.gov/medlineplus/druginfo/anticholinergicsantispasmodics202049.html

[39] Though cumbersome, the FDA database can be freely browsed at the following site: **www.fda.gov/cder/da/da.htm**.

Clarithromycin

- **Systemic - U.S. Brands:** Biaxin
  http://www.nlm.nih.gov/medlineplus/druginfo/clarithromycinsystemic202667.html

Histamine H 2 -Receptor Antagonists

- **Systemic - U.S. Brands:** Axid; Axid AR; Mylanta AR Acid Reducer; Pepcid; Pepcid AC Acid Controller; Pepcid I.V.; Pepcid RPD; Tagamet; Tagamet HB; Zantac; Zantac EFFERdose Granules; Zantac EFFERdose Tablets
  http://www.nlm.nih.gov/medlineplus/druginfo/histamineh2receptorantagonists202283.html

Lansoprazole

- **Systemic - U.S. Brands:** Prevacid
  http://www.nlm.nih.gov/medlineplus/druginfo/lansoprazolesystemic202787.html

Omeprazole

- **Systemic - U.S. Brands:** Prilosec
  http://www.nlm.nih.gov/medlineplus/druginfo/omeprazolesystemic202423.html

Pantoprazole

- **Systemic - U.S. Brands:** Protonix
  http://www.nlm.nih.gov/medlineplus/druginfo/pantoprazolesystemic500064.html

Penicillins

- **Systemic - U.S. Brands:** Amoxil; Bactocill; Beepen-VK; Betapen-VK; Bicillin L-A; Cloxapen; Crysticillin 300 A.S.; Dycill; Dynapen; Geocillin; Geopen; Ledercillin VK; Mezlin; Nafcil; Nallpen; Omnipen; Omnipen-N; Pathocil; Pen Vee K; Pentids; Permapen; Pfizerpen; Pfizerpen-AS; Pi
  http://www.nlm.nih.gov/medlineplus/druginfo/penicillinssystemic202446.html

Rabeprazole

- **Systemic - U.S. Brands:** AcipHex
  http://www.nlm.nih.gov/medlineplus/druginfo/rabeprazolesystemic500054.html

Sodium Bicarbonate

- **Systemic - U.S. Brands:** Bell/ans; Citrocarbonate
  http://www.nlm.nih.gov/medlineplus/druginfo/sodiumbicarbonatesystemic202525.html

Sucralfate

- **Oral - U.S. Brands:** Carafate
  http://www.nlm.nih.gov/medlineplus/druginfo/sucralfateoral202533.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. You may be able to access these sources from your local medical library or your doctor's office.

Reuters Health Drug Database

The Reuters Health Drug Database can be searched by keyword at the hyperlink: **http://www.reutershealth.com/frame2/drug.html**. The following medications are listed in the Reuters' database as associated with peptic ulcer (including those with contraindications):[40]

- **Aminophylline**
  http://www.reutershealth.com/atoz/html/Aminophylline.htm
- **Aminophylline(Theophylline Ethylenediamine)**
  http://www.reutershealth.com/atoz/html/Aminophylline(Theophylline_Ethylenediamine).htm
- **Aminosalicylate Sodium**
  http://www.reutershealth.com/atoz/html/Aminosalicylate_Sodium.htm
- **Aminosalicylate Sodium (Para-Aminosalicylate Sodium;PAS)**
  http://www.reutershealth.com/atoz/html/Aminosalicylate_Sodium_(Para-Aminosalicylate_Sodium;PAS).htm
- **Atropine**
  http://www.reutershealth.com/atoz/html/Atropine.htm

[40] Adapted from *A to Z Drug Facts* by Facts and Comparisons.

- **Atropine Sulfate Scopolamine Hydrobromide Hyoscyamine Sulfate Phenobarbital**
  http://www.reutershealth.com/atoz/html/Atropine_Sulfate_Scopolamine_Hydrobromide_Hyoscyamine_Sulfate_Phenobarbital.htm
- **Benztropine Mesylate**
  http://www.reutershealth.com/atoz/html/Benztropine_Mesylate.htm
- **Betamethasone**
  http://www.reutershealth.com/atoz/html/Betamethasone.htm
- **Bethanechol Chloride**
  http://www.reutershealth.com/atoz/html/Bethanechol_Chloride.htm
- **Brompheniramine Maleate**
  http://www.reutershealth.com/atoz/html/Brompheniramine_Maleate.htm
- **Butalbital Aspirin Caffeine**
  http://www.reutershealth.com/atoz/html/Butalbital_Aspirin_Caffeine.htm
- **Butalbital Aspirin Caffeine Codeine Phosphate**
  http://www.reutershealth.com/atoz/html/Butalbital_Aspirin_Caffeine_Codeine_Phosphate.htm
- **Captopril**
  http://www.reutershealth.com/atoz/html/Captopril.htm
- **Chlorpheniramine Maleate**
  http://www.reutershealth.com/atoz/html/Chlorpheniramine_Maleate.htm
- **Cimetidine**
  http://www.reutershealth.com/atoz/html/Cimetidine.htm
- **Clarithromycin**
  http://www.reutershealth.com/atoz/html/Clarithromycin.htm
- **Clemastine Fumarate**
  http://www.reutershealth.com/atoz/html/Clemastine_Fumarate.htm
- **Clofibrate**
  http://www.reutershealth.com/atoz/html/Clofibrate.htm
- **Clopidogrel**
  http://www.reutershealth.com/atoz/html/Clopidogrel.htm
- **Colchicine**
  http://www.reutershealth.com/atoz/html/Colchicine.htm

- **Corticotropin**
  http://www.reutershealth.com/atoz/html/Corticotropin.htm
- **Corticotropin (Adrenocorticotropic hormone; ACTH)**
  http://www.reutershealth.com/atoz/html/Corticotropin_(Adrenocorticotropic_hormone;_ACTH).htm
- **Cortisone**
  http://www.reutershealth.com/atoz/html/Cortisone.htm
- **Cortisone (Cortisone Acetate)**
  http://www.reutershealth.com/atoz/html/Cortisone_(Cortisone_Acetate).htm
- **Cyclosporine**
  http://www.reutershealth.com/atoz/html/Cyclosporine.htm
- **Cyclosporine(Cyclosporin A)**
  http://www.reutershealth.com/atoz/html/Cyclosporine(Cyclosporin_A).htm
- **Cyproheptadine HCl**
  http://www.reutershealth.com/atoz/html/Cyproheptadine_HCl.htm
- **Dexamethasone**
  http://www.reutershealth.com/atoz/html/Dexamethasone.htm
- **Diclofenac**
  http://www.reutershealth.com/atoz/html/Diclofenac.htm
- **Dicyclomine HCl**
  http://www.reutershealth.com/atoz/html/Dicyclomine_HCl.htm
- **Diflunisal**
  http://www.reutershealth.com/atoz/html/Diflunisal.htm
- **Dimenhydrinate**
  http://www.reutershealth.com/atoz/html/Dimenhydrinate.htm
- **Diphenhydramine HCl**
  http://www.reutershealth.com/atoz/html/Diphenhydramine_HCl.htm
- **Dipyridamole Aspirin**
  http://www.reutershealth.com/atoz/html/Dipyridamole_Aspirin.htm
- **Doxepin HCl**
  http://www.reutershealth.com/atoz/html/Doxepin_HCl.htm
- **Edrophonium Chloride**
  http://www.reutershealth.com/atoz/html/Edrophonium_Chloride.htm

- **Esomeprazole Magnesium**
  http://www.reutershealth.com/atoz/html/Esomeprazole_Magnesium.htm
- **Famotidine**
  http://www.reutershealth.com/atoz/html/Famotidine.htm
- **Flucytosine**
  http://www.reutershealth.com/atoz/html/Flucytosine.htm
- **Fluticasone Propionate**
  http://www.reutershealth.com/atoz/html/Fluticasone_Propionate.htm
- **Glycopyrrolate**
  http://www.reutershealth.com/atoz/html/Glycopyrrolate.htm
- **Guanethidine Monosulfate**
  http://www.reutershealth.com/atoz/html/Guanethidine_Monosulfate.htm
- **Hydrocortisone (Cortisol)**
  http://www.reutershealth.com/atoz/html/Hydrocortisone_(Cortisol).htm
- **Infliximab**
  http://www.reutershealth.com/atoz/html/Infliximab.htm
- **Ketoprofen**
  http://www.reutershealth.com/atoz/html/Ketoprofen.htm
- **Ketorolac Tromethamine**
  http://www.reutershealth.com/atoz/html/Ketorolac_Tromethamine.htm
- **Lansoprazole**
  http://www.reutershealth.com/atoz/html/Lansoprazole.htm
- **Levodopa**
  http://www.reutershealth.com/atoz/html/Levodopa.htm
- **Levodopa Carbidopa**
  http://www.reutershealth.com/atoz/html/Levodopa_Carbidopa.htm
- **Magaldrate**
  http://www.reutershealth.com/atoz/html/Magaldrate.htm
- **Magnesium Oxide**
  http://www.reutershealth.com/atoz/html/Magnesium_Oxide.htm
- **Meclofenamate Sodium**
  http://www.reutershealth.com/atoz/html/Meclofenamate_Sodium.htm

- **Meloxicam**
  http://www.reutershealth.com/atoz/html/Meloxicam.htm
- **Methylprednisolone**
  http://www.reutershealth.com/atoz/html/Methylprednisolone.htm
- **Monoctanoin**
  http://www.reutershealth.com/atoz/html/Monoctanoin.htm
- **Nabumetone**
  http://www.reutershealth.com/atoz/html/Nabumetone.htm
- **Neostigmine**
  http://www.reutershealth.com/atoz/html/Neostigmine.htm
- **Niacin**
  http://www.reutershealth.com/atoz/html/Niacin.htm
- **Nicotine**
  http://www.reutershealth.com/atoz/html/Nicotine.htm
- **Nizatidine**
  http://www.reutershealth.com/atoz/html/Nizatidine.htm
- **Omeprazole**
  http://www.reutershealth.com/atoz/html/Omeprazole.htm
- **Oxaprozin**
  http://www.reutershealth.com/atoz/html/Oxaprozin.htm
- **Pantoprazole**
  http://www.reutershealth.com/atoz/html/Pantoprazole.htm
- **Pantoprazole Sodium**
  http://www.reutershealth.com/atoz/html/Pantoprazole_Sodium.htm
- **Pentoxifylline**
  http://www.reutershealth.com/atoz/html/Pentoxifylline.htm
- **Pilocarpine**
  http://www.reutershealth.com/atoz/html/Pilocarpine.htm
- **Prednisolone**
  http://www.reutershealth.com/atoz/html/Prednisolone.htm
- **Prednisone**
  http://www.reutershealth.com/atoz/html/Prednisone.htm
- **Probenecid**
  http://www.reutershealth.com/atoz/html/Probenecid.htm
- **Promethazine HCl**
  http://www.reutershealth.com/atoz/html/Promethazine_HCl.htm

- **Propantheline Bromide**
  http://www.reutershealth.com/atoz/html/Propantheline_Bromide.htm
- **Ranitidine**
  http://www.reutershealth.com/atoz/html/Ranitidine.htm
- **Ranitidine Bismuth Citrate**
  http://www.reutershealth.com/atoz/html/Ranitidine_Bismuth_Citrate.htm
- **Risedronate Sodium**
  http://www.reutershealth.com/atoz/html/Risedronate_Sodium.htm
- **Salicylate Combination**
  http://www.reutershealth.com/atoz/html/Salicylate_Combination.htm
- **Simethicone**
  http://www.reutershealth.com/atoz/html/Simethicone.htm
- **Sucralfate**
  http://www.reutershealth.com/atoz/html/Sucralfate.htm
- **Sulfinpyrazone**
  http://www.reutershealth.com/atoz/html/Sulfinpyrazone.htm
- **Theophylline**
  http://www.reutershealth.com/atoz/html/Theophylline.htm
- **Ticlopidine HCl**
  http://www.reutershealth.com/atoz/html/Ticlopidine_HCl.htm
- **Tolmetin Sodium**
  http://www.reutershealth.com/atoz/html/Tolmetin_Sodium.htm
- **Triamcinolone**
  http://www.reutershealth.com/atoz/html/Triamcinolone.htm
- **Triprolidine HCl**
  http://www.reutershealth.com/atoz/html/Triprolidine_HCl.htm

Mosby's GenRx

Mosby's GenRx database (also available on CD-Rom and book format) covers 45,000 drug products including generics and international brands. It provides prescribing information, drug interactions, and patient information. Information can be obtained at the following hyperlink: **http://www.genrx.com/Mosby/PhyGenRx/group.html**.

Physicians Desk Reference

The Physicians Desk Reference database (also available in CD-Rom and book format) is a full-text drug database. The database is searchable by brand name, generic name or by indication. It features multiple drug interactions reports. Information can be obtained at the following hyperlink: **http://physician.pdr.net/physician/templates/en/acl/psuser_t.htm**.

Other Web Sites

A number of additional Web sites discuss drug information. As an example, you may like to look at **www.drugs.com** which reproduces the information in the Pharmacopeia as well as commercial information. You may also want to consider the Web site of the Medical Letter, Inc. which allows users to download articles on various drugs and therapeutics for a nominal fee: **http://www.medletter.com/**.

Contraindications and Interactions (Hidden Dangers)

Some of the medications mentioned in the previous discussions can be problematic for patients with peptic ulcer--not because they are used in the treatment process, but because of contraindications, or side effects. Medications with contraindications are those that could react with drugs used to treat peptic ulcer or potentially create deleterious side effects in patients with peptic ulcer. You should ask your physician about any contraindications, especially as these might apply to other medications that you may be taking for common ailments.

Drug-drug interactions occur when two or more drugs react with each other. This drug-drug interaction may cause you to experience an unexpected side effect. Drug interactions may make your medications less effective, cause unexpected side effects, or increase the action of a particular drug. Some drug interactions can even be harmful to you.

Be sure to read the label every time you use a nonprescription or prescription drug, and take the time to learn about drug interactions. These precautions may be critical to your health. You can reduce the risk of potentially harmful drug interactions and side effects with a little bit of knowledge and common sense.

Drug labels contain important information about ingredients, uses, warnings, and directions which you should take the time to read and understand. Labels also include warnings about possible drug interactions. Further, drug labels may change as new information becomes available. This is why it's especially important to read the label every time you use a medication. When your doctor prescribes a new drug, discuss all over-the-counter and prescription medications, dietary supplements, vitamins, botanicals, minerals and herbals you take as well as the foods you eat. Ask your pharmacist for the package insert for each prescription drug you take. The package insert provides more information about potential drug interactions.

A Final Warning

At some point, you may hear of alternative medications from friends, relatives, or in the news media. Advertisements may suggest that certain alternative drugs can produce positive results for patients with peptic ulcer. Exercise caution--some of these drugs may have fraudulent claims, and others may actually hurt you. The Food and Drug Administration (FDA) is the official U.S. agency charged with discovering which medications are likely to improve the health of patients with peptic ulcer. The FDA warns patients to watch out for[41]:

- Secret formulas (real scientists share what they know)
- Amazing breakthroughs or miracle cures (real breakthroughs don't happen very often; when they do, real scientists do not call them amazing or miracles)
- Quick, painless, or guaranteed cures
- If it sounds too good to be true, it probably isn't true.

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

[41] This section has been adapted from **http://www.fda.gov/opacom/lowlit/medfraud.html**.

General References

In addition to the resources provided earlier in this chapter, the following general references describe medications (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **Drug Development: Molecular Targets for Gi Diseases** by Timothy S. Gaginella (Editor), Antonio Guglietta (Editor); Hardcover - 288 pages (December 1999), Humana Press; ISBN: 0896035891; **http://www.amazon.com/exec/obidos/ASIN/0896035891/icongroupinterna**
- **Drug Therapy for Gastrointestinal and Liver Diseases** by Michael J.G. Farthing, M.D. (Editor), Anne B. Ballinger (Editor); Hardcover - 346 pages, 1st edition (August 15, 2001), Martin Dunitz Ltd.; ISBN: 1853177334; **http://www.amazon.com/exec/obidos/ASIN/1853177334/icongroupinterna**
- **Immunopharmacology of the Gastrointestinal System (Handbook of Immunopharmacology)** by John L. Wallace (Editor); Hardcover (October 1997), Academic Press; ISBN: 0127328602; **http://www.amazon.com/exec/obidos/ASIN/0127328602/icongroupinterna**
- **A Pharmacologic Approach to Gastrointestinal Disorders** by James H. Lewis, M.D. (Editor); Hardcover – (February 1994), Lippincott, Williams & Wilkins; ISBN: 0683049704; **http://www.amazon.com/exec/obidos/ASIN/0683049704/icongroupinterna**

Vocabulary Builder

The following vocabulary builder gives definitions of words used in this chapter that have not been defined in previous chapters:

ACTH: Adrenocorticotropic hormone. [EU]

Aminophylline: A drug combination that contains theophylline and ethylenediamine. It is more soluble in water than theophylline but has similar pharmacologic actions. It's most common use is in bronchial asthma, but it has been investigated for several other applications. [NIH]

Atropine: A toxic alkaloid, originally from Atropa belladonna, but found in other plants, mainly Solanaceae. [NIH]

Captopril: A potent and specific inhibitor of peptidyl-dipeptidase A. It blocks the conversion of angiotensin I to angiotensin II, a vasoconstrictor and important regulator of arterial blood pressure. Captopril acts to suppress the renin-angiotensin system and inhibits pressure responses to exogenous

angiotensin. [NIH]

Codeine: An opioid analgesic related to morphine but with less potent analgesic properties and mild sedative effects. It also acts centrally to suppress cough. [NIH]

Diflunisal: A salicylate derivative and anti-inflammatory analgesic with actions and side effects similar to those of aspirin. [NIH]

Dimenhydrinate: A drug combination that contains diphenhydramine and theophylline. It is used for treating vertigo, motion sickness, and nausea associated with pregnancy. It is not effective in the treatment of nausea associated with cancer chemotherapy. [NIH]

Flucytosine: A fluorinated cytosine analog that is used as an antifungal agent. [NIH]

Glycopyrrolate: A muscarinic antagonist used as an antispasmodic, in some disorders of the gastrointestinal tract, and to reduce salivation with some anesthetics. [NIH]

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

Ketorolac Tromethamine: A pyrrolizine carboxylic acid derivative structurally related to indomethacin. It is a non-steroidal anti-inflammatory agent used for analgesia for postoperative pain and inhibits cyclooxygenase activity. [NIH]

Levodopa: The naturally occurring form of dopa and the immediate precursor of dopamine. Unlike dopamine itself, it can be taken orally and crosses the blood-brain barrier. It is rapidly taken up by dopaminergic neurons and converted to dopamine. It is used for the treatment of parkinsonism and is usually given with agents that inhibit its conversion to dopamine outside of the central nervous system. [NIH]

Neostigmine: A cholinesterase inhibitor used in the treatment of myasthenia gravis and to reverse the effects of muscle relaxants such as gallamine and tubocurarine. Neostigmine, unlike physostigmine, does not cross the blood-brain barrier. [NIH]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Pentoxifylline: A methylxanthine derivative that inhibits phosphodiesterase and affects blood rheology. It improves blood flow by increasing erythrocyte and leukocyte flexibility. It also inhibits platelet aggregation. Pentoxifylline modulates immunologic activity by stimulating cytokine production. [NIH]

Pilocarpine: A slowly hydrolyzed muscarinic agonist with no nicotinic effects. Pilocarpine is used as a miotic and in the treatment of glaucoma. [NIH]

Probenecid: The prototypical uricosuric agent. It inhibits the renal excretion of organic anions and reduces tubular reabsorption of urate. Probenecid has also been used to treat patients with renal impairment, and, because it reduces the renal tubular excretion of other drugs, has been used as an adjunct to antibacterial therapy. [NIH]

Scopolamine: An alkaloid from Solanaceae, especially Datura metel L. and Scopola carniolica. Scopolamine and its quaternary derivatives act as antimuscarinics like atropine, but may have more central nervous system effects. Among the many uses are as an anesthetic premedication, in urinary incontinence, in motion sickness, as an antispasmodic, and as a mydriatic and cycloplegic. [NIH]

Sodium Bicarbonate: A white, crystalline powder that is commonly used as a pH buffering agent, an electrolyte replenisher, systemic alkalizer and in topical cleansing solutions. [NIH]

Sulfinpyrazone: A uricosuric drug that is used to reduce the serum urate levels in gout therapy. It lacks anti-inflammatory, analgesic, and diuretic properties. [NIH]

APPENDIX B. RESEARCHING ALTERNATIVE MEDICINE

Overview

Complementary and alternative medicine (CAM) is one of the most contentious aspects of modern medical practice. You may have heard of these treatments on the radio or on television. Maybe you have seen articles written about these treatments in magazines, newspapers, or books. Perhaps your friends or doctor have mentioned alternatives.

