THE OFFICIAL PATIENT'S SOURCEBOOK *on*

ADULT HODGKIN'S DISEASE

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

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Dedication

To the healthcare professionals dedicating their time and efforts to the study of adult Hodgkin's disease.

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 adult Hodgkin's disease. 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.

About the Editors

James N. Parker, M.D.

Dr. James N. Parker received his Bachelor of Science degree in Psychobiology from the University of California, Riverside and his M.D. from the University of California, San Diego. In addition to authoring numerous research publications, he has lectured at various academic institutions. Dr. Parker is the medical editor for the *Official Patient's Sourcebook* series published by ICON Health Publications.

Philip M. Parker, Ph.D.

Philip M. Parker is the Eli Lilly Chair Professor of Innovation, Business and Society at INSEAD (Fontainebleau, France and Singapore). Dr. Parker has also been Professor at the University of California, San Diego and has taught courses at Harvard University, the Hong Kong University of Science and Technology, the Massachusetts Institute of Technology, Stanford University, and UCLA. Dr. Parker is the associate editor for the *Official Patient's Sourcebook* series published by ICON Health Publications.

About ICON Health Publications

In addition to adult Hodgkin's disease, *Official Patient's Sourcebooks* are available for the following related topics:

- The Official Patient's Sourcebook on Adult Acute Lymphoblastic Leukemia
- The Official Patient's Sourcebook on Adult Acute Myeloid Leukemia
- The Official Patient's Sourcebook on Adult Non-hodgkin's Lymphoma
- The Official Patient's Sourcebook on Chronic Lymphocytic Leukemia
- The Official Patient's Sourcebook on Chronic Myelogenous Leukemia
- The Official Patient's Sourcebook on Hairy Cell Leukemia
- The Official Patient's Sourcebook on Hodgkin's Disease during Pregnancy
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- The Official Patient's Sourcebook on Myeloproliferative Disorders
- The Official Patient's Sourcebook on Non-hodgkin's Lymphoma during Pregnancy
- The Official Patient's Sourcebook on Primary Cns Lymphoma

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ICON Group International, Inc.
4370 La Jolla Village Drive, Fourth Floor
San Diego, CA 92122 USA
Fax: 858-546-4341
Web site: **www.icongrouponline.com/health**

Table of Contents

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] Adapted 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 Adult Hodgkin's Disease* 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 adult Hodgkin's disease, 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 adult Hodgkin's disease.

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 adult Hodgkin's disease 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 adult Hodgkin's disease (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 adult Hodgkin's disease. It also gives you sources of information that can help you find a doctor in your local area specializing in treating adult Hodgkin's disease. Collectively, the material presented in Part I is a complete primer on basic research topics for patients with adult Hodgkin's disease.

Part II moves on to advanced research dedicated to adult Hodgkin's disease. 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 adult Hodgkin's disease. 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 adult Hodgkin's disease or related disorders. The appendices are dedicated to more pragmatic issues faced by many patients with adult Hodgkin's disease. 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 adult Hodgkin's disease.

Scope

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

- Cancer Hodgkin's Lymphoma

- Hodgkin Disease
- Hodgkin's Disease
- Hodgkin's Lymphoma
- Lymphoma Hodgkin's
- Malignant Lymphoma

In addition to synonyms and related conditions, physicians may refer to adult Hodgkin's disease 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 adult Hodgkin's disease:[4]

- 201.4 hodgkin's disease, lymphocyte predominance
- 201.5 hodgkin's disease, nodular sclerosis
- 201.6 hodgkin's disease, mixed cellularity
- 201.7 hodgkin's disease, lymphocyte depletion
- 201.9 hodgkin's disease, unspecified
- 201.90 hodgkin's disease, unspecified

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 adult Hodgkin's disease. 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

[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."

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 adult Hodgkin's disease 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 adult Hodgkin's disease 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 adult Hodgkin's disease, 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 adult Hodgkin's disease. 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 adult Hodgkin's disease to you or even given you a pamphlet or brochure describing adult Hodgkin's disease. 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 ADULT HODGKIN'S DISEASE: GUIDELINES

Overview

Official agencies, as well as federally funded institutions supported by national grants, frequently publish a variety of guidelines on adult Hodgkin's disease. 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 adult Hodgkin's disease 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 adult Hodgkin's disease. 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.

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[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 adult Hodgkin's disease 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 Cancer Institute (NCI); guidelines available at **http://cancernet.nci.nih.gov/pdq/pdq_treatment.shtml**

Among the above, the National Cancer Institute (NCI) is particularly noteworthy. The NCI coordinates the National Cancer Program, which conducts and supports research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer, rehabilitation from cancer, and the continuing care of cancer patients and the families of cancer patients.[6] Specifically, the Institute:

- Supports and coordinates research projects conducted by universities, hospitals, research foundations, and businesses throughout this country and abroad through research grants and cooperative agreements.
- Conducts research in its own laboratories and clinics.
- Supports education and training in fundamental sciences and clinical disciplines for participation in basic and clinical research programs and treatment programs relating to cancer through career awards, training grants, and fellowships.
- Supports research projects in cancer control.
- Supports a national network of cancer centers.
- Collaborates with voluntary organizations and other national and foreign institutions engaged in cancer research and training activities.
- Encourages and coordinates cancer research by industrial concerns where such concerns evidence a particular capability for programmatic research.
- Collects and disseminates information on cancer.

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

- Supports construction of laboratories, clinics, and related facilities necessary for cancer research through the award of construction grants.

The NCI, established under the National Cancer Act of 1937, is the Federal Government's principal agency for cancer research and training. The National Cancer Act of 1971 broadened the scope and responsibilities of the NCI and created the National Cancer Program. Over the years, legislative amendments have maintained the NCI authorities and responsibilities and added new information dissemination mandates as well as a requirement to assess the incorporation of state-of-the-art cancer treatments into clinical practice. Information dissemination is made possible through the NCI Online at **www.cancer.gov**. Cancer.gov offers to the public and physicians up-to-date information on the latest cancer research, current and upcoming clinical trials, statistics, research programs, and research funding.

The following patient guideline was recently published by the NCI on adult Hodgkin's disease.

What Is Adult Hodgkin's Disease?[7]

Hodgkin's disease is a type of lymphoma. Lymphomas are cancers that develop in the lymph system, part of the body's immune system.

The lymph system is made up of thin tubes that branch, like blood vessels, into all parts of the body. Lymph vessels carry lymph, a colorless, watery fluid that contains white blood cells called lymphocytes. Along the network of vessels are groups of small, bean-shaped organs called lymph nodes. Clusters of lymph nodes are found in the underarm, pelvis, neck, and abdomen. The lymph nodes make and store infection-fighting cells. The spleen (an organ in the upper abdomen that makes lymphocytes and filters old blood cells from the blood), the thymus (a small organ beneath the breastbone), and the tonsils (an organ in the throat) are also part of the lymph system.

Because there is lymph tissue in many parts of the body, Hodgkin's disease can start in almost any part of the body. The cancer can spread to almost any organ or tissue in the body, including the liver, bone marrow (the spongy tissue inside the large bones of the body that makes blood cells), and spleen.

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[7] The following guidelines appeared on the NCI Web site on Aug. 26, 2002. The text was last modified in April 2002. The text has been adapted for this sourcebook.

Lymphomas are divided into two general types: Hodgkin's disease and non-Hodgkin's lymphomas. The cancer cells in Hodgkin's disease look a certain way under a microscope. (Refer to the PDQ summaries on Adult Non-Hodgkin's Lymphoma Treatment and Childhood Non-Hodgkin's Lymphoma Treatment for more information.)

Adult Hodgkin's disease most commonly affects young adults and people older than 55 years of age. It may also be found in patients with acquired immunodeficiency syndrome (AIDS); these patients require special treatment.[8] Hodgkin's disease can also occur in children and is treated differently from that in adults.[9]

A doctor should be seen if any of the following symptoms persist for longer than 2 weeks:

- Painless swelling of the lymph nodes in the neck, underarm, or groin;
- Fever;
- Night sweats;
- Tiredness;
- Weight loss without dieting; or
- Itchy skin.

If there are symptoms, a doctor will carefully check for swelling or lumps in the neck, underarms, and groin. If the lymph nodes don't feel normal, a doctor may need to cut out a small piece and look at it under the microscope to see if there are any cancer cells. This procedure is called a biopsy.

The chance of recovery (prognosis) and choice of treatment depend on the stage of the cancer (whether it is just in one area or has spread throughout the body), the size of the swollen areas, the results of blood tests, the type of symptoms, and the patient's age, sex, and overall condition.

Stages of Adult Hodgkin's Disease

Once Hodgkin's disease is found, more tests will be done to find out if the cancer has spread from where it started to other parts of the body. This

[8] Refer to the PDQ summary on AIDS-Related Lymphoma Treatment for more information.
[9] Refer to the PDQ summary on Childhood Hodgkin's Disease Treatment for more information.

testing is called staging. A doctor needs to know the stage of the disease to plan treatment.

A doctor may determine the stage of the disease by conducting a thorough examination which may include blood tests and different kinds of x-rays. This type of staging is called clinical staging. In some cases, the doctor may need to do an operation called a laparotomy to determine the stage of the cancer. During this operation, the doctor cuts into the abdomen and carefully looks at the organs inside to see if they contain cancer. The doctor will cut out (biopsy) small pieces of tissue during the operation and look at them under a microscope to see whether they contain cancer. This type of staging is called pathologic staging. Pathologic staging is usually done only when it is needed to help the doctor plan treatment.

Each stage for Hodgkin's disease is further divided by an "A" or "B," based on whether there are certain symptoms called B symptoms. B symptoms include the following: loss of more than 10% of weight in the previous 6 months, fever without any known cause other than Hodgkin's disease, and night sweats that leave the body soaked. For example, if a patient had stage I disease without any B symptoms, the patient would have stage IA disease; if the patient had stage I disease with B symptoms, then the patient would have stage IB disease.

The following stages are used for Hodgkin's disease:

Stage I

Cancer is found in only one lymph node area or in only one area or organ outside of the lymph nodes.

Stage II

Either of the following means the disease is stage II:

- Cancer is found in two or more lymph node areas on the same side of the diaphragm (the thin muscle under the lungs that helps us breathe).
- Cancer is found in only one area or organ outside of the lymph nodes and in the lymph nodes around it. Other lymph node areas on the same side of the diaphragm may also have cancer.

Stage III

Cancer is found in lymph node areas on both sides of the diaphragm. The cancer may also have spread to an area or organ near the lymph node areas and/or to the spleen.

Stage IV

Either of the following means the disease is stage IV:

- Cancer has spread in more than one spot to an organ or organs outside the lymph system. Cancer cells may or may not be found in the lymph nodes near these organs.
- Cancer has spread to only one organ outside the lymph system, but lymph nodes far away from that organ are involved.

Recurrent

Recurrent disease means that the cancer has come back after it has been treated. It may come back in the area where it first started or in another part of the body.

How Is Adult Hodgkin's Disease Treated?

There are treatments for all patients with adult Hodgkin's disease. Two types of treatment are used:

- Radiation therapy (using high-dose x-rays or other high-energy rays to kill cancer cells and shrink tumors)
- Chemotherapy (using drugs to kill cancer cells and shrink tumors)

Also, bone marrow transplants are being studied in clinical trials for certain patients.

Radiation Therapy

Radiation therapy is the use of high-energy x-rays to kill cancer cells and shrink tumors. Radiation for Hodgkin's disease usually comes from a machine outside the body (external-beam radiation therapy). Radiation

therapy given to the neck, chest, and lymph nodes under the arms is called radiation therapy to a mantle field. Radiation therapy given to the mantle field and to the lymph nodes in the upper abdomen, the spleen, and the lymph nodes in the pelvis is called total nodal irradiation. Radiation therapy may be used alone or in addition to chemotherapy.

Chemotherapy

Chemotherapy is the use of drugs to kill cancer cells and shrink tumors. Chemotherapy may be taken by pill, or it may be put into the body by inserting a needle into a vein or muscle. Chemotherapy is called a systemic treatment because the drugs enter the bloodstream, travel through the body, and can kill cancer cells throughout the body.

Bone Marrow Transplants

Bone marrow transplantation is a newer type of treatment. Sometimes Hodgkin's disease becomes resistant to treatment with radiation therapy or chemotherapy. Very high doses of chemotherapy may then be used to treat the cancer. Because the high doses of chemotherapy can destroy the bone marrow, marrow is taken from the bones before treatment. The marrow is then frozen, and the patient is given high-dose chemotherapy with or without radiation therapy to treat the cancer. The marrow is then thawed and given back to the patient through a needle in a vein to replace the marrow that was destroyed. This type of transplant is called an autologous transplant. If the marrow is taken from another person, the transplant is called an allogeneic transplant.

Another type of autologous transplant is called a peripheral blood stem cell transplant. The patient's blood is passed through a machine that removes the stem cells (immature cells from which all blood cells develop), and then returns the blood to the patient. This procedure is called leukapheresis and usually takes 3 or 4 hours to complete. The stem cells are treated with drugs to kill any cancer cells and then frozen until they are transplanted to the patient. This procedure may be done alone or with an autologous bone marrow transplant.

A greater chance for recovery occurs if a doctor chooses a hospital which does more than five bone marrow transplantations per year.

Treatment by Stage

Patients may be immunized with influenza, pneumonia, and meningitis vaccines both before and every few years after treatment in order to guard against infection.

Treatment of adult Hodgkin's disease depends on the type and stage of the disease, and the patient's age, pregnancy status, past surgery to determine the stage of the disease, symptoms, and general health.

Standard treatment may be considered based on its effectiveness in past studies, or participation in a clinical trial may be considered. Not all patients are cured with standard therapy, and some standard treatments may have more side effects than are desired. Within 5 to 15 years after treatment, some patients develop another form of cancer as a result of their treatment; you should visit your doctor regularly to be checked for this possibility. For these reasons, clinical trials are designed to find better ways to treat cancer patients and are based on the most up-to-date information. Clinical trials are ongoing in most parts of the country for most stages of adult Hodgkin's disease. To learn more about clinical trials, call the Cancer Information Service at 1-800-4-CANCER (1-800-422-6237); TTY at 1-800-332-8615.

Stage I Adult Hodgkin's Disease

Treatment depends on whether the patient has stage IA or stage IB disease and where the cancer is found.

Stage IA Disease

If the cancer is above the diaphragm and does not involve a large part of the chest, treatment may be one of the following:

- Combination chemotherapy and radiation therapy.
- Radiation therapy to a mantle field and to the lymph nodes in the upper abdomen.
- Radiation therapy to a mantle field only, after surgery to determine the stage of the tumor.
- Clinical trials of combination chemotherapy alone.

If the cancer is above the diaphragm but involves a large part of the chest, treatment may be one of the following:

- Radiation therapy to a mantle field plus chemotherapy.
- Radiation therapy to a mantle field and to the lymph nodes in the upper abdomen.

If the cancer is below the diaphragm, treatment may be one of the following:

- Radiation therapy.
- Combination chemotherapy with radiation therapy.
- Clinical trials of chemotherapy alone.

Stage IB

Treatment may be one of the following for patients with "B" symptoms:

- Combination chemotherapy with radiation therapy.
- Clinical trials of chemotherapy alone.

Stage II Adult Hodgkin's Disease

Treatment depends on whether the patient has stage IIA or stage IIB disease and where the cancer is found.

Stage IIA Disease

If the cancer is above the diaphragm and does not involve a large part of the chest, treatment may be one of the following:

- Combination chemotherapy and radiation therapy.
- Radiation therapy to a mantle field and to the lymph nodes in the upper abdomen.
- Radiation therapy to a mantle field only, after surgery to determine the stage of the tumor.
- Clinical trials of combination chemotherapy alone.

If the cancer is above the diaphragm but involves a large part of the chest, treatment may be the following:

- Radiation therapy to a mantle field plus chemotherapy.

Stage IIB

Treatment may be one of the following for patients with "B" symptoms:

- Combination chemotherapy with or without radiation therapy.
- Clinical trials of chemotherapy alone.

Stage III Adult Hodgkin's Disease

Treatment depends on whether the patient has stage IIIA or stage IIIB disease and where the cancer is found.

Stage IIIA

If the cancer does not involve a large part of the chest, treatment may be one of the following:

- Combination chemotherapy alone.
- Combination chemotherapy plus radiation therapy.
- A clinical trial of chemotherapy.

If the cancer involves a large part of the chest, treatment may be:

- Combination chemotherapy with radiation therapy.

Stage IIIB

Treatment may be one of the following:

- Combination chemotherapy with radiation therapy.
- A clinical trial of chemotherapy.

Stage IV Adult Hodgkin's Disease

Treatment may be one of the following:

- Combination chemotherapy.
- Combination chemotherapy and radiation therapy.
- Clinical trials of chemotherapy with bone marrow transplantation.

Recurrent Adult Hodgkin's Disease

The treatment depends on where the disease comes back and the treatment received before. If the treatment received before was radiation therapy without chemotherapy, chemotherapy may be given. If the treatment received before was chemotherapy without radiation therapy and the cancer comes back only in the lymph nodes, radiation therapy to the lymph nodes with or without more chemotherapy may be given. If the disease comes back in more than one area, more chemotherapy may be given or a clinical trial of high doses of chemotherapy with bone marrow or peripheral stem cell transplantation may be presented as an option.

To Learn More

Call

For more information, U.S. residents may call the National Cancer Institute's (NCI's) Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237), Monday through Friday from 9:00 a.m. to 4:30 p.m. Deaf and hard-of-hearing callers with TTY equipment may call 1-800-332-8615. The call is free and a trained Cancer Information Specialist is available to answer your questions.

Web Sites and Organizations

The NCI's Cancer.gov Web site (**http://cancer.gov**) provides online access to information on cancer, clinical trials, and other Web sites and organizations that offer support and resources for cancer patients and their families. There are also many other places where people can get materials and information about cancer treatment and services. Local hospitals may have information on local and regional agencies that offer information about finances, getting

to and from treatment, receiving care at home, and dealing with problems associated with cancer treatment.

Publications

The NCI has booklets and other materials for patients, health professionals, and the public. These publications discuss types of cancer, methods of cancer treatment, coping with cancer, and clinical trials. Some publications provide information on tests for cancer, cancer causes and prevention, cancer statistics, and NCI research activities. NCI materials on these and other topics may be ordered online or printed directly from the NCI Publications Locator (**https://cissecure.nci.nih.gov/ncipubs**). These materials can also be ordered by telephone from the Cancer Information Service toll-free at 1-800-4-CANCER (1-800-422-6237), TTY at 1-800-332-8615.

LiveHelp

The NCI's LiveHelp service, a program available on several of the Institute's Web sites, provides Internet users with the ability to chat online with an Information Specialist. The service is available from Monday - Friday 9:00 AM - 10:00 PM Eastern Time. Information Specialists can help Internet users find information on NCI Web sites and answer questions about cancer.

Write

For more information from the NCI, please write to this address:

National Cancer Institute
Office of Communications
31 Center Drive, MSC 2580
Bethesda, MD 20892-2580

About PDQ

PDQ Is a Comprehensive Cancer Database Available on Cancer.gov

PDQ is the National Cancer Institute's (NCI's) comprehensive cancer information database. Most of the information contained in PDQ is available online at Cancer.gov (**http://cancer.gov**), the NCI's Web site. PDQ is

provided as a service of the NCI. The NCI is part of the National Institutes of Health, the federal government's focal point for biomedical research.

PDQ Contains Cancer Information Summaries

The PDQ database contains summaries of the latest published information on cancer prevention, detection, genetics, treatment, supportive care, and complementary and alternative medicine. Most summaries are available in two versions. The health professional versions provide detailed information written in technical language. The patient versions are written in easy-to-understand, non-technical language. Both versions provide current and accurate cancer information.

The PDQ cancer information summaries are developed by cancer experts and reviewed regularly. Editorial Boards made up of experts in oncology and related specialties are responsible for writing and maintaining the cancer information summaries. The summaries are reviewed regularly and changes are made as new information becomes available. The date on each summary ("Date Last Modified") indicates the time of the most recent change.

PDQ Contains Information on Clinical Trials

Before starting treatment, patients may want to think about taking part in a clinical trial. A clinical trial is a study to answer a scientific question, such as whether one treatment is better than another. Trials are based on past studies and what has been learned in the laboratory. Each trial answers certain scientific questions in order to find new and better ways to help cancer patients. During treatment clinical trials, information is collected about new treatments, the risks involved, and how well they do or do not work. If a clinical trial shows that a new treatment is better than one currently being used, the new treatment may become "standard."

Listings of clinical trials are included in PDQ and are available online at Cancer.gov (**http://cancer.gov/clinical_trials**). Descriptions of the trials are available in health professional and patient versions. Many cancer doctors who take part in clinical trials are also listed in PDQ. For more information, call the Cancer Information Service at 1-800-4-CANCER (1-800-422-6237); TTY at 1-800-332-8615.

More Guideline Sources

The guideline above on adult Hodgkin's disease 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 adult Hodgkin's disease. 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 adult Hodgkin's disease. 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**. From there you can either search using the alphabetical index or browse by broad topic areas.

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 **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 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 "adult Hodgkin's disease" or synonyms.

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:

- **2001 Cancer Progress Report**

  Summary: Cancer Progress Report 2001 is the first in a new series of reports designed to make scientific information on cancer more accessible and understandable.

  Source: National Cancer Institute, National Institutes of Health

  http://www.healthfinder.gov/scripts/recordpass.asp?RecordType=0&RecordID=6432

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

NORD (The National Organization of Rare Disorders, Inc.)

NORD provides an invaluable service to the public by publishing, for a nominal fee, short yet comprehensive guidelines on over 1,000 diseases. NORD primarily focuses on rare diseases that might not be covered by the previously listed sources. NORD's Web address is **www.rarediseases.org**. To see if a recent fact sheet has been published on adult Hodgkin's disease, simply go to the following hyperlink: **http://www.rarediseases.org/cgi-bin/nord/alphalist**. A complete guide on adult Hodgkin's disease can be purchased from NORD for a nominal fee.

PEDBASE

Similar to NORD, PEDBASE covers relatively rare disorders, limited mainly to pediatric conditions. PEDBASE was designed by Dr. Alan Gandy. To access the database, which is more oriented to researchers than patients, you can view the current list of conditions covered at the following Web site: **http://www.icondata.com/health/pedbase/pedlynx.htm**.

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:

Abdomen: The part of the body that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs. [NIH]

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

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

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

Biopsy: The removal of cells or tissues for examination under a microscope. When only a sample of tissue is removed, the procedure is called an incisional biopsy or core biopsy. When an entire tumor or lesion is removed, the procedure is called an excisional biopsy. When a sample of tissue or fluid is removed with a needle, the procedure is called a needle biopsy or fine-needle aspiration. [NIH]

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

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

Chemotherapy: Treatment with anticancer drugs. [NIH]

Diaphragm: The thin muscle below the lungs and heart that separates the chest from the abdomen. [NIH]

Gallium: A rare, metallic element designated by the symbol, Ga, atomic number 31, and atomic weight 69.72. [NIH]

Groin: The area where the thigh meets the abdomen. [NIH]

Immunization: The induction of immunity. [EU]

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

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

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

Leukapheresis: Removal of the blood to collect specific blood cells; the remaining blood is returned to the body. [NIH]

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

Lymphocyte: A white blood cell. Lymphocytes have a number of roles in the immune system, including the production of antibodies and other substances that fight infection and diseases. [NIH]

Lymphoma: Cancer that arises in cells of the lymphatic system. [NIH]

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

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

Oncology: The study of cancer. [NIH]

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

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

Pneumonia: An inflammatory infection that occurs in the lung. [NIH]

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

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

Staging: Performing exams and tests to learn the extent of the cancer within the body, especially whether the disease has spread from the original site to other parts of the body. [NIH]

Sweat: The fluid excreted by the sweat glands. It consists of water containing sodium chloride, phosphate, urea, ammonia, and other waste products. [NIH]

Systemic: Affecting the entire body. [NIH]

Thymus: An organ that is part of the lymphatic system, in which T lymphocytes grow and multiply. The thymus is in the chest behind the breastbone. [NIH]

Tonsils: Small masses of lymphoid tissue on either side of the throat. [NIH]

Transplantation: The replacement of an organ with one from another person. [NIH]

Vaccine: A substance or group of substances meant to cause the immune system to respond to a tumor or to microorganisms, such as bacteria or viruses. [NIH]

CHAPTER 2. SEEKING GUIDANCE

Overview

Some patients are comforted by the knowledge that a number of organizations dedicate their resources to helping people with adult Hodgkin's disease. 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.[10] 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 adult Hodgkin's disease. The chapter ends with a discussion on how to find a doctor that is right for you.