In this chapter, we will begin by giving you a broad perspective on complementary and alternative therapies. Next, we will introduce you to official information sources on CAM relating to peptic ulcer. Finally, at the conclusion of this chapter, we will provide a list of readings on peptic ulcer from various authors. We will begin, however, with the National Center for Complementary and Alternative Medicine's (NCCAM) overview of complementary and alternative medicine.

What Is CAM?[42]

Complementary and alternative medicine (CAM) covers a broad range of healing philosophies, approaches, and therapies. Generally, it is defined as those treatments and healthcare practices which are not taught in medical schools, used in hospitals, or reimbursed by medical insurance companies. Many CAM therapies are termed "holistic," which generally means that the healthcare practitioner considers the whole person, including physical, mental, emotional, and spiritual health. Some of these therapies are also known as "preventive," which means that the practitioner educates and

[42] Adapted from the NCCAM: **http://nccam.nih.gov/nccam/fcp/faq/index.html#what-is**.

treats the person to prevent health problems from arising, rather than treating symptoms after problems have occurred.

People use CAM treatments and therapies in a variety of ways. Therapies are used alone (often referred to as alternative), in combination with other alternative therapies, or in addition to conventional treatment (sometimes referred to as complementary). Complementary and alternative medicine, or "integrative medicine," includes a broad range of healing philosophies, approaches, and therapies. Some approaches are consistent with physiological principles of Western medicine, while others constitute healing systems with non-Western origins. While some therapies are far outside the realm of accepted Western medical theory and practice, others are becoming established in mainstream medicine.

Complementary and alternative therapies are used in an effort to prevent illness, reduce stress, prevent or reduce side effects and symptoms, or control or cure disease. Some commonly used methods of complementary or alternative therapy include mind/body control interventions such as visualization and relaxation, manual healing including acupressure and massage, homeopathy, vitamins or herbal products, and acupuncture.

What Are the Domains of Alternative Medicine?[43]

The list of CAM practices changes continually. The reason being is that these new practices and therapies are often proved to be safe and effective, and therefore become generally accepted as "mainstream" healthcare practices. Today, CAM practices may be grouped within five major domains: (1) alternative medical systems, (2) mind-body interventions, (3) biologically-based treatments, (4) manipulative and body-based methods, and (5) energy therapies. The individual systems and treatments comprising these categories are too numerous to list in this sourcebook. Thus, only limited examples are provided within each.

Alternative Medical Systems

Alternative medical systems involve complete systems of theory and practice that have evolved independent of, and often prior to, conventional biomedical approaches. Many are traditional systems of medicine that are

[43] Adapted from the NCCAM: **http://nccam.nih.gov/nccam/fcp/classify/index.html**.

practiced by individual cultures throughout the world, including a number of venerable Asian approaches.

Traditional oriental medicine emphasizes the balance or disturbances of qi (pronounced chi) or vital energy in health and disease, respectively. Traditional oriental medicine consists of a group of techniques and methods including acupuncture, herbal medicine, oriental massage, and qi gong (a form of energy therapy). Acupuncture involves stimulating specific anatomic points in the body for therapeutic purposes, usually by puncturing the skin with a thin needle.

Ayurveda is India's traditional system of medicine. Ayurvedic medicine (meaning "science of life") is a comprehensive system of medicine that places equal emphasis on body, mind, and spirit. Ayurveda strives to restore the innate harmony of the individual. Some of the primary Ayurvedic treatments include diet, exercise, meditation, herbs, massage, exposure to sunlight, and controlled breathing.

Other traditional healing systems have been developed by the world's indigenous populations. These populations include Native American, Aboriginal, African, Middle Eastern, Tibetan, and Central and South American cultures. Homeopathy and naturopathy are also examples of complete alternative medicine systems.

Homeopathic medicine is an unconventional Western system that is based on the principle that "like cures like," i.e., that the same substance that in large doses produces the symptoms of an illness, in very minute doses cures it. Homeopathic health practitioners believe that the more dilute the remedy, the greater its potency. Therefore, they use small doses of specially prepared plant extracts and minerals to stimulate the body's defense mechanisms and healing processes in order to treat illness.

Naturopathic medicine is based on the theory that disease is a manifestation of alterations in the processes by which the body naturally heals itself and emphasizes health restoration rather than disease treatment. Naturopathic physicians employ an array of healing practices, including the following: diet and clinical nutrition, homeopathy, acupuncture, herbal medicine, hydrotherapy (the use of water in a range of temperatures and methods of applications), spinal and soft-tissue manipulation, physical therapies (such as those involving electrical currents, ultrasound, and light), therapeutic counseling, and pharmacology.

Mind-Body Interventions

Mind-body interventions employ a variety of techniques designed to facilitate the mind's capacity to affect bodily function and symptoms. Only a select group of mind-body interventions having well-documented theoretical foundations are considered CAM. For example, patient education and cognitive-behavioral approaches are now considered "mainstream." On the other hand, complementary and alternative medicine includes meditation, certain uses of hypnosis, dance, music, and art therapy, as well as prayer and mental healing.

Biological-Based Therapies

This category of CAM includes natural and biological-based practices, interventions, and products, many of which overlap with conventional medicine's use of dietary supplements. This category includes herbal, special dietary, orthomolecular, and individual biological therapies.

Herbal therapy employs an individual herb or a mixture of herbs for healing purposes. An herb is a plant or plant part that produces and contains chemical substances that act upon the body. Special diet therapies, such as those proposed by Drs. Atkins, Ornish, Pritikin, and Weil, are believed to prevent and/or control illness as well as promote health. Orthomolecular therapies aim to treat disease with varying concentrations of chemicals such as magnesium, melatonin, and mega-doses of vitamins. Biological therapies include, for example, the use of laetrile and shark cartilage to treat cancer and the use of bee pollen to treat autoimmune and inflammatory diseases.

Manipulative and Body-Based Methods

This category includes methods that are based on manipulation and/or movement of the body. For example, chiropractors focus on the relationship between structure and function, primarily pertaining to the spine, and how that relationship affects the preservation and restoration of health. Chiropractors use manipulative therapy as an integral treatment tool.

In contrast, osteopaths place particular emphasis on the musculoskeletal system and practice osteopathic manipulation. Osteopaths believe that all of the body's systems work together and that disturbances in one system may have an impact upon function elsewhere in the body. Massage therapists manipulate the soft tissues of the body to normalize those tissues.

Energy Therapies

Energy therapies focus on energy fields originating within the body (biofields) or those from other sources (electromagnetic fields). Biofield therapies are intended to affect energy fields (the existence of which is not yet experimentally proven) that surround and penetrate the human body. Some forms of energy therapy manipulate biofields by applying pressure and/or manipulating the body by placing the hands in or through these fields. Examples include Qi gong, Reiki and Therapeutic Touch.

Qi gong is a component of traditional oriental medicine that combines movement, meditation, and regulation of breathing to enhance the flow of vital energy (qi) in the body, improve blood circulation, and enhance immune function. Reiki, the Japanese word representing Universal Life Energy, is based on the belief that, by channeling spiritual energy through the practitioner, the spirit is healed and, in turn, heals the physical body. Therapeutic Touch is derived from the ancient technique of "laying-on of hands." It is based on the premises that the therapist's healing force affects the patient's recovery and that healing is promoted when the body's energies are in balance. By passing their hands over the patient, these healers identify energy imbalances.

Bioelectromagnetic-based therapies involve the unconventional use of electromagnetic fields to treat illnesses or manage pain. These therapies are often used to treat asthma, cancer, and migraine headaches. Types of electromagnetic fields which are manipulated in these therapies include pulsed fields, magnetic fields, and alternating current or direct current fields.

Can Alternatives Affect My Treatment?

A critical issue in pursuing complementary alternatives mentioned thus far is the risk that these might have undesirable interactions with your medical treatment. It becomes all the more important to speak with your doctor who can offer advice on the use of alternatives. Official sources confirm this view. Though written for women, we find that the National Women's Health Information Center's advice on pursuing alternative medicine is appropriate for patients of both genders and all ages.[44]

[44] Adapted from **http://www.4woman.gov/faq/alternative.htm**.

Is It Okay to Want Both Traditional and Alternative Medicine?

Should you wish to explore non-traditional types of treatment, be sure to discuss all issues concerning treatments and therapies with your healthcare provider, whether a physician or practitioner of complementary and alternative medicine. Competent healthcare management requires knowledge of both conventional and alternative therapies you are taking for the practitioner to have a complete picture of your treatment plan.

The decision to use complementary and alternative treatments is an important one. Consider before selecting an alternative therapy, the safety and effectiveness of the therapy or treatment, the expertise and qualifications of the healthcare practitioner, and the quality of delivery. These topics should be considered when selecting any practitioner or therapy.

Finding CAM References on Peptic Ulcer

Having read the previous discussion, you may be wondering which complementary or alternative treatments might be appropriate for peptic ulcer. For the remainder of this chapter, we will direct you to a number of official sources which can assist you in researching studies and publications. Some of these articles are rather technical, so some patience may be required.

The Combined Health Information Database

For a targeted search, The Combined Health Information Database is a bibliographic database produced by health-related agencies of the Federal Government (mostly from the National Institutes of Health). This database is updated four times a year at the end of January, April, July, and October. Check the titles, summaries, and availability of CAM-related information by using the "Simple Search" option at the following Web site: **http://chid.nih.gov/simple/simple.html**. In the drop box at the top, select "Complementary and Alternative Medicine." Then type "peptic ulcer" (or synonyms) in the second search box. We recommend that you select 100 "documents per page" and to check the "whole records" options. The following was extracted using this technique:

- **Effects of a Traditional Drug, Turmeric ('Curcuma Longa'), and Placebo on the Healing of Duodenal Ulcer**

  Source: Phytomedicine. 5(1): 29-34. 1998.

Summary: This journal article describes a randomized, double-blind, placebo-controlled study of turmeric ('Curcuma longa') as a treatment for duodenal ulcer. The participants were 118 outpatients, aged 18 to 50 years, from the Uong Bi General Hospital or the Viet Duc University Hospital in Vietnam. All patients had one duodenal ulcer with a minimum diameter of 5 mm verified by endoscopy and/or radiography no more than 4 days before study entry. None was taking another treatment for the ulcer during the preceding week. Patients were randomly assigned to treatment with 6 g daily of turmeric (the dosage suggested in the Vietnamese pharmacopoeia) or placebo. Followup endoscopy and/or radiography and laboratory tests were performed after an average of 28 and 56 days, and patients were asked about adverse events. The rates of ulcer healing after 4 weeks of treatment was 2 percent in the turmeric group and 15 percent in the placebo group; after 8 weeks, they were 27 percent and 29 percent, respectively. All patients experienced relief of symptoms after 1 week, and both treatments were well tolerated. The authors conclude that turmeric alone is not the drug of choice for duodenal ulcer. The article has 1 figure, 3 tables, and 16 references.

National Center for Complementary and Alternative Medicine

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

- **Acupuncture treatment for duodenal ulcer.**
  Author(s): Debreceni L, Denes L.
  Source: Acupunct Electrother Res. 1988; 13(2-3): 105-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2904207&dopt=Abstract

- **An epidemiological study of gastric to duodenal ulcer ratio in Asian countries.**
  Author(s): Kawai K, Watanabe Y, Hayashi K.

Source: Gastroenterol Jpn. 1991 July; 26 Suppl 3: 267-70. No Abstract Available.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1884953&dopt=Abstract

- **Chili--protective factor against peptic ulcer?**
  Author(s): Kang JY, Yeoh KG, Chia HP, Lee HP, Chia YW, Guan R, Yap I.
  Source: Digestive Diseases and Sciences. 1995 March; 40(3): 576-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7895548&dopt=Abstract

- **Clinical and experimental observations on treatment of peptic ulcer with wei yang an (easing peptic-ulcer) capsule.**
  Author(s): Zhou Z, Hu Y, Pi D, Fan S, Yang Z, Wang Z, Gao J, Peng Q, Yao S, Liu L.
  Source: J Tradit Chin Med. 1991 March; 11(1): 34-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=1861510&dopt=Abstract

- **Clinical observation on 80 children with peptic ulcer treated primarily by traditional Chinese medicine.**
  Author(s): Li S, Chen Z, Yan H, Wang Q.
  Source: J Tradit Chin Med. 1995 March; 15(1): 14-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7783454&dopt=Abstract

- **Clinical observations on the treatment of 98 cases of peptic ulcer by massage.**
  Author(s): Bei Y.
  Source: J Tradit Chin Med. 1993 March; 13(1): 50-1. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8501962&dopt=Abstract

- **Combination of traditional Chinese medicine and Western medicine in the treatment of resistant peptic ulcer.**
  Author(s): Ma LS, Guo TM.
  Source: Chin Med J (Engl). 1994 July; 107(7): 554-6. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7956506&dopt=Abstract

- **Controlled trial of hypnotherapy in relapse prevention of duodenal ulceration.**
  Author(s): Colgan SM, Faragher EB, Whorwell PJ.
  Source: Lancet. 1988 June 11; 1(8598): 1299-300.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2897556&dopt=Abstract

- **Cost-effectiveness of Helicobacter pylori eradication therapy in duodenal ulcer disease.**
  Author(s): Jonsson B.
  Source: Scand J Gastroenterol Suppl. 1996; 215: 90-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8722390&dopt=Abstract

- **Duodenal ulcer prevalence: experimental evidence for the possible role of dietary lipids.**
  Author(s): Jayaraj AP, Tovey FI, Lewin MR, Clark CG.
  Source: Journal of Gastroenterology and Hepatology. 2000 June; 15(6): 610-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10921413&dopt=Abstract

- **Effect of ayurvedic medicines on beta-glucuronidase activity of Brunner's glands during recovery from cysteamine induced duodenal ulcers in rats.**
  Author(s): Nadar TS, Pillai MM.
  Source: Indian J Exp Biol. 1989 November; 27(11): 959-62.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2620935&dopt=Abstract

- **Effects of garlic compounds diallyl sulfide and diallyl disulfide on arylamine N-acetyltransferase activity in strains of Helicobacter pylori from peptic ulcer patients.**
  Author(s): Chung JG, Chen GW, Wu LT, Chang HL, Lin JG, Yeh CC, Wang TF.
  Source: Am J Chin Med. 1998; 26(3-4): 353-64.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9862023&dopt=Abstract

- **Evaluation of Nigerian traditional medicines: II. Effects of some Nigerian folk remedies on peptic ulcer.**
  Author(s): Akah PA, Orisakwe OE, Gamaniel KS, Shittu A.

Source: Journal of Ethnopharmacology. 1998 September; 62(2): 123-7.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9741884&dopt=Abstract

- **Food intolerance in duodenal ulcer patients, non ulcer dyspeptic patients and healthy subjects. A prospective study.**
  Author(s): Kaess H, Kellermann M, Castro A.
  Source: Klin Wochenschr. 1988 March 1; 66(5): 208-11.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3361798&dopt=Abstract

- **Gastroprotective effects of an aqueous extract of Entandrophragma utile bark in experimental ethanol-induced peptic ulceration in mice and rats.**
  Author(s): John TA, Onabanjo AO.
  Source: Journal of Ethnopharmacology. 1990 April; 29(1): 87-93.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2345463&dopt=Abstract

- **Medicinal plants used for peptic ulcer in the Bangangte region, western Cameroon.**
  Author(s): Noumi E, Dibakto TW.
  Source: Fitoterapia. 2000 August; 71(4): 406-12.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10925012&dopt=Abstract

- **Natural history of peptic ulcer in children. Five-year prospective endoscopic examinations. Part II. Healing of duodenal ulcer.**
  Author(s): Michalowicz-Wojczynska E, Swiatkowski P, Teisseyre M.
  Source: Mater Med Pol. 1988 January-March; 20(1): 36-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=3221724&dopt=Abstract

- **Peptic ulcer is not a disease, only a sign!--Stress is a factor in more than a few dyspeptics.**
  Author(s): Spiro H.
  Source: Psychosomatic Medicine. 2000 March-April; 62(2): 186-7. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10772395&dopt=Abstract

- **Phase II clinical trial on effect of the long turmeric (Curcuma longa Linn) on healing of peptic ulcer.**
  Author(s): Prucksunand C, Indrasukhsri B, Leethochawalit M, Hungspreugs K.
  Source: Southeast Asian J Trop Med Public Health. 2001 March; 32(1): 208-15.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11485087&dopt=Abstract

- **Protective effect of UL-409, a herbal formulation against physical and chemical factor induced gastric and duodenal ulcers in experimental animals.**
  Author(s): Mitra SK, Gopumadhavan S, Hemavathi TS, Muralidhar TS, Venkataranganna MV.
  Source: Journal of Ethnopharmacology. 1996 July 5; 52(3): 165-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8771458&dopt=Abstract

- **Psychologic factors associated with peptic ulcer disease.**
  Author(s): Schindler BA, Ramchandani D.
  Source: The Medical Clinics of North America. 1991 July; 75(4): 865-76. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2072792&dopt=Abstract

- **Psychosocial factors in peptic ulcer and inflammatory bowel disease.**
  Author(s): Levenstein S.
  Source: J Consult Clin Psychol. 2002 June; 70(3): 739-50.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12090380&dopt=Abstract

- **Ranitidine in children with peptic ulcer and patients with pancreatic cystic fibrosis.**
  Author(s): Scorza A, Conti-Nibali S, Sferlazzas C, Saitta G, Tedeschi A.
  Source: Int J Clin Pharmacol Res. 1990; 10(3): 179-82.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=2228343&dopt=Abstract

- **The effect of an integrated stress management program on the psychologic and physiologic stress reactions of peptic ulcer in Korea.**
  Author(s): Han KS.

Source: International Journal of Nursing Studies. 2002 July; 39(5): 539-48.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11996874&dopt=Abstract

- **The effect of an integrated stress management program on the psychologic and physiologic stress reactions of peptic ulcer in Korea.**
  Author(s): Han KS.
  Source: Journal of Holistic Nursing : Official Journal of the American Holistic Nurses' Association. 2002 March; 20(1): 61-80.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11898689&dopt=Abstract

- **The influence of commonly prescribed synthetic drugs for peptic ulcer on the pharmacokinetic fate of glycyrrhizin from Shaoyao-Gancao-tang.**
  Author(s): He JX, Akao T, Nishino T, Tani T.
  Source: Biol Pharm Bull. 2001 December; 24(12): 1395-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11767109&dopt=Abstract

- **Use of spinal manipulative therapy in the treatment of duodenal ulcer: a pilot study.**
  Author(s): Forbes J.
  Source: Journal of Manipulative and Physiological Therapeutics. 1995 November-December; 18(9): 637-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8775029&dopt=Abstract

- **Use of spinal manipulative therapy in the treatment of duodenal ulcer: a pilot study.**
  Author(s): Haywood J, Kirk D, Sanders D.
  Source: Journal of Manipulative and Physiological Therapeutics. 1995 February; 18(2): 117-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7790783&dopt=Abstract

- **Use of spinal manipulative therapy in the treatment of duodenal ulcer: a pilot study.**
  Author(s): Pikalov AA, Kharin VV.

Source: Journal of Manipulative and Physiological Therapeutics. 1994 June; 17(5): 310-3.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7930964&dopt=Abstract

Additional Web Resources

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

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

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

- **General Overview**

Peptic Ulcer
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Peptic ulcer
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/InteractiveMedicine/ConsLookups/Uses/peptic ulcer.html

Peptic Ulcer
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcerrcc.html

- **Chinese Medicine**

Baiji
Alternative names: Common Bletilla Tuber; Rhizoma Bletillae
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

Haipiaoxiao
Alternative names: Cuttlebone; Os Sepiae
Source: Chinese Materia Medica
Hyperlink: http://www.newcenturynutrition.com/

- **Herbs and Supplements**

Allopurinol
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Aloe
Alternative names: Aloe vera, Aloe barbadensis, Aloe ferox , Aloe Vera
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Aloech.html

Aloe Vera
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Aloech.html

Aloe vera
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10001,00.html

Alpha-Lipoic Acid
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Aluminum Hydroxide
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Drug/Aluminum_Hydroxide.htm

Amino Acids Overview
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Amino_Acids.htm

Amoxicillin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Amoxicillin
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Amoxicillin
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Amoxil
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Antacids
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Antacids
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Antibiotics
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Antibiotics
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Anti-Inflammatory Drugs
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Arginine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Aspirin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Aspirin
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Beta-Carotene
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Beta-Carotene
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Bladderwrack
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Bovine Colostrum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Bovine_Colostrum.htm

Bupleurum
Alternative names: Bupleurum chinense, Bupleurum falcatum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Bupleurum.htm

Caffeine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Caffeine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Caffeine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Caffeine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Calendula
Alternative names: Calendula officinalis

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Calendula.htm

Capsaicin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Carnosine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Carnosine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/Carnosine.htm

Catnip
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Chamomile
Alternative names: Matricaria recutita
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Chamomile.htm

Chamomile
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Chamomile
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Chamomile
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Chemotherapy
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Chili Pepper
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Cimetidine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Cimetidine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Clarithromycin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Clarithromycin
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

CLOVES
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Comfrey
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Comfrey
Alternative names: Symphytum officinale
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink: http://www.thedacare.org/healthnotes/Herb/Comfrey.htm

Corydalis
Alternative names: Corydalis turtschaninovii, Corydalis yanhusuo
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Corydalis.htm

Corydalis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Cysteine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Cysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Cysteine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Deglycyrrhizinated Licorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Deglycyrrhizinated Licorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Deglycyrrhizinated Licorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Devil's claw
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com

Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,970,00.html

Digestive enzymes
Source: WholeHealthMD.com, LLC.; www.wholehealthmd.com
Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10051,00.html

DMSO
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

DMSO
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/DMSO.htm

Fiber
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Fiber
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/Fiber.htm

Flavonoids
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

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Hyperlink: http://www.thedacare.org/healthnotes/Supp/Flavonoids.htm

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Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Gamma Oryzanol
Source: Healthnotes, Inc.; www.healthnotes.com

Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Gaviscon
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Gentian
Alternative names: Gentiana lutea
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Gentian.htm

Glucosamine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Glucosamine.htm

Glutamine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/Glutamine.htm

Glutamine
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Glutamine
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Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsSupplements/Glutaminecs.html

Glutamine
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Glutamine
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Hyperlink:
http://www.wholehealthmd.com/refshelf/substances_view/0,1525,10030,00.html

Glutathione
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Glutathione
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Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Glycyrrhiza glabra
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Glycyrrhiza1
Alternative names: Licorice; Glycyrrhiza glabra L.
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Golden Seal
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsg-i.htm

Goldenseal
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Goldenseal
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Greater Celandine
Alternative names: Chelidonium majus

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Greater_Celandine.htm

Herbal Medicine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Herbal Medicine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Horehound
Alternative names: Marrubium vulgare
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Horehound.htm

Horseradish
Alternative names: Cochlearia armoracia
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Horseradish.htm

Hyoscyamine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Drug/Hyoscyamine.htm

Ibuprofen
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Inosine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Interferon
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Lansoprazole
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

L-Arginine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Lecithin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Lemon Balm
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Licorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Licorice
Alternative names: Glycyrrhiza glabra, Glycyrrhiza uralensis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Licorice.htm

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Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Licorice
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Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Licorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Licorice
Alternative names: Glycyrrhiza glabra, Spanish Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Liquorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Liquorice
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Liquorice
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsj-l.htm

Maalox
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
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Maalox
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Marshmallow
Alternative names: Althea officinalis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Herb/Marshmallow.htm

Marshmallow
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Marshmallow
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Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Marshmallow
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Marshmallow
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsm-o.htm

Meadowsweet
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Meadowsweet
Source: The Canadian Internet Directory for Holistic Help, WellNet, Health and Wellness Network; www.wellnet.ca
Hyperlink: http://www.wellnet.ca/herbsm-o.htm

Metronidazole
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Milk Thistle
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Musa Banana
Alternative names: Plantain, Banana; Musa sp.
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Mylanta
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Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

N-Acetyl Cysteine
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Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

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http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Non-steroidal Anti-Inflammatory Drugs
Source: Healthnotes, Inc.; www.healthnotes.com
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Oral Contraceptives
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Peppermint
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Phyllanthus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Picrorhiza
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Piper nigrum
Alternative names: Black Pepper
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

Plantain
Alternative names: Plantago lanceolata, Plantago major
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Plantain.htm

Plantain
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
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Prickly Ash
Alternative names: Zanthoxylum clava-herculis, Zanthoxylum americanum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Prickly_Ash.htm

Proton Pump Inhibitors
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Proton Pump Inhibitors
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Proton Pump Inhibitors
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

Ribes
Alternative names: Black Currant; Ribes nigrum L.
Source: Alternative Medicine Foundation, Inc.; www.amfoundation.org
Hyperlink: http://www.herbmed.org/

S-Adenosylmethionine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Schisandra
Source: Healthnotes, Inc.; www.healthnotes.com
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Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
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Slippery Elm
Source: Integrative Medicine Communications; www.onemedicine.com
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Spanish Licorice
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsHerbs/Licoricech.html

Tetracycline
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
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Tetracycline
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
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Thymus
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Valerian
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Yohimbe
Alternative names: Pausinystalia yohimbe
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Yohimbe.htm

- **Related Conditions**

Cholesterol, High
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Hypercholesterolemiacc.html

Chronic Candidiasis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Chronic_Candidiasis.htm

Gallstones
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Gastritis
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Gastritis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

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Hyperlink: http://www.thedacare.org/healthnotes/Concern/GERD.htm

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

Hyperlink: http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

High Cholesterol
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
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Hypercholesterolemia
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Hypercholesterolemiacc.html

Hyperparathyroidism
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/HyperparathyroidismPrimarycc.html

Indigestion, Heartburn, and Low Stomach Acidity
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Indigestion.htm

Migraine Headaches
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Concern/Migraine.htm

Parathyroid, Overactive
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/HyperparathyroidismPrimarycc.html

Sarcoidosis
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Sarcoidoscc.html

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Schizophrenia.htm

Stomach Inflammation
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Ulcer, Peptic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

General References

A good place to find general background information on CAM is the National Library of Medicine. It has prepared within the MEDLINEplus system an information topic page dedicated to complementary and alternative medicine. To access this page, go to the MEDLINEplus site at: **www.nlm.nih.gov/medlineplus/alternativemedicine.html.** This Web site provides a general overview of various topics and can lead to a number of general sources. The following additional references describe, in broad terms, alternative and complementary medicine (sorted alphabetically by title; hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Gastrointestinal Disorders and Nutrition** by Tonia Reinhard; Paperback - 192 pages (January 24, 2002), McGraw-Hill Professional Publishing; ISBN: 0737303611;
  http://www.amazon.com/exec/obidos/ASIN/0737303611/icongroupinterna
- **Healthy Digestion the Natural Way: Preventing and Healing Heartburn, Constipation, Gas, Diarrhea, Inflammatory Bowel and Gallbladder Diseases, Ulcers, Irritable Bowel Syndrome, and More** by D. Lindsey Berkson, et al; Paperback - 256 pages, 1st edition (February 2000), John Wiley & Sons; ISBN: 0471349623;
  http://www.amazon.com/exec/obidos/ASIN/0471349623/icongroupinterna
- **No More Heartburn: Stop the Pain in 30 Days--Naturally!: The Safe, Effective Way to Prevent and Heal Chronic Gastrointestinal Disorders** by Sherry A. Rogers, M.D.; Paperback - 320 pages (February 2000),

Kensington Publishing Corp.; ISBN: 1575665107;
http://www.amazon.com/exec/obidos/ASIN/1575665107/icongroupinterna

For additional information on complementary and alternative medicine, ask your doctor or write to:

National Institutes of Health
National Center for Complementary and Alternative Medicine Clearinghouse
P. O. Box 8218
Silver Spring, MD 20907-8218

Vocabulary Builder

The following vocabulary builder gives definitions of words used in this chapter that have not been defined in previous chapters:

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

Herpes: Any inflammatory skin disease caused by a herpesvirus and characterized by the formation of clusters of small vesicles. When used alone, the term may refer to herpes simplex or to herpes zoster. [EU]

Outpatients: Persons who receive ambulatory care at an outpatient department or clinic without room and board being provided. [NIH]

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

Radiography: The making of film records (radiographs) of internal structures of the body by passage of x-rays or gamma rays through the body to act on specially sensitized film. [EU]

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

APPENDIX C. RESEARCHING NUTRITION

Overview

Since the time of Hippocrates, doctors have understood the importance of diet and nutrition to patients' health and well-being. Since then, they have accumulated an impressive archive of studies and knowledge dedicated to this subject. Based on their experience, doctors and healthcare providers may recommend particular dietary supplements to patients with peptic ulcer. Any dietary recommendation is based on a patient's age, body mass, gender, lifestyle, eating habits, food preferences, and health condition. It is therefore likely that different patients with peptic ulcer may be given different recommendations. Some recommendations may be directly related to peptic ulcer, while others may be more related to the patient's general health. These recommendations, themselves, may differ from what official sources recommend for the average person.

In this chapter we will begin by briefly reviewing the essentials of diet and nutrition that will broadly frame more detailed discussions of peptic ulcer. We will then show you how to find studies dedicated specifically to nutrition and peptic ulcer.

Food and Nutrition: General Principles

What Are Essential Foods?

Food is generally viewed by official sources as consisting of six basic elements: (1) fluids, (2) carbohydrates, (3) protein, (4) fats, (5) vitamins, and (6) minerals. Consuming a combination of these elements is considered to be a healthy diet:

- **Fluids** are essential to human life as 80-percent of the body is composed of water. Water is lost via urination, sweating, diarrhea, vomiting, diuretics (drugs that increase urination), caffeine, and physical exertion.
- **Carbohydrates** are the main source for human energy (thermoregulation) and the bulk of typical diets. They are mostly classified as being either simple or complex. Simple carbohydrates include sugars which are often consumed in the form of cookies, candies, or cakes. Complex carbohydrates consist of starches and dietary fibers. Starches are consumed in the form of pastas, breads, potatoes, rice, and other foods. Soluble fibers can be eaten in the form of certain vegetables, fruits, oats, and legumes. Insoluble fibers include brown rice, whole grains, certain fruits, wheat bran and legumes.
- **Proteins** are eaten to build and repair human tissues. Some foods that are high in protein are also high in fat and calories. Food sources for protein include nuts, meat, fish, cheese, and other dairy products.
- **Fats** are consumed for both energy and the absorption of certain vitamins. There are many types of fats, with many general publications recommending the intake of unsaturated fats or those low in cholesterol.

Vitamins and minerals are fundamental to human health, growth, and, in some cases, disease prevention. Most are consumed in your diet (exceptions being vitamins K and D which are produced by intestinal bacteria and sunlight on the skin, respectively). Each vitamin and mineral plays a different role in health. The following outlines essential vitamins:

- **Vitamin A** is important to the health of your eyes, hair, bones, and skin; sources of vitamin A include foods such as eggs, carrots, and cantaloupe.
- **Vitamin B^1**, also known as thiamine, is important for your nervous system and energy production; food sources for thiamine include meat, peas, fortified cereals, bread, and whole grains.
- **Vitamin B^2**, also known as riboflavin, is important for your nervous system and muscles, but is also involved in the release of proteins from nutrients; food sources for riboflavin include dairy products, leafy vegetables, meat, and eggs.
- **Vitamin B^3**, also known as niacin, is important for healthy skin and helps the body use energy; food sources for niacin include peas, peanuts, fish, and whole grains
- **Vitamin B^6**, also known as pyridoxine, is important for the regulation of cells in the nervous system and is vital for blood formation; food sources for pyridoxine include bananas, whole grains, meat, and fish.

- **Vitamin B^{12}** is vital for a healthy nervous system and for the growth of red blood cells in bone marrow; food sources for vitamin B12 include yeast, milk, fish, eggs, and meat.
- **Vitamin C** allows the body's immune system to fight various diseases, strengthens body tissue, and improves the body's use of iron; food sources for vitamin C include a wide variety of fruits and vegetables.
- **Vitamin D** helps the body absorb calcium which strengthens bones and teeth; food sources for vitamin D include oily fish and dairy products.
- **Vitamin E** can help protect certain organs and tissues from various degenerative diseases; food sources for vitamin E include margarine, vegetables, eggs, and fish.
- **Vitamin K** is essential for bone formation and blood clotting; common food sources for vitamin K include leafy green vegetables.
- **Folic Acid** maintains healthy cells and blood and, when taken by a pregnant woman, can prevent her fetus from developing neural tube defects; food sources for folic acid include nuts, fortified breads, leafy green vegetables, and whole grains.

It should be noted that one can overdose on certain vitamins which become toxic if consumed in excess (e.g. vitamin A, D, E and K).
Like vitamins, minerals are chemicals that are required by the body to remain in good health. Because the human body does not manufacture these chemicals internally, we obtain them from food and other dietary sources. The more important minerals include:

- **Calcium** is needed for healthy bones, teeth, and muscles, but also helps the nervous system function; food sources for calcium include dry beans, peas, eggs, and dairy products.
- **Chromium** is helpful in regulating sugar levels in blood; food sources for chromium include egg yolks, raw sugar, cheese, nuts, beets, whole grains, and meat.
- **Fluoride** is used by the body to help prevent tooth decay and to reinforce bone strength; sources of fluoride include drinking water and certain brands of toothpaste.
- **Iodine** helps regulate the body's use of energy by synthesizing into the hormone thyroxine; food sources include leafy green vegetables, nuts, egg yolks, and red meat.

- **Iron** helps maintain muscles and the formation of red blood cells and certain proteins; food sources for iron include meat, dairy products, eggs, and leafy green vegetables.
- **Magnesium** is important for the production of DNA, as well as for healthy teeth, bones, muscles, and nerves; food sources for magnesium include dried fruit, dark green vegetables, nuts, and seafood.
- **Phosphorous** is used by the body to work with calcium to form bones and teeth; food sources for phosphorous include eggs, meat, cereals, and dairy products.
- **Selenium** primarily helps maintain normal heart and liver functions; food sources for selenium include wholegrain cereals, fish, meat, and dairy products.
- **Zinc** helps wounds heal, the formation of sperm, and encourage rapid growth and energy; food sources include dried beans, shellfish, eggs, and nuts.

The United States government periodically publishes recommended diets and consumption levels of the various elements of food. Again, your doctor may encourage deviations from the average official recommendation based on your specific condition. To learn more about basic dietary guidelines, visit the Web site: **http://www.health.gov/dietaryguidelines/**. Based on these guidelines, many foods are required to list the nutrition levels on the food's packaging. Labeling Requirements are listed at the following site maintained by the Food and Drug Administration: **http://www.cfsan.fda.gov/~dms/lab-cons.html**. When interpreting these requirements, the government recommends that consumers become familiar with the following abbreviations before reading FDA literature:[45]

- **DVs (Daily Values):** A new dietary reference term that will appear on the food label. It is made up of two sets of references, DRVs and RDIs.
- **DRVs (Daily Reference Values):** A set of dietary references that applies to fat, saturated fat, cholesterol, carbohydrate, protein, fiber, sodium, and potassium.
- **RDIs (Reference Daily Intakes):** A set of dietary references based on the Recommended Dietary Allowances for essential vitamins and minerals and, in selected groups, protein. The name "RDI" replaces the term "U.S. RDA."

[45] Adapted from the FDA: **http://www.fda.gov/fdac/special/foodlabel/dvs.html**.

- **RDAs (Recommended Dietary Allowances):** A set of estimated nutrient allowances established by the National Academy of Sciences. It is updated periodically to reflect current scientific knowledge.

What Are Dietary Supplements?[46]

Dietary supplements are widely available through many commercial sources, including health food stores, grocery stores, pharmacies, and by mail. Dietary supplements are provided in many forms including tablets, capsules, powders, gel-tabs, extracts, and liquids. Historically in the United States, the most prevalent type of dietary supplement was a multivitamin/mineral tablet or capsule that was available in pharmacies, either by prescription or "over the counter." Supplements containing strictly herbal preparations were less widely available. Currently in the United States, a wide array of supplement products are available, including vitamin, mineral, other nutrients, and botanical supplements as well as ingredients and extracts of animal and plant origin.

The Office of Dietary Supplements (ODS) of the National Institutes of Health is the official agency of the United States which has the expressed goal of acquiring "new knowledge to help prevent, detect, diagnose, and treat disease and disability, from the rarest genetic disorder to the common cold."[47] According to the ODS, dietary supplements can have an important impact on the prevention and management of disease and on the maintenance of health.[48] The ODS notes that considerable research on the effects of dietary supplements has been conducted in Asia and Europe where the use of plant products, in particular, has a long tradition. However, the overwhelming majority of supplements have not been studied scientifically. To explore the role of dietary supplements in the improvement of health care, the ODS plans, organizes, and supports conferences, workshops, and symposia on scientific topics related to dietary supplements. The ODS often

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[46] This discussion has been adapted from the NIH: **http://ods.od.nih.gov/whatare/whatare.html**.

[47] Contact: The Office of Dietary Supplements, National Institutes of Health, Building 31, Room 1B29, 31 Center Drive, MSC 2086, Bethesda, Maryland 20892-2086, Tel: (301) 435-2920, Fax: (301) 480-1845, E-mail: **ods@nih.gov**.

[48] Adapted from **http://ods.od.nih.gov/about/about.html**. The Dietary Supplement Health and Education Act defines dietary supplements as "a product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: a vitamin, mineral, amino acid, herb or other botanical; or a dietary substance for use to supplement the diet by increasing the total dietary intake; or a concentrate, metabolite, constituent, extract, or combination of any ingredient described above; and intended for ingestion in the form of a capsule, powder, softgel, or gelcap, and not represented as a conventional food or as a sole item of a meal or the diet."

works in conjunction with other NIH Institutes and Centers, other government agencies, professional organizations, and public advocacy groups.