Associations and Adult Hodgkin's Disease

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.[11] 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

[10] Churches, synagogues, and other houses of worship might also have groups that can offer you the social support you need.
[11] 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):

- **March of Dimes Birth Defects Foundation**

  Address: March of Dimes Birth Defects Foundation 1275 Mamaroneck Avenue, White Plains, NY 10605

  Telephone: (914) 428-7100 Toll-free: (888) 663-4637

  Fax: (914) 997-4763

  Email: resourcecenter@modimes.org

  Web Site: http://www.modimes.org

  Background: The March of Dimes Birth Defects Foundation is a national not-for- profit organization that was established in 1938. The mission of the Foundation is to improve the health of babies by preventing birth defects and infant mortality. Through the Campaign for Healthier Babies, the March of Dimes funds programs of research, community services, education, and advocacy. Educational programs that seek to prevent birth defects are important to the Foundation and to that end it produces a wide variety of printed informational materials and videos. The March of Dimes public health educational materials provide information encouraging health- enhancing behaviors that lead to a healthy pregnancy and a healthy baby.

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 Cancer Institute (NCI)

The National Cancer Institute (NCI) has complied a list of national organizations that offer services to people with cancer and their families. To view the list, see the NCI fact sheet online at the following Web address: **http://cis.nci.nih.gov/fact/8_1.htm**. The name of each organization is accompanied by its contact information and a brief explanation of its services.

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 adult Hodgkin's disease. 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 "adult Hodgkin's disease" (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 "adult Hodgkin's disease". 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 "adult Hodgkin's disease" (or synonyms) into the "For these words:" box, you will only receive results on organizations

dealing with adult Hodgkin's disease. 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 "adult Hodgkin's disease" (or a synonym) in the search box.

Cancer Support Groups[12]

People diagnosed with cancer and their families face many challenges that may leave them feeling overwhelmed, afraid, and alone. It can be difficult to cope with these challenges or to talk to even the most supportive family members and friends. Often, support groups can help people affected by cancer feel less alone and can improve their ability to deal with the uncertainties and challenges that cancer brings. Support groups give people who are affected by similar diseases an opportunity to meet and discuss ways to cope with the illness.

How Can Support Groups Help?

People who have been diagnosed with cancer sometimes find they need assistance coping with the emotional as well as the practical aspects of their disease. In fact, attention to the emotional burden of cancer is sometimes part of a patient's treatment plan. Cancer support groups are designed to provide a confidential atmosphere where cancer patients or cancer survivors can discuss the challenges that accompany the illness with others who may have experienced the same challenges. For example, people gather to discuss the emotional needs created by cancer, to exchange information about their disease—including practical problems such as managing side effects or returning to work after treatment—and to share their feelings. Support groups have helped thousands of people cope with these and similar situations.

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[12] This section has been adapted from the NCI: **http://cis.nci.nih.gov/fact/8_8.htm**.

Can Family Members and Friends Participate in Support Groups?

Family and friends are affected when cancer touches someone they love, and they may need help in dealing with stresses such as family disruptions, financial worries, and changing roles within relationships. To help meet these needs, some support groups are designed just for family members of people diagnosed with cancer; other groups encourage families and friends to participate along with the cancer patient or cancer survivor.

How Can People Find Support Groups?

Many organizations offer support groups for people diagnosed with cancer and their family members or friends. The NCI fact sheet *National Organizations That Offer Services to People with Cancer and Their Families* lists many cancer-concerned organizations that can provide information about support groups. This fact sheet is available at **http://cis.nci.nih.gov/fact/8_1.htm** on the Internet, or can be ordered from the Cancer Information Service at 1–800–4–CANCER (1–800–422–6237). Some of these organizations provide information on their Web sites about contacting support groups.

Doctors, nurses, or hospital social workers who work with cancer patients may also have information about support groups, such as their location, size, type, and how often they meet. Most hospitals have social services departments that provide information about cancer support programs. Additionally, many newspapers carry a special health supplement containing information about where to find support groups.

What Types of Support Groups Are Available?

Several kinds of support groups are available to meet the individual needs of people at all stages of cancer treatment, from diagnosis through follow-up care. Some groups are general cancer support groups, while more specialized groups may be for teens or young adults, for family members, or for people affected by a particular disease. Support groups may be led by a professional, such as a psychiatrist, psychologist, or social worker, or by cancer patients or survivors. In addition, support groups can vary in approach, size, and how often they meet. Many groups are free, but some require a fee (people can contact their health insurance company to find out whether their plan will cover the cost). It is important for people to find an atmosphere that is comfortable and meets their individual needs.

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.

The Cancer Information Service[13]

The Cancer Information Service (CIS) is a program of the National Cancer Institute (NCI), the Nation's lead agency for cancer research. As a resource for information and education about cancer, the CIS is a leader in helping people become active participants in their own health care by providing the latest information on cancer in understandable language. Through its network of regional offices, the CIS serves the United States, Puerto Rico, the U.S. Virgin Islands, and the Pacific Islands.

For 25 years, the Cancer Information Service has provided the latest and most accurate cancer information to patients and families, the public, and health professionals by:

- Interacting with people one-on-one through its Information Service,
- Working with organizations through its Partnership Program,
- Participating in research efforts to find the best ways to help people adopt healthier behaviors,
- Providing access to NCI information over the Internet.

How Does the CIS Assist the Public?

Through the CIS toll-free telephone service (1–800–4–CANCER), callers speak with knowledgeable, caring staff who are experienced at explaining medical information in easy-to-understand terms. CIS information specialists answer calls in English and Spanish. They also provide cancer information to deaf and hard of hearing callers through the toll-free TTY number (1–800–

[13] This section has been adapted from the NCI: **http://cis.nci.nih.gov/fact/2_5.htm**.

332–8615). CIS staff have access to comprehensive, accurate information from the NCI on a range of cancer topics, including the most recent advances in cancer treatment. They take as much time as each caller needs, provide thorough and personalized attention, and keep all calls confidential.

The CIS also provides live, online assistance to users of NCI Web sites through LiveHelp, an instant messaging service that is available from 9:00 a.m. to 7:30 p.m. Eastern time, Monday through Friday. Through LiveHelp, information specialists provide answers to questions about cancer and help in navigating Cancer.gov, the NCI's Web site.

Through the telephone numbers or LiveHelp service, CIS users receive:

- Answers to their questions about cancer, including ways to prevent cancer, symptoms and risks, diagnosis, current treatments, and research studies;
- Written materials from the NCI;
- Referrals to clinical trials and cancer-related services, such as treatment centers, mammography facilities, or other cancer organizations;
- Assistance in quitting smoking from information specialists trained in smoking cessation counseling.

What Kind of Assistance Does the CIS Partnership Program Offer?

Through its Partnership Program, the CIS collaborates with established national, state, and regional organizations to reach minority and medically underserved audiences with cancer information. Partnership Program staff provide assistance to organizations developing programs that focus on breast and cervical cancer, clinical trials, tobacco control, and cancer awareness for special populations. To reach those in need, the CIS:

- Helps bring cancer information to people who do not traditionally seek health information or who may have difficulties doing so because of educational, financial, cultural, or language barriers;
- Provides expertise to organizations to help strengthen their ability to inform people they serve about cancer; and
- Links organizations with similar goals and helps them plan and evaluate programs, develop coalitions, conduct training on cancer-related topics, and use NCI resources.

How Do CIS Research Efforts Assist the Public?

The CIS plays an important role in research by studying the most effective ways to communicate with people about healthy lifestyles; health risks; and options for preventing, diagnosing, and treating cancer. The ability to conduct health communications research is a unique aspect of the CIS. Results from these research studies can be applied to improving the way the CIS communicates about cancer and can help other programs communicate more effectively.

How Do People Reach the Cancer Information Service?

- To speak with a CIS information specialist call 1–800–4–CANCER (1–800–422–6237), 9:00 a.m. to 4:30 p.m. local time, Monday through Friday. Deaf or hard of hearing callers with TTY equipment may call 1–800–332–8615.
- To obtain online assistance visit the NCI's Cancer Information Web site at **http://cancer.gov/cancer_information** and click on the LiveHelp link between 9:00 a.m. and 7:30 p.m. Eastern time, Monday through Friday.
- For information 24 hours a day, 7 days a week call 1–800–4–CANCER and select option 4 to hear recorded information at any time.
- Visit NCI's Web site at **http://cancer.gov** on the Internet.
- Visit the CIS Web site at **http://cancer.gov/cis** on the Internet.

Finding Cancer Resources in Your Community[14]

If you have cancer or are undergoing cancer treatment, there are places in your community to turn to for help. There are many local organizations throughout the country that offer a variety of practical and support services to people with cancer. However, people often don't know about these services or are unable to find them. National cancer organizations can assist you in finding these resources, and there are a number of things you can do for yourself.

Whether you are looking for a support group, counseling, advice, financial assistance, transportation to and from treatment, or information about cancer, most neighborhood organizations, local health care providers, or area hospitals are a good place to start. Often, the hardest part of looking for help is knowing the right questions to ask.

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[14] Adapted from the NCI: **http://cis.nci.nih.gov/fact/8_9.htm**.

What Kind of Help Can I Get?

Until now, you probably never thought about the many issues and difficulties that arise with a diagnosis of cancer. There are support services to help you deal with almost any type of problem that might occur. The first step in finding the help you need is knowing what types of services are available. The following pages describe some of these services and how to find them.

- **Information on Cancer.** Most national cancer organizations provide a range of information services, including materials on different types of cancer, treatments, and treatment-related issues.
- **Counseling.** While some people are reluctant to seek counseling, studies show that having someone to talk to reduces stress and helps people both mentally and physically. Counseling can also provide emotional support to cancer patients and help them better understand their illness. Different types of counseling include individual, group, family, self-help (sometimes called peer counseling), bereavement, patient-to-patient, and sexuality.
- **Medical Treatment Decisions.** Often, people with cancer need to make complicated medical decisions. Many organizations provide hospital and physician referrals for second opinions and information on clinical trials (research studies with people), which may expand treatment options.
- **Prevention and Early Detection.** While cancer prevention may never be 100 percent effective, many things (such as quitting smoking and eating healthy foods) can greatly reduce a person's risk for developing cancer. Prevention services usually focus on smoking cessation and nutrition. Early detection services, which are designed to detect cancer when a person has no symptoms of disease, can include referrals for screening mammograms, Pap tests, or prostate exams.
- **Home Health Care.** Home health care assists patients who no longer need to stay in a hospital or nursing home, but still require professional medical help. Skilled nursing care, physical therapy, social work services, and nutrition counseling are all available at home.
- **Hospice Care.** Hospice is care focused on the special needs of terminally ill cancer patients. Sometimes called *palliative care*, it centers around providing comfort, controlling physical symptoms, and giving emotional support to patients who can no longer benefit from curative treatment. Hospice programs provide services in various settings, including the patient's home, hospice centers, hospitals, or skilled nursing facilities. Your doctor or social worker can provide a referral for these services.

- **Rehabilitation.** Rehabilitation services help people adjust to the effects of cancer and its treatment. Physical rehabilitation focuses on recovery from the physical effects of surgery or the side effects associated with chemotherapy. Occupational or vocational therapy helps people readjust to everyday routines, get back to work, or find employment.
- **Advocacy.** Advocacy is a general term that refers to promoting or protecting the rights and interests of a certain group, such as cancer patients. Advocacy groups may offer services to assist with legal, ethical, medical, employment, legislative, or insurance issues, among others. For instance, if you feel your insurance company has not handled your claim fairly, you may want to advocate for a review of its decision.
- **Financial.** Having cancer can be a tremendous financial burden to cancer patients and their families. There are programs sponsored by the government and nonprofit organizations to help cancer patients with problems related to medical billing, insurance coverage, and reimbursement issues. There are also sources for financial assistance, and ways to get help collecting entitlements from Medicaid, Medicare, and the Social Security Administration.
- **Housing/Lodging.** Some organizations provide lodging for the family of a patient undergoing treatment, especially if it is a child who is ill and the parents are required to accompany the child to treatment.
- **Children's Services.** A number of organizations provide services for children with cancer, including summer camps, make-a-wish programs, and help for parents seeking child care.

How to Find These Services

Often, the services that people with cancer are looking for are right in their own neighborhood or city. The following is a list of places where you can begin your search for help.

- The hospital, clinic, or medical center where you see your doctor, received your diagnosis, or where you undergo treatment should be able to give you information. Your doctor or nurse may be able to tell you about your specific medical condition, pain management, rehabilitation services, home nursing, or hospice care.
- Most hospitals also have a social work, home care, or discharge planning department. This department may be able to help you find a support group, a nonprofit agency that helps people who have cancer, or the government agencies that oversee Social Security, Medicare, and

Medicaid. While you are undergoing treatment, be sure to ask the hospital about transportation, practical assistance, or even temporary child care. Talk to a hospital financial counselor in the business office about developing a monthly payment plan if you need help with hospital expenses.

- The public library is an excellent source of information, as are patient libraries at many cancer centers. A librarian can help you find books and articles through a literature search.
- A local church, synagogue, YMCA or YWCA, or fraternal order may provide financial assistance, or may have volunteers who can help with transportation and home care. Catholic Charities, the United Way, or the American Red Cross may also operate local offices. Some of these organizations may provide home care, and the United Way's information and referral service can refer you to an agency that provides financial help. To find the United Way serving your community, visit their online directory at **http://www.unitedway.org** on the Internet or look in the White Pages of your local telephone book.
- Local or county government agencies may offer low-cost transportation (sometimes called para-transit) to individuals unable to use public transportation. Most states also have an Area Agency on Aging that offers low-cost services to people over 60. Your hospital or community social worker can direct you to government agencies for entitlements, including Social Security, state disability, Medicaid, income maintenance, and food stamps. (Keep in mind that most applications to entitlement programs take some time to process.) The Federal government also runs the Hill-Burton program (1–800–638–0742), which funds certain medical facilities and hospitals to provide cancer patients with free or low-cost care if they are in financial need.

Getting the Most From a Service: What To Ask

No matter what type of help you are looking for, the only way to find resources to fit your needs is to ask the right questions. When you are calling an organization for information, it is important to think about what questions you are going to ask before you call. Many people find it helpful to write out their questions in advance, and to take notes during the call. Another good tip is to ask the name of the person with whom you are speaking in case you have follow-up questions. Below are some of the questions you may want to consider if you are calling or visiting a new agency and want to learn about how they can help:

- How do I apply [for this service]?
- Are there eligibility requirements? What are they?
- Is there an application process? How long will it take? What information will I need to complete the application process? Will I need anything else to get the service?
- Do you have any other suggestions or ideas about where I can find help?

The most important thing to remember is that you will rarely receive help unless you ask for it. In fact, asking can be the hardest part of getting help. Don't be afraid or ashamed to ask for assistance. Cancer is a very difficult disease, but there are people and services that can ease your burdens and help you focus on your treatment and recovery.

Finding Doctors Who Specialize in Cancer Care[15]

One of the most important aspects of your treatment will be the relationship between you and your doctor or specialist. All patients with adult Hodgkin's disease must go through the process of selecting a physician. A common way to find a doctor who specializes in cancer care is to ask for a referral from your primary care physician. Sometimes, you may know a specialist yourself, or through the experience of a family member, coworker, or friend. The following resources may also be able to provide you with names of doctors who specialize in treating specific diseases or conditions. However, these resources may not have information about the quality of care that the doctors provide.

- Your local hospital or its patient referral service may be able to provide you with a list of specialists who practice at that hospital.
- Your nearest National Cancer Institute (NCI)-designated cancer center can provide information about doctors who practice at that center. The NCI fact sheet *The National Cancer Institute Cancer Centers Program* describes and gives contact information, including Web sites, for NCI-designated cancer treatment centers around the country. Many of the cancer centers' Web sites have searchable directories of physicians who practice at each facility. The NCI's fact sheet is available at **http://cis.nci.nih.gov/fact/1_2.htm** on the Internet, or by calling the Cancer Information Service (CIS) at 1–800–4–CANCER (1–800–422–6237).
- The American Board of Medical Specialties (ABMS) publishes a list of board-certified physicians. The *Official ABMS Directory of Board Certified*

[15] Adapted from the NCI: **http://cis.nci.nih.gov/fact/7_47.htm**.

Medical Specialists lists doctors' names along with their specialty and their educational background. This resource is available in most public libraries. The ABMS also has a Web site that can be used to verify whether a specific physician is board-certified. This free service is located at **http://www.abms.org/newsearch.asp** on the Internet. Verification of a physician's board certification can also be obtained by calling the ABMS at 1–866–275–2267 (1–866–ASK–ABMS).

- The American Medical Association (AMA) provides an online service called AMA Physician Select that offers basic professional information on virtually every licensed physician in the United States and its possessions. The database can be searched by doctor's name or by medical specialty. The AMA Physician Select service is located at **http://www.ama-assn.org/aps/amahg.htm** on the Internet.
- The American Society of Clinical Oncologists (ASCO) provides an online list of doctors who are members of ASCO. The member database has the names and affiliations of over 15,000 oncologists worldwide. It can be searched by doctor's name, institution's name, location, and/or type of board certification. This service is located at **http://www.asco.org/people/db/html/m_db.htm** on the Internet.
- The American College of Surgeons (ACOS) Fellowship Database is an online list of surgeons who are Fellows of the ACOS. The list can be searched by doctor's name, geographic location, or medical specialty. This service is located at **http://web.facs.org/acsdir/default.htm** on the Internet. The ACOS can be contacted at 633 North Saint Clair Street, Chicago, IL 60611–3211; or by telephone at 312–202–5000.
- Local medical societies may maintain lists of doctors in each specialty.
- Public and medical libraries may have print directories of doctors' names, listed geographically by specialty.
- Your local Yellow Pages may have doctors listed by specialty under "Physicians."

The Agency for Healthcare Research and Quality (AHRQ) offers *Your Guide to Choosing Quality Health Care*, which has information for consumers on choosing a health plan, a doctor, a hospital, or a long-term care provider. The Guide includes suggestions and checklists that you can use to determine which doctor or hospital is best for you. This resource is available at **http://www.ahrq.gov/consumer/qntool.htm** on the Internet. You can also order the Guide by calling the AHRQ Publications Clearinghouse at 1–800–358–9295.

If you are a member of a health insurance plan, your choice may be limited to doctors who participate in your plan. Your insurance company can provide you with a list of participating primary care doctors and specialists. It is important to ask your insurance company if the doctor you choose is accepting new patients through your health plan. You also have the option of seeing a doctor outside your health plan and paying the costs yourself. If you have a choice of health insurance plans, you may first wish to consider which doctor or doctors you would like to use, then choose a plan that includes your chosen physician(s).

The National Comprehensive Cancer Network (NCCN) Physician Directory lists specialists who practice in the NCCN's 19 member institutions across the U.S. To access the directory, go to **http://www.nccn.org/** and click on "Physician Directory". To use this service, you will be required to scroll to the bottom of the page and select "I agree." Enter your search criteria and select "Find" at the bottom of the page. To obtain more information on a physician or institution, contact the institution's Physician Referral Department or the NCCN Patient Information and Referral Service at 1-888-909-NCCN or **patientinformation@nccn.org**.

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[16]

There are many factors to consider when choosing a doctor. To make the most informed decision, you may wish to speak with several doctors before choosing one. When you meet with each doctor, you might want to consider the following:

- Does the doctor have the education and training to meet my needs?
- Does the doctor use the hospital that I have chosen?
- Does the doctor listen to me and treat me with respect?
- Does the doctor explain things clearly and encourage me to ask questions?

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

- What are the doctor's office hours?
- Who covers for the doctor when he or she is unavailable? Will that person have access to my medical records?
- How long does it take to get an appointment with the doctor?

If you are choosing a surgeon, you may wish to ask additional questions about the surgeon's background and experience with specific procedures. These questions may include:

- Is the surgeon board-certified?[17]
- Has the surgeon been evaluated by a national professional association of surgeons, such as the American College of Surgeons (ACOS)?
- At which treatment facility or facilities does the surgeon practice?
- How often does the surgeon perform the type of surgery I need?
- How many of these procedures has the surgeon performed? What was the success rate?

It is important for you to feel comfortable with the specialist that you choose, because you will be working closely with that person to make decisions about your cancer treatment. Trust your own observations and feelings when deciding on a doctor for your medical care.

Other health professionals and support services may also be important during cancer treatment. The National Cancer Institute fact sheet *Your Health Care Team: Your Doctor Is Only the Beginning* has information about these providers and services, and how to locate them. This fact sheet is located at **http://cis.nci.nih.gov/fact/8_10.htm** on the Internet, or can be obtained by calling the CIS at 1–800–4–CANCER (1–800–422–6237).

[17] 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.

Working with Your Doctor[18]

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.
- 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.

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

- 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.

Finding a Cancer Treatment Facility[19]

Choosing a treatment facility is another important consideration for getting the best medical care possible. Although you may not be able to choose which hospital treats you in an emergency, you can choose a facility for scheduled and ongoing care. If you have already found a doctor for your cancer treatment, you may need to choose a facility based on where your doctor practices. Your doctor may be able to recommend a facility that provides quality care to meet your needs. You may wish to ask the following questions when considering a treatment facility:

- Has the facility had experience and success in treating my condition?
- Has the facility been rated by state, consumer, or other groups for its quality of care?
- How does the facility check and work to improve its quality of care?
- Has the facility been approved by a nationally recognized accrediting body, such as the American College of Surgeons (ACOS) and/or the Joint Commission on Accredited Healthcare Organizations (JCAHO)?
- Does the facility explain patients' rights and responsibilities? Are copies of this information available to patients?
- Does the treatment facility offer support services, such as social workers and resources to help me find financial assistance if I need it?
- Is the facility conveniently located?

If you are a member of a health insurance plan, your choice of treatment facilities may be limited to those that participate in your plan. Your

[19] Adapted from the NCI: **http://cis.nci.nih.gov/fact/7_47.htm**. At this Web site, information on how to find treatment facilities is also available for patients living outside the U.S.

insurance company can provide you with a list of approved facilities. Although the costs of cancer treatment can be very high, you have the option of paying out-of-pocket if you want to use a treatment facility that is not covered by your insurance plan. If you are considering paying for treatment yourself, you may wish to discuss the potential costs with your doctor beforehand. You may also want to speak with the person who does the billing for the treatment facility. In some instances, nurses and social workers can provide you with more information about coverage, eligibility, and insurance issues.

The following resources may help you find a hospital or treatment facility for your care:

- The NCI fact sheet *The National Cancer Institute Cancer Centers Program* describes and gives contact information for NCI-designated cancer treatment centers around the country.
- The ACOS accredits cancer programs at hospitals and other treatment facilities. More than 1,400 programs in the United States have been designated by the ACOS as Approved Cancer Programs. The ACOS Web site offers a searchable database of these programs at **http://web.facs.org/cpm/default.htm** on the Internet. The ACOS can be contacted at 633 North Saint Clair Street, Chicago, IL 60611–3211; or by telephone at 312–202–5000.
- The JCAHO is an independent, not-for-profit organization that evaluates and accredits health care organizations and programs in the United States. It also offers information for the general public about choosing a treatment facility. The JCAHO Web site is located at **http://www.jcaho.org** on the Internet. The JCAHO is located at One Renaissance Boulevard, Oakbrook Terrace, IL 60181–4294. The telephone number is 630–792–5800.
- The JCAHO offers an online Quality Check service that patients can use to determine whether a specific facility has been accredited by the JCAHO and view the organization's performance reports. This service is located at **http://www.jcaho.org/qualitycheck/directry/directry.asp** on the Internet.
- The AHRQ publication *Your Guide To Choosing Quality Health Care* has suggestions and checklists for choosing the treatment facility that is right for you.

Additional Cancer Support Information

In addition to the references above, the NCI has set up guidance Web sites that offers information on issues relating to cancer. These include:

- Facing Forward - A Guide for Cancer Survivors: **http://www.cancer.gov/cancer_information/doc_img.aspx?viewid=cc93a843-6fc0-409e-8798-5c65afc172fe**
- Taking Time: Support for People With Cancer and the People Who Care About Them: **http://www.cancer.gov/cancer_information/doc_img.aspx?viewid=21a46445-a5c8-4fee-95a3-d9d0d665077a**
- When Cancer Recurs: Meeting the Challenge: **http://www.cancer.gov/cancer_information/doc_img.aspx?viewid=9e13d0d2-b7de-4bd6-87da-5750300a0dab**
- Your Health Care Team: Your Doctor Is Only the Beginning: **http://cis.nci.nih.gov/fact/8_10.htm**

Vocabulary Builder

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

Bereavement: Refers to the whole process of grieving and mourning and is associated with a deep sense of loss and sadness. [NIH]

Cervical: Relating to the neck, or to the neck of any organ or structure. Cervical lymph nodes are located in the neck; cervical cancer refers to cancer of the uterine cervix, which is the lower, narrow end (the "neck") of the uterus. [NIH]

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

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

Mammography: The use of x-rays to create a picture of the breast. [NIH]

Oncologist: A doctor who specializes in treating cancer. Some oncologists specialize in a particular type of cancer treatment. For example, a radiation oncologist specializes in treating cancer with radiation. [NIH]

Palliative: 1. affording relief, but not cure. 2. an alleviating medicine. [EU]

Pap test: The collection of cells from the cervix for examination under a microscope. It is used to detect changes that may be cancer or may lead to cancer, and can show noncancerous conditions, such as infection or

inflammation. Also called a Pap smear. [NIH]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

Screening: Checking for disease when there are no symptoms. [NIH]

CHAPTER 3. CLINICAL TRIALS AND ADULT HODGKIN'S DISEASE

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 adult Hodgkin's disease.