To learn more about official information on dietary supplements, visit the ODS site at **http://ods.od.nih.gov/whatare/whatare.html**. Or contact:

The Office of Dietary Supplements
National Institutes of Health
Building 31, Room 1B29
31 Center Drive, MSC 2086
Bethesda, Maryland 20892-2086
Tel: (301) 435-2920
Fax: (301) 480-1845
E-mail: ods@nih.gov

Finding Studies on Peptic Ulcer

The NIH maintains an office dedicated to patient nutrition and diet. The National Institutes of Health's Office of Dietary Supplements (ODS) offers a searchable bibliographic database called the IBIDS (International Bibliographic Information on Dietary Supplements). The IBIDS contains over 460,000 scientific citations and summaries about dietary supplements and nutrition as well as references to published international, scientific literature on dietary supplements such as vitamins, minerals, and botanicals.[49] IBIDS is available to the public free of charge through the ODS Internet page: **http://ods.od.nih.gov/databases/ibids.html**.

After entering the search area, you have three choices: (1) IBIDS Consumer Database, (2) Full IBIDS Database, or (3) Peer Reviewed Citations Only. We recommend that you start with the Consumer Database. While you may not find references for the topics that are of most interest to you, check back periodically as this database is frequently updated. More studies can be found by searching the Full IBIDS Database. Healthcare professionals and researchers generally use the third option, which lists peer-reviewed citations. In all cases, we suggest that you take advantage of the "Advanced Search" option that allows you to retrieve up to 100 fully explained

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

references in a comprehensive format. Type "peptic ulcer" (or synonyms) into the search box. To narrow the search, you can also select the "Title" field. The following is a typical result when searching for recently indexed consumer information on peptic ulcer:

- **Diet therapy of peptic ulcer disease.**
  Source: Hollander, D. Nutrition-and-the-M.D (USA). (February 1988). volume 14(2) page 1-2. alcoholic beverages digestive disorders therapeutic diets fatty acids caffeine 0732-0167

The following information is typical of that found when using the "Full IBIDS Database" when searching using "peptic ulcer" (or a synonym):

- **A four-year follow-up of duodenal ulcer patients after Helicobacter pylori eradication.**
  Author(s): Medical Center Rogaska, Rogaska Slatina, Slovenia.
  Source: Tepes, B Kavcic, B Gubina, M Krizman, I Hepatogastroenterology. 1999 May-June; 46(27): 1746-50 0172-6390
- **Effect of lapachol, a naphthaquinone isolated from Tectona grandis, on experimental peptic ulcer and gastric secretion.**
  Source: Goel, R K Pathak, N K Biswas, M Pandey, V B Sanyal, A K J-Pharm-Pharmacol. 1987 February; 39(2): 138-40 0022-3573
- **Gastrojejunal fistula caused by gastric ulcer.**
  Author(s): Department of Gastroenterology, Mishuku Hospital, Tokyo, Japan.
  Source: Matsuoka, M Yoshida, Y Hayakawa, K Fukuchi, S J-Gastroenterol. 1998 April; 33(2): 267-71 0944-1174
- **GC and C3 serum groups in peptic ulcer.**
  Author(s): Department of Pathologic Physiology, Laikon General Hospital, University of Athens, Greece.
  Source: Archimandritis, A Douvara, M Grigoris, S Tjivras, M Davaris, P Fertakis, A Hum-Hered. 1992; 42(3): 198-200 0001-5652
- **Helicobacter pylori and early duodenal ulcer status post-treatment: a review.**
  Author(s): Food and Drug Administration, Division of Special Pathogen and Immunologic Drug Products, Rockville, MD 20850, USA.
  Source: Meyer, J M Silliman, N P Dixon, C A Siepman, N Y Sugg, J E Hopkins, R J Helicobacter. 2001 June; 6(2): 84-92 1083-4389
- **Helicobacter pylori and gastric ulcer therapy: reflections and uncertainties.**
  Author(s): Divisione di Gastroenterologia, Ospedale Generale Regionale, Bolzano, Italy.

Source: Dobrilla, G Piazzi, L Amplatz, S Benvenuti, S Di Fede, F Ital-J-Gastroenterol. 1992 February; 24(2): 79-84 0392-0623

- **Perforated gastric ulcer complicating corticosteroid therapy in acute rheumatic fever.**
  Author(s): Department of Paediatrics, Bikur Cholim General Hospital, Jerusalem, Israel.
  Source: Klar, A Moise, J Brand, A Seror, D Hurvitz, H Acta-Gastroenterol-Belg. 2000 Apr-June; 63(2): 236-8 0001-5644
- **Zinc compounds, a new treatment in peptic ulcer.**
  Author(s): Department of Pharmacology, Laboratorios Vinas S.A., Barcelona, Spain.
  Source: Escolar, G Bulbena, O Drugs-Exp-Clin-Res. 1989; 15(2): 83-9 0378-6501

Federal Resources on Nutrition

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

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

- Food and Nutrition Information Center, National Agricultural Library sponsored by the United States Department of Agriculture: **http://www.nal.usda.gov/fnic/**
- Food and Nutrition Service sponsored by the United States Department of Agriculture: **http://www.fns.usda.gov/fns/**

Additional Web Resources

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

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

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

- **Vitamins**

  Ascorbic Acid
  Source: Healthnotes, Inc.; www.healthnotes.com
  Hyperlink:
  http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

  Ascorbic Acid
  Source: Healthnotes, Inc.; www.healthnotes.com
  Hyperlink:
  http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

  Niacinamide

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Vitamin A
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Vitamin_A.htm

Vitamin C
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Vitamin_C.htm

- **Minerals**

Betaine Hydrochloride
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Betaine_HCl.htm

Copper
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Copper
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

D-Alpha-Tocopherol
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Iron
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Magnesium Carbonate
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Phosphatidylcholine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Potassium
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Quercetin
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Supp/Quercetin.htm

Sulfur
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Sulfur
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Zinc
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Supp/Zinc.htm

- **Food and Diet**

Bananas

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Beverages
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Beverages
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Bread
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Brussels sprouts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Brussels sprouts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Cabbage
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Cabbage
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Cabbage.htm

Cabbage
Source: Integrative Medicine Communications; www.onemedicine.com

Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Cabbage
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Cauliflower
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Cauliflower
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Chili
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Chili
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Chips
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Chocolate
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Chocolate

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Coffee
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Coffee
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Coffee
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Coffee
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Coffee.htm

Coffee
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Coffee
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Eggs
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

French fries
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Garlic
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Garlic
Alternative names: Allium sativum
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink: http://www.thedacare.org/healthnotes/Herb/Garlic.htm

Garlic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Garlic
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

High Cholesterol
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Meat
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Milk
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Milk
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Mushrooms
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Obesity
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Obesity
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Onions
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Onions
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Peptic Ulcercc.html

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Sprouts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Sprouts
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Sucralfate
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Sucralfate
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Sugar
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Sugar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Sugar
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Tea

Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Food_Guide/Tea.htm

Tea
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Tea
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

Tea
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Peptic Ulcercc.html

Tea
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastriti scc.html

Vegetarian Diet
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Water
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Water
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Hepatitis.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gastritis.htm

Water
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/Gastritiscc.html

Water
Source: Integrative Medicine Communications; www.onemedicine.com
Hyperlink:
http://www.drkoop.com/interactivemedicine/ConsConditions/PepticUlcercc.html

Weight Loss
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Weight Loss
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

Weight Loss
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Wheat
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Gallstones.htm

White Bread
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

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

Hyperlink:
http://www.thedacare.org/healthnotes/Concern/GERD.htm

Wine
Source: Healthnotes, Inc.; www.healthnotes.com
Hyperlink:
http://www.thedacare.org/healthnotes/Concern/Peptic_Ulcer.htm

Vocabulary Builder

The following vocabulary builder defines words used in the references in this chapter that have not been defined in previous chapters:

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

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]

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

Fats: One of the three main classes of foods and a source of energy in the body. Fats help the body use some vitamins and keep the skin healthy. They also serve as energy stores for the body. In food, there are two types of fats: saturated and unsaturated. [NIH]

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

Overdose: 1. to administer an excessive dose. 2. an excessive dose. [EU]

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

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

and maintenance of the water-electrolyte balance. [NIH]

Riboflavin: Nutritional factor found in milk, eggs, malted barley, liver, kidney, heart, and leafy vegetables. The richest natural source is yeast. It occurs in the free form only in the retina of the eye, in whey, and in urine; its principal forms in tissues and cells are as FMN and FAD. [NIH]

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

Serum: The clear portion of any body fluid; the clear fluid moistening serous membranes. 2. blood serum; the clear liquid that separates from blood on clotting. 3. immune serum; blood serum from an immunized animal used for passive immunization; an antiserum; antitoxin, or antivenin. [EU]

Thermoregulation: Heat regulation. [EU]

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

APPENDIX D. FINDING MEDICAL LIBRARIES

Overview

At a medical library you can find medical texts and reference books, consumer health publications, specialty newspapers and magazines, as well as medical journals. In this Appendix, we show you how to quickly find a medical library in your area.

Preparation

Before going to the library, highlight the references mentioned in this sourcebook that you find interesting. Focus on those items that are not available via the Internet, and ask the reference librarian for help with your search. He or she may know of additional resources that could be helpful to you. Most importantly, your local public library and medical libraries have Interlibrary Loan programs with the National Library of Medicine (NLM), one of the largest medical collections in the world. According to the NLM, most of the literature in the general and historical collections of the National Library of Medicine is available on interlibrary loan to any library. NLM's interlibrary loan services are only available to libraries. If you would like to access NLM medical literature, then visit a library in your area that can request the publications for you.[50]

[50] Adapted from the NLM: **http://www.nlm.nih.gov/psd/cas/interlibrary.html**.

Finding a Local Medical Library

The quickest method to locate medical libraries is to use the Internet-based directory published by the National Network of Libraries of Medicine (NN/LM). This network includes 4626 members and affiliates that provide many services to librarians, health professionals, and the public. To find a library in your area, simply visit **http://nnlm.gov/members/adv.html** or call 1-800-338-7657.

Medical Libraries Open to the Public

In addition to the NN/LM, the National Library of Medicine (NLM) lists a number of libraries that are generally open to the public and have reference facilities. The following is the NLM's list plus hyperlinks to each library Web site. These Web pages can provide information on hours of operation and other restrictions. The list below is a small sample of libraries recommended by the National Library of Medicine (sorted alphabetically by name of the U.S. state or Canadian province where the library is located):[51]

- **Alabama:** Health InfoNet of Jefferson County (Jefferson County Library Cooperative, Lister Hill Library of the Health Sciences), **http://www.uab.edu/infonet/**
- **Alabama:** Richard M. Scrushy Library (American Sports Medicine Institute), **http://www.asmi.org/LIBRARY.HTM**
- **Arizona:** Samaritan Regional Medical Center: The Learning Center (Samaritan Health System, Phoenix, Arizona), **http://www.samaritan.edu/library/bannerlibs.htm**
- **California:** Kris Kelly Health Information Center (St. Joseph Health System), **http://www.humboldt1.com/~kkhic/index.html**
- **California:** Community Health Library of Los Gatos (Community Health Library of Los Gatos), **http://www.healthlib.org/orgresources.html**
- **California:** Consumer Health Program and Services (CHIPS) (County of Los Angeles Public Library, Los Angeles County Harbor-UCLA Medical Center Library) - Carson, CA, **http://www.colapublib.org/services/chips.html**
- **California:** Gateway Health Library (Sutter Gould Medical Foundation)
- **California:** Health Library (Stanford University Medical Center), **http://www-med.stanford.edu/healthlibrary/**

[51] Abstracted from **http://www.nlm.nih.gov/medlineplus/libraries.html**.

- **California:** Patient Education Resource Center - Health Information and Resources (University of California, San Francisco), **http://sfghdean.ucsf.edu/barnett/PERC/default.asp**
- **California:** Redwood Health Library (Petaluma Health Care District), **http://www.phcd.org/rdwdlib.html**
- **California:** San José PlaneTree Health Library, **http://planetreesanjose.org/**
- **California:** Sutter Resource Library (Sutter Hospitals Foundation), **http://go.sutterhealth.org/comm/resc-library/sac-resources.html**
- **California:** University of California, Davis. Health Sciences Libraries
- **California:** ValleyCare Health Library & Ryan Comer Cancer Resource Center (ValleyCare Health System), **http://www.valleycare.com/library.html**
- **California:** Washington Community Health Resource Library (Washington Community Health Resource Library), **http://www.healthlibrary.org/**
- **Colorado:** William V. Gervasini Memorial Library (Exempla Healthcare), **http://www.exempla.org/conslib.htm**
- **Connecticut:** Hartford Hospital Health Science Libraries (Hartford Hospital), **http://www.harthosp.org/library/**
- **Connecticut:** Healthnet: Connecticut Consumer Health Information Center (University of Connecticut Health Center, Lyman Maynard Stowe Library), **http://library.uchc.edu/departm/hnet/**
- **Connecticut:** Waterbury Hospital Health Center Library (Waterbury Hospital), **http://www.waterburyhospital.com/library/consumer.shtml**
- **Delaware:** Consumer Health Library (Christiana Care Health System, Eugene du Pont Preventive Medicine & Rehabilitation Institute), **http://www.christianacare.org/health_guide/health_guide_pmri_health_info.cfm**
- **Delaware:** Lewis B. Flinn Library (Delaware Academy of Medicine), **http://www.delamed.org/chls.html**
- **Georgia:** Family Resource Library (Medical College of Georgia), **http://cmc.mcg.edu/kids_families/fam_resources/fam_res_lib/frl.htm**
- **Georgia:** Health Resource Center (Medical Center of Central Georgia), **http://www.mccg.org/hrc/hrchome.asp**
- **Hawaii:** Hawaii Medical Library: Consumer Health Information Service (Hawaii Medical Library), **http://hml.org/CHIS/**

- **Idaho:** DeArmond Consumer Health Library (Kootenai Medical Center), **http://www.nicon.org/DeArmond/index.htm**
- **Illinois:** Health Learning Center of Northwestern Memorial Hospital (Northwestern Memorial Hospital, Health Learning Center), **http://www.nmh.org/health_info/hlc.html**
- **Illinois:** Medical Library (OSF Saint Francis Medical Center), **http://www.osfsaintfrancis.org/general/library/**
- **Kentucky:** Medical Library - Services for Patients, Families, Students & the Public (Central Baptist Hospital), **http://www.centralbap.com/education/community/library.htm**
- **Kentucky:** University of Kentucky - Health Information Library (University of Kentucky, Chandler Medical Center, Health Information Library), **http://www.mc.uky.edu/PatientEd/**
- **Louisiana:** Alton Ochsner Medical Foundation Library (Alton Ochsner Medical Foundation), **http://www.ochsner.org/library/**
- **Louisiana:** Louisiana State University Health Sciences Center Medical Library-Shreveport, **http://lib-sh.lsuhsc.edu/**
- **Maine:** Franklin Memorial Hospital Medical Library (Franklin Memorial Hospital), **http://www.fchn.org/fmh/lib.htm**
- **Maine:** Gerrish-True Health Sciences Library (Central Maine Medical Center), **http://www.cmmc.org/library/library.html**
- **Maine:** Hadley Parrot Health Science Library (Eastern Maine Healthcare), **http://www.emh.org/hll/hpl/guide.htm**
- **Maine:** Maine Medical Center Library (Maine Medical Center), **http://www.mmc.org/library/**
- **Maine:** Parkview Hospital, **http://www.parkviewhospital.org/communit.htm#Library**
- **Maine:** Southern Maine Medical Center Health Sciences Library (Southern Maine Medical Center), **http://www.smmc.org/services/service.php3?choice=10**
- **Maine:** Stephens Memorial Hospital Health Information Library (Western Maine Health), **http://www.wmhcc.com/hil_frame.html**
- **Manitoba, Canada:** Consumer & Patient Health Information Service (University of Manitoba Libraries), **http://www.umanitoba.ca/libraries/units/health/reference/chis.html**
- **Manitoba, Canada:** J.W. Crane Memorial Library (Deer Lodge Centre), **http://www.deerlodge.mb.ca/library/libraryservices.shtml**

- **Maryland:** Health Information Center at the Wheaton Regional Library (Montgomery County, Md., Dept. of Public Libraries, Wheaton Regional Library), **http://www.mont.lib.md.us/healthinfo/hic.asp**
- **Massachusetts:** Baystate Medical Center Library (Baystate Health System), **http://www.baystatehealth.com/1024/**
- **Massachusetts:** Boston University Medical Center Alumni Medical Library (Boston University Medical Center), **http://med-libwww.bu.edu/library/lib.html**
- **Massachusetts:** Lowell General Hospital Health Sciences Library (Lowell General Hospital), **http://www.lowellgeneral.org/library/HomePageLinks/WWW.htm**
- **Massachusetts:** Paul E. Woodard Health Sciences Library (New England Baptist Hospital), **http://www.nebh.org/health_lib.asp**
- **Massachusetts:** St. Luke's Hospital Health Sciences Library (St. Luke's Hospital), **http://www.southcoast.org/library/**
- **Massachusetts:** Treadwell Library Consumer Health Reference Center (Massachusetts General Hospital), **http://www.mgh.harvard.edu/library/chrcindex.html**
- **Massachusetts:** UMass HealthNet (University of Massachusetts Medical School), **http://healthnet.umassmed.edu/**
- **Michigan:** Botsford General Hospital Library - Consumer Health (Botsford General Hospital, Library & Internet Services), **http://www.botsfordlibrary.org/consumer.htm**
- **Michigan:** Helen DeRoy Medical Library (Providence Hospital and Medical Centers), **http://www.providence-hospital.org/library/**
- **Michigan:** Marquette General Hospital - Consumer Health Library (Marquette General Hospital, Health Information Center), **http://www.mgh.org/center.html**
- **Michigan:** Patient Education Resouce Center - University of Michigan Cancer Center (University of Michigan Comprehensive Cancer Center), **http://www.cancer.med.umich.edu/learn/leares.htm**
- **Michigan:** Sladen Library & Center for Health Information Resources - Consumer Health Information, **http://www.sladen.hfhs.org/library/consumer/index.html**
- **Montana:** Center for Health Information (St. Patrick Hospital and Health Sciences Center), **http://www.saintpatrick.org/chi/librarydetail.php3?ID=41**

- **National:** Consumer Health Library Directory (Medical Library Association, Consumer and Patient Health Information Section), **http://caphis.mlanet.org/directory/index.html**
- **National:** National Network of Libraries of Medicine (National Library of Medicine) - provides library services for health professionals in the United States who do not have access to a medical library, **http://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), **http://www.lvccld.org/special_collections/medical/index.htm**
- **New Hampshire:** Dartmouth Biomedical Libraries (Dartmouth College Library), **http://www.dartmouth.edu/~biomed/resources.htmld/conshealth.htmld/**
- **New Jersey:** Consumer Health Library (Rahway Hospital), **http://www.rahwayhospital.com/library.htm**
- **New Jersey:** Dr. Walter Phillips Health Sciences Library (Englewood Hospital and Medical Center), **http://www.englewoodhospital.com/links/index.htm**
- **New Jersey:** Meland Foundation (Englewood Hospital and Medical Center), **http://www.geocities.com/ResearchTriangle/9360/**
- **New York:** Choices in Health Information (New York Public Library) - NLM Consumer Pilot Project participant, **http://www.nypl.org/branch/health/links.html**
- **New York:** Health Information Center (Upstate Medical University, State University of New York), **http://www.upstate.edu/library/hic/**
- **New York:** Health Sciences Library (Long Island Jewish Medical Center), **http://www.lij.edu/library/library.html**
- **New York:** ViaHealth Medical Library (Rochester General Hospital), **http://www.nyam.org/library/**
- **Ohio:** Consumer Health Library (Akron General Medical Center, Medical & Consumer Health Library), **http://www.akrongeneral.org/hwlibrary.htm**
- **Oklahoma:** Saint Francis Health System Patient/Family Resource Center (Saint Francis Health System), **http://www.sfh-tulsa.com/patientfamilycenter/default.asp**

- **Oregon:** Planetree Health Resource Center (Mid-Columbia Medical Center), **http://www.mcmc.net/phrc/**
- **Pennsylvania:** Community Health Information Library (Milton S. Hershey Medical Center), **http://www.hmc.psu.edu/commhealth/**
- **Pennsylvania:** Community Health Resource Library (Geisinger Medical Center), **http://www.geisinger.edu/education/commlib.shtml**
- **Pennsylvania:** HealthInfo Library (Moses Taylor Hospital), **http://www.mth.org/healthwellness.html**
- **Pennsylvania:** Hopwood Library (University of Pittsburgh, Health Sciences Library System), **http://www.hsls.pitt.edu/chi/hhrcinfo.html**
- **Pennsylvania:** Koop Community Health Information Center (College of Physicians of Philadelphia), **http://www.collphyphil.org/kooppg1.shtml**
- **Pennsylvania:** Learning Resources Center - Medical Library (Susquehanna Health System), **http://www.shscares.org/services/lrc/index.asp**
- **Pennsylvania:** Medical Library (UPMC Health System), **http://www.upmc.edu/passavant/library.htm**
- **Quebec, Canada:** Medical Library (Montreal General Hospital), **http://ww2.mcgill.ca/mghlib/**
- **South Dakota:** Rapid City Regional Hospital - Health Information Center (Rapid City Regional Hospital, Health Information Center), **http://www.rcrh.org/education/LibraryResourcesConsumers.htm**
- **Texas:** Houston HealthWays (Houston Academy of Medicine-Texas Medical Center Library), **http://hhw.library.tmc.edu/**
- **Texas:** Matustik Family Resource Center (Cook Children's Health Care System), **http://www.cookchildrens.com/Matustik_Library.html**
- **Washington:** Community Health Library (Kittitas Valley Community Hospital), **http://www.kvch.com/**
- **Washington:** Southwest Washington Medical Center Library (Southwest Washington Medical Center), **http://www.swmedctr.com/Home/**

APPENDIX E. NIH CONSENSUS STATEMENT ON HELICOBACTER PYLORI IN PEPTIC ULCER DISEASE

Overview

NIH Consensus Development Conferences are convened to evaluate available scientific information and resolve safety and efficacy issues related to biomedical technology. The resultant NIH Consensus Statements are intended to advance understanding of the technology or issue in question and to be useful to health professionals and the public.[52] Each NIH consensus statement is the product of an independent, non-Federal panel of experts and is based on the panel's assessment of medical knowledge available at the time the statement was written. Therefore, a consensus statement provides a "snapshot in time" of the state of knowledge of the conference topic.

The NIH makes the following caveat: "When reading or downloading NIH consensus statements, keep in mind that new knowledge is inevitably accumulating through medical research. Nevertheless, each NIH consensus statement is retained on this website in its original form as a record of the NIH Consensus Development Program."[53] The following concensus statement was posted on the NIH site and not indicated as "out of date" in March 2002. It was originally published, however, in January, 1994.[54]

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[52] This paragraph is adapted from the NIH: **http://odp.od.nih.gov/consensus/cons/cons.htm**.

[53] Adapted from the NIH: **http://odp.od.nih.gov/consensus/cons/consdate.htm**.

[54] Helicobacter pylori in peptic ulcer disease. NIH Consens Statement Online 1994 Jan 7-9 [cited 2002 February 19] 12(1):1-23. **http://consensus.nih.gov/cons/094/094_statement.htm**

Abstract

The National Institutes of Health Consensus Development Conference on Helicobacter pylori in Peptic Ulcer Disease brought together specialists in gastroenterology, surgery, infectious diseases, epidemiology, and pathology, as well as the public to address the following questions: (1) What is the causal relationship of H. pylori to upper gastrointestinal disease? (2) How does one diagnose and eradicate H. pylori infection? (3) Does eradication of H. pylori infection benefit the patient with peptic ulcer disease? (4) What is the relationship between H. pylori infection and gastric malignancy? (5) Which H. pylori-infected patients should be treated? (6) What are the most important questions that must be addressed by future research in H. pylori infections? Following 1-1/2 days of presentations by experts and discussion by the audience, a consensus panel weighed the evidence and prepared their consensus statement.

Among their findings, the consensus panel concluded that: (1) ulcer patients with H. pylori infection require treatment with antimicrobial agents in addition to antisecretory drugs whether on first presentation with the illness or on recurrence; (2) the value of treating nonulcer dyspepsia patients with H. pylori infection remains to be determined; and (3) the interesting relationship between H. pylori infection and gastric cancers requires further exploration.

The full text of the consensus panel's statement follows.

What Is Peptic Ulcer Disease?

Peptic ulcer disease is a chronic inflammatory condition of the stomach and duodenum that affects as many as 10 percent of people in the United States at some time in their lives. The disease has relatively low mortality, but it results in substantial human suffering and high economic costs.

In the early 20th century, the pathogenesis of the disorder was believed to be related to stress and dietary factors. Thus, treatment focused on hospitalization with bed rest and prescription of special bland foods. Later the concept arose that peptic ulcer disease was caused by the injurious effects of digestive secretions such as gastric acid; hence, antacids became the standard of therapy. In 1971, Sir James Black identified a subtype of the histamine receptor (H2receptor) that appeared to be the principal mediator of gastric acid secretion. Antagonists of this receptor proved to be safe and

effective therapy for peptic ulcer disease. More recently, inhibitors of the proton pump (H+,K+-ATPase) in gastric parietal cells have proved to be rapidly effective and extremely potent antiulcer drugs. Other drugs that appear to enhance mucosal defense such as bismuth compounds, sucralfate (aluminum sucrose sulfate, basic) and prostaglandins have also been applied to the treatment of peptic ulcers. Despite these sophisticated therapeutic agents, the disturbing problem of the high recurrence rate of peptic ulcer, even after complete healing, remains.

In 1982, Warren and Marshall provided the first insight into another important pathogenic factor in peptic ulcer disease. They isolated a spiral urease-producing organism (later identified as Helicobacter pylori) nestled in the narrow interface between the gastric epithelial cell surface and the overlying mucus gel. In their early studies, the presence of this organism was shown to be highly correlated with antral gastritis as well as with gastric and duodenal ulcers, and eradication of this organism effectively eliminated ulcer recurrences. Furthermore, a disturbing epidemiologic relationship between H. pylori infection and gastric malignancies was reported. Such studies have given rise to the hypothesis that H. pylori is a major etiologic factor in peptic ulcer disease and that diagnosis and eradication of the organism are necessary for optimal therapy of the disorder.

To address these issues, the National Institute of Diabetes and Digestive and Kidney Diseases, together with the Office of Medical Applications of Research of the National Institutes of Health, convened a Consensus Development Conference on Helicobacter pylori in Peptic Ulcer Disease. The conference was cosponsored by the National Institute of Allergy and Infectious Diseases. Following a day and a half of presentations by experts in the relevant fields and discussion from the audience, an independent consensus panel composed of specialists and generalists from the medical and other related scientific disciplines, as well as representatives from the public, considered the evidence and formulated a consensus statement in response to the following six previously stated questions:

- What is the causal relationship of H. pylori to upper gastrointestinal disease?
- How does one diagnose and eradicate H. pylori infection?
- Does eradication of H. pylori infection benefit the patient with peptic ulcer disease?
- What is the relationship between H. pylori infection and gastric malignancy?
- Which H. pylori-infected patients should be treated?

- What are the most important questions that must be addressed by future research in H. pylori infections?

Causal Relationship of H. Pylori to Upper Gastrointestinal Disease

A strong association between H. pylori and upper gastrointestinal disease has been reported. The causal relationship between H. pylori and chronic superficial gastritis is well established. The evidence for this statement is as follows:

- Virtually all H. pylori-positive patients demonstrate antral gastritis.
- Eradication of H. pylori infection results in resolution of gastritis.
- The lesion of chronic superficial gastritis has been reproduced following intragastric administration of the isolated organism in some animal models and oral administration in two humans.

A causal relationship between H. pylori and peptic ulcer disease is more difficult to establish from the available data, in part because of the lack of an animal model and because only a small proportion of individuals harboring the organism develop ulceration. However, nearly all patients with duodenal ulcer have H. pylori gastritis. Thus infection with the organism may be a prerequisite for the occurrence of almost all duodenal ulcers in the absence of other precipitating factors such as nonsteroidal anti-inflammatory drug (NSAID) use or Zollinger-Ellison syndrome. The association between H. pylori infection and gastric ulcer is only slightly less strong, in that 80 percent of patients with non-NSAID-induced gastric ulcers are infected. Nevertheless, it is important to note that the majority of H. pylori-infected individuals do not develop duodenal or gastric ulcers. These facts imply that host characteristics, strain variability, or other factors play a role in the pathogenesis of peptic ulcer disease.

The strongest evidence for the pathogenic role of H. pylori in peptic ulcer disease is the marked decrease in the recurrence rate of ulcers following the eradication of infection. The prevention of recurrence following H. pylori eradication is less well documented for gastric ulcer than for duodenal ulcer, but the available data suggest similar efficacy.

In the case of duodenal ulcer, it is curious that in some studies the organism is more often present in the antrum than in the duodenum, where the ulcer is found. Suggested mechanisms by which an antral organism causes a

duodenal lesion include bacterial colonization of gastric metaplasia in the duodenum, secondary changes in gastric acid or duodenal bicarbonate secretion, or changes caused by products of the infecting organism and/or the inflammatory response of the host. Further studies are needed to clarify the mechanisms of bacterial pathogenesis and host responses leading to duodenal ulceration.

To date, there is no convincing evidence for an association of H. pylori infection with nonulcer dyspepsia. The prevalence of H. pylori infection is no higher in patients with nonulcer dyspepsia than in the general population. Although some patients with nonulcer dyspepsia may have symptoms related to the presence of H. pylori, there are no data to demonstrate how to identify such a subset. Studies are needed to determine whether H. pylori-infected patients with nonulcer dyspepsia would benefit from treatment of the infection.

Diagnosis and Eradication of H. Pylori Infection

A fundamental principle of specific antimicrobial therapy is accurate diagnosis. Numerous validated methods to diagnose patients with H. pylori infection are in use. These methods can be divided into invasive and noninvasive diagnostic tests.

The invasive tests include endoscopy followed by gastric biopsy and histologic demonstration of organisms, biopsy with direct detection of urease activity in the tissue specimen, and biopsy with culture of the H. pylori organism. Although culturing the organism is traditionally considered the "gold standard" for diagnosis of many infectious agents, it is the least sensitive diagnostic test (approximately 70-80 percent positivity). Both histologic demonstration of the organism by Giemsa or Warthin-Starry stains and urease testing have sensitivities and specificities greater than 90 percent.

Excellent diagnostic sensitivities and specificities (>95 percent) are also obtained with noninvasive tests for the initial diagnosis of H. pylori infection. These include serology for immunoglobulin G antibodies to H. pylori antigens and breath tests of urease activity using orally administered 14C- or 13C-labeled urea. A number of highly accurate serologic kits for diagnosis of H. pylori infection are available. Labeled urea breath tests have had restricted availability as research tools in the past, but commercial assays will be available in the near future.

It is important to note that, with the exception of the serologic assays, all the tests for diagnosis of H. pylori infection may be falsely negative in patients who have taken antibiotics, bismuth compounds, or omeprazole in the recent past.

Presently, there is no readily available, inexpensive, and accurate noninvasive method to monitor eradication of H. pylori. Without such an assay, routine monitoring for relapse, reinfection, or treatment failure cannot be recommended. Even if such a test were available, testing all patients treated for H. pylori infection would probably not be necessary in view of the high efficacy of treatment and low reinfection rate. Important exceptions would be patients with complicated, recurrent, or refractory peptic ulcers who should be evaluated for successful eradication of infection before cessation of antiulcer therapy. Antibody levels decrease slowly following successful eradication of H. pylori infection. If the same well-standardized assay is used, a dramatic fall in antibody titer 6-12 months following antimicrobial treatment indicates successful eradication. However, variability among serology tests applied in commercial laboratories may limit their usefulness in confirming H. pylori eradication. Although breath testing is the best noninvasive assay for evaluating success of eradication, there are unresolved issues of availability, cost, and ease of use in the practical application of this method. Invasive tests can also be used for documenting cure, but these incur the cost and morbidity associated with endoscopy.

Therapy of H. pylori poses several unique challenges. The organism resides under a mucus gel layer in the highly acidic milieu of the stomach, where rapid removal of ingested antimicrobials may occur. These and other factors may contribute to the variable correlation between in vitro and in vivo antimicrobial activity. A problem in selection of a therapeutic regimen has been the lack of a suitable animal model. For these reasons, much of the available information concerning choice of antimicrobial agents is based on small empirical trials in humans. Multiple agents that have been studied in various combinations include metronidazole, tetracycline, amoxicillin, clarithromycin, bismuth compounds, H2-receptor antagonists, and proton-pump inhibitors. The choice of a particular regimen must be tempered by the rapidly developing data on optimal therapy.

Consideration of the therapeutic options should take into account efficacy, compliance, side effects, and cost. A triple antimicrobial regimen consisting of bismuth subsalicylate, tetracycline, and metronidazole has been studied extensively and can yield eradication rates of approximately 90 percent. Substitution of amoxicillin for tetracycline or metronidazole lowers efficacy

only slightly (>80 percent). One promising study reported efficacy of approximately 90 percent with the combination of ranitidine, metronidazole, and amoxicillin. Although variable, eradication rates of greater than 80 percent have also been reported with the double combination of omeprazole (a proton-pump inhibitor) and amoxicillin. Omeprazole should be given at least twice daily, and the two agents begun at the same time because immediate pretreatment with omeprazole lowers efficacy of the omeprazole-amoxicillin combination. Two- or three-drug regimens should last 2 weeks. If therapy is begun at the time of active peptic disease, treatment with antisecretory agents in addition to antimicrobials is recommended. When multiple drugs are administered at various times in the day, patient compliance may become an important factor affecting efficacy. If symptoms persist or recur after initial treatment, diagnostic reevaluation should be undertaken and a second course of therapy considered. Side effects are more frequent with the three-drug regimen than with the two-drug regimen but have been mild in either case and infrequently have prevented completion of therapy. Serious but rare events such as anaphylaxis, Stevens-Johnson syndrome, and pseudomembranous colitis should be expected as antimicrobial regimens are used more widely. Safety and efficacy of antimicrobial therapy in H. pylori-infected children and adolescents have not been studied in detail.

Resistance to antimicrobials, in particular to nitroimidazoles such as metronidazole, is an important problem and a cause for treatment failure in some studies. Resistance to metronidazole varies worldwide, with the highest rates (40-50 percent) in underdeveloped countries. Application of currently available one-drug regimens has led to enhanced antimicrobial resistance and thus is strongly discouraged. The widespread application of antimicrobial regimens to treat H. pylori infection may magnify the problem of drug resistance. Thus alternative treatment or prevention strategies such as vaccines or immunotherapy may deserve attention in the future.

Benefit of Eradication of H. Pylori Infection

Helicobacter pylori infection is strongly associated with the predominant forms of peptic ulcer disease and appears to play an important contributory role in their pathogenesis; thus, it is reasonable to suggest that eradication of H. pylori infection may benefit patients with peptic ulcer disease. Although further studies are needed to delineate fully the role of H. pylori eradication in many other patient populations, available studies have demonstrated clearly the principal benefit of eradication in patients with peptic ulcers, a

substantial reduction in the risk of ulcer recurrence (to <10 percent in 1 year). The evidence is more complete for patients with duodenal ulcers than for those with gastric ulcers, although the benefits to the two sets of patients appear to be comparable. The side effects of current regimens for eradication of H. pylori infection are generally minor and are outweighed by the benefit of reduced ulcer recurrence. When combined with standard antisecretory therapy, H. pylori eradication may contribute to a modest reduction in time to ulcer healing. Moreover, eradication of H. pylori infection may enhance healing of ulcers refractory to conventional therapy.

A separate question is whether H. pylori eradication prevents future problems in peptic ulcer patients with a history of bleeding or other complications. Although preliminary data indicate such efficacy, more definitive data are needed.

The benefits of eradicating H. pylori infection in patients with peptic ulcer disease may vary depending on a variety of factors including those related to the host, the organism, and the environment. Such factors include patient demographics (age, socioeconomic status, concurrent illness, behavioral factors), frequency of reinfection, mode of transmission, and strain variation.

The potential cost savings associated with treating H. pylori infection have not been established, but may be substantial. Carefully designed economic analyses are needed to assess more completely the cost-effectiveness of H. pylori eradication in peptic ulcer disease patients.

Relationship Between H. Pylori Infection and Gastric Malignancy

Adenocarcinoma of the stomach is one of the most common malignancies in the world, although it is relatively uncommon in the United States (24,000 new cases and 14,000 deaths per year). There is evidence that H. pylori infection is associated with adenocarcinoma of the body and antrum of the stomach. However, gastric cancer occurs in some individuals with no evidence of H. pylori infection, and in the United States, fewer than 1 percent of H. pylori-infected individuals will ever develop gastric cancer. The effect of prevention or treatment of H. pylori infection on gastric cancer risk has not been studied adequately.

Descriptive epidemiologic data indicate that gastric cancer occurs more frequently in some populations that have higher rates of H. pylori infection.

Rates of both H. pylori infection and gastric cancer correlate inversely with socioeconomic status, increase as a function of age, have declined in successive birth cohorts in developed countries, and occur less commonly in whites than in African Americans and Hispanics in the United States. A geographic correlation has been found between H. pylori infection and gastric cancer death rates. However, some clear examples exist of disparity in the epidemiology of the two diseases. Gastric cancer is more common in men than in women, whereas the rates of H. pylori infection are not different between the sexes. Some populations are reported to have a high rate of H. pylori infection but low rates of gastric cancer. These disparities indicate that factors other than H. pylori infection are also important in gastric cancer risk.

Some but not all of the retrospective serologic studies have shown that patients with gastric cancer more frequently have H. pylori infection than do controls. The strongest evidence that H. pylori infection is associated with gastric cancer comes from three prospective cohort serologic studies which indicate that H. pylori-infected individuals have a significantly increased rate of gastric cancer. There is no association in any of these studies between H. pylori infection and cancer in the gastric cardia and gastroesophageal junction, which is increasing in incidence in the United States.

Non-Hodgkin's lymphoma of the stomach is a rare disorder that accounts for only 3 percent of gastric malignancies. Mucosa-associated lymphoid tissue (MALT) lymphomas, which constitute a subset of Non-Hodgkin's lymphoma, are low-grade clonal neoplasms that are thought to arise from lymphoid aggregates in the lamina propria. Preliminary epidemiologic data suggest that H. pylori infection is associated with both non-Hodgkin's lymphoma and MALT lymphomas of the stomach. Further study of the relationship between H. pylori infection and gastric lymphomas is warranted.

In summary, if there is any causal relationship between H. pylori infection and gastric cancer, clearly other factors are also important in gastric carcinogenesis. H. pylori eradication for the purpose of preventing gastric cancer cannot be recommended at this time.

Which H. Pylori-Infected Patients Should Be Treated?

There are ample data to support the antimicrobial eradication of H. pylori infection in patients with peptic ulcer disease. All patients with gastric or duodenal ulcers who are infected with H. pylori should be treated with

antimicrobials regardless of whether they are suffering from the initial presentation of the disease or from a recurrence. H. pylori-infected peptic ulcer patients who are receiving maintenance treatment with antisecretory agents or who have a history of complicated or refractory disease should also be treated for the infection. The presence of NSAID's, including aspirin, as a contributing factor should not alter the antimicrobial regimen, but whenever possible, these drugs should be discontinued. However, in asymptomatic H. pylori-infected patients without ulcers, the data are not sufficient to support prophylactic antimicrobial therapy to prevent ulcer disease in the future or to reduce the likelihood of developing gastric neoplasia. Also, no convincing data exist to support routine treatment of patients with nonulcer dyspepsia who are infected with H. pylori. Thus, at the present time there is no reason to to consider routine detection or treatment of H. pylori infection in the absence of ulcers. Carefully controlled prospective studies are needed to assess the benefits of treating nonulcer dyspepsia patients with H. pylori infection. It is self-evident that no patient should be treated for H. pylori unless one of the sensitive and specific tests previously discussed demonstrates infection.