What Is a Clinical Trial?[20]

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 adult Hodgkin's disease is to try it on patients in a clinical trial.

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

What Kinds of Clinical Trials Are There?

Clinical trials are carried out in three phases:

- **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 adult Hodgkin's disease.
- **Phase III.** Finally, researchers conduct Phase III trials to find out how new treatments for adult Hodgkin's disease 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 adult Hodgkin's disease 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 adult Hodgkin's disease. 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 adult Hodgkin's disease 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 adult Hodgkin's disease 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 adult Hodgkin's disease. 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 Adult Hodgkin's Disease

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 adult Hodgkin's disease.[21] 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.

- **Biological Therapy in Treating Patients With Progressive, Relapsed, or Refractory Hodgkin's Disease**

  Condition(s): recurrent adult Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); UAB Comprehensive Cancer Center

  Purpose - Excerpt: Rationale: Biological therapies use different ways to stimulate the immune system and stop cancer cells from growing. Donor white blood cells that are treated in the laboratory with Epstein-Barr virus and donor peripheral stem cell transplantation may be effective treatments for Hodgkin's disease. Purpose: Phase I trial to study the effectiveness of biological therapy in treating patients who have progressive, relapsed, or refractory Hodgkin's disease.

  Phase(s): Phase I

  Study Type: Treatment

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

Contact(s): Alabama; University of Alabama at Birmingham Comprehensive Cancer Center, Birmingham, Alabama, 35294-3300, United States; Recruiting; Donna E. Salzman 205-934-1908. Study chairs or principal investigators: Kenneth Lucas, Study Chair; UAB Comprehensive Cancer Center

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00006100;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **CD8 DLI for Patients With Relapse or Residual Disease Following Allogeneic Stem Cell Transplantation**

  Condition(s): Chronic Myelogenous Leukemia; Multiple Myeloma; Non Hodgkin's Lymphoma; Hodgkin's Disease; Chronic Lymphocytic Leukemia

  Study Status: This study is currently recruiting patients.

  Sponsor(s): M.D. Anderson Cancer Center

  Purpose - Excerpt: Primary Objectives: To evaluate response rates of acute or chronic GVHD following CD8 depleted DLI in patients with CMML, CLL, NHL, MM and HD. Secondary Objectives: To evaluate safety and treatment related mortality after CD8 depleted DLI. To evaluate the time to onset of GVHD following DLI and response to GVHD treatment. To evaluate the incidence and timing of pancytopenia following DLI. To evaluate disease-free survival, overall survival and relapse rates in three cohorts of patients; early relapse CML, late relapse CML and lymphoproliferative disorders (HD, CLL, NHL and MM). To evaluate the need and efficacy of second or subsequent CD8 depleted donor lymphocyte infusions. To evaluate the number of apheresis procedures needed to collect appropriate doses of CD4+ cells.

  Study Type: Interventional

  Contact(s): Texas; MD Anderson Cancer Center, Houston, Texas, 77030, United States; Recruiting; Gloria McCormick, RN 713-745-1721 gmccormi@mdanderson.org; Richard E Champlin, MD, Principal Investigator

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00038818;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Chemotherapy and Radiation Therapy Plus Bone Marrow or Peripheral Stem Cell Transplantation in Treating Patients With Relapsed or Refractory T-cell Lymphoma, Hodgkin's Disease, or Non-Hodgkin's Lymphoma**

  Condition(s): recurrent diffuse small lymphocytic/marginal zone lymphoma; recurrent adult diffuse small cleaved cell lymphoma; recurrent grade III follicular large cell lymphoma; recurrent adult immunoblastic large cell lymphoma; recurrent adult diffuse mixed cell lymphoma; recurrent adult diffuse large cell lymphoma; recurrent cutaneous T-cell lymphoma; recurrent adult Hodgkin's disease; recurrent mycosis fungoides/Sezary syndrome; recurrent grade I follicular small cleaved cell lymphoma; recurrent grade II follicular mixed cell lymphoma

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Robert H. Lurie Cancer Center

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage cancer cells. Bone marrow or peripheral stem cell transplantation may allow the doctor to give higher doses of chemotherapy drugs and radiation therapy and kill more cancer cells. Purpose: Phase I/II trial to study the effectiveness of chemotherapy and radiation therapy plus bone marrow or peripheral stem cell transplantation in treating patients who have refractory or relapsed T-cell lymphoma, Hodgkin's disease, or non-Hodgkin's lymphoma.

  Phase(s): Phase I; Phase II

  Study Type: Treatment

  Contact(s): Illinois; Robert H. Lurie Comprehensive Cancer Center, Northwestern University, Chicago, Illinois, 60611-3013, United States; Recruiting; Leo I. Gordon 312-695-4546. Study chairs or principal investigators: Leo I. Gordon, Study Chair; Robert H. Lurie Cancer Center

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00004907;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Chemotherapy Followed By Peripheral Stem Cell Transplantation in Treating Patients With Recurrent or Refractory AIDS-Related Lymphoma**

  Condition(s): AIDS-related diffuse small cleaved cell lymphoma; AIDS-related small noncleaved cell lymphoma; AIDS-related lymphoblastic

lymphoma; AIDS-related diffuse mixed cell lymphoma; AIDS-related immunoblastic large cell lymphoma; AIDS-related peripheral/systemic lymphoma; AIDS-related diffuse large cell lymphoma; HIV-associated Hodgkin's disease

Study Status: This study is currently recruiting patients.

Sponsor(s): National Cancer Institute (NCI); AIDS Associated Malignancies Clinical Trials Consortium

Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Peripheral stem cell transplantation may allow the doctor to give higher doses of chemotherapy drugs and kill more cancer cells. Purpose: Phase II trial to study the effectiveness of chemotherapy followed by peripheral stem cell transplantation in treating patients who have recurrent or refractory AIDS -related lymphoma.

Phase(s): Phase II

Study Type: Treatment

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00005824;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Chemotherapy Plus Radiation Therapy in Treating Patients With Refractory or Relapsed Hodgkin's Disease**

  Condition(s): recurrent adult Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Memorial Sloan-Kettering Cancer Center

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage tumor cells. Combining radiation therapy with chemotherapy may kill more tumor cells. Peripheral stem cell transplantation may be able to replace immune cells that were destroyed by chemotherapy and radiation therapy used to kill tumor cells. Purpose: Phase II trial to study the effectiveness of chemotherapy plus radiation therapy in treating patients with refractory or relapsed Hodgkin's disease.

  Phase(s): Phase II

  Study Type: Treatment

Contact(s): New York; Memorial Sloan-Kettering Cancer Center, New York, New York, 10021, United States; Recruiting; Joachim Yahalom 212-639-5999. Study chairs or principal investigators: Joachim Yahalom, Study Chair; Memorial Sloan-Kettering Cancer Center

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00003631;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Chemotherapy With or Without Additional Chemotherapy and/or Radiation Therapy in Treating Children with Newly Diagnosed Hodgkin's Disease**

  Condition(s): stage III childhood Hodgkin's disease; stage IV childhood Hodgkin's disease; stage I childhood Hodgkin's disease; childhood lymphocyte predominant Hodgkin's disease; childhood lymphocyte depletion Hodgkin's disease; stage II childhood Hodgkin's disease; childhood mixed cellularity Hodgkin's disease; childhood nodular sclerosis Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Children's Oncology Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Giving the drugs in different combinations may kill more cancer cells. Radiation therapy uses high-energy x-rays to damage cancer cells. It is not yet known if chemotherapy is more effective with or without additional chemotherapy and/or radiation therapy in treating Hodgkin's disease. Purpose: Randomized phase III trial to compare the effectiveness of chemotherapy with or without additional chemotherapy and/or radiation therapy in treating children who have newly diagnosed Hodgkin's disease.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00025259;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy and Peripheral Stem Cell Transplantation in Treating Patients With Relapsed Hodgkin's Disease**

  Condition(s): recurrent adult Hodgkin's disease

Study Status: This study is currently recruiting patients.

Sponsor(s): German Hodgkin's Lymphoma Study Group; EORTC Lymphoma Cooperative Group; EBMT Solid Tumors Working Party

Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Peripheral stem cell transplantation may allow the doctors to give higher doses of chemotherapy drugs and kill more cancer cells. It is not yet known which combination chemotherapy regimen given before peripheral stem cell transplantation is more effective in treating relapsed Hodgkin's disease . Purpose: Randomized phase III trial to compare different combination chemotherapy regimens followed by peripheral stem cell transplantation in treating patients who have relapsed Hodgkin's disease.

Phase(s): Phase III

Study Type: Treatment

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00025636;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy Followed by Bone Marrow or Peripheral Stem Cell Transplantation in Treating Patients With Non-Hodgkin's Lymphoma or Hodgkin's Disease**

  Condition(s): recurrent diffuse small lymphocytic/marginal zone lymphoma; recurrent adult diffuse small cleaved cell lymphoma; recurrent grade III follicular large cell lymphoma; recurrent adult immunoblastic large cell lymphoma; recurrent adult diffuse small noncleaved cell/Burkitt's lymphoma; recurrent adult diffuse mixed cell lymphoma; recurrent mantle cell lymphoma; recurrent adult diffuse large cell lymphoma; recurrent adult Hodgkin's disease; recurrent grade I follicular small cleaved cell lymphoma; recurrent grade II follicular mixed cell lymphoma; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); H. Lee Moffitt Cancer Center and Research Institute

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Combining chemotherapy with peripheral stem cell or bone marrow transplantation may allow the doctor to give higher doses of

chemotherapy drugs and kill more cancer cells. Purpose: Phase II trial to study the effectiveness of combination chemotherapy followed by autologous bone marrow transplantation or peripheral stem cell transplantation in treating patients who have non-Hodgkin's lymphoma or Hodgkin's disease.

Phase(s): Phase II

Study Type: Treatment

Contact(s): Florida; H. Lee Moffitt Cancer Center and Research Institute, Tampa, Florida, 33612-9497, United States; Recruiting; Kapil Narain Bhalla 813-903-6861. Study chairs or principal investigators: Steven C. Goldstein, Study Chair; H. Lee Moffitt Cancer Center and Research Institute

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00006373;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy Followed by Bone Marrow or Peripheral Stem Cell Transplantation in Treating Patients With Relapsed or Refractory Hodgkin's Disease**

  Condition(s): stage II adult Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease; recurrent adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Fox Chase Cancer Center

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Combining chemotherapy with bone marrow or peripheral stem cell transplantation may allow the doctor to give higher doses of chemotherapy drugs and kill more tumor cells. Purpose: Phase II trial to study the effectiveness of combination chemotherapy followed by bone marrow or peripheral stem cell transplantation in treating patients with relapsed or refractory Hodgkin's disease.

  Phase(s): Phase II

  Study Type: Treatment

  Contact(s): Pennsylvania; Fox Chase - Temple Cancer Center, Philadelphia, Pennsylvania, 19140, United States; Recruiting; Kenneth F. Mangan 215-214-3129. Study chairs or principal investigators: Kenneth F. Mangan, Study Chair; Fox Chase Cancer Center

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00002522;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy Followed by Peripheral Stem Cell Transplantation in Treating Children With Recurrent or Refractory Hodgkin's or Non-Hodgkin's Lymphoma**

  Condition(s): recurrent childhood large cell lymphoma; childhood diffuse large cell lymphoma; recurrent childhood small noncleaved cell lymphoma; recurrent childhood lymphoblastic lymphoma; childhood immunoblastic large cell lymphoma; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Pediatric Oncology Group; Children's Cancer Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Peripheral stem cell transplantation may allow doctors to give higher doses of chemotherapy and kill more cancer cells. Purpose: Phase II trial to study the effectiveness of combination chemotherapy followed by peripheral stem cell transplantation in treating children who have recurrent or refractory Hodgkin's disease or non-Hodgkin's lymphoma.

  Phase(s): Phase II

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00002941;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy in Treating Children With Refractory or Relapsed Hodgkin's Disease**

  Condition(s): childhood lymphocyte predominant Hodgkin's disease; childhood lymphocyte depletion Hodgkin's disease; childhood mixed cellularity Hodgkin's disease; childhood nodular sclerosis Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Children's Oncology Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die.

Combining more than one drug may kill more cancer cells. Purpose: Phase II trial to study the effectiveness of combination chemotherapy in treating children who have refractory or relapsed Hodgkin's disease.

Phase(s): Phase II

Study Type: Treatment

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00006760;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy in Treating Patients With Advanced Hodgkin's Disease**

  Condition(s): adult lymphocyte predominant Hodgkin's disease; adult lymphocyte depletion Hodgkin's disease; adult mixed cellularity Hodgkin's disease; adult nodular sclerosis Hodgkin's disease; stage II adult Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Stanford University

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Combining more than one drug may kill more tumor cells. Purpose: Phase II trial to study the effectiveness of combination chemotherapy in treating patients who have advanced Hodgkin's disease.

  Phase(s): Phase II

  Study Type: Treatment

  Contact(s): California; Stanford University Medical Center, Stanford, California, 94305-5408, United States; Recruiting; Sandra J. Horning 650-725-6456. Study chairs or principal investigators: Sandra J. Horning, Study Chair; Stanford University

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00002715;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy in Treating Patients With Hodgkin's Disease and HIV Infection**

  Condition(s): stage II adult Hodgkin's disease; AIDS-related peripheral/systemic lymphoma; stage III adult Hodgkin's disease; stage

IV adult Hodgkin's disease; HIV-associated Hodgkin's disease; stage I adult Hodgkin's disease

Study Status: This study is currently recruiting patients.

Sponsor(s): Centro di Riferimento Oncologico - Aviano

Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Combining more than one drug may kill more tumor cells. Purpose: Phase II trial to study the effectiveness of two combination chemotherapy regimens in treating patients with Hodgkin's disease and HIV infection.

Phase(s): Phase II

Study Type: Treatment

Contact(s): Italy; Centro di Riferimento Oncologico - Aviano, Aviano, 33081, Italy; Recruiting; Umberto Tirelli 0434-659284. Study chairs or principal investigators: Umberto Tirelli, Study Chair; Centro di Riferimento Oncologico - Aviano

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00003262;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy in Treating Patients With Previously Untreated Advanced Hodgkin's Disease**

  Condition(s): adult lymphocyte predominant Hodgkin's disease; adult lymphocyte depletion Hodgkin's disease; adult mixed cellularity Hodgkin's disease; adult nodular sclerosis Hodgkin's disease; stage II adult Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): British National Lymphoma Investigation

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Combining more than one drug may kill more cancer cells. It is not yet known which combination chemotherapy regimen is more effective in treating patients who have advanced Hodgkin's disease. Purpose: Randomized phase III trial to compare the effectiveness of two different combination chemotherapy regimens in treating patients who have advanced Hodgkin's disease.

  Phase(s): Phase III

  Study Type: Treatment

Contact(s): United Kingdom, England; Mount Vernon Hospital, Northwood, England, HA6 2RN, United Kingdom; Recruiting; Peter John Hoskin 01923-844533. Study chairs or principal investigators: Peter John Hoskin, Study Chair; British National Lymphoma Investigation

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00041210;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy in Treating Patients With Relapsed or Refractory Hodgkin's Disease**

  Condition(s): recurrent adult Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Cancer and Leukemia Group B

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Combining more than one drug may kill more tumor cells. Purpose: Phase I/II trial to study the effectiveness of combination chemotherapy in treating patients who have relapsed or refractory Hodgkin's disease.

  Phase(s): Phase I; Phase II

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00006029;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy With or Without Radiation Therapy and Peripheral Stem Cell Transplantation in Treating Children With Hodgkin's Disease**

  Condition(s): stage III childhood Hodgkin's disease; stage IV childhood Hodgkin's disease; stage I childhood Hodgkin's disease; stage II childhood Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): United Kingdom Children's Cancer Study Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage tumor cells.

Peripheral stem cell transplantation may be able to replace immune cells that were destroyed by chemotherapy. Purpose: Phase II trial to compare the effectiveness of different combination chemotherapy regimens with or without radiation therapy or peripheral stem cell transplantation in treating children who have Hodgkin's disease.

Phase(s): Phase II

Study Type: Treatment

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00025064;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy With or Without Radiation Therapy in Treating Patients With Advanced Hodgkin's Disease**

  Condition(s): stage II adult Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Southwest Oncology Group; NCIC-Clinical Trials Group; Cancer and Leukemia Group B; Eastern Cooperative Oncology Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage tumor cells. Combining more than one drug with radiation therapy may kill more tumor cells. It is not yet known which combination chemotherapy regimen is most effective in treating patients with advanced Hodgkin's disease. Purpose: Randomized phase III trial to compare the effectiveness of two different combination chemotherapy regimens, with or without radiation therapy, in treating patients with advanced Hodgkin's disease.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00003389;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy With or Without Radiation Therapy in Treating Patients With Hodgkin's Disease**

  Condition(s): adult lymphocyte predominant Hodgkin's disease; stage II adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): EORTC Lymphoma Cooperative Group; Groupe d'Etudes de Lymphomes de L'Adulte; Federation Nationale des Centres de Lutte Contre le Cancer

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage tumor cells. Combining chemotherapy with radiation therapy may kill more tumor cells. It is not yet known which combination chemotherapy regimen is most effective in treating Hodgkin's disease. Purpose: Randomized phase III trial to compare the effectiveness of different regimens of combination chemotherapy with or without radiation therapy in treating patients who have Hodgkin's disease.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00005584;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Combination Chemotherapy With or Without Radiation Therapy in Treating Patients With Stage I or Stage IIA Hodgkin's Disease.**

  Condition(s): adult mixed cellularity Hodgkin's disease; adult nodular sclerosis Hodgkin's disease; stage II adult Hodgkin's disease; stage I adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Stanford University

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Radiation therapy uses high-energy x-rays to damage tumor cells. Combining chemotherapy with radiation therapy may kill more tumor cells. Purpose: Phase II trial to compare the effectiveness of combination chemotherapy with or without radiation therapy in treating patients who have stage I or stage IIA Hodgkin's disease.

  Phase(s): Phase II

Study Type: Treatment

Contact(s): California; Kaiser Permanente Medical Center - Vallejo, Vallejo, California, 94589, United States; Recruiting; Louis Fehrenbacher 707-651-2577; Stanford University Medical Center, Stanford, California, 94305-5408, United States; Recruiting; Richard T. Hoppe 650-723-5510. Study chairs or principal investigators: Sandra J. Horning, Study Chair; Stanford University

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00026208;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Comparison of Two Combination Chemotherapy Regimens in Treating Patients With Stage III or Stage IV Hodgkin's Disease**

  Condition(s): adult lymphocyte depletion Hodgkin's disease; adult mixed cellularity Hodgkin's disease; adult nodular sclerosis Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): EORTC Lymphoma Cooperative Group; British National Lymphoma Investigation; Groupe d'Etudes de Lymphomes de L'Adulte; Grup per l'Estudi dels Limfomes de Catalunya i Balears; NCIC-Clinical Trials Group; Australian New Zealand Lymphoma Group; Nordic Lymphoma Group

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop cancer cells from dividing so they stop growing or die. Combining more than one drug may kill more cancer cells. It is not yet known which combination chemotherapy regimen is more effective in treating stage III or stage IV Hodgkin's disease. Purpose: Randomized phase III trial to compare the effectiveness of two combination chemotherapy regimens in treating patients who have stage III or stage IV Hodgkin's disease.

  Phase(s): Phase III

  Study Type: Treatment

  Contact(s): see Web site below

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00049595;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Donor Th2 Cells to Prevent Graft-Versus-Host Disease in Bone Marrow Transplants**

  Condition(s): Chronic Lymphocytic Leukemia; Graft vs Host Disease; Hodgkin's Disease; Multiple Myeloma; Non Hodgkin's Lymphoma

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI)

  Purpose - Excerpt: Allogeneic peripheral blood stem cell transplantation (PBSCT) is primarily limited by graft-versus-host disease (GVHD). In murine models, we have demonstrated that donor CD4+ T cells of Th1 cytokine phenotype (defined by their secretion of IL-2 and IFN-gamma) mediate GVHD. In contrast, donor CD4+ T cells of Th2 phenotype (defined by their secretion of IL-4, IL-5, and IL-10) do not generate GVHD, and abrogate Th-1-mediated GVHD. Importantly, we have demonstrated that enrichment of murine allografts with Th2 cells reduces GVHD without impairing the ability of donor T cells to prevent graft rejection. These studies indicate that the administration of Th2 cells after allogeneic transplantation represents a strategy for achieving alloengraftment with reduced GVHD. In addition to GVHD, allogeneic PBSCT has been limited by the toxicity associated with conventional myeloablative preparative regimens. Such regimens, which typically utilize total body irradiation (TBI) and high-dose chemotherapy, were once considered essential for the prevention of graft rejection. However, recent clinical studies have shown that non-myeloablative doses of fludarabine-based chemotherapy can result in alloengraftment. In murine models, we have demonstrated that severe host T cell depletion induced by combination fludarabine and cytoxan can prevent even fully-MHC mismatched marrow graft rejection. Although non-myeloablative regimens may reduce regimen-related toxicity, such transplants have been associated with a 30 to 40% incidence of severe acute GVHD that is similar to rates observed with myeloablative regimens. Because non-myeloablative regimens appear to be associated with reduced regimen-related toxicity, we have elected to conduct this phase I study of Th2 cells in the setting of an immunoablative (non-myeloablative) preparative regimen. Patients with leukemia in clinical remission, and patients with refractory lymphoid malignancy will be candidates for this HLA-matched allogeneic PBSCT protocol. Patients will receive novel induction regimen (fludarabine and EPOCH) and transplant preparative regimen (fludarabine and cytoxan) designed to maximally deplete host immune T cells capable of mediating graft rejection. After induction and preparative regimen chemotherapy, patients will receive an unmanipulated, G-CSF mobilized PBSC graft. In the initial six patients receiving this transplant procedure at the NCI, graft rejection has been successfully prevented

(100% donor chimerism by day 30 post-transplant). Importantly, GVHD has been observed in all six patients, with three of the six patients developing severe GVHD (grade III). Given that this regimen successfully achieves donor engraftment, and is associated with significant GVHD, this transplant regimen represents an excellent clinical setting for the evaluation of Th2 cells. Using this non-myeloablative allogeneic PBSCT approach, we will perform a Phase I study to evaluate the safety and feasibility of administering donor Th2 cells on day 1 post-transplant. Prior to transplantation, donor CD4+ T cells will be stimulated in vitro using culture conditions that support the generation of donor CD4 cells of the Th2 cytokine profile. If this Phase I study demonstrates that Th2 cell administration is safe and feasible, a Phase III study will be performed to evaluate whether Th2 cell administration reduces the incidence and severity of GVHD. Successful implementation of this Th2 strategy will greatly reduce the morbidity and mortality associated with allogeneic PBSCT, and may also represent an approach to stem cell transplantation in patients lacking an HLA-matched donor.

Phase(s): Phase I

Study Type: Interventional

Contact(s): Maryland; National Cancer Institute (NCI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Clinical Studies Support Center/NCI 1-888-624-1937 ncicssc@mail.nih.gov

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00001830;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Filgrastim and Chemotherapy Followed by Peripheral Stem Cell Transplantation in Treating Patients With Hodgkin's Disease or Non-Hodgkin's Lymphoma**

  Condition(s): leukemia; lymphoma

  Study Status: This study is currently recruiting patients.

  Sponsor(s): University of Minnesota Cancer Center

  Purpose - Excerpt: Rationale: Drugs used in chemotherapy use different ways to stop tumor cells from dividing so they stop growing or die. Combining chemotherapy with peripheral stem cell transplantation may allow the doctor to give higher doses of chemotherapy drugs and kill more tumor cells. Colony-stimulating factors such as filgrastim may increase the number of immune cells found in bone marrow or peripheral blood and may help a person's immune system recover from the side effects of chemotherapy. Purpose: Phase II trial to study the effectiveness

of filgrastim and chemotherapy followed by peripheral stem transplantation in treating patients who have Hodgkin's disease or non-Hodgkin's lymphoma.

Phase(s): Phase II

Study Type: Treatment

Contact(s): Minnesota; University of Minnesota Cancer Center, Minneapolis, Minnesota, 55455, United States; Recruiting; Daniel J. Weisdorf 612-624-3101. Study chairs or principal investigators: Daniel J. Weisdorf, Study Chair; University of Minnesota Cancer Center

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00005985;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Lower-Dose Chemotherapy and Stem Cell Transplantation to Treat Childhood Leukemias and Lymphomas**

  Condition(s): Hodgkin Lymphoma; Lymphocytic Leukemia; Mixed Cell Leukemia; Myelodysplastic Syndrome; Non Hodgkin's Lymphoma

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI)

  Purpose - Excerpt: This study will investigate the safety and effectiveness of a new stem cell transplant procedure for treating various leukemias and lymphomas in children. Transplantation of donated stem cells (cells produced by the bone marrow that mature into white and red blood cells and platelets) is a very effective treatment for patients with leukemia, pre-leukemia and lymphoma. However, despite its success in a large number of patients, this procedure has many serious side effects and carries a significant risk of death. These complications result from the intensive chemotherapy and radiation patients receive before the transplant to rid the body of cancer cells. In this study, radiation will not be used and chemotherapy drugs will be given in lower doses to try to reduce the dangers of the procedure. Patients between 5 and 21 years of age with acute lymphocytic leukemia, acute myelogenous leukemia, myelodysplasia, chronic myelogenous leukemia, juvenile chronic myelogenous or myelomonocytic leukemia, Hodgkin's disease and non-Hodgkin's lymphoma may be eligible for this study. Candidates will be screened with a medical history, physical examination, blood tests (including testing for genetic match with the donor), breathing tests, X-rays, scans and other tests to determine eligibility. They may also undergo bone marrow aspiration, in which the hip area is anesthetized and a small sample of bone marrow is drawn through a needle inserted

into the hipbone. A spinal tap may be done to look for cancer cells in the central nervous system. This procedure involves numbing the back and inserting a needle between the bones of the spine to withdraw a small amount of spinal fluid. A central venous catheter (flexible plastic tube placed in a vein) will be put in place before treatment begins. It will be used to draw and transfuse blood, give medications, and infuse the donated stem cells. Before the transplant procedure, patients will receive induction chemotherapy with cyclophosphamide, fludarabine, etoposide, doxorubicin, vincristine and prednisone for 4 days, followed by a 17-day rest period. No more than 3 cycles of this chemotherapy will be given. Following the induction chemotherapy, patients will be admitted to the Clinical Center for 4 days of chemotherapy with cyclophosphamide and fludarabine. The donated stem cells will be infused 3 days later. Patients can leave the hospital when their white cell counts return to near normal and they have no serious complications. After discharge, they will be followed closely (at least once or twice weekly for the first 100 days after transplant) with a physical exam and blood tests. Patients may require immunoglobulin or antibiotics to fight infections and transfusions of red blood cells and platelets. After the 100 days, follow-up visits will continue less frequently for at least 5 years.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Maryland; National Cancer Institute (NCI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Clinical Studies Support Center/NCI 1-888-624-1937 ncicssc@mail.nih.gov

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00013533;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Monoclonal Antibody Plus Interleukin-2 in Treating Patients With Leukemia or Lymphoma**

  Condition(s): relapsing chronic myelogenous leukemia; recurrent adult Hodgkin's disease; chronic phase chronic myelogenous leukemia; recurrent adult acute myeloid leukemia

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Beth Israel Deaconess Medical Center

  Purpose - Excerpt: Rationale: Monoclonal antibodies can locate cancer cells and either kill them or deliver cancer-killing substances to them without harming normal cells. Interleukin-2 may stimulate a person's

white blood cells to kill leukemia or lymphoma cells. Combining these two therapies may be an effective treatment for leukemia and lymphoma. Purpose: Phase I/II trial to study the effectiveness of monoclonal antibody therapy plus interleukin-2 in treating patients who have leukemia or lymphoma.

Phase(s): Phase I; Phase II

Study Type: Treatment

Contact(s): Massachusetts; Beth Israel Deaconess Medical Center, Boston, Massachusetts, 02215, United States; Recruiting; Richard P. Junghans 617-432-7004. Study chairs or principal investigators: Richard P. Junghans, Study Chair; Beth Israel Deaconess Medical Center

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00002681;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Phase I Study of Anti-Tac(Fv)-PE38 (LMB-2), a Recombinant Single-Chain Immunotoxin for Treatment of Tac-Expressing Malignancies**

  Condition(s): Chronic Lymphocytic Leukemia; Hodgkin's Disease; Leukemia; Non Hodgkin's Lymphoma; T Cell Leukemia

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI)

  Purpose - Excerpt: Immunotoxin Therapy. LMB-2, NSC-676422, a recombinant single chainmimmunotoxin in which the heavy and light chains of anti-Tac murine monoclonal antibody are fused to a truncated portion of Pseudomonas exotoxin lacking the cell-binding domain.

  Phase(s): Phase I

  Study Type: Interventional

  Contact(s): Maryland; National Cancer Institute (NCI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Clinical Studies Support Center/NCI 1-888-624-1937 ncicssc@mail.nih.gov

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00001501;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Phase I/II Study of Tac-Expressing Malignancies [Other than Adult T-Cell Leukemia (ATL)] with Yttrium-90 Radiolabeled Humanized Anti-Tac and Calcium-DTPA**

  Condition(s): Cutaneous T Cell Lymphoma; Hodgkin's Disease; Neoplasm; Non Hodgkin's Lymphoma; Peripheral T Cell Lymphoma

Study Status: This study is currently recruiting patients.

Sponsor(s): National Cancer Institute (NCI)

Purpose - Excerpt: The purpose of the study is to determine (1) the maximum tolerated dose of humanized-anti-Tac monoclonal antibody conjugated with Yttrium-90 (90Y) and (2) the clinical response in patients with Tac-expressing malignancies other than adult T-cell leukemia (ATL). This study represents an extension of Metabolism Branch, NCI protocols utilizing modifications of the anti-Tac monoclonal antibody in the treatment of ATL. The scientific basis for these therapeutic studies is that the malignant cells of patients with various hematologic malignancies express abnormally high levels of the Tac antigen (the IL-2R alpha) on their surfaces whereas resting normal cells, including T cells, do not. The administration of 90Yttrium-humanized anti-Tac (90Y-HAT) and intravenous calcium DTPA for patients with ATL is permitted under protocol #96-C-0147. The maximum tolerated dose in the Phase I trial of 90Y-murine anti-Tac (90Y-MAT) (without the intravenous chelate) was 10 mCi. In 1993 a phase II study of Yttrium-90 (90Y)-labeled humanized anti-Tac, also without the chelate, Protocol #93-C-0066 was initiated. In that trial all patients received an initial dose of 10 mCi of 90Y-HAT followed by up to 8 successive doses of 5 mCi. A review of the results of the first 15 patients treated has shown evidence of both less efficacy and less toxicity than seen in the 90Y-murine anti-Tac study. Also, recent data from another group has indicated that the maximum tolerated dose of the 90Yttrium can be significantly increased through use of an intravenous chelate, calcium DTPA (Ca-DTPA) to facilitate urinary excretion of 90Y. As a result we proposed and obtained approval for a Phase I/II, dose escalation trial of 90Yttrium labeled humanized anti-Tac with a fixed dose of calcium-DTPA for the treatment of patients with Tac-expressing ATL. We seek to redesign the ongoing trial of 90Y-HAT for the treatment of Tac-expressing post-thymic T-cell malignancies [other than ATL] (CC Protocol # 94-C-0068) to include the same modifications and to expand the patient population to include other Tac-positive malignancies. There will be two phases to the study, a phase I dose escalation element to define the maximum tolerated dose and a phase II element at the maximum tolerated dose of 90Y-anti-Tac defined in the first element.

Phase(s): Phase I

Study Type: Interventional

Contact(s): Maryland; National Cancer Institute (NCI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Clinical Studies Support Center/NCI 1-888-624-1937 ncicssc@mail.nih.gov

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00001575;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Prophylactic Use of Filgrastim SD/01 in Patients With Hodgkin's Disease Receiving ABVD Chemotherapy**

  Condition(s): Hodgkin Disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): M.D. Anderson Cancer Center

  Purpose - Excerpt: For patients with Hodgkin's lymphoma receiving ABVD chemotherapy.

  Phase(s): Phase II; Phase III

  Study Type: Interventional

  Contact(s): Texas; MD Anderson Cancer Center, Houston, Texas, 77030, United States; Recruiting; Anas Younes, MD 713-792-2860; Anas Younes, MD, Principal Investigator

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00038558;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Radiolabeled Monoclonal Antibody With or Without Peripheral Stem Cell Transplantation in Treating Children With Recurrent or Refractory Lymphoma**

  Condition(s): recurrent childhood small noncleaved cell lymphoma; recurrent childhood lymphoblastic lymphoma; AIDS-related peripheral/systemic lymphoma; recurrent childhood large cell lymphoma; AIDS-related primary CNS lymphoma; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Cancer Institute (NCI); Children's Oncology Group

  Purpose - Excerpt: Rationale: Radiolabeled monoclonal antibodies can locate cancer cells and deliver radioactive tumor-killing substances to them without harming normal cells. Peripheral stem cell transplantation may be able to replace immune cells that were destroyed by anticancer therapy. Purpose: Phase I trial to study the effectiveness of radiolabeled monoclonal antibody therapy with or without peripheral stem cell transplantation in treating patients who have recurrent or refractory lymphoma.

  Phase(s): Phase I

Study Type: Treatment

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00036855;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Rituximab in Treating Patients With Hodgkin's Disease**

  Condition(s): adult lymphocyte predominant Hodgkin's disease; stage III childhood Hodgkin's disease; stage IV childhood Hodgkin's disease; stage I childhood Hodgkin's disease; childhood lymphocyte predominant Hodgkin's disease; stage II childhood Hodgkin's disease; recurrent adult Hodgkin's disease; stage II adult Hodgkin's disease; stage III adult Hodgkin's disease; stage IV adult Hodgkin's disease; stage I adult Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Stanford University

  Purpose - Excerpt: Rationale: Monoclonal antibodies such as rituximab can locate tumor cells and either kill them or deliver tumor-killing substances to them without harming normal cells. Purpose: Phase II trial to study the effectiveness of rituximab in treating patients who have Hodgkin's disease.

  Phase(s): Phase II

  Study Type: Treatment

  Contact(s): California; Stanford University Medical Center, Stanford, California, 94305-5408, United States; Recruiting; Sandra J. Horning 650-725-6456; Missouri; Washington University School of Medicine, Saint Louis, Missouri, 63110, United States; Recruiting; Nancy Bartlett 314-362-4843. Study chairs or principal investigators: Sandra J. Horning, Study Chair; Stanford University

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00003820;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Safety and Efficacy of Campath in Nonmyeloablative Transplantation**

  Condition(s): Non Hodgkin's Lymphoma; Hodgkin's Disease; Chronic Lymphocytic Leukemia

  Study Status: This study is currently recruiting patients.

  Sponsor(s): M.D. Anderson Cancer Center

Purpose - Excerpt: This is a phase I/II study to determine the safety and efficacy of unrelated allogeneic stem cell transplantation using Campath-1H/Rituximab/Cyclophosphamide/Flurdarbine as a preparative regimen for patients with lymphoid malignancies.

Phase(s): Phase I; Phase II

Study Type: Interventional

Contact(s): Texas; MD Anderson Cancer Center, Houston, Texas, 77030, United States; Recruiting; Patricia A Williams, RN 713-792-8373 pwilliams@mdanderson.org; Issa F Khouri, MD, Principal Investigator; Richard E Champlin, MD, Sub-Investigator; Michael Keating, MD, Sub-Investigator

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00038844;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Selective T-Cell Depletion to Reduce Graft-Versus-Host-Disease in Patients Receiving Stem Cell Transplantation to Treat Leukemia, Lymphoma or Myelodysplastic Syndromes**

  Condition(s): Graft vs Host Disease; Myelodysplastic Syndromes; Leukemia; Leukemia, Myeloid; Leukemia, Myelomonocytic, chronic; Leukemia, Lymphocytyc; Lymphoma; Lymphoma, Mantle-cell; Lymphoma, Non-Hodgkin; Hodgkin Disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): National Heart, Lung, and Blood Institute (NHLBI)

  Purpose - Excerpt: This study will evaluate the safety and effectiveness of stem cell transplantation in which the donors T lymphocytes (a type of white cell) have undergone "selective depletion." Certain patients with cancers of the blood undergo transplantation of donated stem cells (cells produced by the bone marrow that mature into the different blood components-white cells, red cells and platelets) to generate new and normally functioning bone marrow. In addition to producing the new bone marrow, the donor's T-lymphocytes also fight any tumor cells that might have remained in the body. This attack on tumor cells is called a "graft-versus-leukemia" (GVL) effect. However, another type of T-lymphocyte from the donor may cause what is called "graft-versus-host-disease" (GVHD), in which the donor cells recognize the patient's cells as foreign and mount an immune response to reject them. Selective depletion is a technique that was developed to remove the T-lymphocytes that cause harmful GVHD, while keeping those that produce the desirable GVL effect. Patients with leukemia, lymphoma or a

myelodysplastic syndrome (pre-cancerous blood disorder) between 55 and 75 years of age may be eligible for this 4-year study. Candidates will be screened with a medical history and physical examination, dental and eye examinations, blood tests (including HLA typing for genetic compatibility with the donor), stress test, echocardiogram, 24-hour electrocardiogram (EKG), breathing test and chest and sinus X-rays. They will also have a bone marrow biopsy and aspiration, in which about a tablespoon of bone marrow will be withdrawn through a needle inserted into the hipbone. This procedure is done under local anesthetic. Participants will undergo apheresis to collect lymphocytes to test for interactions between the patient's and donor's white cells. In this procedure, blood is drawn through a needle in the arm, similar to donating a unit of blood. The lymphocytes are then separated by a cell separator machine and collected, and the rest of the blood is returned through a needle in the other arm. Patients will also have a central venous catheter (flexible plastic tube) placed in a vein before treatment begins. This line will remain in place during the stem cell transfusion and recovery period to draw and transfuse blood, give medications, and to infuse the donated cells. Seven days before the transfusion, patients will begin chemotherapy with cyclophosphamide and will start taking fludarabine 5 days before the procedure. These anti-cancer agents are given to kill the cancer cells and to prevent rejection of the donated cells. The day after chemotherapy is completed, the stem cells will be infused through the central line. Also, from 4 days before the transplantation until about 3 months after the procedure, patients will receive cyclosporine to help prevent both GVHD and rejection of the donated cells. Usually patients may be discharged from the hospital about 3 weeks after the transplant. They will return for follow-up clinic visits weekly or twice weekly for 3 months for a symptom check, physical examination and blood tests. Blood transfusions will be given if needed. Subsequent visits will be scheduled at 4, 6, 12, 18, 24, 30, 36 and 48 months after the transplant, or more often if required, and then yearly.

Phase(s): Phase II

Study Type: Interventional

Contact(s): Maryland; National Heart, Lung and Blood Institute (NHLBI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States; Recruiting; Patient Recruitment and Public Liaison Office 1-800-411-1222 prpl@mail.cc.nih.gov; TTY 1-866-411-1010

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00016484;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Vaccine Therapy in Treating Patients With Relapsed Hodgkin's Disease**

  Condition(s): recurrent adult Hodgkin's disease; recurrent/refractory childhood Hodgkin's disease

  Study Status: This study is currently recruiting patients.

  Sponsor(s): Baylor College of Medicine

  Purpose - Excerpt: Rationale: Vaccines made from cancer cells that have the Epstein-Barr virus may make the body build an immune response to and kill tumor cells. Purpose: Phase I trial to study the effectiveness of Epstein-Barr virus-specific cytotoxic T cells in treating patients with relapsed Hodgkin's disease.

  Phase(s): Phase I

  Study Type: Treatment

  Contact(s): Texas; Baylor College of Medicine, Houston, Texas, 77030, United States; Recruiting; Helen E. Heslop 832-824-4662. Study chairs or principal investigators: Helen E. Heslop, Study Chair; Baylor College of Medicine

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00002821;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Safety and efficacy of an investigational drug in the prevention of thrombocytopenia in recurrent or refractory non-Burkitt's, non-Hodgkin's lymphoma (NHL) or Hodgkin's disease receiving DHAP (Dexamethasone, high-dose Cytarabine and Cisplatin) chemotherapy**

  Condition(s): Non-Hodgkin Lymphoma; Hodgkin Disease; Thrombocytopenia

  Study Status: This study is no longer recruiting patients.

  Purpose - Excerpt: Intensive chemotherapy is associated with significant thrombocytopenia, often requiring platelet transfusion to maintain platelet counts. This investigational drug has been demonstrated to increase platelet counts. This study will test the safety and efficacy of the investigational drug in the prevention of thrombocytopenia in patients with recurrent or refractory intermediate-grade or high-grade non-Burkitt's, non-Hodgkin's lymphoma (NHL), or Hodgkin's disease receiving DHAP (Dexamethasone, high-dose Cytarabine, and Cisplatin) chemotherapy.

  Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00039910;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **A Randomized Study of EPOCH II Versus EPOCH II and Immunotherapy in Lymphomas**

  Condition(s): Hodgkin's Disease; Non Hodgkin's Lymphoma

  Study Status: This study is completed.

  Sponsor(s): National Cancer Institute (NCI)

  Purpose - Excerpt: This is a randomized study of combination chemotherapy (EPOCH II) versus EPOCH II and immunotherapy with peripheral blood stem cells (PBSC) and IL-2 in patients with relapsed Hodgkin's and non-Hodgkin's lymphomas, and untreated patients with low-grade non-Hodgkin's lymphomas. The chemotherapy entails the administration of multiple cycles of infusional doxorubicin, etoposide and vincristine chemotherapy (total of 3), alternating with cycles of high-dose cyclophosphamide (3 cycles). Patients will be randomized, on a 2:1 basis, to either receive only chemotherapy or to undergo a PBSC harvest with PBSC reinfusion and IL-2 following the last cycle of chemotherapy. In all patients, immunological monitoring for NK/LAK activity, T cell number and function will be performed. The therapy is specifically targeted for patients who would be candidates for high-dose chemotherapy with stem cell support.

  Phase(s): Phase II

  Study Type: Interventional

  Contact(s): Maryland; National Cancer Institute (NCI), 9000 Rockville Pike Bethesda, Maryland, 20892, United States

  Web Site:
  http://clinicaltrials.gov/ct/gui/show/NCT00001430;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

- **Phase II Study of Filgrastim (G-CSF) Plus ABVD in the Treatment of HIV-Associated Hodgkin's Disease**

  Condition(s): HIV Infections; Hodgkin's Disease

  Study Status: This study is completed.

  Sponsor(s): Amgen; National Institute of Allergy and Infectious Diseases (NIAID)

  Purpose - Excerpt: Primary: To assess the toxicity of chemotherapy with ABVD (doxorubicin / bleomycin / vinblastine / dacarbazine) when

given with filgrastim (granulocyte colony-stimulating factor; G-CSF) in patients with underlying HIV infection and Hodgkin's disease; to observe the efficacy of ABVD and G-CSF in reducing tumor burden in HIV-infected patients with Hodgkin's disease. Secondary: To determine the durability of tumor response to ABVD plus G-CSF over the 2-year study period; to observe the incidence of bacterial and opportunistic infections in HIV-infected patients with Hodgkin's disease receiving this regimen; to document quality of life of patients receiving this regimen. Addition of granulocyte colony-stimulating factor may prevent neutropenia caused by chemotherapy, allowing more timely administration of chemotherapy and improved response.

Phase(s): Phase II

Study Type: Interventional

Contact(s): see Web site below

Web Site:
http://clinicaltrials.gov/ct/gui/show/NCT00000626;jsessionid=FD6491347A38DF0715A1DAA47B7DFE70

Benefits and Risks[22]

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 adult Hodgkin's disease. 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.

[22] 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.

- People who take part in trials contribute to scientific discoveries that may help other people with adult Hodgkin's disease. In cases where certain diseases or disorders run in families, your participation may lead to better care or prevention for your family members.

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 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 adult Hodgkin's disease? 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?

Clinical Trials and Insurance Coverage[23]

As you consider enrolling in a clinical trial, you will face the critical issue of how to cover the costs of care. Even if you have health insurance, your coverage may not include some or all of the patient care costs associated with a clinical trial. This is because some health plans define clinical trials as "experimental" or "investigational" procedures.

Because lack of coverage for these costs can keep people from enrolling in trials, the National Cancer Institute is working with major health plans and managed care groups to find solutions. In the meantime, there are strategies that may help you deal with cost and coverage barriers. This section answers frequently asked questions about insurance coverage for clinical trial participation and directs you to additional information resources.

The material here is mainly concerned with treatment clinical trials, since other types of trials (prevention, screening, etc.) are newer and generally not covered by health insurance at all. However, this guide may become more

[23] Adapted from the NCI:
http://www.cancer.gov/clinical_trials/doc_header.aspx?viewid=1d92be79-8748-4bda-8005-2a56d332463b.

relevant for prevention and other types of trials as these trials grow more common.

If you do not have any health insurance, you may find this section helpful for understanding some of the costs that trials involve.

What Costs Do Trials Involve? Who Is Usually Responsible for Paying Them?

There are two types of costs associated with a trial: patient care costs and research costs.
Patient care costs fall into two categories:

- Usual care costs, such as doctor visits, hospital stays, clinical laboratory tests, x-rays, etc., which occur whether you are participating in a trial or receiving standard treatment. These costs have usually been covered by a third-party health plan, such as Medicare or private insurance.
- Extra care costs associated with clinical trial participation, such as the additional tests that may or may not be fully covered by the clinical trial sponsor and/or research institution.

The sponsor and the participant's health plan need to resolve coverage of these costs for particular trials.

Research costs are those associated with conducting the trial, such as data collection and management, research physician and nurse time, analysis of results, and tests purely performed for research purposes. Such costs are usually covered by the sponsoring organization, such as NCI or a pharmaceutical company.

Criteria Used by Health Plans to Make Reimbursement Decisions about Trials

Health insurance companies and managed care companies decide which health care services they will pay for by developing coverage policy regarding the specific services. In general, the most important factor determining whether something is covered is a health plan's judgment as to whether the service is established or investigational. Health plans usually designate a service as established if there is a certain amount of scientific data to show that it is safe and effective. If the health plan does not think that

such data exist in sufficient quantity, the plan may label the service as investigational.

Health care services delivered within the setting of a clinical trial are very often categorized as investigational and not covered. This is because the health plan thinks that the major reason to perform the clinical trial is that there is not enough data to establish the safety and effectiveness of the service being studied. Thus, for some health plans, any mention of the fact that the patient is involved in a clinical trial results in a denial of payment.

Your health plan may define specific criteria that a trial must meet before extending coverage, such as the following:

Sponsorship

Some plans may only cover costs of trials sponsored by organizations whose review and oversight of the trial is careful and scientifically rigorous, according to standards set by the health plan.

Trial Phase and Type

Some plans may cover patient care costs only for the clinical trials they judge to be "medically necessary" on a case-by-case basis. Trial phase may also affect coverage; for example, while a plan may be willing to cover costs associated with Phase III trials, which include treatments that have already been successful with a certain number of people, the plan may require some documentation of effectiveness before covering a Phase I or II trial.

While health plans are interested in efforts to improve prevention and screening, they currently seem less likely to have a review process in place for these trials. Therefore, it may be more difficult to get coverage for the care costs associated with them.

Some plans, especially smaller ones, will not cover any costs associated with a clinical trial. Policies vary widely, but in most cases your best bet is to have your doctor initiate discussions with the health plan.

Cost "Neutrality"

Some health plans may limit coverage to trials they consider cost-neutral (i.e., not significantly more expensive than the treatments considered standard).

Lack of Standard Therapy

Some plans limit coverage of trials to situations in which no standard therapy is available.

Facility and Personnel Qualifications

A health plan may require that the facility and medical staff meet specific qualifications to conduct a trial involving unique services, especially intensive therapy such as a bone marrow transplant (high-dose chemotherapy with bone marrow/ stem cell rescue).

Clinical Trials and Medicare Coverage

For up-to-date information about Medicare coverage of clinical trials, go to the Web site for the Centers for Medicaid & Medicare (**http://www.hcfa.gov/coverage/8d.htm**; formerly the Health Care Financing Administration). As of January 2001, the following information was accurate[24]:

What Will Medicare Pay?

- Anything normally covered is still covered when it is part of a clinical trial. This includes test, procedures, and doctor visits that are ordinarily covered.
- Anything normally covered even if it is a service or item associated with the experimental treatment. For example, Medicare will pay for the

[24] On June 7, 2000, Present Clinton announced that Medicare would revise its payment policy to reimburse the routine patient care costs of clinical trials. The announcement is available for public viewing at the following Web address: **http://www.cancer.gov/clinical_trials/doc.aspx?viewid=320DD013-BA7A-4177-A000-2011089F34A0**.

intravenous administration of a new chemotherapy drug being tested in a trial, including any therapy to prevent side effects from the new drug.

- Anything normally covered even if it resulted from your being in the clinical trial. For example, a test or hospitalization resulting from a side effect of the new treatment that Medicare would ordinarily cover.

What Costs Are Not Covered?

- Investigational items or services being tested in a trial. Sponsors of clinical trials often provide the new drug free, but make sure you ask your doctor before you begin.
- Items or services used solely for the data collection needs of the trial.
- Anything being provided free by the sponsor of the trial.

What Kinds of Clinical Trials Are Covered?