Bleeding is the complication of peptic ulcer disease associated with the highest mortality rate and, therefore, demands aggressive therapy. The available data suggest that after these ulcers heal, the likelihood of recurrence with bleeding is significantly reduced by maintenance antisecretory therapy. Preliminary studies indicate that eradication of H. pylori infection may be equally efficient in preventing the recurrence of ulcer bleeding. Until these studies can be confirmed, maintenance antisecretory therapy may be prudent in such patients even after H. pylori eradication in view of the high risks associated with rebleeding.

Guidelines for the routine antimicrobial treatment of H. pylori infection

Patient status	H. Pylori negative	H. pylori positive
Asymptomatic (no ulcer)	No	No
Nonulcer dyspepsia	No	No
Gastric ulcer	No	Yes
Duodenal ulcer	No	Yes

Directions of Future Research

Although much is known about the role of H. pylori in gastrointestinal disease, many issues are still unresolved.

Further well-designed studies on the role of H. pylori eradication in the management of peptic ulcer disease are needed, particularly in populations not well studied to date, including children, patients with gastric ulcers, and patients with duodenal or gastric ulcers with complications. These studies should utilize standard definitions, be randomized, be analyzed on an intention-to-treat basis, have sample size adequate to detect clinically meaningful differences between treatment arms, and be double-blind whenever possible.

Fundamental questions remain concerning the initial evaluation of a patient who presents with dyspepsia. Should that patient be tested for H. pylori infection? Should that patient be treated empirically for H. pylori infection if it is present? The answers to these questions depend in part on whether antimicrobial therapy relieves symptoms in some or all symptomatic patients with H. pylori infection and gastritis but without ulcers. If the answer is yes, patients presenting to the physician with dyspepsia should be tested for H. pylori infection and, if the results are positive, be treated with antimicrobial therapy. However, if symptomatic H. pylori-infected patients without ulcers do not respond to antimicrobial therapy, it will continue to be imperative to confirm the diagnosis of peptic ulcer disease in order to identify the patients who will benefit from treatment of their infection. Under these circumstances, the question arises as to whether it is necessary, appropriate, and cost-effective to perform endoscopy in dyspeptic patients at initial presentation.

Another major question that remains to be answered is whether eradication of H. pylori infection prevents gastric cancer. Such a question cannot be answered directly without a long and costly study. Thus, an alternative approach might be to conduct studies looking at intermediate endpoints that are thought to predict the evolution of malignancy and their response to H. pylori eradication. Epidemiologic studies are also needed to define more precisely the subset of H. pylori-infected individuals who will develop gastric cancer.

A major opportunity for additional studies is in the area of mechanisms by which H. pylori infection leads to gastrointestinal disease. Virulence factors, bacterial genetics, mechanisms of immunity, animal models, antibiotic resistance, and modes of transmission are all issues that should be examined

in future studies. Furthermore, the natural history of H. pylori infections and the nature of the host-organism interaction require further study. The pathogenic consequences of H. pylori infection in childhood and adolescence and the optimal management of infection are additional important questions. More information is needed on the value of testing to confirm eradication after antimicrobial therapy, and antimicrobial regimens need to be optimized to improve treatment efficacy. A comprehensive economic analysis should be conducted to examine the cost-effectiveness of treating H. pylori infection.

Conclusion

The discovery of H. pylori as a gastrointestinal pathogen has had a profound effect on current concepts of peptic ulcer disease pathogenesis. Evidence presented at this Consensus Development Conference has led to the following conclusions:

- Ulcer patients with H. pylori infection require treatment with antimicrobial agents in addition to antisecretory drugs whether on first presentation with the illness or on recurrence.
- The value of treatment of nonulcer dyspepsia patients with H. pylori infection remains to be determined.
- The interesting relationship between H. pylori infection and gastric cancers requires further exploration.

Vocabulary Builder

Adolescence: The period of life beginning with the appearance of secondary sex characteristics and terminating with the cessation of somatic growth. The years usually referred to as adolescence lie between 13 and 18 years of age. [NIH]

Aluminum: A metallic element that has the atomic number 13, atomic symbol Al, and atomic weight 26.98. [NIH]

Anaphylaxis: An acute hypersensitivity reaction due to exposure to a previously encountered antigen. The reaction may include rapidly progressing urticaria, respiratory distress, vascular collapse, systemic shock, and death. [NIH]

Immunity: The condition of being immune; the protection against infectious

disease conferred either by the immune response generated by immunization or previous infection or by other nonimmunologic factors (innate i.). [EU]

Immunotherapy: Manipulation of the host's immune system in treatment of disease. It includes both active and passive immunization as well as immunosuppressive therapy to prevent graft rejection. [NIH]

Reinfection: A second infection by the same pathogenic agent, or a second infection of an organ such as the kidney by a different pathogenic agent. [EU]

APPENDIX F. NIH CONSENSUS STATEMENT ON THERAPEUTIC ENDOSCOPY AND BLEEDING ULCERS

Overview

NIH Consensus Development Conferences are convened to evaluate available scientific information and resolve safety and efficacy issues related to biomedical technology. The resultant NIH Consensus Statements are intended to advance understanding of the technology or issue in question and to be useful to health professionals and the public.[55] Each NIH consensus statement is the product of an independent, non-Federal panel of experts and is based on the panel's assessment of medical knowledge available at the time the statement was written. Therefore, a consensus statement provides a "snapshot in time" of the state of knowledge of the conference topic.

The NIH makes the following caveat: "When reading or downloading NIH consensus statements, keep in mind that new knowledge is inevitably accumulating through medical research. Nevertheless, each NIH consensus statement is retained on this website in its original form as a record of the NIH Consensus Development Program."[56] The following concensus statement was posted on the NIH site and not indicated as "out of date" in March 2002. It was originally published, however, in March, 1989.[57]

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[55] This paragraph is adapted from the NIH: **http://odp.od.nih.gov/consensus/cons/cons.htm**.

[56] Adapted from the NIH: **http://odp.od.nih.gov/consensus/cons/consdate.htm**.

[57] Therapeutic Endoscopy and Bleeding Ulcers. NIH Consens Statement Online 1989 Mar 6-8 [cited 2002 February 19];7(6):1-22. **http://consensus.nih.gov/cons/072/072_statement.htm**.

What Is Therapeutic Endoscopy and Bleeding Ulcers

Peptic ulcer disease is a major health problem in the United States that affects more than 4 million people each year. Bleeding is one of the most dread complications of peptic ulcer. Upper gastrointestinal (UGI) bleeding is a common cause of emergency hospitalization in the United States. It has been estimated that more than 100,000 patients with peptic ulcer disease bleed each year. Morbidity and mortality from ulcer bleeding remain significant despite major improvements in the accurate diagnosis of peptic ulcer disease and the use of H2 receptor antagonist drugs and other pharmacological agents. The mortality rate from bleeding ulcers has averaged between 6 and 10 percent over the past 30 years despite advances in diagnosis and treatment.

During the past decade there has been a remarkable transition of the application of the endoscope from solely a diagnostic tool to a therapeutic modality. With the advent of this therapeutic role there has been much enthusiasm in utilizing endoscopic techniques in managing high-risk patients. A variety of approaches for endoscopic management of bleeding have evolved, and there has been continuing improvement over the past decade, resulting in considerable interest in evaluating the various treatment options for managing patients with bleeding ulcers. Unfortunately, there have been limited and conflicting clinical studies on the efficacy and safety of the various hemostatic modalities available for treating these ulcers. In an effort to define the role of these methods, the National Institute of Diabetes and Digestive and Kidney Diseases and the Office of Medical Applications of Research of the National Institutes of Health sponsored a Consensus Development Conference on Therapeutic Endoscopy and Bleeding Ulcers. The conference brought together research clinicians and other health professionals and representatives of the public on March 6-8, 1989. Following 2 days of presentations and discussion by the invited experts and the audience, members of a consensus panel drawn from the health care and medical communities weighed the scientific evidence in formulating a statement in response to several questions:

- Which bleeding ulcer patients are at risk for rebleeding and thus emergency surgery?
- How effective is endoscopic hemostatic therapy?
- How safe is endoscopic hemostatic therapy?
- Which bleeding patients should be treated?
- What further research is required?

It is important that certain limitations be considered when applying the findings of this conference to a particular bleeding patient. The conference was charged to address specifically the question of therapeutic endoscopy for the treatment of bleeding peptic ulcer. Other causes of UGI bleeding, including gastric and esophageal varices, diffuse erosive gastritis, and Mallory-Weiss tears were necessarily excluded from consideration. It should be noted that the conclusions reached should not be extrapolated to those diseases excluded from consideration. Moreover, a striking finding from the review of available clinical trials of therapeutic endoscopy was the selective inclusion of only a small proportion (10 to 25 percent) of the total population of patients who presented with UGI bleeding. In addition to patients with the above diagnoses, many other patients were also excluded, quite appropriately, due to hemorrhage too massive or too little to justify prudent therapeutic endoscopy.

In this conference, the need for emergency surgery was taken as one indicator of inadequately controlled bleeding. Although many patients treated with surgery do well, they are subjected to additional discomfort and cost and to approximately a 10-percent risk of mortality when the surgery must be performed under such emergency conditions. On the other hand, when temporary hemostasis achieved by endoscopic therapy allows resuscitation and hemodynamic control of an unstable patient, considerable benefit may be realized even if surgery must be performed ultimately. For a variety of reasons, a surgeon should be involved from the outset in the team caring for the patient with bleeding peptic ulcer.

Risk of Rebleeding and Emergency Surgery

Magnitude of Bleeding

There is consensus that a major predictor of significant persistent or recurrent bleeding is the magnitude of blood loss before initial evaluation. Clear indications of a large and clinically significant volume of blood loss are hemodynamic instability, hematemesis of grossly red material, or red stool. The hazard of hemodynamic instability underlies the importance of careful hemodynamic evaluation in order to detect significant hypovolemia before the appearance of overt shock. Another commonly used indicator of the magnitude of hemorrhage is estimation of the volume of blood lost, often quantitated as the number of units transfused or as a transfusion rate. Although there is general agreement that the volume of blood loss is important, there is substantial uncertainty about the best way to estimate it. Persistent red blood in the nasogastric aspirate correlates with an increased

requirement for subsequent transfusion. Although failure of the nasogastric aspirate to clear with irrigation often is taken as an indication of rapid bleeding, this criterion may be misleading

Host Factors

Patient-related factors also predict persistent or recurrent bleeding. The panel finds that documented coagulopathy and the onset of bleeding in a patient already hospitalized for a related or unrelated condition are predictive of recurrent bleeding. Two other factors, age and the existence of concurrent illnesses, while clearly related to mortality, bear a less clear relationship to prognosis for continued bleeding or rebleeding.

Endoscopic Features

The first and most important endoscopic predictor of persistent or recurrent bleeding is active bleeding at the time of endoscopy, as evidenced by arterial spurting or oozing. Also of importance is the presence of a discrete protuberance within the ulcer crater, often referred to by endoscopists as a "visible vessel" or "sentinel clot." There is consensus that some pigmented protuberances (red, blue, or purple) imply a high risk of rebleeding, even when not associated with bleeding at the time of endoscopy. There is less agreement on the prognostic significance of a white or black protuberance. A white protuberance may be indicative of an older, more organized process. Although any such lesions often are referred to as "visible vessels," pathologic studies indicate that only some are true vessels. Most frequently, they represent a hemostatic plug (clot) in the underlying vessel or a false aneurysm. The prognostic implications of these distinctions remain unclear. An additional endoscopic predictor of recurrent bleeding is the presence of a clot that adheres to the ulcer base despite gentle washing (adherent clot).

Whereas the anatomic location of the ulcer crater often is cited as a prognostic factor, the panel members do not agree that site is clearly predictive. Nevertheless, many endoscopists feel that deep ulcers located high on the lesser curvature of the stomach or in the posterior-inferior wall of the duodenal bulb are at greater risk for severe bleeding due to their proximity to large vessels.

Features that clearly appear to be associated with a low frequency of recurrent bleeding include a clean ulcer base or one that contains a flat pigmented spot indicative of old hemorrhage.

Value of Combined Clinical and Endoscopic Predictors

Whereas the above clinical and endoscopic features are predictive when considered singly, they may become particularly useful as prognostic indicators when considered together.

How Effective Is Endoscopic Hemostatic Therapy?

The following consensus statements on the effectiveness of the various endoscopic hemostatic therapies are based on the limited number of studies performed. Results were reported only for the acute hospital stay; only sparse followup data are available. The level of efficacy of individual treatment modalities varies from study to study. Some factors that may account for this variability are small sample sizes, variation in patient characteristics such as age, entry criteria, differing definitions of such terms as "visible vessel" or "rebleed," and timing of endoscopy. Nonetheless, certain conclusions can be drawn from these studies.

Promising Techniques

Multipolar Electrocoagulation (MPEC).

MPEC (also known as bipolar) appears to be an effective modality for achieving immediate hemostasis and preventing rebleeding in actively bleeding patients and patients with "visible vessels." The data are less clear that MPEC decreases the need for emergency surgical intervention or decreases mortality.

Further advantages of this modality are that it does not require an en face approach to the bleeding point, the endoscopist can control the depth of tissue injury, and the equipment is portable and easy to use.

Recommendations are evolving concerning technique in terms of probe size, power setting, pressure applied, and duration and number of pulses delivered.

Heater Probe

In comparison with "conventional" medical therapy, the heater probe appears to achieve immediate hemostasis and to reduce rebleeding and the need for emergency surgery. The advantages of heater probe therapy are the same as for MPEC.

Early data for MPEC and heater probe suggest no delay in ulcer healing in treated patients.

Other Techniques

Neodymium-Yttrium-Aluminum-Garnet (ND-YAG) Laser

Nd-YAG laser appears to be effective for achieving immediate hemostasis and preventing rebleeding. Studies have also shown a trend toward reducing need for emergency surgery and lowering mortality. Difficulties in using this instrument include gaining access to the bleeding lesion for an en face approach and training endoscopists in its use. Laser therapy is difficult to master and apply. Furthermore, the Nd-YAG laser is costly to use in relation to other modalities. Although portability has been an obstacle to its use, new portable instrumentation is now available.

Injection Therapy

Some agents (e.g., sodium chloride, epinephrine, and ethanol) appear promising for early control of bleeding. Currently there are insufficient data to make specific recommendations concerning the proper role of this approach. However, injection therapies warrant further study because of their technical ease of use, low cost, and promise.

Techniques Not Recommended

Topical

There is no current evidence for efficacy of the following agents: cyanoacrylate glue, clotting factors, ferromagnetic tamponade, epinephrine lavage, and microcrystalline collagen hemostat.

Argon Laser

This technique appears to be effective for immediate hemostasis, but available data do not demonstrate significant reduction in rebleeding, mortality, or need for emergency surgery. This technique has been superseded by other, more effective treatment modalities.

Monopolar/Electrohydrothermal Coagulation.

This modality appears to be effective for immediate hemostasis. However, monopolar therapy has been replaced by other techniques because of difficulty in its use due to the necessity to meet the bleeding point en face, to control the depth of injury, and the need for multiple cleanings of the probe.

How Safe Is Endoscopic Hemostatic Therapy?

Safety may be compromised by:

- Patient characteristics: Hemodynamic instability and associated illnesses.
- Ulcer characteristics: Depth and location, especially posterior-inferior duodenal bulb and high lesser curvature of the stomach because of the proximity to large arteries.
- Method of therapy: Excessive depth of penetration of energy or injectant.

The consensus of the panel is that therapeutic endoscopy should be performed only by an endoscopist experienced and qualified in the specific therapeutic techniques. Appropriate professional organizations should develop guidelines for training and for quality assurance.

The goal of endoscopic hemostatic treatment is to stop active bleeding and prevent rebleeding while controlling depth of tissue injury and avoiding excessive necrosis, increased bleeding, and perforation. The only indication to remove an adherent clot other than by low-pressure irrigation is in the actively bleeding patient or the patient who has rebled. After clot removal, the endoscopist must be prepared to apply therapy.
The risk of precipitating bleeding with therapy is variable but has been as high as 20 percent. While this bleeding can usually be controlled by the same endoscopic hemostatic therapy, occasionally uncontrollable bleeding will require emergency surgical intervention. The risk of perforation has been approximately 1 percent and may require laparotomy should it occur.

In the patient population at high risk of rebleeding, the rate of complications of endoscopic hemostatic therapy appears to be acceptably low considering the natural history of the disease.

As the technology in this field advances, controlled observations of potential complications are needed to ensure that safety remains within acceptable limits.

Which Bleeding Ulcer Patients Should Be Treated?

Acute peptic ulcer bleeding will stop spontaneously in approximately 70 to 80 percent of patients. Therefore, there is consensus that a need exists for selectivity in applying endoscopic hemostatic therapy to bleeding ulcers. Such therapy should be directed at selected high-risk patients.

A clinical feature of high risk for rebleeding or death is rapid bleeding with substantial blood loss manifested by hemodynamic instability, ongoing transfusion requirement, red hematemesis, or red stool. Other patient characteristics that predict a poor outcome from ulcer bleeding include age greater than 60 years and major associated diseases. Patients whose onset of bleeding occurs in the hospital or who rebleed during hospitalization are also at high risk.

Patients with high-risk clinical features are candidates for therapeutic/hemostatic endoscopy. The observations at endoscopy should then determine whether endoscopic hemostatic therapy should be carried out. There is consensus that the findings of pulsatile bleeding (“spurting”) or oozing from the ulcer are indications for treatment. In addition, the finding of a pigmented protuberance (“visible vessel” or “sentinel clot”) in the ulcer crater is an indication for endoscopic hemostatic therapy.

There is agreement that patients with ulcer craters that are clean with or without flat pigmented spots do not require endoscopic hemostatic treatment.

In the absence of the clinical risk factors described above, adherent clots (resisting gentle washing) without evident active bleeding should not be removed because of the possible risk of precipitating bleeding. In a deteriorating clinical situation, adherent clots may be removed as long as there is satisfactory endoscopic access and capability for treatment. Surgical backup should be readily available to deal with the possibility of

precipitating active bleeding that cannot be controlled endoscopically, and thus the need for early surgical consultation.

Patients exsanguinating with torrential bleeding from peptic ulcer represent a special case. The panel agrees that endoscopic localization and treatment should be attempted in concert with the surgeon and without undue delay.

It should be recognized that deep ulcers near the left gastric artery high on the lesser curvature of the stomach and those near the gastroduodenal artery in the posterior-inferior duodenal bulb may be at high risk for major bleeding. This emphasizes that surgical support must be available before endoscopic treatment of ulcers in these anatomic locations is undertaken.

It is important to resuscitate patients and correct coagulopathy as completely as possible before endoscopic hemostatic therapy. Uncontrollable coagulopathy appears to be a contraindication to endoscopic hemostatic therapy in the patient who is not actively bleeding. However, in the patient who is actively bleeding, endoscopic hemostatic therapy may be attempted despite uncorrectable coagulopathy with the awareness that control of hemorrhage may be temporary.

Endoscopic treatment of patients with bleeding peptic ulcers should be carried out only by individuals qualified in therapeutic endoscopy.

What Further Research Is Required?