NCI's Cancer Information Service has provided a fact sheet for Medicare beneficiaries at the following Web site: **http://cis.nci.nih.gov/fact/8_14.htm**. In general, cancer treatment and diagnosis trials are covered if:

- They are funded by the National Cancer Institute (NCI), NCI-Designated Cancer Centers, NCI-Sponsored Clinical Trials Cooperative Groups and all other Federal agencies that fund cancer research. Other trials may be eligible for coverage and doctors can ask Medicare to pay the patients' costs. Ask your doctor about this before you begin.
- They are designed to treat or diagnose your cancer.
- The purpose or subject of the trial is within a Medicare benefit category. For example, cancer diagnosis and treatment are Medicare benefits, so these trials are covered. Cancer prevention trials are not currently covered.

Increasing the Likelihood of Insurance Coverage for Trials[25]

There are several steps you can follow to deal with coverage issues up front when deciding to enter a clinical trial. Along the way, enlist the help of

[25] This section has been adapted from the NCI: **http://www.cancer.gov/clinical_trials/doc_header.aspx?viewid=1d92be79-8748-4bda-8005-2a56d332463b&docid=0df4397a-eccb-465f-bd33-a89e7a708c46**.

family members and your doctor or other health professionals. You may find the following checklist useful:

Understand the Costs Associated with the Trial

Ask your doctor or the trial's contact person about the costs that must be covered by you or your health plan. Are these costs significantly higher than those associated with standard care? Also, inquire about the experience of other patients in the trial. Have their plans paid for their care? Have there been any persistent problems with coverage? How often have the trial's administrators been successful in getting plans to cover patient care costs?

Understand Your Health Plan

Be sure you know what's in your policy; request and carefully review the actual contract language. If there's a specific exclusion for "experimental treatment," look closely at the policy to see how the plan defines such treatment and under what conditions it might be covered. If it is not clearly defined, call the plan's customer service line, consult their Web site, and/or write to them. Ask for specific information about clinical trials coverage.

Work Closely with Your Doctor

Talk with your doctor about the paperwork he or she submits to your health plan. If there have been problems with coverage in the past, you might ask your doctor or the hospital to send an information package to the plan that includes studies supporting the procedure's safety, benefits, and medical appropriateness. This package might include:

- Publications from peer-reviewed literature about the proposed therapy that demonstrate patient benefits;
- A letter that uses the insurance contract's own language to explain why the treatment, screening method, or preventive measure should be covered;
- Letters from researchers that explain the clinical trial;
- Support letters from patient advocacy groups.

Be sure to keep your own copy of any materials that the doctor sends to your health plan for future reference.

Work Closely with Your Company's Benefits Manager

This person may be helpful in enlisting the support of your employer to request coverage by the health plan.

Give Your Health Plan a Deadline

Ask the hospital or cancer center to set a target date for the therapy. This will help to ensure that coverage decisions are made promptly.

Know Your Rights[26]

A number of state governments are addressing the question of whether insurance companies ought to cover the costs associated with patients' participation in clinical trials. Lack of such coverage is a significant barrier to many patients who might otherwise benefit from enrolling in a trial. Lack of coverage also makes it harder for researchers to successfully conduct trials that could improve prevention and treatment options. Information on State initiatives and legislation concerning cancer-related clinical trials is available at **http://www.cancer.gov/ClinicalTrials/insurancelaws**. By conducting your own research and learning about your rights, you may increase the likelihood that your insurance company will cover the costs of a trial.

If Your Insurance Claim Is Denied after the Trial Has Begun

If a claim is denied, read your policy to find out what steps you can follow to make an appeal. In "What Cancer Survivors Need to Know about Health Insurance", the National Coalition for Cancer Survivorship suggests that you and your doctor demonstrate to the health plan that:

- The therapy is not just a research study, but also a valid procedure that benefits patients;
- Your situation is similar to that of other patients who are participating in clinical trials as part of a covered benefit;
- Possible complications have been anticipated and can be handled effectively.

[26] Adapted from Cancer.gov: **http://www.cancer.gov/ClinicalTrials/insurancelaws**.

You also may wish to contact your state insurance counseling hotline or insurance department for more help, or write your state insurance commissioner describing the problem.

Where Else Can I Turn for Assistance?

It's never easy to deal with financial issues when you or a loved one faces cancer. Unfortunately, costs can present a significant barrier to clinical trials participation. The range of insurance issues and health plan contracts makes it impossible to deal with all of them here. You may wish to consult this partial list of publications, organizations, and Web sites for more information:

Publications

What Cancer Survivors Need to Know about Health Insurance
National Coalition of Cancer Survivorship
1010 Wayne Avenue, 5th floor
Silver Spring, MD 20910
(301) 650-8868
http://www.cansearch.org/

Cancer Treatments Your Insurance Should Cover
The Association of Community Cancer Centers
11600 Nebel Street, Suite 201
Rockville, MD 20852
(301) 984-9496
http://www.accc-cancer.org/main2001.shtml

The Managed Care Answer Guide
Patient Advocate Foundation
739 Thimble Shoals Boulevard, Suite 704
Newport News, VA 23606
(757) 873-6668
E-mail: **ndepaf@pinn.net**

1998 Guide to Health Insurance for People with Medicare, The Medicare Handbook
Medicare Helpline: 1-800-444-4606
Health Care Financing Administration: **http://www.hcfa.gov/**
New Medicare site: **http://www.medicare.gov/**

Assistance Programs

Candlelighters Childhood Cancer Foundation
Ombudsman Program
910 Woodmont Avenue, #4607
Bethesda, MD 20814
(301) 657-8401; 1-800-366-2223 (toll-free)
E-mail: **info@candlelighters.org**
http://www.candlelighters.org
The Ombudsman Program helps families of children with cancer and survivors of childhood cancer resolve a range of problems, including insurance coverage difficulties. Local groups appoint a Parent Advocate who works with the treatment center on behalf of families.

Medical Care Management Corporation
5272 River Road, Suite 650
Bethesda, MD 20816-1405
(301) 652-1818
email: mcman@mcman.com
http://www.mcman.com/
Working for a range of clients, including health plans, employers, and patients, MCMC conducts independent, objective reviews of high-technology medical care cases to assist in decision-making. While it does charge for its services, MCMC also offers a volunteer program for those who cannot afford to pay.

More Information Resources

OncoLink
A service of the University of Pennsylvania Cancer Center.
http://www.oncolink.com/
In addition to general cancer information, this web site features a section on financial information for patients. Among the topics: viatical settlements, life insurance, a glossary of financial and medical terms, and news about billing and insurance.

American Association of Health Plans
1129 20th Street, NW, Suite 600
Washington, DC 20036-3421
(202) 778-3200
http://www.aahp.org/
The Web site section "For Consumers" includes a fact sheet on clinical research that describes various health plans' efforts to support research initiatives and collaborate with academic health centers and universities.

Health Insurance Association of America
555 13th Street, NW
Washington, DC 20004
(202) 824-1600

- Home page: **http://www.hiaa.org/**
- Consumer Information: **http://www.hiaa.org/consumer/**
- Insurance Counseling Hotlines by State: **http://www.hiaa.org/consumer/insurance_counsel.cfm**
- State Insurance Departments: **http://www.hiaa.org/consumer/state_insurance.cfm**

Government Initiatives to Expand Insurance Coverage for Trials[27]

The good news is that there has been a recent effort in the U.S. to assure clinical trials coverage, with NCI involved in several new initiatives as described below:

NCI-Department of Defense Agreement

An innovative 1996 agreement between NCI and the Department of Defense (DoD) has given thousands of DoD cancer patients more options for care and greater access to state-of-the-art treatments. Patients who are beneficiaries of TRICARE/CHAMPUS, the DoD's health program, are covered for NCI-sponsored Phase II and Phase III clinical treatment trials. NCI and DoD are refining a system that allows physicians and patients to determine quickly what current trials meet their needs and where they are taking place.

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[27] Adapted from the NCI:
http://www.cancer.gov/clinical_trials/doc_header.aspx?viewid=1d92be79-8748-4bda-8005-2a56d332463b&docid=d8092601-daf9-4794-8536-3be2712eb6b9.

NCI-Department of Veterans Affairs Agreement

A 1997 agreement with the Department of Veterans Affairs provides coverage for eligible veterans of the armed services to participate in NCI-sponsored prevention, diagnosis, and treatment studies nationwide. For additional information, see the VA/DoD Beneficiaries Digest Page at **http://www.va.gov/cancer.htm**.

Midwest Health Plans Agreement

Some NCI Cooperative Groups have reached agreements with several insurers in Wisconsin and Minnesota to provide more than 200,000 people with coverage. This coverage is allocated for patient care costs if they participate in a cooperative group-sponsored trial.

Pediatric Cancer Care Network

This network, a cooperative agreement among the Children's Cancer Group, the Pediatric Oncology Group, and the Blue Cross Blue Shield System Association (BCBS) nationwide, will ensure that children of BCBS subscribers receive care at designated centers of cancer care excellence and may promote the enrollment of children in Cooperative Group clinical trials.

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 "adult Hodgkin's disease" (or synonyms).

While ClinicalTrials.gov is the most comprehensive listing of NIH-supported clinical trials available, not all trials are in the database. The database is updated regularly, so clinical trials are continually being added. The following is a list of specialty databases affiliated with the National Institutes of Health that offer additional information on trials:

- For clinical studies at the Warren Grant Magnuson Clinical Center located in Bethesda, Maryland, visit their Web site: **http://clinicalstudies.info.nih.gov/**
- For clinical studies conducted at the Bayview Campus in Baltimore, Maryland, visit their Web site: **http://www.jhbmc.jhu.edu/studies/index.html**
- For cancer trials, visit the National Cancer Institute: **http://cancertrials.nci.nih.gov/**

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:

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

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

Aspiration: Removal of fluid from a lump, often a cyst, with a needle and a syringe. [NIH]

Bleomycin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. [NIH]

Calcium: A mineral found in teeth, bones, and other body tissues. [NIH]

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

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

Cisplatin: An anticancer drug that belongs to the family of drugs called platinum compounds. [NIH]

CNS: Central nervous system. The brain and spinal cord. [NIH]

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

CSF: Cerebrospinal fluid. The fluid flowing around the brain and spinal

cord. CSF is produced in the ventricles of the brain. [NIH]

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

Cyclophosphamide: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

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

Cytotoxic: Cell-killing. [NIH]

Dacarbazine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

Dexamethasone: A synthetic steroid (similar to steroid hormones produced naturally in the adrenal gland). Dexamethasone is used to treat leukemia and lymphoma and may be used to treat some of the problems caused by other cancers and their treatment. [NIH]

Doxorubicin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. It is an anthracycline. [NIH]

Etoposide: An anticancer drug that is a podophyllotoxin derivative and belongs to the family of drugs called mitotic inhibitors. [NIH]

Filgrastim: A colony-stimulating factor that stimulates the production of neutrophils (a type of white blood cell). It is a cytokine that belongs to the family of drugs called hematopoietic (blood-forming) agents. Also called granulocyte colony-stimulating factor (G-CSF). [NIH]

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

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

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

Granulocyte: A type of white blood cell that fights bacterial infection. Neutrophils, eosinophils, and basophils are granulocytes. [NIH]

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

HIV: Human immunodeficiency virus, the cause of acquired immunodeficiency syndrome (AIDS). [NIH]

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

Immunotherapy: Treatment to stimulate or restore the ability of the immune system to fight infection and disease. Also used to lessen side effects that may be caused by some cancer treatments. Also called biological therapy or biological response modifier (BRM) therapy. [NIH]

Immunotoxin: An antibody linked to a toxic substance. Some immmunotoxins can bind to cancer cells and kill them. [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]

Infuse: To pour (a liquid) into something. [EU]

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

Intravenous: IV. Into a vein. [NIH]

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

Lymphocytic: Referring to lymphocytes, a type of white blood cell. [NIH]

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

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

Mediate: Indirect; accomplished by the aid of an intervening medium. [EU]

Mycosis: Any disease caused by a fungus. [EU]

Myelodysplasia: Abnormal bone marrow cells that may lead to myelogenous leukemia. [NIH]

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

Myeloma: Cancer that arises in plasma cells, a type of white blood cell. [NIH]

Neoplasm: A new growth of benign or malignant tissue. [NIH]

Neutropenia: An abnormal decrease in the number of neutrophils, a type of white blood cell. [NIH]

Pancytopenia: Deficiency of all cell elements of the blood; aplastic anaemia. [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]

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

Prednisone: Belongs to the family of drugs called steroids and is used to

treat several types of cancer and other disorders. Prednisone also inhibits the body's immune response. [NIH]

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

Pseudomonas: A genus of gram-negative, aerobic, rod-shaped bacteria widely distributed in nature. Some species are pathogenic for humans, animals, and plants. [NIH]

Radioactive: Giving off radiation. [NIH]

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

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

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]

Refractory: Not readily yielding to treatment. [EU]

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

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

Rituximab: A type of monoclonal antibody used in cancer detection or therapy. Monoclonal antibodies are laboratory-produced substances that can locate and bind to cancer cells. [NIH]

Sclerosis: A induration, or hardening; especially hardening of a part from inflammation and in diseases of the interstitial substance. The term is used chiefly for such a hardening of the nervous system due to hyperplasia of the connective tissue or to designate hardening of the blood vessels. [EU]

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]

Thrombocytopenia: A decrease in the number of platelets in the blood that may result in easy bruising and excessive bleeding from wounds or bleeding in mucous membranes and other tissues. [NIH]

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

Transfusion: The infusion of components of blood or whole blood into the

bloodstream. The blood may be donated from another person, or it may have been taken from the person earlier and stored until needed. [NIH]

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

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

Vinblastine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. It is a mitotic inhibitor. [NIH]

Vincristine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. [NIH]

Virus: Submicroscopic organism that causes infectious disease. In cancer therapy, some viruses may be made into vaccines that help the body build an immune response to, and kill, tumor cells. [NIH]

Yttrium: A rare elemental metal. A radioactive form of yttrium is used in radiation therapy and some types of immunotherapy. [NIH]

PART II: ADDITIONAL RESOURCES AND ADVANCED MATERIAL

ABOUT PART II

In Part II, we introduce you to additional resources and advanced research on adult Hodgkin's disease. 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 adult Hodgkin's disease. In Part II, as in Part I, our objective is not to interpret the latest advances on adult Hodgkin's disease 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 adult Hodgkin's disease is suggested.

CHAPTER 4. STUDIES ON ADULT HODGKIN'S DISEASE

Overview

Every year, academic studies are published on adult Hodgkin's disease 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 adult Hodgkin's disease. 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 adult Hodgkin's disease and teach you how to keep current on new studies as they are published or undertaken by the scientific community.

Federally Funded Research on Adult Hodgkin's Disease

The U.S. Government supports a variety of research studies relating to adult Hodgkin's disease and associated conditions. These studies are tracked by the Office of Extramural Research at the National Institutes of Health.[28]

[28] 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).

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 adult Hodgkin's disease 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 adult Hodgkin's disease 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 adult Hodgkin's disease:

- **Project Title: Adult Hodgkin's Disease and Epstein Barr Virus**

  Principal Investigator & Institution: Ambinder, Richard F.; Professor and Director; Oncology; Johns Hopkins University 3400 N Charles St Baltimore, Md 21218

  Timing: Fiscal Year 2002; Project Start 5-APR-2002; Project End 1-MAR-2007

  Summary: (PROVIDED BY APPLICANT): Successes in the treatment of Hodgkin's disease (HD) highlight the long-term consequences of chemotherapy and radiation therapy in the management of this disease. The current inter-group trial reflects the improvement in failure free survival as it pays increasing attention to reducing the late effects of therapy in survivors. The presence of Epstein-Barr virus (EBV) in a significant proportion of HD tumors offers the opportunity to develop the use of virus-specific tumor markers and virus-specific immune therapy. The Eastern Cooperative Oncology Group (ECOG) and Southwestern Oncology Group (SWOG) trial E2496 offers an unparalleled opportunity to address these questions. Through evaluation of this large group of patients, the determination of whether EBV detection in biopsy specimens identifies a poor risk group (particularly in patients over the age of 45 years) should be possible. In addition, the validation of the utility of tissue arrays in the detection of EBV in HD will allow the development of this important and cost-efficient resource. A careful analysis will be performed to determine whether EBV detection studies in tissue arrays or in plasma by real-time PCR yield results parallel to those achieved with detection studies applied to conventional tissue sections. In parallel, the determination of the rate of viral DNA

clearance in plasma and the effect of different treatment regimens on this clearance will be performed using real-time PCR. The rate of clearance as well as the persistence of viral DNA in plasma will analyzed to determine if they predict resistant disease or relapse. The relationship between plasma IL-10 levels, IL-10 promoter polymorphisms, and the EBV status of the tumor will be evaluated. Finally, we seek to characterize the cytotoxic T-cell response to EBV antigens expressed in HD (in the context of response to other EBV antigens and antigens from other viruses) and to assess the impact of chemotherapy/radiotherapy on these responses. This work should lay the groundwork for future viral antigen targeted therapies.

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

E-Journals: PubMed Central[29]

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).[30] Access to this growing archive of e-journals is free and unrestricted.[31] To search, go to **http://www.pubmedcentral.nih.gov/index.html#search**, and type "adult Hodgkin's disease" (or synonyms) into the search box. This search gives you access to full-text articles. The following is a sample of items found for adult Hodgkin's disease in the PubMed Central database:

- **Hodgkin and Reed --Sternberg cells in lymphocyte predominant Hodgkin disease represent clonal populations of germinal center-derived tumor B cells** by Andreas Braeuninger, Ralf Kuppers, John G. Strickler, Hans-Heinrich Wacker, Klaus Rajewsky, and Martin-Leo Hansmann; 1997 August 19
  http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=23186
- **Hodgkin Disease: Hodgkin and Reed-Sternberg Cells Picked from Histological Sections Show Clonal Immunoglobulin Gene Rearrangements and Appear to be Derived from B Cells at Various**

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

[30] 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.

[31] 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.

Stages of Development by R Kuppers, K Rajewsky, M Zhao, G Simons, R Laumann, R Fischer, and M-L Hansmann; 1994 November 8
http://www.pubmedcentral.nih.gov/articlerender.fcgi?rendertype=abstract&artid=45146

- **Isolation of viable Hodgkin and Reed-Sternberg cells from Hodgkin disease tissues** by Johannes Irsch, Silke Nitsch, Martin-Leo Hansmann, Klaus Rajewsky, Hans Tesch, Volker Diehl, Andrea Jox, Ralf Kuppers, and Andreas Radbruch; 1998 August 18
http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=21471

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

- **Epstein-Barr Virus and HLA-DPB1-*0301 in young adult Hodgkin's disease: evidence for inherited susceptibility to Epstein-Barr Virus in cases that are EBV(+ve).**
Author(s): Alexander FE, Jarrett RF, Cartwright RA, Armstrong AA, Gokhale DA, Kane E, Gray D, Lawrence DJ, Taylor GM.

[32] 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.

Source: Cancer Epidemiology, Biomarkers & Prevention : a Publication of the American Association for Cancer Research, Cosponsored by the American Society of Preventive Oncology. 2001 June; 10(6): 705-9.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11401923&dopt=Abstract

- **A defective, rearranged Epstein-Barr virus genome in EBER-negative and EBER-positive Hodgkin's disease.**
  Author(s): Gan YJ, Razzouk BI, Su T, Sixbey JW.
  Source: American Journal of Pathology. 2002 March; 160(3): 781-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11891176&dopt=Abstract

- **A population-based study of intensive multi-agent chemotherapy with or without autotransplant for the highest risk Hodgkin's disease patients identified by the Scotland and Newcastle Lymphoma Group (SNLG) prognostic index. A Scotland and Newcastle Lymphoma Group study (SNLG HD III).**
  Author(s): Proctor SJ, Mackie M, Dawson A, White J, Prescott RJ, Lucraft HL, Angus B, Jackson GH, Lennard AL, Hepplestone A, Taylor PR.
  Source: European Journal of Cancer (Oxford, England : 1990). 2002 April; 38(6): 795-806.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11937314&dopt=Abstract

- **Absence of human herpesvirus-6 genome by polymerase chain reaction in children with Hodgkin disease: a Children's Cancer Group Lymphoma Biology Study.**
  Author(s): Shiramizu B, Chang CW, Cairo MS.
  Source: Journal of Pediatric Hematology/Oncology : Official Journal of the American Society of Pediatric Hematology/Oncology. 2001 June-July; 23(5): 282-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11464983&dopt=Abstract

- **Analysis of BCL-6 mutations in classic Hodgkin disease of the B- and T-cell type.**
  Author(s): Seitz V, Hummel M, Anagnostopoulos I, Stein H.
  Source: Blood. 2001 April 15; 97(8): 2401-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11290603&dopt=Abstract

- **Autotransplantation for advanced lymphoma and Hodgkin's disease followed by post-transplant rituxan/GM-CSF or radiotherapy and consolidation chemotherapy.**
  Author(s): Rapoport AP, Meisenberg B, Sarkodee-Adoo C, Fassas A, Frankel SR, Mookerjee B, Takebe N, Fenton R, Heyman M, Badros A, Kennedy A, Jacobs M, Hudes R, Ruehle K, Smith R, Kight L, Chambers S, MacFadden M, Cottler-Fox M, Chen T, Phillips G, Tricot G.
  Source: Bone Marrow Transplantation. 2002 February; 29(4): 303-12.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11896427&dopt=Abstract

- **BAX expression in Hodgkin and Reed-Sternberg cells of Hodgkin's disease: correlation with clinical outcome.**
  Author(s): Rassidakis GZ, Medeiros LJ, McDonnell TJ, Viviani S, Bonfante V, Nadali G, Vassilakopoulos TP, Giardini R, Chilosi M, Kittas C, Gianni AM, Bonadonna G, Pizzolo G, Pangalis GA, Cabanillas F, Sarris AH.
  Source: Clinical Cancer Research : an Official Journal of the American Association for Cancer Research. 2002 February; 8(2): 488-93.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11839668&dopt=Abstract

- **Breast cancer screening in women previously treated for Hodgkin's disease: a prospective cohort study.**
  Author(s): Diller L, Medeiros Nancarrow C, Shaffer K, Matulonis U, Mauch P, Neuberg D, Tarbell NJ, Litman H, Garber J.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 April 15; 20(8): 2085-91.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11956269&dopt=Abstract

- **Cases from the Osler Medical Service at Johns Hopkins University. Hodgkin's disease with Pel-Ebstein fevers.**
  Author(s): Talbot TR.
  Source: The American Journal of Medicine. 2002 March; 112(4): 312-3. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11893371&dopt=Abstract

- **CC chemokines and the receptors CCR3 and CCR5 are differentially expressed in the nonneoplastic leukocytic infiltrates of Hodgkin disease.**

Author(s): Buri C, Korner M, Scharli P, Cefai D, Uguccioni M, Mueller C, Laissue JA, Mazzucchelli L.
Source: Blood. 2001 March 15; 97(6): 1543-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11238088&dopt=Abstract

- **Challenging cases and diagnostic dilemmas: case 2. Pitfalls of positron emission tomography for assessing residual mediastinal mass after chemotherapy for Hodgkin's disease.**
  Author(s): Bomanji JB, Syed R, Brock C, Jankowska P, Dogan A, Costa DC, Ell PJ, Lee SM.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 August 1; 20(15): 3347-9. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12149309&dopt=Abstract

- **Clonally unrelated Hodgkin's disease following autologous stem cell transplant for B-cell lymphoma.**
  Author(s): Fend F, Martinez A, Quintanilla-Martinez L, Sanz L, Combalia N, Raffeld M, Jaffe ES, Montserrat E, Campo E.
  Source: British Journal of Haematology. 2002 February; 116(2): 329-33.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11841433&dopt=Abstract

- **Comparison of prognostic models in patients with advanced Hodgkin disease. Promising results from integration of the best three systems.**
  Author(s): Gobbi PG, Zinzani PL, Broglia C, Comelli M, Magagnoli M, Federico M, Merli F, Iannitto E, Tura S, Ascari E.
  Source: Cancer. 2001 April 15; 91(8): 1467-78.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11301394&dopt=Abstract

- **Composite nodular lymphocyte-predominance Hodgkin disease and gamma-heavy-chain disease: a case report and review of the literature.**
  Author(s): Hudnall SD, Alperin JB, Petersen JR.
  Source: Archives of Pathology & Laboratory Medicine. 2001 June; 125(6): 803-7. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11371236&dopt=Abstract

- **Correlation of blood lymphocyte CTLA-4 (CD152) induction in Hodgkin's disease with proliferative activity, interleukin 2 and interferon-gamma production.**
  Author(s): Kosmaczewska A, Frydecka I, Bocko D, Ciszak L, Teodorowska R.
  Source: British Journal of Haematology. 2002 July; 118(1): 202-9.
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http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12147658&dopt=Abstract

- **The bone marrow in Hodgkin's disease--a two year study.**
  Author(s): Ananthamurthy A, Kurien A, Ramnarayan K.
  Source: Indian J Cancer. 2000 December; 37(4): 173-83.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12018570&dopt=Abstract

- **The clinical course of nonsmall cell lung carcinoma in survivors of Hodgkin disease.**
  Author(s): Laurie SA, Kris MG, Portlock CS, Rosenzweig KE, Miller VA, Krug LM, Rusch VW.
  Source: Cancer. 2002 July 1; 95(1): 119-26.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12115325&dopt=Abstract

- **The correlation of Epstein-Barr virus expression and lymphocyte subsets with the clinical presentation of nodular sclerosing Hodgkin disease.**
  Author(s): Kandil A, Bazarbashi S, Mourad WA.
  Source: Cancer. 2001 June 1; 91(11): 1957-63.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11391573&dopt=Abstract

- **The tumor cells in nodular lymphocyte-predominant Hodgkin disease are clonally related to the large cell lymphoma occurring in the same individual. Direct demonstration by single cell analysis.**
  Author(s): Ohno T, Huang JZ, Wu G, Park KH, Weisenburger DD, Chan WC.
  Source: Am J Clin Pathol. 2001 October; 116(4): 506-11.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11601135&dopt=Abstract

- **Treatment of paediatric Hodgkin's disease. a balance of risks.**
  Author(s): Thomson AB, Wallace WH.
  Source: European Journal of Cancer (Oxford, England : 1990). 2002 March; 38(4): 468-77. Review.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11872338&dopt=Abstract

- **Trends in mortality from Hodgkin's disease in western and eastern Europe.**
  Author(s): Levi F, Lucchini F, Negri E, Boyle P, La Vecchia C.
  Source: British Journal of Cancer. 2002 July 29; 87(3): 291-3.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12177797&dopt=Abstract

- **Utility and outcomes of fine-needle aspiration biopsy in Hodgkin's disease.**
  Author(s): Moreland WS, Geisinger KR.
  Source: Diagnostic Cytopathology. 2002 May; 26(5): 278-82.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11992367&dopt=Abstract

- **Very late relapse of Hodgkin's disease: a report of five patients.**
  Author(s): Shihabi S, Deutsch M, Jacobs SA.
  Source: American Journal of Clinical Oncology : the Official Publication of the American Radium Society. 2001 December; 24(6): 576-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11801757&dopt=Abstract

- **Viruses and Hodgkin disease: no evidence of novel herpesviruses in non-EBV-associated lesions.**
  Author(s): Gallagher A, Perry J, Shield L, Freeland J, MacKenzie J, Jarrett RF.
  Source: International Journal of Cancer. Journal International Du Cancer. 2002 September 20; 101(3): 259-64.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12209977&dopt=Abstract

- **Virus-like agents from patients with Hodgkin's disease.**
  Author(s): Eisinger M, Fox SM, De Harven E, Biedler JL, Sanders FK.
  Source: Nature. 1971 September 10; 233(5315): 104-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12058748&dopt=Abstract

- **Vitiligo at the sites of irradiation in a patient with Hodgkin's disease.**
  Author(s): Pajonk F, Weissenberger C, Witucki G, Henke M.

Source: Strahlentherapie Und Onkologie : Organ Der Deutschen Rontgengesellschaft . [et Al]. 2002 March; 178(3): 159-62.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11962193&dopt=Abstract

- **Whole-body positron emission tomography using 18F-fluorodeoxyglucose for initial staging of patients with Hodgkin's disease.**
  Author(s): Weihrauch MR, Re D, Bischoff S, Dietlein M, Scheidhauer K, Krug B, Textoris F, Ansen S, Franklin J, Bohlen H, Wolf J, Schicha H, Diehl V, Tesch H.
  Source: Annals of Hematology. 2002 January; 81(1): 20-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11807631&dopt=Abstract

Vocabulary Builder

Antigens: Substances that cause the immune system to make a specific immune response. [NIH]

Aspergillus: A genus of mitosporic fungi containing about 100 species and eleven different teleomorphs in the family Trichocomaceae. [NIH]

Bile: A fluid made by the liver and stored in the gallbladder. Bile is excreted into the small intestine where it helps digest fat. [NIH]

Biomarkers: Substances sometimes found in an increased amount in the blood, other body fluids, or tissues and that may suggest the presence of some types of cancer. Biomarkers include CA 125 (ovarian cancer), CA 15-3 (breast cancer), CEA (ovarian, lung, breast, pancreas, and GI tract cancers), and PSA (prostate cancer). Also called tumor markers. [NIH]

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

Cerebellar: Pertaining to the cerebellum. [EU]

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

Cytokines: A class of substances that are produced by cells of the immune system and can affect the immune response. Cytokines can also be produced in the laboratory by recombinant DNA technology and given to people to affect immune responses. [NIH]

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

Haemopoietic: Haematopoietic; pertaining to or effecting the formation of

blood cells. [EU]

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

Hepatitis: Inflammation of the liver. [NIH]

Hypothermia: A low body temperature, as that due to exposure in cold weather or a state of low temperature of the body induced as a means of decreasing metabolism of tissues and thereby the need for oxygen, as used in various surgical procedures, especially on the heart, or in an excised organ being preserved for transplantation. [EU]

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

Laparoscopy: The insertion of a thin, lighted tube (called a laparoscope) through the abdominal wall to inspect the inside of the abdomen and remove tissue samples. [NIH]

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

Leukaemia: An acute or chronic disease of unknown cause in man and other warm-blooded animals that involves the blood-forming organs, is characterized by an abnormal increase in the number of leucocytes in the tissues of the body with or without a corresponding increase of those in the circulating blood, and is classified according of the type leucocyte most prominently involved. [EU]

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

Lymphangiography: An x-ray study of the lymphatic system. A dye is injected into a lymphatic vessel and travels throughout the lymphatic system. The dye outlines the lymphatic vessels and organs on the x-ray. [NIH]

Meningioma: A type of tumor that occurs in the meninges, the membranes that cover and protect the brain and spinal cord. Meningiomas usually grow slowly. [NIH]

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

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

Molecule: A chemical made up of two or more atoms. The atoms in a

molecule can be the same (an oxygen molecule has two oxygen atoms) or different (a water molecule has two hydrogen atoms and one oxygen atom). Biological molecules, such as proteins and DNA, can be made up of many thousands of atoms. [NIH]

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]

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

Neurology: A medical specialty concerned with the study of the structures, functions, and diseases of the nervous system. [NIH]

Neurosurgery: A surgical specialty concerned with the treatment of diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system. [NIH]

Osteomyelitis: Inflammation of bone caused by a pyogenic organism. It may remain localized or may spread through the bone to involve the marrow, cortex, cancellous tissue, and periosteum. [EU]

Otolaryngology: A surgical specialty concerned with the study and treatment of disorders of the ear, nose, and throat. [NIH]

Paediatric: Of or relating to the care and medical treatment of children; belonging to or concerned with paediatrics. [EU]

Pediatrics: A medical specialty concerned with maintaining health and providing medical care to children from birth to adolescence. [NIH]

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

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

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

Radiotherapy: The treatment of disease by ionizing radiation. [EU]

Radium: Radium. A radioactive element of the alkaline earth series of metals. It has the atomic symbol Ra, atomic number 88, and atomic weight 226. Radium is the product of the disintegration of uranium and is present in pitchblende and all ores containing uranium. It is used clinically as a source of beta and gamma-rays in radiotherapy, particularly brachytherapy. [NIH]

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

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

Rheumatoid: Resembling rheumatism. [EU]

Rosales: An order of the angiosperms, subclass Rosidae. Its members

include some of the most known ornamental and edible plants of temperate zones including roses, apples, cherries, and peaches. Plants of a number of the species of the rose family contain cyanide compounds, for example, peach pits and bitter almonds. [NIH]

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

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

Tomography: A series of detailed pictures of areas inside the body; the pictures are created by a computer linked to an x-ray machine. [NIH]

Tumour: 1. swelling, one of the cardinal signs of inflammations; morbid enlargement. 2. a new growth of tissue in which the multiplication of cells is uncontrolled and progressive; called also neoplasm. [EU]

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

Viruses: Minute infectious agents whose genomes are composed of DNA or RNA, but not both. They are characterized by a lack of independent metabolism and the inability to replicate outside living host cells. [NIH]

CHAPTER 5. BOOKS ON ADULT HODGKIN'S DISEASE

Overview

This chapter provides bibliographic book references relating to adult Hodgkin's disease. You have many options to locate books on adult Hodgkin's disease. 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 adult Hodgkin's disease 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.

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 "adult Hodgkin's disease" (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:[33]

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[33] 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

- **Adult-onset Still's disease: a circadian cytokine syndrome?** Author: John J. Cush; Year: 1994; [Dallas]: University of Texas Southwestern Medical Center at Dallas, [1994]
- **Borderline cases of Hodgkin's disease.** Author: Offerhaus, Leonardus; Year: 1957; Assen, Van Gorcum, 1957.
- **Controversies in the management of lymphomas including Hodgkin's disease.** Author: edited by John M. Bennett; Year: 1983; Boston: Nijhoff; Hingham, MA: Distributors for the U.S. and Canada, Kluwer Boston, 1983. ; ISBN: 0898385865
  http://www.amazon.com/exec/obidos/ASIN/0898385865/icongroupinterna
- **Current studies on standardization problems in clinical pathology, haematology, and radiotherapy in Hodgkin's disease: proceedings of the third international symposium of the Comitato italiano per la standardizzazione dei metodi ematologici e di laborato.** Author: Lennert, Karl; Year: 1975; Amsterdam: Excerpta Medica; New York: American Elsevier, 1975. ; ISBN: 0444151621
  http://www.amazon.com/exec/obidos/ASIN/0444151621/icongroupinterna
- **Hodgkin's disease: histopathology and clinico-pathological correlations.** Author: door Martinus Albert Vrede; Year: 1981; Amsterdam: Ronald Meesters, 1981.
- **Hodgkin's disease and allied disorders [by] Henry Jackson, Jr. ... and Frederic Parker, Jr. ...** Author: Jackson, Henry, 1892-; Year: 1947; New York, Oxford Univ. Press, 1947.
- **Hodgkin's disease and its interrelationships with other disorders.** Author: Dawe, Clyde J. (Clyde Johnson), 1921-; Year: 1955; [Minneapolis] 1955.
- **Hodgkin's disease, compiled and edited by David W. Molander and George T. Pack.** Author: Molander, David W., 1922-; Year: 1968; Springfield, Ill., Thomas [c1968]
- **Hodgkin's disease.** Author: Bennett, Robert Allan, 1871-; Year: 1923; Bristol, Wright, 1923.
- **Hodgkin's disease.** Author: Kaplan, Henry S., 1918-; Year: 1972; Cambridge, Harvard Univ. Press, 1972. ; ISBN: 0674404750

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http://www.amazon.com/exec/obidos/ASIN/0674404750/icongroupinterna

- **Hodgkin's disease.** Author: Henry S. Kaplan; Year: 1980; Cambridge: Harvard Univ. Press, 1980. ; ISBN: 0674404858
  http://www.amazon.com/exec/obidos/ASIN/0674404858/icongroupinterna
- **Hodgkin's disease.** Author: edited by Mortimer J. Lacher; Year: 1976; New York: Wiley, c1976. ; ISBN: 0471511498
  http://www.amazon.com/exec/obidos/ASIN/0471511498/icongroupinterna
- **Hodgkin's disease.** Author: editors, Peter M. Mauch ... [et al.]; Year: 1999; Philadelphia: Lippincott Williams ; Wilkins, c1999. ; ISBN: 0781715024
  http://www.amazon.com/exec/obidos/ASIN/0781715024/icongroupinterna
- **Hodgkin's disease. Edited by David Smithers, in collaboration with G. Hamilton Fairley [et al.].** Author: Smithers, David Waldron, 1908-; Year: 1973; Edinburgh, Churchill Livingstone, 1973. ; ISBN: 0443010846
  http://www.amazon.com/exec/obidos/ASIN/0443010846/icongroupinterna
- **Immunodeficiency in Hodgkin's disease and its relation to prognosis.** Author: Magnus Björkholm; Year: 1978; Copenhagen: Munksgaard, 1978. ; ISBN: 8716028724
- **Immunological studies in Hodgkin's disease: with special reference to the influence of splenectomy.** Author: door Damianus Johannes Theodorus Wagener; Year: 1976; Meppel [Netherlands]: Krips Repro, [1976?]
- **Immunopathology of Hodgkin's disease.** Author: door Siebrandes Poppema; Year: 1979; [Groningen, Netherlands: s.n.], 1979.
- **International Symposium on Hodgkin's Disease.** Author: International Symposium on Hodgkin's Disease (1972: Stanford University); Year: 1973; Bethesda, Md. [For sale by the Supt. of Docs., U. S. Govt. Print. Off., Washington] 1973.
- **Lymphographic polymorphism in Hodgkin's disease; correlation of lymphography to histology and duration.** Author: Wiljasalo,kka/Sir; Year: 1969; Stockholm, 1969.
- **Lymphomas other than Hodgkin's disease.** Author: the British Lymphoma Pathology Group; edited by A.E. Stuart, A.G. Stansfeld, I. Lauder; Year: 1981; Oxford; New York: Oxford University Press, 1981. ; ISBN: 0192612964

http://www.amazon.com/exec/obidos/ASIN/0192612964/icongroupinterna

- **Malignant lymphomas and Hodgkin's disease: experimental and therapeutic advances: proceedings of the Second International Conference on Malignant Lymphomas, Lugano, Switzerland, June 13-16, 1984.** Author: edited by Franco Cavalli, G. Bonadonna,Marcel Rozencweig; Year: 1985; Boston: Nijhoff; Hingham, MA, USA: Distributors for the U.S. and Canada, Kluwer Academic, 1985. ; ISBN: 0898387272
  http://www.amazon.com/exec/obidos/ASIN/0898387272/icongroupinterna
- **Malignant lymphomas other than Hodgkin's disease: histology, cytology, ultrastructure, immunology.** Author: by Karl Lennert, in collaboration with Noboru Mohri ... [et al.]; Year: 1978; Berlin; New York: Springer-Verlag, 1977. ; ISBN: 0387080201
- **Management of Hodgkin's disease and the other lymphomas journal articles; a collection of current published articles related to Hodgkin's disease and the other lymphomas, by Edward S. Greenwald and Warren Zeitlin.** Author: Greenwald, Edward S., 1928-; Year: 1971; Flushing, N. Y., Medical Examination Pub. Co., c1971. ; ISBN: 087488515
- **Monocyte function in Hodgkin's disease.** Author: door Pieter Henri Maria de Mulder; Year: 1983; [S.l.: s.n.], 1983.
- **Nouvelle théorie pathogénique de la maladie de Hodgkin. A new pathogenic theory of Hodgkin's disease.** Author: Jakob, P; Year: 1949; [Bethesda, Md., 1949]
- **Splenectomy in Hodgkin's disease: a clinical and immunological study.** Author: by Jutta Askergren; Year: 1980; Stockholm: [s.n.], 1980.
- **Splenic dissemination of Hodgkin's Disease.** Author: door Martin Rudolf Halie; Year: 1977; Groningen: Veenstra-Visser Offset, 1977.
- **Spontaneous lymphocyte transformation in Hodgkin's disease.** Author: door Bernardus Emilianus de Pauw; Year: 1980; Meppel, [Netherlands]: Krips Repro, [1980]
- **Symposium on changing concepts in Hodgkin's disease, lymphomas, and leukemias. Philip Rubin, Malcolm A. Bagshaw, guest editors.** Author: Rubin, Philip, 1927-; Year: 1968; Philadelphia, London, Saunders [c1968]
- **Treatment of Hodgkin's disease.** Author: Anglesio, Enrico; Year: 1969; Berlin, New York, Springer, 1969.

Chapters on Adult Hodgkin's Disease

Frequently, adult Hodgkin's disease will be discussed within a book, perhaps within a specific chapter. In order to find chapters that are specifically dealing with adult Hodgkin's disease, an excellent source of abstracts is the Combined Health Information Database. You will need to limit your search to book chapters and adult Hodgkin's disease 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 "adult Hodgkin's disease" (or synonyms) into the "For these words:" box, you will only receive results on chapters in books.

General Home References

In addition to references for adult Hodgkin's disease, 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):

- **Cancer: 50 Essential Things to Do** by Greg Anderson, O. Carl Simonton; Paperback - 184 pages; Revised & Updated edition (August 1999), Plume; ISBN: 0452280745; **http://www.amazon.com/exec/obidos/ASIN/0452280745/icongroupinterna**
- **Cancer Encyclopedia -- Collections of Anti-Cancer & Anti-Carcinogenic Agents, Chemicals, Drugs and Substances** by John C. Bartone; Paperback (January 2002), ABBE Publishers Association of Washington, DC; ISBN: 0788326791; **http://www.amazon.com/exec/obidos/ASIN/0788326791/icongroupinterna**
- **Cancer Sourcebook: Basic Consumer Health Information About Major Forms and Stages of Cancer** by Edward J. Prucha (Editor); Library Binding - 1100 pages, 3rd edition (August 1, 2000), Omnigraphics, Inc.; ISBN: 0780802276; **http://www.amazon.com/exec/obidos/ASIN/0780802276/icongroupinterna**
- **Cancer Supportive Care: A Comprehensive Guide for Patients and Their Families** by Ernest H. Rosenbaum, M.D., Isadora Rosenbaum, M.A.; Paperback - 472 pages (November 5, 1998), Somerville House Books Limited; ISBN: 1894042115; **http://www.amazon.com/exec/obidos/ASIN/1894042115/icongroupinterna**

- **Cancer Symptom Management: Patient Self-Care Guides (Book with CD-ROM for Windows & Macintosh)** by Connie Henke Yarbro (Editor), et al; CD-ROM - 264 pages, 2nd Book & CD-Rom edition (January 15, 2000), Jones & Bartlett Publishing; ISBN: 0763711675; http://www.amazon.com/exec/obidos/ASIN/0763711675/icongroupinterna
- **Diagnosis Cancer: Your Guide Through the First Few Months** by Wendy Schlessel Harpham, Ann Bliss Pilcher (Illustrator); Paperback: 230 pages; Revised & Updated edition (November 1997), .W. Norton & Company; ISBN: 0393316912; **http://www.amazon.com/exec/obidos/ASIN/0393316912/icongroupinterna**
- **The Human Side of Cancer: Living with Hope, Coping with Uncertainty** by Jimmie C. Holland, M.D., Sheldon Lewis; Paperback - 368 pages (October 2, 2001), Quill; ISBN: 006093042X; **http://www.amazon.com/exec/obidos/ASIN/006093042X/icongroupinterna**

Vocabulary Builder

Carcinogenic: Producing carcinoma. [EU]

Flushing: A transient reddening of the face that may be due to fever, certain drugs, exertion, stress, or a disease process. [NIH]

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

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

Lymphography: An x-ray study of lymph nodes and lymphatic vessels made visible by the injection of a special dye. [NIH]

CHAPTER 6. MULTIMEDIA ON ADULT HODGKIN'S DISEASE

Overview

Information on adult Hodgkin's disease 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 adult Hodgkin's disease. 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.

Bibliography: Multimedia on Adult Hodgkin's Disease

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 adult Hodgkin's disease (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 adult Hodgkin's disease. For more information, follow the hyperlink indicated:

- **Aspiration biopsy cytology of head and neck lesions (lymphnodes, thyroid, salivary glands, etc.).** Source: Josef Zajicek; Year: 1973; Format: Slide; Chicago: Tutorials of Cytology, c1973.

- **Chronic lymphatic leukemia.** Source: [Henry E.] Wilson; produced by Ohio State University, Medical Audiovisual and Television Center; Year: 1971; Format: Videorecording; [Columbus, Ohio]: The Center, c1971.
- **Classification of malignant lymphomas.** Source: John M. Bennett, Richard J. Werner; Year: 1973; Format: Slide; [New York]: Medcom, c1973.
- **Clinical and immunological aspects of Hodgkin's disease.** Source: [presented by] American Society of Clinical Pathologists; Year: 1979; Format: Videorecording; Chicago: The Society, c1979.
- **Cutaneous manifestations of systemic disease.** Source: American Academy of Dermatology, and Institute for Dermatologic Communication and Education; Year: 1973; Format: Slide; [Evanston, Ill.]: The Academy, [1973].
- **Cytology of effusions and its histologic basis.** Source: Myron R. Melamed; Year: 1974; Format: Slide; Chicago: Tutorials of Cytology, c1974.
- **Dermatologic signs of systemic diseases.** Source: Roger Harrison Brodkin; Year: 1970; Format: Slide; New York: Medcom, c1970.
- **Hemophilia.** Source: [Stanley P.] Balcerzak; produced by Ohio State University, Medical Audiovisual and Television Center; Year: 1971; Format: Videorecording; [Columbus, Ohio]: The Center, c1971.
- **Histopathology of Hodgkin's disease.** Source: American Society of Clinical Pathologists; Year: 1977; Format: Videorecording; Chicago: The Society, c1977.
- **Hodgkin's and non-Hodgkin's lymphomas.** Source: [produced and published by Gower Medical Publishing]; Year: 1991; Format: Slide; New York, NY: Gower Medical Pub., c1991.
- **Hodgkin's disease: complications of survival.** Source: with Mortimer J. Lacher; Year: 1985; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, 1985.
- **Hodgkin's disease: controversies in staging and treatment.** Year: 1989; Format: Sound recording; Chicago, IL: Teach'em, [1989]
- **Hodgkin's disease: current management challenges.** Source: American Society of Clinical Oncology; Year: 1994; Format: Sound recording; [Chicago, Ill.]: The Society, [1994]
- **Hodgkin's disease: issues in management.** Source: with Sandra Horning; Year: 1989; Format: Videorecording; Secaucus, N.J.: Network for Continuing Medical Education, c1989.

- **Hodgkin's disease.** Year: 1985; Format: Slide; [Columbus, Ohio]: Center for Continuing Medical Education, the Ohio State University College of Medicine, [1985]
- **Hodgkins disease: a great imitator.** Source: [Armed Forces Institute of Pathology; produced by WRAMC-TV]; Year: 1970; Format: Videorecording; [Washington: The Institute: [for loan by Walter Reed Army Medical Center TV, 1970]
- **Hodgkins disease.** Source: [Stanley P.] Balcerzak; produced by Ohio State University, Medical Audiovisual and Television Center; Year: 1971; Format: Videorecording; [Columbus, Ohio]: The Center, c1971.
- **Hodgkins disease.** Source: [presented by] Medical Video Library; co-produced by IMS, Faculty of Medicine, University of Toronto and Medical Productions and Associates; Year: 1989; Format: Videorecording; [Toronto, Ont.]: Burn-Shield, [1989]
- **Hodgkin's disease.** Source: author and faculty coordinator, May L. Votaw; faculty consultant, Roland Hiss; Biomedical Media Production Unit, the University of Michigan Medical Center, Office of Educational Resources & Research; Year: 1981; Format: Videorecording; Ann Arbor, Mich.: The University, c1978-1981.
- **Interabdominal lymphosarcoma.** Source: [Albert F.] LoBuglio; produced by Ohio State University, Medical Audiovisual and Television Center; Year: 1971; Format: Videorecording; [Columbus, Ohio]: The Center, c1971.
- **Iron deficiency anemia.** Source: [Albert F.] LoBuglio; produced by Ohio State University, Medical Audiovisual and Television Center; Year: 1971; Format: Videorecording; [Columbus, Ohio]: The Center, c1971.
- **Malignant lymphoma.** Source: American Society of Hematology; Year: 1974; Format: Slide; [Seattle: The Society: for sale by University of Washington Health Sciences Center for Educational Resources, 1974]
- **Malignant lymphomas: chest involvement.** Source: T. J. Wachowski and E. J. Liebner; Year: 1965; Format: Slide; [Urbana, Ill.: Wachowski; Chicago: for sale by Micro X-Ray Recorder, Inc., Medical Film Slide Division, 196-?]
- **Mediastinal and thoracic wall tumors.** Source: [Ira H. Lockwood, Gordon E. Sawyers.]; Year: 1970; Format: Slide; [Kansas City, Mo.: Lockwood; Chicago: for sale by Micro X-Ray Recorder, Inc., Medical Film Slide Division, 1973?]
- **Medical management of Hodgkin's disease.** Source: Radiological Society of North America; Year: 1983; Format: Slide; [Chicago, Ill.]: RSNA, c1983.

- **Medical terminology: cardiovascular disorders and surgery.** Source: Au-Vid, inc; Year: 1972; Format: Sound recording; [Garden Grove, Calif.]: Au-Vid, [1972]
- **Normal and pathological roentgen anatomy of the lymphatic system.** Source: Franklin S. Alcorn, Frank L. Hussey, Edwin J. Liebner; Year: 1970; Format: Slide; [Urbana, Ill.: Alcorn; Chicago: for sale by Micro X-Ray Recorder, Inc., Medical Film Slide Division, 196-?]
- **Pediatric Hodgkin's disease, Non-Hodgkin's lymphoma, and leukemia .** Year: 1989; Format: Sound recording; Chicago, IL: Teach'em, [1989]
- **Radiation treatment of patients with Hodgkin's disease.** Source: Radiological Society of North America; Year: 1983; Format: Slide; [Chicago, Ill.]: RSNA, c1983.
- **Staging laparotomy for Hodgkin's disease.** Source: author, Hugo V. Villar; produced by Biomedical Communications, University of Arizona Health Sciences Center; Year: 1983; Format: Videorecording; Tucson, AZ: The University, c1983.