Despite the considerable technical advances that have been made in the past decade in endoscopic hemostatic therapy, firm conclusions regarding clinical applications are limited by a paucity of controlled trials. There is consensus that a number of important issues remain to be resolved and that high priority should be given to continuing scientific evaluation of techniques. There is a strong need to use rigorous scientific methods to resolve the following issues:

- Standardize use of terminology, particularly descriptive terms such as "visible vessel" (e.g., white, blue, red, black or bare), adherent clot, persistent and recurrent bleeding.
- Quantitate rebleeding risk associated with endoscopic features such as "visible vessel," adherent clot, size, depth and location of ulcer, and timing of endoscopy.

- Quantitate rebleeding risk associated with different host factors such as aging, nonsteroidal anti-inflammatory drug use (including aspirin), and associated diseases.
- Develop a composite system using clinical and endoscopic features to predict risk of persistent or recurrent bleeding.
- Define optimal treatment regimens for individual and combined treatment modalities to maximize therapeutic effectiveness.
- Explore improved diagnostic and therapeutic technology through collaboration with bioengineers.

Clinical effectiveness and safety of endoscopic hemostatic therapies would be best assessed by multicenter, randomized controlled trials. Ulcer patients at high risk but without active bleeding at endoscopy should be entered into studies comparing endoscopic therapies with medical therapies. There is a lack of consensus regarding the need for a medical therapy control group of patients with active bleeding at endoscopy.

Conclusions and Recommendations

- In the United States, more than 100,000 patients a year bleed from peptic ulcers.
- Despite advances in diagnosis and treatment, the mortality rate from bleeding ulcers has remained largely unchanged, averaging between 6 and 10 percent over the past 30 years.
- Bleeding from peptic ulcers will stop spontaneously in 70 to 80 percent of patients.
- A surgeon should be involved from the outset in the team caring for the patient with a bleeding peptic ulcer.
- Patients at high risk for persistent or recurrent bleeding are those with a large initial blood loss and active bleeding or a pigmented protuberance ("visible vessel") at endoscopy.
- Patients at low risk for subsequent bleeding are those with a clean ulcer base or one that contains a flat pigmented spot at endoscopy.
- Heater probe and multipolar electrocoagulation (also known as bipolar) are the most promising modalities for endoscopic hemostatic therapy.
- In the hands of the qualified therapeutic endoscopist, the rate of complications of endoscopic hemostatic therapy is acceptably low considering the natural history of bleeding peptic ulcers.

- Endoscopic hemostatic therapy should be used only in patients who are at high risk for persistent or recurrent bleeding and death.
- Clinical efficacy and safety of endoscopic hemostatic therapy should be assessed by multicenter, randomized controlled trials.

Vocabulary Builder

Aneurysm: A sac formed by the dilatation of the wall of an artery, a vein, or the heart. The chief signs of arterial aneurysm are the formation of a pulsating tumour, and often a bruit (aneurysmal bruit) heard over the swelling. Sometimes there are symptoms from pressure on contiguous parts. [EU]

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

Collagen: The protein substance of the white fibres (collagenous fibres) of skin, tendon, bone, cartilage, and all other connective tissue; composed of molecules of tropocollagen (q.v.), it is converted into gelatin by boiling. collagenous pertaining to collagen; forming or producing collagen. [EU]

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

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

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

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

Irrigation: Washing by a stream of water or other fluid. [EU]

Localization: 1. the determination of the site or place of any process or lesion. 2. restriction to a circumscribed or limited area. 3. prelocalization. [EU]

Neodymium: Neodymium. An element of the rare earth family of metals. It has the atomic symbol Nd, atomic number 60, and atomic weight 144.24, and is used in industrial applications. [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]

Schilling Test: A diagnostic test in which vitamin B12 is tagged with radioactive cobalt, taken orally, and gastrointestinal absorption is

determined via measurement of the amount of radioactivity in a 24-hour urine collection. [NIH]

Transfusion: The introduction of whole blood or blood component directly into the blood stream. [EU]

ONLINE GLOSSARIES

The Internet provides access to a number of free-to-use medical dictionaries and glossaries. The National Library of Medicine has compiled the following list of online dictionaries:

- ADAM Medical Encyclopedia (A.D.A.M., Inc.), comprehensive medical reference: **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**
- MedicineNet.com Medical Dictionary (MedicineNet, Inc.): **http://www.medterms.com/Script/Main/hp.asp**
- Merriam-Webster Medical Dictionary (Inteli-Health, Inc.): **http://www.intelihealth.com/IH/**
- Multilingual Glossary of Technical and Popular Medical Terms in Eight European Languages (European Commission) - Danish, Dutch, English, French, German, Italian, Portuguese, and Spanish: **http://allserv.rug.ac.be/~rvdstich/eugloss/welcome.html**
- On-line Medical Dictionary (CancerWEB): **http://www.graylab.ac.uk/omd/**
- Technology Glossary (National Library of Medicine) - Health Care Technology: **http://www.nlm.nih.gov/nichsr/ta101/ta10108.htm**
- Terms and Definitions (Office of Rare Diseases): **http://rarediseases.info.nih.gov/ord/glossary_a-e.html**

Beyond these, MEDLINEplus contains a very user-friendly encyclopedia covering every aspect of medicine (licensed from A.D.A.M., Inc.). The ADAM Medical Encyclopedia Web site address is **http://www.nlm.nih.gov/medlineplus/encyclopedia.html**. ADAM is also available on commercial Web sites such as drkoop.com (**http://www.drkoop.com/**) and Web MD (**http://my.webmd.com/adam/asset/adam_disease_articles/a_to_z/a)**. Topics of interest can be researched by using keywords before continuing elsewhere, as these basic definitions and concepts will be useful in more advanced areas of research. You may choose to print various pages specifically relating to peptic ulcer and keep them on file. The NIH, in particular, suggests that patients with peptic ulcer visit the following Web sites in the ADAM Medical Encyclopedia:

- **Basic Guidelines for Peptic Ulcer**

  Duodenal ulcer
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/000206.htm

  Gastric ulcer - benign
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/000213.htm

  Helicobacter pylori gastritis (chronic gastritis)
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/000229.htm

- **Signs & Symptoms for Peptic Ulcer**

  Abdominal indigestion
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003260.htm

  Abdominal pain
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003120.htm

  Belching
  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

  Fatigue
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003088.htm

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

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

Stools, bloody
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003130.htm

Tarry stools
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003130.htm

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

Vomiting blood
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003118.htm

Weight loss
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003107.htm

- **Diagnostics and Tests for Peptic Ulcer**

Amylase, urine
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003607.htm

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

CEA
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003574.htm

EGD (esophagogastroduodenoscopy)
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003888.htm

Erosion
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003225.htm

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

Gastric acid
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003883.htm

Haptoglobin
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003634.htm

Schilling test
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003572.htm

Stool guaiac
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003393.htm

Ulcer
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003225.htm

Ulcers
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003228.htm

Upper GI series
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003816.htm

- **Nutrition for Peptic Ulcer**

Caffeine
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002445.htm

Coffee
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002445.htm

- **Background Topics for Peptic Ulcer**

Cigarette smoking
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002032.htm

Duodenum
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002347.htm

Enzyme
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002353.htm

Gastrectomy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002945.htm

Helicobacter pylori
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/000229.htm

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

Relieved by
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002288.htm

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

Online Dictionary Directories

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

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

PEPTIC ULCER GLOSSARY

The following is a complete glossary of terms used in this sourcebook. The definitions are derived from official public sources including the National Institutes of Health [NIH] and the European Union [EU]. After this glossary, we list a number of additional hardbound and electronic glossaries and dictionaries that you may wish to consult.

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

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

ACTH: Adrenocorticotropic hormone. [EU]

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

Adolescence: The period of life beginning with the appearance of secondary sex characteristics and terminating with the cessation of somatic growth. The years usually referred to as adolescence lie between 13 and 18 years of age. [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]

Alkaloid: One of a large group of nitrogenous basis substances found in plants. They are usually very bitter and many are pharmacologically active. Examples are atropine, caffeine, coniine, morphine, nicotine, quinine, strychnine. The term is also applied to synthetic substances (artificial a's) which have structures similar to plant alkaloids, such as procaine. [EU]

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

Aluminum: A metallic element that has the atomic number 13, atomic symbol Al, and atomic weight 26.98. [NIH]

Aminophylline: A drug combination that contains THEOPHYLLINE and ethylenediamine. It is more soluble in water than theophylline but has similar pharmacologic actions. It's most common use is in bronchial asthma, but it has been investigated for several other applications. [NIH]

Ammonia: Ammonia. A colorless alkaline gas. It is formed in the body

during decomposition of organic materials during a large number of metabolically important reactions. [NIH]

Amoxicillin: A broad-spectrum semisynthetic antibiotic similar to ampicillin except that its resistance to gastric acid permits higher serum levels with oral administration. [NIH]

Anaphylaxis: An acute hypersensitivity reaction due to exposure to a previously encountered antigen. The reaction may include rapidly progressing urticaria, respiratory distress, vascular collapse, systemic shock, and death. [NIH]

Aneurysm: A sac formed by the dilatation of the wall of an artery, a vein, or the heart. The chief signs of arterial aneurysm are the formation of a pulsating tumour, and often a bruit (aneurysmal bruit) heard over the swelling. Sometimes there are symptoms from pressure on contiguous parts. [EU]

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

Antibacterial: A substance that destroys bacteria or suppresses their growth or reproduction. [EU]

Antibiotic: A chemical substance produced by a microorganism which has the capacity, in dilute solutions, to inhibit the growth of or to kill other microorganisms. Antibiotics that are sufficiently nontoxic to the host are used as chemotherapeutic agents in the treatment of infectious diseases of man, animals and plants. [EU]

Antibodies: Proteins that the body makes to protect itself from foreign substances. In diabetes, the body sometimes makes antibodies to work against pork or beef insulins because they are not exactly the same as human insulin or because they have impurities. The antibodies can keep the insulin from working well and may even cause the person with diabetes to have an allergic or bad reaction to the beef or pork insulins. [NIH]

Antibody: An immunoglobulin molecule that has a specific amino acid sequence by virtue of which it interacts only with the antigen that induced its synthesis in cells of the lymphoid series (especially plasma cells), or with antigen closely related to it. Antibodies are classified according to their ode of action as agglutinins, bacteriolysins, haemolysins, opsonins, precipitins, etc. [EU]

Anticoagulants: Agents that prevent blood clotting. Naturally occurring agents in the blood are included only when they are used as drugs. [NIH]

Antigens: Substances that cause an immune response in the body. The body "sees" the antigens as harmful or foreign. To fight them, the body produces antibodies, which attack and try to eliminate the antigens. [NIH]

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

Antioxidant: One of many widely used synthetic or natural substances added to a product to prevent or delay its deterioration by action of oxygen in the air. Rubber, paints, vegetable oils, and prepared foods commonly contain antioxidants. [EU]

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

Aqueous: Watery; prepared with water. [EU]

Aromatic: Having a spicy odour. [EU]

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

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

Artery: A large blood vessel that carries blood from the heart to other parts of the body. Arteries are thicker and have walls that are stronger and more elastic than the walls of veins. [NIH]

Ascariasis: Infection by nematodes of the genus ASCARIS. Ingestion of infective eggs causes diarrhea and pneumonitis. Its distribution is more prevalent in areas of poor sanitation and where human feces are used for fertilizer. [NIH]

Ascites: Effusion and accumulation of serous fluid in the abdominal cavity; called also abdominal or peritoneal dropsy, hydroperitonia, and hydrops abdominis. [EU]

Asymptomatic: No symptoms; no clear sign of disease present. [NIH]

Atrophy: A wasting away; a diminution in the size of a cell, tissue, organ, or part. [EU]

Atropine: A toxic alkaloid, originally from Atropa belladonna, but found in other plants, mainly Solanaceae. [NIH]

Bacteriostatic: 1. inhibiting the growth or multiplication of bacteria. 2. an agent that inhibits the growth or multiplication of bacteria. [EU]

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]

Benign: Not malignant; not recurrent; favourable for recovery. [EU]

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]

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

Biopsy: The removal and examination, usually microscopic, of tissue from the living body, performed to establish precise diagnosis. [EU]

Bismuth: A metallic element that has the atomic symbol Bi, atomic number 83 and atomic weight 208.98. [NIH]

Butterflies: Slender-bodies diurnal insects having large, broad wings often strikingly colored and patterned. [NIH]

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

Captopril: A potent and specific inhibitor of peptidyl-dipeptidase A. It blocks the conversion of angiotensin I to angiotensin II, a vasoconstrictor and important regulator of arterial blood pressure. Captopril acts to suppress the renin-angiotensin system and inhibits pressure responses to exogenous angiotensin. [NIH]

Carbachol: A slowly hydrolyzed cholinergic agonist that acts at both muscarinic and nicotinic receptors. [NIH]

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

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

Cardiac: Pertaining to the heart. [EU]

Cardiovascular: Pertaining to the heart and blood vessels. [EU]

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

Caustic: An escharotic or corrosive agent. Called also cauterant. [EU]

Chemotherapy: The treatment of disease by means of chemicals that have a specific toxic effect upon the disease - producing microorganisms or that selectively destroy cancerous tissue. [EU]

Chloroform: A commonly used laboratory solvent. It was previously used as an anesthetic, but was banned from use in the U.S. due to its suspected carcinogenecity. [NIH]

Cholangitis: Inflammation of a bile duct. [EU]

Cholecystectomy: Surgical removal of the gallbladder. [NIH]

Cholecystitis: Inflammation of the gallbladder. [EU]

Cholelithiasis: The presence or formation of gallstones. [EU]

Cholestasis: Impairment of biliary flow at any level from the hepatocyte to

Vater's ampulla. [NIH]

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

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

Cimetidine: A histamine congener, it competitively inhibits histamine binding to H2 receptors. Cimetidine has a range of pharmacological actions. It inhibits gastric acid secretion, as well as pepsin and gastrin output. It also blocks the activity of cytochrome P-450. [NIH]

Cirrhosis: Liver disease characterized pathologically by loss of the normal microscopic lobular architecture, with fibrosis and nodular regeneration. The term is sometimes used to refer to chronic interstitial inflammation of any organ. [EU]

Clarithromycin: A semisynthetic macrolide antibiotic derived from erythromycin that is active against a variety of microorganisms. It can inhibit protein synthesis in bacteria by reversibly binding to the 50S ribosomal subunits. This inhibits the translocation of aminoacyl transfer-RNA and prevents peptide chain elongation. [NIH]

Clostridium: A genus of motile or nonmotile gram-positive bacteria of the family bacillaceae. Many species have been identified with some being pathogenic. They occur in water, soil, and in the intestinal tract of humans and lower animals. [NIH]

Codeine: An opioid analgesic related to morphine but with less potent analgesic properties and mild sedative effects. It also acts centrally to suppress cough. [NIH]

Colitis: Inflammation of the colon. [EU]

Collagen: The protein substance of the white fibres (collagenous fibres) of skin, tendon, bone, cartilage, and all other connective tissue; composed of molecules of tropocollagen (q.v.), it is converted into gelatin by boiling. collagenous pertaining to collagen; forming or producing collagen. [EU]

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

Colorectal: Pertaining to or affecting the colon and rectum. [EU]

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

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

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

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

Cysteamine: A radiation-protective agent that oxidizes in air to form

cystamine. It can be given intravenously or orally to treat radiation sickness. The bitartrate has been used for the oral treatment of nephropathic cystinosis. [NIH]

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

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

Cytotoxins: Substances elaborated by microorganisms, plants or animals that are specifically toxic to individual cells; they may be involved in immunity or may be contained in venoms. [NIH]

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

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

Dietetics: The study and regulation of the diet. [NIH]

Diflunisal: A salicylate derivative and anti-inflammatory analgesic with actions and side effects similar to those of aspirin. [NIH]

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

Dimenhydrinate: A drug combination that contains diphenhydramine and theophylline. It is used for treating vertigo, motion sickness, and nausea associated with pregnancy. It is not effective in the treatment of nausea associated with cancer chemotherapy. [NIH]

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]

Diverticulitis: Inflammation of a diverticulum, especially inflammation related to colonic diverticula, which may undergo perforation with abscess formation. Sometimes called left-sided or L-sides appendicitis. [EU]

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

Duodenum: The first or proximal portion of the small intestine, extending from the pylorus to the jejunum; so called because it is about 12

fingerbreadths in length. [EU]

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

Dyspepsia: Impairment of the power of function of digestion; usually applied to epigastric discomfort following meals. [EU]

Dysphagia: Difficulty in swallowing. [EU]

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

Embryology: The study of the development of an organism during the embryonic and fetal stages of life. [NIH]

Encephalopathy: Any degenerative disease of the brain. [EU]

Endocrinology: A subspecialty of internal medicine concerned with the metabolism, physiology, and disorders of the endocrine system. [NIH]

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

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

Enteritis: Inflammation of the intestine, applied chiefly to inflammation of the small intestine; see also enterocolitis. [EU]

Enzyme: A protein molecule that catalyses chemical reactions of other substances without itself being destroyed or altered upon completion of the reactions. Enzymes are classified according to the recommendations of the Nomenclature Committee of the International Union of Biochemistry. Each enzyme is assigned a recommended name and an Enzyme Commission (EC) number. They are divided into six main groups; oxidoreductases, transferases, hydrolases, lyases, isomerases, and ligases. [EU]

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

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

Epigastric: Pertaining to the epigastrium. [EU]

Epithelium: The covering of internal and external surfaces of the body, including the lining of vessels and other small cavities. It consists of cells joined by small amounts of cementing substances. Epithelium is classified into types on the basis of the number of layers deep and the shape of the superficial cells. [EU]

Ergotamine: A vasoconstrictor found in ergot of Central Europe. It is an alpha-1 selective adrenergic agonist and is commonly used in the treatment of migraine headaches. [NIH]

Ergotism: Chronic poisoning from excessive or misdirected use of ergot as a medicine, or from eating ergotized grain; it is marked by cerebrospinal symptoms, spasms, and cramps, or by a kind of dry gangrene. Called also St. Anthony's fire. [EU]

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

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

Ethnopharmacology: The study of the actions and properties of drugs, usually derived from medicinal plants, indigenous to a population or ethnic group. [NIH]

Extraction: The process or act of pulling or drawing out. [EU]

Famotidine: A competitive histamine H2-receptor antagonist. Its main pharmacodynamic effect is the inhibition of gastric secretion. [NIH]

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

Fats: One of the three main classes of foods and a source of energy in the body. Fats help the body use some vitamins and keep the skin healthy. They also serve as energy stores for the body. In food, there are two types of fats: saturated and unsaturated. [NIH]

Ferula: A genus of umbelliferous plants, including Ferula asafoetida, that yields pungent oils and resins used formerly as carminatives and now as cat and dog repellents. A related plant, F. galbanum, is used similarly. F. foetida is used as a fresh vegetable. [NIH]

Fibrosis: The formation of fibrous tissue; fibroid or fibrous degeneration [EU]

Fistula: An abnormal passage or communication, usually between two internal organs, or leading from an internal organ to the surface of the body; frequently designated according to the organs or parts with which it communicates, as anovaginal, brochocutaneous, hepatopleural, pulmonoperitoneal, rectovaginal, urethrovaginal, and the like. Such passages are frequently created experimentally for the purpose of obtaining body secretions for physiologic study. [EU]

Flucytosine: A fluorinated cytosine analog that is used as an antifungal agent. [NIH]

Gastritis: Inflammation of the stomach. [EU]

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]

Gastroenterostomy: Surgical construction of a channel between the stomach and intestines. [NIH]

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

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

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

Glycopyrrolate: A muscarinic antagonist used as an antispasmodic, in some disorders of the gastrointestinal tract, and to reduce salivation with some anesthetics. [NIH]

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

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

Helicobacter: A genus of gram-negative, spiral-shaped bacteria that is pathogenic and has been isolated from the intestinal tract of mammals, including humans. [NIH]