Vocabulary Builder

Anemia: A condition in which the number of red blood cells is below normal. [NIH]

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

Lymphosarcoma: An obsolete term for a malignant tumor of lymphatic tissue. [NIH]

Thyroid: A gland located near the windpipe (trachea) that produces thyroid hormone, which helps regulate growth and metabolism. [NIH]

CHAPTER 7. 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 Cancer Institute (NCI); guidelines available at **http://cancernet.nci.nih.gov/pdq/pdq_treatment.shtml**

In this chapter, we begin by reproducing one such guideline for adult Hodgkin's disease:

What Is Adult Hodgkin's Disease?[34]

More than 75% of all newly diagnosed patients with adult Hodgkin's disease are curable with combination chemotherapy and/or radiation therapy. Careful staging and treatment planning by a multidisciplinary team of cancer specialists is required to determine optimal treatment of patients with this disease. National mortality has fallen more rapidly for adult Hodgkin's disease than for any other malignancy, largely due to excellent results achieved with modern radiation therapy and effective combination chemotherapy. Effective drug combinations can produce prolonged disease-free survival in the majority of patients who have recurrent disease when radiation therapy was the initial treatment. Depending on the duration of the remission after the drug treatment was stopped, patients whose disease recurs following combination chemotherapy may be salvaged when re-treated with another regimen. Other patients may benefit from high-dose consolidation therapy.[35] Hodgkin's disease is the main cause of death over the first 15 years after treatment. By 15 to 20 years after therapy, the cumulative mortality from a second malignancy will exceed the cumulative mortality from Hodgkin's disease.[36]

Prognosis for a given patient depends on several factors. The most important factors are the presence or absence of systemic symptoms, the stage of disease, presence of large masses, and the quality and suitability of the treatment administered. Other important factors are age (therapy for very young children requires special attention), sex, erythrocyte sedimentation rate, number of splenic nodules, extent of abdominal involvement, hematocrit, and absolute number of nodal sites of involvement.[37]

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[34] The following guidelines appeared on the NCI Web site on Aug. 26, 2002. The text was last modified in May 2002. The text has been adapted for this sourcebook. Note: Separate PDQ summaries on Pregnancy and Hodgkin's Disease Treatment; Childhood Hodgkin's Disease Treatment; and AIDS-Related Lymphoma Treatment are also available.

[35] Marshall NA, DeVita VT Jr: Hodgkin's disease and transplantation: a room with a (nontransplanter's) view. Seminars in Oncology 26(1): 67-73, 1999.

[36] Mauch PM, Kalish LA, Marcus KC, et al.: Long-term survival in Hodgkin's disease: relative impact of mortality, second tumors, infection, and cardiovascular disease. Cancer Journal from Scientific American 1(1): 33-42, 1995.

Aisenberg AC: Problems in Hodgkin's disease management. Blood 93(3): 761-779, 1999.

[37] Kennedy BJ, Loeb V, Peterson V, et al.: Survival in Hodgkin's disease by stage and age. Medical and Pediatric Oncology 20(2): 100-104, 1992.

Cellular Classification

Pathologists currently use the World Health Organization (WHO) modification of the Revised European-American Lymphoma (REAL) classification for the histologic classification for adult Hodgkin's disease.[38]

WHO/REAL Classification

Classical Hodgkin's Lymphoma

- Nodular sclerosis Hodgkin's lymphoma
- Mixed cellularity Hodgkin's lymphoma
- Lymphocyte depletion Hodgkin's lymphoma
- Lymphocyte-rich classical Hodgkin's lymphoma

Nodular Lymphocyte-Predominant Hodgkin's Lymphoma

Nodular lymphocyte-predominant Hodgkin's disease is a clinicopathologic entity of B- cell origin that is distinct from classic Hodgkin's disease.[39] The typical immunophenotype for lymphocyte-predominant disease is CD15-, CD20+, CD30-, CD45+, while the profile for classic Hodgkin's disease is CD15+, CD20-, CD30+, CD45-. Patients with lymphocyte-predominant disease have earlier-stage disease, longer survival, and fewer treatment failures than those with classic Hodgkin's disease. Lymphocyte-predominant Hodgkin's disease is usually diagnosed in asymptomatic young males with cervical or inguinal lymph nodes, but usually without mediastinal involvement. The REAL Classification of Lymphoid Neoplasms proposed separating nodular lymphocyte-predominant Hodgkin's disease (CD15-, CD20+, CD30-) from lymphocyte-rich classical Hodgkin's disease (CD15+, CD20-, CD30+), simply on the basis of these immunophenotypic

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Cosset JM, Henry-Amar M, Meerwaldt JH, et al.: The EORTC trials for limited stage Hodgkin's disease. European Journal of Cancer 28A(11): 1847-1850, 1992.

[38] Lukes RJ, Craver LF, Hall TC, et al.: Report of the Nomenclature Committee. Cancer Research 26(1): 1311, 1966.

Harris NL: Hodgkin's lymphomas: classification, diagnosis, and grading. Seminars in Hematology 36(3): 220-232, 1999.

[39] von Wasielewski R, Mengel M, Fischer R, et al.: Classical Hodgkin's disease: clinical impact of the immunophenotype. American Journal of Pathology 151(4): 1123-1130, 1997.

Bodis S, Kraus MD, Pinkus G, et al.: Clinical presentation and outcome in lymphocyte-predominant Hodgkin's disease. Journal of Clinical Oncology 15(9): 3060-3066, 1997.

differences.[40] The largest retrospective report of 426 cases showed no significant difference in clinical response or outcome to standard therapies for these 2 subgroups.[41] [Level of evidence: 3iiiA] Of interest, with a median follow-up of 7 to 8 years, more patients died of treatment-related toxic effects (acute and long-term) than from Hodgkin's recurrence. Limitation of radiation dose and fields and avoidance of leukemogenic chemotherapeutic agents, along with watchful waiting policies, should be investigated for these subgroups.[42]

Stage Information[43]

Stage has a critical role in the selection of treatment. The stage is based on a combination of clinical staging and pathologic staging. Clinical staging includes a history, physical examination, laboratory studies (including sedimentation rate), and thoracic and abdominal/pelvic computerized tomographic scans.[44] Gallium scans (high-dose: 8-11 mCi) are used in some centers if mediastinal or hilar nodes are involved and as a baseline in patients with bulky disease for better determination of response during or after therapy.[45] Lymphangiography is usually unnecessary if multi-agent chemotherapy is part of the standard approach. However, lymphangiography is used at some centers since it may aid in the design of radiation portals, the detection of subdiaphragmatic disease, and follow-up of patients after completion of therapy. Bone marrow involvement occurs in 5% of patients; biopsy is indicated in the presence of constitutional "B" symptoms or anemia, leukopenia, or thrombocytopenia. Staging laparotomy is no longer recommended routinely; it should be considered only when the results will allow substantial reduction in treatment. It should not be done in

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[40] Harris NL: Hodgkin's lymphomas: classification, diagnosis, and grading. Seminars in Hematology 36(3): 220-232, 1999.

[41] Diehl V, Sextro M, Franklin J, et al.: Clinical presentation, course, and prognostic factors in lymphocyte-predominant Hodgkin's disease and lymphocyte-rich classical Hodgkin's disease: report from the European Task Force on Lymphoma Project on lymphocyte-predominant Hodgkin's disease. Journal of Clinical Oncology 17(3): 776-783, 1999.

[42] Aster JC: Lymphocyte-predominant Hodgkin's disease: how little therapy is enough? Journal of Clinical Oncology 17(3): 744-746, 1999.

[43] Note: Some citations in the text of this section are followed by a level of evidence. The PDQ editorial boards use a formal ranking system to help the reader judge the strength of evidence linked to the reported results of a therapeutic strategy. (Refer to the PDQ summary on Levels of Evidence for more information.)

[44] Lister TA, Crowther D, Sutcliffe SB, et al.: Report of a committee convened to discuss the evaluation and staging of patients with Hodgkin's disease: Cotswolds meeting. Journal of Clinical Oncology 7(11): 1630-1636, 1989.

[45] Salloum E, Brandt DS, Caride VJ, et al.: Gallium scans in the management of patients with Hodgkin's disease: a study of 101 patients. Journal of Clinical Oncology 15(2): 518-527, 1997.

patients who require combination chemotherapy. If the laparotomy is required for treatment decisions, the risks of potential morbidity should be considered.[46] The staging classification that is currently used for Hodgkin's disease was adopted in 1971 at the Ann Arbor Conference,[47] with some modifications 18 years later from the Cotswolds meeting.[48]

Subclassification of Stage

Stages I, II, III, and IV adult Hodgkin's disease can be subclassified into A and B categories: B for those with defined general symptoms and A for those without B symptoms. The B designation is given to patients with any of the following symptoms[49]:

- Unexplained loss of more than 10% of body weight in the 6 months before diagnosis
- Unexplained fever with temperatures above 38 degrees celsius
- Drenching night sweats

The designation E is used when well-localized extranodal lymphoid malignancies arise in or extend to tissues beyond, but near, the major lymphatic aggregates. Stage IV refers to disease that is diffusely spread throughout an extranodal site, such as the liver. If pathologic proof of

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[46] Urba WJ, Longo DL: Hodgkin's disease. New England Journal of Medicine 326(10): 678-687, 1992.
Sombeck MD, Mendenhall NP, Kaude JV, et al.: Correlation of lymphangiography, computed tomography, and laparotomy in the staging of Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 25(3): 425-429, 1993.
Mauch P, Larson D, Osteen R, et al.: Prognostic factors for positive surgical staging in patients with Hodgkin's disease. Journal of Clinical Oncology 8(2): 257-265, 1990.
Dietrich PY, Henry-Amar M, Cosset JM, et al.: Second primary cancers in patients continuously disease-free from Hodgkin's disease: a protective role for the spleen? Blood 84(4): 1209-1215, 1994.

[47] Carbone PP, Kaplan HS, Musshoff K, et al.: Report of the Committee on Hodgkin's Disease Staging Classification. Cancer Research 31(11): 1860-1861, 1971.

[48] Lister TA, Crowther D, Sutcliffe SB, et al.: Report of a committee convened to discuss the evaluation and staging of patients with Hodgkin's disease: Cotswolds meeting. Journal of Clinical Oncology 7(11): 1630-1636, 1989.

[49] Note: The most significant "B" symptoms are fevers and weight loss. Night sweats alone do not confer an adverse prognosis. Pruritus as a systemic symptom remains controversial and is not considered a B symptom in the Ann Arbor staging system. This symptom is hard to define quantitatively and uniformly, but when it is recurrent, generalized, and otherwise unexplained and when it ebbs and flows parallel to disease activity, it may be the equivalent of a B symptom.

involvement of 1 or more extralymphatic sites has been documented, the symbol for the site of involvement, followed by a plus sign (+), is listed.

Sites are identified by the following notations:

- D = skin
- H = liver
- L = lung
- M = bone marrow
- N = nodes
- O = bone
- P = pleura
- S = spleen

Current practice is to assign a clinical stage (CS) based on the findings of the clinical evaluation and a pathologic stage (PS) based on the findings of invasive procedures.

For example, a patient who has disease in the chest and neck, systemic symptoms, and a negative lymphangiogram might be found at laparotomy to have involvement of the spleen, liver, and bone marrow. Thus, the precise stage of such a patient would be CS IIB, PS IVB (S+)(H+)(M+).

Stage I

Stage I adult Hodgkin's disease means the involvement of a single lymph node region (I) or localized involvement of a single extralymphatic organ or site (IE).

Stage II

Stage II adult Hodgkin's disease means the involvement of 2 or more lymph node regions on the same side of the diaphragm (II) or localized involvement of a single associated extralymphatic organ or site and its regional lymph node(s) with or without involvement of other lymph node regions on the same side of the diaphragm (IIE). Note: The number of lymph node regions involved may be indicated by a subscript.

Stage III

Stage III adult Hodgkin's disease means the involvement of lymph node regions on both sides of the diaphragm (III), which may also be accompanied by localized involvement of an associated extralymphatic organ or site (IIIE), by involvement of the spleen (IIIS), or by involvement of both (IIIE + S). Stage III disease may be subdivided by anatomic distribution of abdominal involvement or by extent of splenic involvement. Stage III(1) indicates involvement that is limited to the upper abdomen above the renal vein. Stage III(2) indicates involvement of pelvic and/or para-aortic nodes. Five or more visible splenic nodules on a cut section constitutes extensive splenic involvement. Zero to 4 nodules is classified as minimal splenic disease.

Stage IV

Stage IV adult Hodgkin's disease means there is disseminated (multifocal) involvement of 1 or more extralymphatic organs, with or without associated lymph node involvement, or isolated extralymphatic organ involvement with distant (nonregional) nodal involvement.

Massive mediastinal disease has been defined by the Cotswolds meeting as a thoracic ratio of maximum transverse mass diameter greater than or equal to one-third of the internal transverse thoracic diameter measured at the T5/6 intervertebral disc level on chest radiography.[50] Other investigators have designated a lymph node mass measuring 10 centimeters or more in greatest dimension as massive disease.[51] Other investigators use a measurement of the maximum width of the mediastinal mass divided by the maximum intrathoracic diameter.[52]

Many investigators divide patients with clinical stage I and II disease into favorable or unfavorable groups based on prognostic factors. The patients in the favorable group are managed with treatment reduction strategies; the patients in the unfavorable group are managed with combined modality therapy. Patients with early-stage disease and favorable prognostic features

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[50] Lister TA, Crowther D, Sutcliffe SB, et al.: Report of a committee convened to discuss the evaluation and staging of patients with Hodgkin's disease: Cotswolds meeting. Journal of Clinical Oncology 7(11): 1630-1636, 1989.

[51] Bradley AJ, Carrington BM, Lawrance JA, et al.: Assessment and significance of mediastinal bulk in Hodgkin's disease: comparison between computed tomography and chest radiography. Journal of Clinical Oncology 17(8): 2493-2498, 1999.

[52] Mauch P, Goodman R, Hellman S: The significance of mediastinal involvement in early stage Hodgkin's disease. Cancer 42(3): 1039-1045, 1978.

can undergo radiation therapy without staging laparotomy.[53] These favorable subgroups of patients have an 80% relapse-free survival rate at 5 to 10 years with mantle-field irradiation, alone or in conjunction with para-aortic and splenic irradiation. Favorable features include sedimentation rate of less than 50, patient age of 50 years or younger, lymphocyte predominant or nodular sclerosing histology, lack of B symptoms, less than 3 sites of involvement, and no bulky adenopathy.[54]

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[53] Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.
Noordijk EM, Carde P, Mandard AM, et al.: Preliminary results of the EORTC-GPMC controlled clinical trial H7 in early-stage Hodgkin's disease. Annals of Oncology 5(Suppl 2): 107-112, 1994.
Abrahamsen AF, Hannisdal E, Nome O, et al.: Clinical stage I and II Hodgkin's disease: long-term results of therapy without laparotomy - experience at one institution. Annals of Oncology 7(2): 145-150, 1996.
Leibenhaut MH, Hoppe RT, Efron B, et al.: Prognostic indicators of laparotomy findings in clinical stage I-II supradiaphragmatic Hodgkin's disease. Journal of Clinical Oncology 7(1): 81-91, 1989.
Cosset JM, Henry-Amar M, et al. on behalf of the EORTC Lymphoma Cooperative Group: The EORTC trial for limited stage Hodgkin's disease. European Journal of Cancer 28A(11): 1847-1850, 1992.
Mauch PM, Canellos GP, Shulman LN, et al.: Mantle irradiation alone for selected patients with laparotomy-staged IA to IIA Hodgkin's disease: preliminary results of a prospective trial. Journal of Clinical Oncology 13(4): 947-952, 1995.
Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.
Mauch PM, Connors JM, Pavlovsky S, et al.: Treatment of favorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 435-458.
Hoppe RT, Cosset JM, Santoro A, et al.: Treatment of unfavorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 459-481.
[54] Salloum E, Brandt DS, Caride VJ, et al.: Gallium scans in the management of patients with Hodgkin's disease: a study of 101 patients. Journal of Clinical Oncology 15(2): 518-527, 1997.
Leibenhaut MH, Hoppe RT, Efron B, et al.: Prognostic indicators of laparotomy findings in clinical stage I-II supradiaphragmatic Hodgkin's disease. Journal of Clinical Oncology 7(1): 81-91, 1989.
Cosset JM, Henry-Amar M, et al. on behalf of the EORTC Lymphoma Cooperative Group: The EORTC trial for limited stage Hodgkin's disease. European Journal of Cancer 28A(11): 1847-1850, 1992.
Mauch PM, Canellos GP, Shulman LN, et al.: Mantle irradiation alone for selected patients with laparotomy-staged IA to IIA Hodgkin's disease: preliminary results of a prospective trial. Journal of Clinical Oncology 13(4): 947-952, 1995.
Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

The International Prognostic Factors Project on Advanced Hodgkin's Disease has developed a prognostic score based on 7 adverse factors: albumin level of less than 4.0 gram per deciliter; hemoglobin level of less than 10.5 gram per deciliter; male sex; age of 45 years or older; stage IV disease; a white-cell count of at least 15,000 per cubic millimeter; and an absolute lymphocytic count of less than 600 per cubic millimeter or a lymphocyte count that was less than 8% of the total white-cell count.[55] Even the patients at the very highest risk, with 4 to 7 adverse factors, showed a 42% to 51% freedom from progression at 5 years with first-line therapy.[56] [Level of evidence: 3iiiDii]

Treatment Option Overview[57]

After initial clinical staging, patients with obvious stage III or IV disease, bulky disease (defined as a 10 centimeter mass or mediastinal disease with a transverse diameter exceeding one-third of the transthoracic diameter), or the presence of "B" symptoms will require combination chemotherapy with or without additional radiation therapy. Most patients with clinical stage IB or IIB disease will ultimately need chemotherapy; 30% to 40% would be upstaged at laparotomy and 25% would relapse after radiation.[58] Patients with non-bulky stage IA or IIA disease are considered to have clinical early-stage disease. These patients are candidates for radiation therapy, combined modality therapy, or chemotherapy alone (under evaluation in clinical trials). Staging laparotomy is no longer recommended since it may not alter management and does not enhance ultimate outcome.[59] When chemotherapy

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Mauch PM, Connors JM, Pavlovsky S, et al.: Treatment of favorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 435-458.

Hoppe RT, Cosset JM, Santoro A, et al.: Treatment of unfavorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 459-481.

[55] Hasenclever D, Diehl V, for the International Prognostic Factors Project on Advanced Hodgkin's Disease: A prognostic score for advanced Hodgkin's disease. New England Journal of Medicine 339(21): 1506-1514, 1998.

[56] Hasenclever D, Diehl V, for the International Prognostic Factors Project on Advanced Hodgkin's Disease: A prognostic score for advanced Hodgkin's disease. New England Journal of Medicine 339(21): 1506-1514, 1998.

[57] Note: Some citations in the text of this section are followed by a level of evidence. The PDQ editorial boards use a formal ranking system to help the reader judge the strength of evidence linked to the reported results of a therapeutic strategy. (Refer to the PDQ summary on Levels of Evidence for more information.)

[58] Crnkovich MJ, Leopold K, Hoppe RT, et al.: Stage I to IIB Hodgkin's disease: the combined experience at Stanford University and the Joint Center for Radiation Therapy. Journal of Clinical Oncology 5(7): 1041-1049, 1987.

[59] Advani RH, Horning SJ: Treatment of early-stage Hodgkin's disease. Seminars in Hematology 36(3): 270-281, 1999.

alone or combined modality therapy is applied, laparotomy is not required. After clinical staging, patients with early-stage disease and favorable prognostic features can undergo radiation alone.[60]

In adult Hodgkin's disease, the appropriate dose of radiation is 3,000 cGy to clinically uninvolved sites, and 3,500 cGy to 4,400 cGy to regions of initial nodal involvement.[61] These recommendations are often modified in pediatric or advanced-staged adult patients who also receive chemotherapy. Treatment is usually delivered to the neck, chest, and axilla (mantle field) and then to an abdominal field to treat para-aortic nodes and the spleen (splenic pedicle). With careful treatment technique, the risk of cardiac and pulmonary complications is small.[62] In some patients, pelvic nodes are treated with a third field. These 3 fields constitute total nodal irradiation. In some cases, the pelvic and para-aortic nodes are treated in a single field called an inverted Y. In patients with a favorable prognosis, treatment of the pelvic lymph nodes is frequently omitted, since fertility can be preserved without affecting relapse-free survival.

Acute nonlymphocytic leukemia may occur in patients treated with combined modality therapy or with combination chemotherapy alone.[63] At

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[60] Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.

Noordijk EM, Carde P, Mandard AM, et al.: Preliminary results of the EORTC-GPMC controlled clinical trial H7 in early-stage Hodgkin's disease. Annals of Oncology 5(Suppl 2): 107-112, 1994.

Abrahamsen AF, Hannisdal E, Nome O, et al.: Clinical stage I and II Hodgkin's disease: long-term results of therapy without laparotomy - experience at one institution. Annals of Oncology 7(2): 145-150, 1996.

[61] Sears JD, Greven KM, Ferree CR, et al.: Definitive irradiation in the treatment of Hodgkin's disease: analysis of outcome, prognostic factors, and long term complications. Cancer 79(1): 145-151, 1997.

Ng AK, Mauch PM: Radiation therapy in Hodgkin's lymphoma. Seminars in Hematology 36(3): 290-302, 1999.

Duhmke E, Franklin J, Pfreundschuh M, et al.: Low-dose radiation is sufficient for the noninvolved extended-field treatment in favorable early-stage Hodgkin's disease: long-term results of a randomized trial of radiotherapy alone. Journal of Clinical Oncology 19(11): 2905-2914, 2001.

[62] Tarbell NJ, Thompson L, Mauch P: Thoracic irradiation in Hodgkin's disease: disease control and long-term complications. International Journal of Radiation Oncology, Biology, Physics 18(2): 275-281, 1990.

Marcus KC, Svensson G, Rhodes LP, et al.: Mantle irradiation in the upright position: a technique to reduce the volume of lung irradiated in patients with bulky mediastinal Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 23(2): 443-447, 1992.

[63] Valagussa P, Santoro A, Fossati-Bellani F, et al.: Second acute leukemia and other malignancies following treatment for Hodgkin's disease. Journal of Clinical Oncology 4(6): 830-837, 1986.

10 years following therapy with mechlorethamine + vincristine + procarbazine + prednisone (MOPP)-containing regimens, the risk of acute myelogenous leukemia is approximately 3%, with the peak incidence occurring 5 to 9 years after therapy. The risk of acute leukemia at 10 years following therapy with doxorubicin + bleomycin + vinblastine + dacarbazine (ABVD) appears to be less than 1%.[64] An increase in second solid tumors has also been observed, especially cancers of the colon, lung, bone, thyroid, and breast.[65] These tumors occur primarily after radiation therapy or with combined modality treatment, and approximately 75% occur within radiation ports.

At 15-year follow-up, the risk of second solid tumors is approximately 13%.[66] Lung cancer is seen with increased frequency, even after chemotherapy

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Hancock SL, Hoppe RT: Long-term complications of treatment and causes of mortality after Hodgkin's disease. Seminars in Radiation Oncology 6(3): 225-242, 1996.

van Leeuwen FE, Chorus AM, van den Belt-Dusebout AW, et al.: Leukemia risk following Hodgkin's disease: relation to cumulative dose of alkylating agents, treatment with teniposide combinations, number of episodes of chemotherapy, and bone marrow damage. Journal of Clinical Oncology 12(5): 1063-1073, 1994.

[64] Valagussa P, Santoro A, Fossati-Bellani F, et al.: Second acute leukemia and other malignancies following treatment for Hodgkin's disease. Journal of Clinical Oncology 4(6): 830-837, 1986.

[65] Hancock SL, Hoppe RT: Long-term complications of treatment and causes of mortality after Hodgkin's disease. Seminars in Radiation Oncology 6(3): 225-242, 1996.

Swerdlow AJ, Douglas AJ, Hudson GV, et al.: Risk of second primary cancers after Hodgkin's disease by type of treatment: analysis of 2846 patients in the British National Lymphoma Investigation. British Medical Journal 304(6835): 1137-1143, 1992.

Yahalom J, Petrek JA, Biddinger PW, et al.: Breast cancer in patients irradiated for Hodgkin's disease: a clinical and pathologic analysis of 45 events in 37 patients. Journal of Clinical Oncology 10(11): 1674-1681, 1992.

van Leeuwen FE, Klokman WJ, Hagenbeek A, et al.: Second cancer risk following Hodgkin's disease: a 20-year follow-up study. Journal of Clinical Oncology 12(2): 312-325, 1994.

Henry-Amar M: Second cancer after the treatment for Hodgkin's disease: a report from the International Database on Hodgkin's Disease. Annals of Oncology 3(4, Suppl): 117-128, 1992.

Boivin JF, Hutchison GB, Zauber AG, et al.: Incidence of second cancers in patients treated for Hodgkin's disease. Journal of the National Cancer Institute 87(10): 732-741, 1995.