Hematemesis: Vomiting of blood. [NIH]

Hematology: A subspecialty of internal medicine concerned with morphology, physiology, and pathology of the blood and blood-forming tissues. [NIH]

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

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

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

Hepatic: Pertaining to the liver. [EU]

Hepatitis: Inflammation of the liver. [EU]

Hepatobiliary: Pertaining to the liver and the bile or the biliary ducts. [EU]

Hernia: (he protrusion of a loop or knuckle of an organ or tissue through an abnormal opening. [EU]

Herpes: Any inflammatory skin disease caused by a herpesvirus and characterized by the formation of clusters of small vesicles. When used alone, the term may refer to herpes simplex or to herpes zoster. [EU]

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]

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

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

Hypersecretion: Excessive secretion. [EU]

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

Iatrogenic: Resulting from the activity of physicians. Originally applied to disorders induced in the patient by autosuggestion based on the physician's examination, manner, or discussion, the term is now applied to any adverse condition in a patient occurring as the result of treatment by a physician or surgeon, especially to infections acquired by the patient during the course of treatment. [EU]

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

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

Ileus: Obstruction of the intestines. [EU]

Immersion: The placing of a body or a part thereof into a liquid. [NIH]

Immunity: The condition of being immune; the protection against infectious disease conferred either by the immune response generated by immunization or previous infection or by other nonimmunologic factors

(innate i.). [EU]

Immunotherapy: Manipulation of the host's immune system in treatment of disease. It includes both active and passive immunization as well as immunosuppressive therapy to prevent graft rejection. [NIH]

Incontinence: Inability to control excretory functions, as defecation (faecal i.) or urination (urinary i.). [EU]

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

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

Infarction: 1. the formation of an infarct. 2. an infarct. [EU]

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

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

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

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

Intoxication: Poisoning, the state of being poisoned. [EU]

Intravenous: Within a vein or veins. [EU]

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

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]

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

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]

Ketoprofen: An Ibuprofen-type anti-inflammatory analgesic and

antipyretic. It is used in the treatment of rheumatoid arthritis and osteoarthritis. [NIH]

Ketorolac Tromethamine: A pyrrolizine carboxylic acid derivative structurally related to indomethacin. It is a non-steroidal anti-inflammatory agent used for analgesia for postoperative pain and inhibits cyclooxygenase activity. [NIH]

Lesion: Any pathological or traumatic discontinuity of tissue or loss of function of a part. [EU]

Leukotrienes: A family of biologically active compounds derived from arachidonic acid by oxidative metabolism through the 5-lipoxygenase pathway. They participate in host defense reactions and pathophysiological conditions such as immediate hypersensitivity and inflammation. They have potent actions on many essential organs and systems, including the cardiovascular, pulmonary, and central nervous system as well as the gastrointestinal tract and the immune system. [NIH]

Levodopa: The naturally occurring form of DOPA and the immediate precursor of dopamine. Unlike dopamine itself, it can be taken orally and crosses the blood-brain barrier. It is rapidly taken up by dopaminergic neurons and converted to dopamine. It is used for the treatment of parkinsonism and is usually given with agents that inhibit its conversion to dopamine outside of the central nervous system. [NIH]

Lipid: Any of a heterogeneous group of flats and fatlike substances characterized by being water-insoluble and being extractable by nonpolar (or fat) solvents such as alcohol, ether, chloroform, benzene, etc. All contain as a major constituent aliphatic hydrocarbons. The lipids, which are easily stored in the body, serve as a source of fuel, are an important constituent of cell structure, and serve other biological functions. Lipids may be considered to include fatty acids, neutral fats, waxes, and steroids. Compound lipids comprise the glycolipids, lipoproteins, and phospholipids. [EU]

Localization: 1. the determination of the site or place of any process or lesion. 2. restriction to a circumscribed or limited area. 3. prelocalization. [EU]

Lymphoma: Any neoplastic disorder of the lymphoid tissue, the term lymphoma often is used alone to denote malignant lymphoma. [EU]

Malabsorption: Impaired intestinal absorption of nutrients. [EU]

Malformation: A morphologic defect resulting from an intrinsically abnormal developmental process. [EU]

Mediator: An object or substance by which something is mediated, such as (1) a structure of the nervous system that transmits impulses eliciting a specific response; (2) a chemical substance (transmitter substance) that induces activity in an excitable tissue, such as nerve or muscle; or (3) a

substance released from cells as the result of the interaction of antigen with antibody or by the action of antigen with a sensitized lymphocyte. [EU]

Membrane: A thin layer of tissue which covers a surface, lines a cavity or divides a space or organ. [EU]

Metaplasia: The change in the type of adult cells in a tissue to a form which is not formal for that tissue. [EU]

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

Microbiology: The study of microorganisms such as fungi, bacteria, algae, archaea, and viruses. [NIH]

Micronutrients: Essential dietary elements or organic compounds that are required in only small quantities for normal physiologic processes to occur. [NIH]

Microspheres: Small uniformly-sized spherical particles frequently labeled with radioisotopes or various reagents acting as tags or markers. [NIH]

Misoprostol: A synthetic analog of natural prostaglandin E1. It produces a dose-related inhibition of gastric acid and pepsin secretion, and enhances mucosal resistance to injury. It is an effective anti-ulcer agent and also has oxytocic properties. [NIH]

Molecular: Of, pertaining to, or composed of molecules : a very small mass of matter. [EU]

Motility: The ability to move spontaneously. [EU]

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

Mysticism: A philosophy based upon spiritual intuition that is believed to transcend ordinary sensory experiences or understanding. [NIH]

Naproxen: An anti-inflammatory agent with analgesic and antipyretic properties. Both the acid and its sodium salt are used in the treatment of rheumatoid arthritis and other rheumatic or musculoskeletal disorders, dysmenorrhea, and acute gout. [NIH]

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

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

Neodymium: Neodymium. An element of the rare earth family of metals. It has the atomic symbol Nd, atomic number 60, and atomic weight 144.24, and

is used in industrial applications. [NIH]

Neonatal: Pertaining to the first four weeks after birth. [EU]

Neoplasms: New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms. [NIH]

Neostigmine: A cholinesterase inhibitor used in the treatment of myasthenia gravis and to reverse the effects of muscle relaxants such as gallamine and tubocurarine. Neostigmine, unlike physostigmine, does not cross the blood-brain barrier. [NIH]

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

Neuropeptides: Peptides released by neurons as intercellular messengers. Many neuropeptides are also hormones released by non-neuronal cells. [NIH]

Neurophysiology: The scientific discipline concerned with the physiology of the nervous system. [NIH]

Neutralization: An act or process of neutralizing. [EU]

Neutrophil: Having an affinity for neutral dyes. [EU]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Nicotine: Nicotine is highly toxic alkaloid. It is the prototypical agonist at nicotinic cholinergic receptors where it dramatically stimulates neurons and ultimately blocks synaptic transmission. Nicotine is also important medically because of its presence in tobacco smoke. [NIH]

Nitrosamines: A class of compounds that contain a -NH2 and a -NO radical. Many members of this group have carcinogenic and mutagenic properties. [NIH]

Nizatidine: A histamine H2 receptor antagonist with low toxicity that inhibits gastric acid secretion. The drug is used for the treatment of duodenal ulcers. [NIH]

Nosocomial: Pertaining to or originating in the hospital, said of an infection not present or incubating prior to admittance to the hospital, but generally occurring 72 hours after admittance; the term is usually used to refer to patient disease, but hospital personnel may also acquire nosocomial infection. [EU]

Octreotide: A potent, long-acting somatostatin octapeptide analog which has a wide range of physiological actions. It inhibits growth hormone secretion, is effective in the treatment of hormone-secreting tumors from various organs, and has beneficial effects in the management of many

pathological states including diabetes mellitus, orthostatic hypertension, hyperinsulinism, hypergastrinemia, and small bowel fistula. [NIH]

Oral: Pertaining to the mouth, taken through or applied in the mouth, as an oral medication or an oral thermometer. [EU]

Outpatients: Persons who receive ambulatory care at an outpatient department or clinic without room and board being provided. [NIH]

Overdose: 1. to administer an excessive dose. 2. an excessive dose. [EU]

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

Pancreas: An organ behind the lower part of the stomach that is about the size of a hand. It makes insulin so that the body can use glucose (sugar) for energy. It also makes enzymes that help the body digest food. Spread all over the pancreas are areas called the islets of Langerhans. The cells in these areas each have a special purpose. The alpha cells make glucagon, which raises the level of glucose in the blood; the beta cells make insulin; the delta cells make somatostatin. There are also the PP cells and the D1 cells, about which little is known. [NIH]

Pancreatitis: Inflammation (pain, tenderness) of the pancreas; it can make the pancreas stop working. It is caused by drinking too much alcohol, by disease in the gallbladder, or by a virus. [NIH]

Parasitic: Pertaining to, of the nature of, or caused by a parasite. [EU]

Parenteral: Not through the alimentary canal but rather by injection through some other route, as subcutaneous, intramuscular, intraorbital, intracapsular, intraspinal, intrasternal, intravenous, etc. [EU]

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]

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]

Pentoxifylline: A methylxanthine derivative that inhibits phosphodiesterase and affects blood rheology. It improves blood flow by increasing erythrocyte and leukocyte flexibility. It also inhibits platelet aggregation. Pentoxifylline modulates immunologic activity by stimulating cytokine production. [NIH]

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

Perforation: 1. the act of boring or piercing through a part. 2. a hole made through a part or substance. [EU]

Perfusion: 1. the act of pouring over or through, especially the passage of a

fluid through the vessels of a specific organ. 2. a liquid poured over or through an organ or tissue. [EU]

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

Pilocarpine: A slowly hydrolyzed muscarinic agonist with no nicotinic effects. Pilocarpine is used as a miotic and in the treatment of glaucoma. [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]

Postoperative: Occurring after a surgical operation. [EU]

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

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

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

Prevalence: The number of people in a given group or population who are reported to have a disease. [NIH]

Probenecid: The prototypical uricosuric agent. It inhibits the renal excretion of organic anions and reduces tubular reabsorption of urate. Probenecid has also been used to treat patients with renal impairment, and, because it reduces the renal tubular excretion of other drugs, has been used as an adjunct to antibacterial therapy. [NIH]

Prophylaxis: The prevention of disease; preventive treatment. [EU]

Prostaglandins: A group of compounds derived from unsaturated 20-carbon fatty acids, primarily arachidonic acid, via the cyclooxygenase pathway. They are extremely potent mediators of a diverse group of physiological processes. [NIH]

Proteins: Polymers of amino acids linked by peptide bonds. The specific sequence of amino acids determines the shape and function of the protein. [NIH]

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

Psychosomatic: Pertaining to the mind-body relationship; having bodily symptoms of psychic, emotional, or mental origin; called also psychophysiologic. [EU]

Radiography: The making of film records (radiographs) of internal structures of the body by passage of x-rays or gamma rays through the body to act on specially sensitized film. [EU]

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

Receptor: 1. a molecular structure within a cell or on the surface characterized by (1) selective binding of a specific substance and (2) a specific physiologic effect that accompanies the binding, e.g., cell-surface receptors for peptide hormones, neurotransmitters, antigens, complement fragments, and immunoglobulins and cytoplasmic receptors for steroid hormones. 2. a sensory nerve terminal that responds to stimuli of various kinds. [EU]

Recombinant: 1. a cell or an individual with a new combination of genes not found together in either parent; usually applied to linked genes. [EU]

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

Reflex: 1; reflected. 2. a reflected action or movement; the sum total of any particular involuntary activity. [EU]

Reflux: A backward or return flow. [EU]

Refractory: Not readily yielding to treatment. [EU]

Reinfection: A second infection by the same pathogenic agent, or a second infection of an organ such as the kidney by a different pathogenic agent. [EU]

Remission: A diminution or abatement of the symptoms of a disease; also the period during which such diminution occurs. [EU]

Resection: Excision of a portion or all of an organ or other structure. [EU]

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

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

Riboflavin: Nutritional factor found in milk, eggs, malted barley, liver, kidney, heart, and leafy vegetables. The richest natural source is yeast. It occurs in the free form only in the retina of the eye, in whey, and in urine; its principal forms in tissues and cells are as FMN and FAD. [NIH]

Saliva: The clear, viscous fluid secreted by the salivary glands and mucous glands of the mouth. It contains mucins, water, organic salts, and ptylin. [NIH]

Schilling Test: A diagnostic test in which vitamin B12 is tagged with radioactive cobalt, taken orally, and gastrointestinal absorption is determined via measurement of the amount of radioactivity in a 24-hour urine collection. [NIH]

Sciatica: A syndrome characterized by pain radiating from the back into the buttock and into the lower extremity along its posterior or lateral aspect, and most commonly caused by prolapse of the intervertebral disk; the term is also used to refer to pain anywhere along the course of the sciatic nerve. [EU]

Scopolamine: An alkaloid from Solanaceae, especially Datura metel L. and Scopola carniolica. Scopolamine and its quaternary derivatives act as antimuscarinics like atropine, but may have more central nervous system effects. Among the many uses are as an anesthetic premedication, in urinary incontinence, in motion sickness, as an antispasmodic, and as a mydriatic and cycloplegic. [NIH]

Secretion: 1. the process of elaborating a specific product as a result of the activity of a gland; this activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. 2. any substance produced by secretion. [EU]

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

Serology: The study of serum, especially of antigen-antibody reactions in vitro. [NIH]

Serum: The clear portion of any body fluid; the clear fluid moistening serous membranes. 2. blood serum; the clear liquid that separates from blood on clotting. 3. immune serum; blood serum from an immunized animal used for passive immunization; an antiserum; antitoxin, or antivenin. [EU]

Sodium Bicarbonate: A white, crystalline powder that is commonly used as a pH buffering agent, an electrolyte replenisher, systemic alkalizer and in topical cleansing solutions. [NIH]

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

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

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]

Spectrum: A charted band of wavelengths of electromagnetic vibrations obtained by refraction and diffraction. By extension, a measurable range of activity, such as the range of bacteria affected by an antibiotic (antibacterial s.) or the complete range of manifestations of a disease. [EU]

Standardize: To compare with or conform to a standard; to establish standards. [EU]

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

Sulfinpyrazone: A uricosuric drug that is used to reduce the serum urate levels in gout therapy. It lacks anti-inflammatory, analgesic, and diuretic properties. [NIH]

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

Systemic: Pertaining to or affecting the body as a whole. [EU]

Tetracycline: An antibiotic originally produced by Streptomyces viridifaciens, but used mostly in synthetic form. It is an inhibitor of aminoacyl-tRNA binding during protein synthesis. [NIH]

Thermoregulation: Heat regulation. [EU]

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

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

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]

Transfusion: The introduction of whole blood or blood component directly into the blood stream. [EU]

Transplantation: The grafting of tissues taken from the patient's own body or from another. [EU]

Ulcer: A break in the skin; a deep sore. People with diabetes may get ulcers from minor scrapes on the feet or legs, from cuts that heal slowly, or from the rubbing of shoes that do not fit well. Ulcers can become infected. [NIH]

Ulceration: 1. the formation or development of an ulcer. 2. an ulcer. [EU]

Ulcerogenic: Causing ulceration; leading to the production of ulcers. [EU]

Urea: One of the chief waste products of the body. When the body breaks down food, it uses what it needs and throws the rest away as waste. The kidneys flush the waste from the body in the form of urea, which is in the urine. [NIH]

Urease: An enzyme that catalyzes the conversion of urea and water to carbon dioxide and ammonia. EC 3.5.1.5. [NIH]

Urology: A surgical specialty concerned with the study, diagnosis, and treatment of diseases of the urinary tract in both sexes and the genital tract in the male. It includes the specialty of andrology which addresses both male genital diseases and male infertility. [NIH]

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

Vasoconstriction: The diminution of the calibre of vessels, especially constriction of arterioles leading to decreased blood flow to a part. [EU]

Veins: The vessels carrying blood toward the heart. [NIH]

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

Virulence: The degree of pathogenicity within a group or species of microorganisms or viruses as indicated by case fatality rates and/or the ability of the organism to invade the tissues of the host. [NIH]

Withdrawal: 1. a pathological retreat from interpersonal contact and social involvement, as may occur in schizophrenia, depression, or schizoid avoidant and schizotypal personality disorders. 2. (DSM III-R) a substance-specific organic brain syndrome that follows the cessation of use or reduction in intake of a psychoactive substance that had been regularly used to induce a state of intoxication. [EU]

General Dictionaries and Glossaries

While the above glossary is essentially complete, the dictionaries listed here cover virtually all aspects of medicine, from basic words and phrases to more advanced terms (sorted alphabetically by title; hyperlinks provide rankings, information and reviews at Amazon.com):

- **Dictionary of Medical Acronymns & Abbreviations** by Stanley Jablonski (Editor), Paperback, 4th edition (2001), Lippincott Williams & Wilkins Publishers, ISBN: 1560534605, **http://www.amazon.com/exec/obidos/ASIN/1560534605/icongroupinterna**

- **Dictionary of Medical Terms : For the Nonmedical Person (Dictionary of Medical Terms for the Nonmedical Person, Ed 4)** by Mikel A. Rothenberg, M.D, et al, Paperback - 544 pages, 4th edition (2000), Barrons Educational Series, ISBN: 0764112015,
http://www.amazon.com/exec/obidos/ASIN/0764112015/icongroupinterna
- **A Dictionary of the History of Medicine** by A. Sebastian, CD-Rom edition (2001), CRC Press-Parthenon Publishers, ISBN: 185070368X,
http://www.amazon.com/exec/obidos/ASIN/185070368X/icongroupinterna
- **Dorland's Illustrated Medical Dictionary (Standard Version)** by Dorland, et al, Hardcover - 2088 pages, 29th edition (2000), W B Saunders Co, ISBN: 0721662544,
http://www.amazon.com/exec/obidos/ASIN/0721662544/icongroupinterna
- **Dorland's Electronic Medical Dictionary** by Dorland, et al, Software, 29th Book & CD-Rom edition (2000), Harcourt Health Sciences, ISBN: 0721694934,
http://www.amazon.com/exec/obidos/ASIN/0721694934/icongroupinterna
- **Dorland's Pocket Medical Dictionary (Dorland's Pocket Medical Dictionary, 26th Ed)** Hardcover - 912 pages, 26th edition (2001), W B Saunders Co, ISBN: 0721682812,
http://www.amazon.com/exec/obidos/ASIN/0721682812/icongroupinterna/103-4193558-7304618
- **Melloni's Illustrated Medical Dictionary (Melloni's Illustrated Medical Dictionary, 4th Ed)** by Melloni, Hardcover, 4th edition (2001), CRC Press-Parthenon Publishers, ISBN: 85070094X,
http://www.amazon.com/exec/obidos/ASIN/85070094X/icongroupinterna
- **Stedman's Electronic Medical Dictionary Version 5.0 (CD-ROM for Windows and Macintosh, Individual)** by Stedmans, CD-ROM edition (2000), Lippincott Williams & Wilkins Publishers, ISBN: 0781726328,
http://www.amazon.com/exec/obidos/ASIN/0781726328/icongroupinterna
- **Stedman's Medical Dictionary** by Thomas Lathrop Stedman, Hardcover - 2098 pages, 27th edition (2000), Lippincott, Williams & Wilkins, ISBN: 068340007X,
http://www.amazon.com/exec/obidos/ASIN/068340007X/icongroupinterna
- **Tabers Cyclopedic Medical Dictionary (Thumb Index)** by Donald Venes (Editor), et al, Hardcover - 2439 pages, 19th edition (2001), F A Davis Co, ISBN: 0803606540,
http://www.amazon.com/exec/obidos/ASIN/0803606540/icongroupinterna

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