Mauch PM, Kalish LA, Marcus KC, et al.: Second malignancies after treatment for laparotomy staged IA-IIIB Hodgkin's disease: long-term analysis of risk factors and outcome. Blood 87(9): 3625-3632, 1996.

Salloum E, Doria R, Schubert W, et al.: Second solid tumors in patients with Hodgkin's disease cured after radiation or chemotherapy plus adjuvant low-dose radiation. Journal of Clinical Oncology 14(9): 2435-2443, 1996.

Birdwell SH, Hancock SL, Varghese A, et al.: Gastrointestinal cancer after treatment of Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 37(1): 67-73, 1997.

[66] Hancock SL, Hoppe RT: Long-term complications of treatment and causes of mortality after Hodgkin's disease. Seminars in Radiation Oncology 6(3): 225-242, 1996.

alone, and the risk of this cancer is increased with cigarette smoking.[67] Breast cancer is seen with increased frequency after radiation therapy or combined modality therapy.[68] The risk appears greatest for women treated with radiation before age 30 years, and the incidence increases substantially after 15 years of follow-up.[69] The risk of non-Hodgkin's lymphoma is also increased, but this risk is not clearly related to type or extent of treatment.[70] Another toxic effect that is primarily related to chemotherapy is infertility, usually after MOPP-containing regimens;[71] ABVD appears to spare long-term testicular and ovarian function.[72] Late complications primarily related to irradiation include hypothyroidism and cardiac disease.[73] Impairment of

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Swerdlow AJ, Douglas AJ, Hudson GV, et al.: Risk of second primary cancers after Hodgkin's disease by type of treatment: analysis of 2846 patients in the British National Lymphoma Investigation. British Medical Journal 304(6835): 1137-1143, 1992.

[67] van Leeuwen FE, Klokman WJ, Stovall M, et al.: Roles of radiotherapy and smoking in lung cancer following Hodgkin's disease. Journal of the National Cancer Institute 87(20): 1530-1537, 1995.

Swerdlow AJ, Schoemaker MJ, Allerton R, et al.: Lung cancer after Hodgkin's disease: a nested case-control study of the relation to treatment. Journal of Clinical Oncology 19(6): 1610-1618, 2001.

[68] Yahalom J, Petrek JA, Biddinger PW, et al.: Breast cancer in patients irradiated for Hodgkin's disease: a clinical and pathologic analysis of 45 events in 37 patients. Journal of Clinical Oncology 10(11): 1674-1681, 1992.

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[70] Swerdlow AJ, Douglas AJ, Hudson GV, et al.: Risk of second primary cancers after Hodgkin's disease by type of treatment: analysis of 2846 patients in the British National Lymphoma Investigation. British Medical Journal 304(6835): 1137-1143, 1992.

[71] Swerdlow AJ, Douglas AJ, Hudson GV, et al.: Risk of second primary cancers after Hodgkin's disease by type of treatment: analysis of 2846 patients in the British National Lymphoma Investigation. British Medical Journal 304(6835): 1137-1143, 1992.

[72] Viviani S, Santoro A, Ragni G, et al.: Pre- and post-treatment testicular dysfunction in Hodgkin's disease (HD). Proceedings of the American Society of Clinical Oncology 7: A-877, 227, 1988.

[73] Tarbell NJ, Thompson L, Mauch P: Thoracic irradiation in Hodgkin's disease: disease control and long-term complications. International Journal of Radiation Oncology, Biology, Physics 18(2): 275-281, 1990.

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pulmonary function may occur as a result of mantle-field irradiation; this impairment is not usually clinically evident, and recovery in pulmonary testing often occurs after 2 to 3 years.[74] The use of bleomycin-containing combination chemotherapy before or after mantle-field irradiation may result in more severe pulmonary toxic effects.[75] Avascular necrosis of bone has been observed in patients treated with chemotherapy and is most likely related to corticosteroid therapy.[76] Bacterial sepsis may occur rarely after splenectomy performed during staging laparotomy for Hodgkin's disease.[77] It is much more frequent in children than in adults.

The Advisory Committee on Immunization Practices recommends that all patients with Hodgkin's disease, whether or not they have had a splenectomy, should be immunized with Hemophilus influenza type b conjugate, meningococcal, and pneumococcal vaccines at least 1 week before treatment.[78] Some investigators recommend re-immunization with all 3 vaccines 2 years after completion of treatment and with pneumococcal vaccine every 6 years thereafter.[79] Several studies suggest that splenic-field irradiation and splenectomy increase the risk of a treatment-related second cancer.[80]

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[74] Horning SJ, Adhikari A, Rizk N, et al.: Effect of treatment for Hodgkin's disease on pulmonary function: results of a prospective study. Journal of Clinical Oncology 12(2): 297-305, 1994.

[75] Bates NP, Williams MV, Bessell EM, et al.: Efficacy and toxicity of vinblastine, bleomycin, and methotrexate with involved-field radiotherapy in clinical stage IA and IIA Hodgkin's disease: a British National Lymphoma Investigation pilot study. Journal of Clinical Oncology 12(2): 288-296, 1994.

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[76] Prosnitz LR, Lawson JP, Friedlaender GE, et al.: Avascular necrosis of bone in Hodgkin's disease patients treated with combined modality therapy. Cancer 47(12): 2793-2797, 1981.

[77] Schimpff SC, O'Connell MJ, Greene WH, et al.: Infections in 92 splenectomized patients with Hodgkin's disease: a clinical review. American Journal of Medicine 59(5): 695-701, 1975.

[78] Recommendations of the Advisory Committee on Immunization Practices (ACIP): use of vaccines and immune globulins for persons with altered immunocompetence. Morbidity and Mortality Weekly Report 42(RR-4): 1-18, 1993.

[79] Molrine DC, George S, Tarbell N, et al.: Antibody responses to polysaccharide and polysaccharide-conjugate vaccines after treatment of Hodgkin disease. Annals of Internal Medicine 123(11): 828-834, 1995.

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Fatigue is a commonly reported symptom of patients who have completed chemotherapy. In a case control study design, a majority of Hodgkin's disease survivors reported significant fatigue lasting for more than 6 months after therapy compared to age-matched controls.[81]

A retrospective review of 709 patients with early-stage disease who were treated with primary radiation therapy revealed that 157 patients relapsed at a median time of 2 years (range 0-13 years).[82] Relapse was discovered by history in 55% of patients, by physical examination in 14% of patients, by chest x-ray in 23% of patients (during the first 3 years of follow-up), by abdominal x-ray in 7% of patients, and by a routine laboratory study in only 1% of patients.

The reliance on radiation therapy alone for early-stage Hodgkin's disease is based on 50 years of clinical trials and experience. However, if chemotherapy proves to be just as effective, the ultimate treatment choice may depend on differences in short-term and long-term toxic effects. The late mortality from cardiovascular disease and from solid tumors, especially in the lung, breast, gastrointestinal tract, and connective tissue, makes extended-field radiation therapy a less attractive option. The long-term effects (more than 15 years after completion of therapy) for patients treated with chemotherapy alone are not yet available. The most effective and least toxic chemotherapy regimen is ABVD.[83] In a randomized study of patients with clinical early-stage Hodgkin's disease, published only in abstract form, 4 months of ABVD followed by involved-field radiation or extended-field radiation showed equivalent overall survival and freedom from progression with 7 years median follow- up.[84] [Level of evidence: 1iiA] A randomized study comparing 4 months of ABVD versus 2 months of ABVD plus extended-field

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[81] Loge JH, Abrahamsen AF, Ekeberg O, et al.: Hodgkin's disease survivors more fatigued than the general population. Journal of Clinical Oncology 17(1): 253-261, 1999.

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[83] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[84] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

radiation therapy is being conducted by the National Cancer Institute of Canada and by the Eastern Cooperative Oncology Group.[85]

The treatment of choice for patients with advanced-stage disease and for patients who experience a relapse after radiation therapy is combination chemotherapy. ABVD was superior to MOPP (mechlorethamine, vincristine, procarbazine, prednisone) in freedom from progression in 2 trials with 7 to 8 years follow-up[86] and in overall survival in a single trial.[87] The Intergroup trial comparing ABVD with the MOPP/ABV hybrid, published only in abstract form, showed equivalent efficacy in failure-free survival and overall survival, but increased toxic effects in the hybrid arm, especially from second malignancies.[88] [Level of evidence: 1iiA] Outside the context of a clinical trial, ABVD should be considered an acceptable standard regimen for advanced-stage disease. Alternative drug combinations currently in clinical trials include bleomycin, etoposide, doxorubicin, cyclophosphamide, vincristine, procarbazine, and prednisone (BEACOPP)[89] and doxorubicin, vinblastine, mechlorethamine, etoposide, vincristine, bleomycin, and prednisone (Stanford V).[90] A prospective randomized trial failed to show a benefit in overall survival from the addition of low-dose consolidative

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[85] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[86] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

Bonfante V, Santoro A, Viviani S, et al.: ABVD in the treatment of Hodgkin's disease. Seminars in Oncology 19(2, Suppl 5): 38-45, 1992.

[87] Bonfante V, Santoro A, Viviani S, et al.: ABVD in the treatment of Hodgkin's disease. Seminars in Oncology 19(2, Suppl 5): 38-45, 1992.

[88] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

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[90] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

irradiation to chemotherapy for patients with advanced-stage disease.[91] In a meta-analysis of 1,740 patients treated on 14 different trials, there was no improvement in overall 10-year survival for patients with advanced stage Hodgkin's disease who received combined modality therapy versus chemotherapy alone.[92] [Level of evidence: 1iiiA] Randomized trials have never addressed the role of combined modality therapy for bulky disease (especially massive mediastinal disease). A retrospective report described a 50% relapse rate with MOPP alone versus a 20% relapse rate with combined modality therapy in a small group of patients with massive mediastinal disease.[93] The high cure rate (over 80%) of patients with stage I or II massive mediastinal Hodgkin's disease with combined modality therapy has made this a commonly used treatment modality.[94]

Clinical trials are addressing the role of more intensive regimens for patients with advanced-stage disease and poor prognostic factors. There is controversy about whether the optimal strategy should involve early dose intensification, with subsequent risks of increased late toxic effects (such as leukemia) or whether ABVD should be employed and patients who relapse be salvaged with high-dose treatment and autografting.

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[91] Fabian CJ, Mansfield CM, Dahlberg S, et al.: Low-dose involved field radiation after chemotherapy in advanced Hodgkin disease: a Southwest Oncology Group randomized study. Annals of Internal Medicine 120(11): 903-912, 1994.

[92] Loeffler M, Brosteanu O, Hasenclever D, et al.: Meta-analysis of chemotherapy versus combined modality treatment trials in Hodgkin's disease. Journal of Clinical Oncology 16(3): 818-829, 1998.

[93] Longo DL, Russo A, Duffey PL, et al.: Treatment of advanced-stage massive mediastinal Hodgkin's disease: the case for combined modality treatment. Journal of Clinical Oncology 9(2): 227-235, 1991.

[94] Leopold KA, Canellos GP, Rosenthal D, et al.: Stage IA-IIB Hodgkin's disease: staging and treatment of patients with large mediastinal adenopathy. Journal of Clinical Oncology 7(8): 1059-1065, 1989. Note: Separate PDQ summaries on Pregnancy and Hodgkin's Disease Treatment and Childhood Hodgkin's Disease are also available.

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Loeffler M, Diehl V, Pfreundschuh M, et al.: Dose-response relationship of complementary radiotherapy following four cycles of combination chemotherapy in intermediate-stage Hodgkin's disease. Journal of Clinical Oncology 15(6): 2275-2287, 1997.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

The designations in PDQ that treatments are "standard" or "under clinical evaluation" are not to be used as a basis for reimbursement determinations.

Stage I Adult Hodgkin's Disease

Stage IA

Patients with early-stage disease are candidates for radiation therapy, combined modality therapy, or chemotherapy alone (under evaluation in clinical trials). Radiation therapy is the traditional treatment of patients with stage IA disease and it can achieve a cure in approximately 90% or more of treated patients.[95] When chemotherapy or combined modality therapy is applied, laparotomy is not required. Patients with early-stage disease and favorable prognostic features can undergo radiation therapy without staging laparotomy.[96] These favorable subgroups of patients have an 80% relapse-free survival rate at 5 to 10 years with mantle-field irradiation, alone or in conjunction with, para-aortic, and splenic irradiation. Favorable features include sedimentation rate of less than 50, patient age of 50 years or younger,

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[95] Mauch PM: Controversies in the management of early stage Hodgkin's disease. Blood 83(2): 318-329, 1994.

[96] Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.

Noordijk EM, Carde P, Mandard AM, et al.: Preliminary results of the EORTC-GPMC controlled clinical trial H7 in early-stage Hodgkin's disease. Annals of Oncology 5(Suppl 2): 107-112, 1994.

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Backstrand KH, Ng AK, Takvorian RW, et al.: Results of a prospective trial of mantle irradiation alone for selected patients with early-stage Hodgkin's disease. Journal of Clinical Oncology 19(3): 736-741, 2001.

Cosset JM, Henry-Amar M, et al. on behalf of the EORTC Lymphoma Cooperative Group: The EORTC trial for limited stage Hodgkin's disease. European Journal of Cancer 28A(11): 1847-1850, 1992.

Mauch PM, Canellos GP, Shulman LN, et al.: Mantle irradiation alone for selected patients with laparotomy-staged IA to IIA Hodgkin's disease: preliminary results of a prospective trial. Journal of Clinical Oncology 13(4): 947-952, 1995.

Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

Mauch PM, Connors JM, Pavlovsky S, et al.: Treatment of favorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 435-458.

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lymphocyte-predominant or nodular sclerosing histology, lack of B symptoms, less than 3 sites of involvement, and no bulky adenopathy.[97]

If chemotherapy regimens (with or without radiation therapy) prove to be just as effective as radiation therapy, the ultimate treatment choice may depend on differences in short-term and long-term toxic effects. The late mortality from cardiovascular disease and from solid tumors, especially in the lung, breast, gastrointestinal tract, and connective tissue, makes extended-field radiation therapy a less attractive option. The long-term effects (more than 15 years after completion of therapy) are not yet available for management programs that include chemotherapy alone. The most effective and least toxic chemotherapy regimen is ABVD (doxorubicin + bleomycin + vinblastine + dacarbazine).[98] In a randomized study of patients with clinical early-stage Hodgkin's disease, published only in abstract form, 4 months of ABVD followed by involved-field radiation or extended-field radiation showed equivalent overall survival and freedom from progression with 7 years median follow-up.[99] [Level of evidence: 1iiA] A randomized

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[97] Noordijk EM, Carde P, Mandard AM, et al.: Preliminary results of the EORTC-GPMC controlled clinical trial H7 in early-stage Hodgkin's disease. Annals of Oncology 5(Suppl 2): 107-112, 1994.
Backstrand KH, Ng AK, Takvorian RW, et al.: Results of a prospective trial of mantle irradiation alone for selected patients with early-stage Hodgkin's disease. Journal of Clinical Oncology 19(3): 736-741, 2001.
Cosset JM, Henry-Amar M, et al. on behalf of the EORTC Lymphoma Cooperative Group: The EORTC trial for limited stage Hodgkin's disease. European Journal of Cancer 28A(11): 1847-1850, 1992.
Mauch PM, Canellos GP, Shulman LN, et al.: Mantle irradiation alone for selected patients with laparotomy-staged IA to IIA Hodgkin's disease: preliminary results of a prospective trial. Journal of Clinical Oncology 13(4): 947-952, 1995.
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Hoppe RT, Cosset JM, Santoro A, et al.: Treatment of unfavorable prognosis, stage I-II Hodgkin's disease. In: Mauch PM, Amitage JG, Diehl V, et al., eds.: Hodgkin's Disease. Philadelphia: Lippincott Williams and Wilkins, 1999, pp 459-481.
[98] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.
Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.
[99] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's

study comparing 4 months of ABVD versus 2 months of ABVD plus extended-field radiation therapy is being conducted by the National Cancer Institute of Canada and by the Eastern Cooperative Oncology Group.[100]

Most patients with a subdiaphragmatic presentation and clinical stage IA disease should receive chemotherapy with or without involved-field radiation to avoid extended pelvic/abdominal fields which are myeloablative and to avoid staging laparotomy. There are no published trials to suggest a benefit from the use of chemotherapy alone in this setting. Patients with massive mediastinal disease should receive combined modality therapy; staging laparotomy is not required.[101]

A specialized approach to therapy can be taken in the following circumstances. Patients with non-bulky lymphocyte-predominant disease presenting in unilateral high neck (above the thyroid notch) or epitrochlear locations require only involved-field irradiation after clinical staging.[102] A retrospective report of 426 cases of lymphocyte-predominant Hodgkin's disease (including the so-called nodular lymphocyte-predominant and lymphocyte-rich classical subtypes) showed that more patients died of

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disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[100] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[101] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

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Longo DL, Glatstein E, Duffey PL, et al.: Alternating MOPP and ABVD chemotherapy plus mantle-field radiation therapy in patients with massive mediastinal Hodgkin's disease. Journal of Clinical Oncology 15(11): 3338-3346, 1997.

Loeffler M, Diehl V, Pfreundschuh M, et al.: Dose-response relationship of complementary radiotherapy following four cycles of combination chemotherapy in intermediate-stage Hodgkin's disease. Journal of Clinical Oncology 15(6): 2275-2287, 1997.

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[102] Russell KJ, Hoppe RT, Colby TV, et al.: Lymphocyte predominant Hodgkin's disease: clinical presentation and results of treatment. Radiotherapy and Oncology 1(3): 197-205, 1984.

treatment-related toxicity (both acute and long-term) than from recurrence of Hodgkin's disease.[103] [Level of evidence; 3iiiA] Limitation of radiation dose and fields and avoidance of leukemogenic chemotherapeutic agents, along with watchful waiting policies, should be investigated for these subgroups.[104] Patients with non-bulky nodular sclerosing disease presenting in the anterior mediastinum only after clinical staging also do well with mantle irradiation alone.[105]

Treatment options for supradiaphragmatic presentation without massive mediastinal involvement:

- Combination chemotherapy and radiation:
  - ABVD for 4 months + involved-field radiation.[106]
  - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
  - Clinical trial evaluating ABVD with or without radiation therapy.[107]
- Subtotal lymphoid irradiation to mantle and para-aortic fields (with splenic field if no laparotomy).[108] Patients with mixed cellularity histologic type disease may have higher relapse rates in pelvic nodes

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[103] Diehl V, Sextro M, Franklin J, et al.: Clinical presentation, course, and prognostic factors in lymphocyte-predominant Hodgkin's disease and lymphocyte-rich classical Hodgkin's disease: report from the European Task Force on Lymphoma Project on lymphocyte-predominant Hodgkin's disease. Journal of Clinical Oncology 17(3): 776-783, 1999.

[104] Aster JC: Lymphocyte-predominant Hodgkin's disease: how little therapy is enough? Journal of Clinical Oncology 17(3): 744-746, 1999.

[105] Backstrand KH, Ng AK, Takvorian RW, et al.: Results of a prospective trial of mantle irradiation alone for selected patients with early-stage Hodgkin's disease. Journal of Clinical Oncology 19(3): 736-741, 2001.

[106] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[107] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[108] Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

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Duhmke E, Franklin J, Pfreundschuh M, et al.: Low-dose radiation is sufficient for the noninvolved extended-field treatment in favorable early-stage Hodgkin's disease: long-term results of a randomized trial of radiotherapy alone. Journal of Clinical Oncology 19(11): 2905-2914, 2001.

with conventional therapy (11%) than patients with nodular sclerosing or lymphocyte-predominant histologic types of disease(5%).[109]

- Combination chemotherapy alone (under clinical evaluation):
  - ABVD for 4 to 6 months.[110]
  - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
  - Clinical trial evaluating ABVD with or without radiation therapy.[111]
- Mantle-field irradiation alone with or without staging laparotomy in patients with favorable prognostic features (mantle alone without staging laparotomy is generally not indicated).[112]

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[109] Mauch PM: Controversies in the management of early stage Hodgkin's disease. Blood 83(2): 318-329, 1994.
Zanini M, Viviani S, Santoro A, et al.: Extended-field radiotherapy in favorable stage IA-IIA Hodgkin's disease (prognostic role of stage). International Journal of Radiation Oncology, Biology, Physics 30(4): 813-819, 1994.
[110] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.
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[111] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.
[112] Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.
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Mauch PM, Canellos GP, Shulman LN, et al.: Mantle irradiation alone for selected patients with laparotomy-staged IA to IIA Hodgkin's disease: preliminary results of a prospective trial. Journal of Clinical Oncology 13(4): 947-952, 1995.
Zanini M, Viviani S, Santoro A, et al.: Extended-field radiotherapy in favorable stage IA-IIA Hodgkin's disease (prognostic role of stage). International Journal of Radiation Oncology, Biology, Physics 30(4): 813-819, 1994.
Wirth A, Chao M, Corry J, et al.: Mantle irradiation alone for clinical stage I-II Hodgkin's disease: lon-term follow-up and analysis of prognostic factors in 261 patients. Journal of Clinical Oncology 17(1): 230-240, 1999.

Treatment options for supradiaphragmatic presentation with massive mediastinal involvement (defined as a mediastinal mass width greater than one third of the maximum chest diameter or 10 centimeter mass):

- Most patients with massive mediastinal disease will receive combined modality therapy.

One of the following chemotherapy regimens plus radiation therapy to a mantle or modified mantle field (mantle-field irradiation in the upright position should be considered[113]):

- Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[114]
- ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[115] MOPP/ABV hybrid: mechlorethamine + vincristine + procarbazine + prednisone/doxorubicin + bleomycin + vinblastine[116]
- MOPP alternating with ABVD (MOPP/ABVD): mechlorethamine + vincristine + procarbazine + prednisone alternating with doxorubicin + bleomycin + vinblastine + dacarbazine[117]

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[113] Marcus KC, Svensson G, Rhodes LP, et al.: Mantle irradiation in the upright position: a technique to reduce the volume of lung irradiated in patients with bulky mediastinal Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 23(2): 443-447, 1992.
Behar RA, Horning SJ, Hoppe RT: Hodgkin's disease with bulky mediastinal involvement: effective management with combined modality therapy. International Journal of Radiation Oncology, Biology, Physics 25(5): 771-776, 1993.

[114] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[115] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[116] Klimo P, Connors JM: An update on the Vancouver experience in the management of advanced Hodgkin's disease treated with the MOPP/ABV hybrid program. Seminars in Hematology 25(2, Suppl 2): 34-40, 1988.
Viviani S, Bonadonna G, Santoro A, et al.: Alternating versus hybrid MOPP and ABVD combinations in advanced Hodgkin's disease: ten-year results. Journal of Clinical Oncology 14(5): 1421-1430, 1996.

[117] Viviani S, Bonadonna G, Santoro A, et al.: Alternating versus hybrid MOPP and ABVD combinations in advanced Hodgkin's disease: ten-year results. Journal of Clinical Oncology 14(5): 1421-1430, 1996.

Treatment options for subdiaphragmatic presentation:[118]

- Regional irradiation for lymphocyte predominant subtype localized to the inguinal or femoral region.
- Combination chemotherapy with irradiation to regions of involvement or to inverted-Y and splenic fields:
  - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[119]
- Chemotherapy alone (under clinical evaluation).

Stage IB

Patients with "B" symptoms require combination chemotherapy with or without additional radiation therapy because, of the patients who undergo a laparotomy, 30% to 40% will be upstaged at laparotomy and 25% will relapse after radiation.[120]

Standard treatment options:

- Combination chemotherapy with radiation therapy:
  - ABVD for 6 months. ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
- Chemotherapy alone (under clinical evaluation). Clinical trial evaluating ABVD with or without radiation therapy.[121]

Longo DL, Glatstein E, Duffey PL, et al.: Alternating MOPP and ABVD chemotherapy plus mantle-field radiation therapy in patients with massive mediastinal Hodgkin's disease. Journal of Clinical Oncology 15(11): 3338-3346, 1997.

[118] Krikorian JG, Portlock CS, Mauch PM: Hodgkin's disease presenting below the diaphragm: a review. Journal of Clinical Oncology 4(10): 1551-1562, 1986.

Leibenhaut MH, Hoppe RT, Varghese A, et al.: Subdiaphragmatic Hodgkin's disease: laparotomy and treatment results in 49 patients. Journal of Clinical Oncology 5(7): 1050-1055, 1987.

Liao Z, Ha CS, Fuller LM, et al.: Subdiaphragmatic stage I and II Hodgkin's disease: long-term follow-up and prognostic factors. International Journal of Radiation Oncology, Biology, Physics 41(5): 1047-1056, 1998.

[119] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[120] Crnkovich MJ, Leopold K, Hoppe RT, et al.: Stage I to IIB Hodgkin's disease: the combined experience at Stanford University and the Joint Center for Radiation Therapy. Journal of Clinical Oncology 5(7): 1041-1049, 1987.

[121] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus

Stage II Adult Hodgkin's Disease

Stage IIA

Patients with early-stage disease are candidates for radiation therapy, combined modality therapy, or chemotherapy alone (under evaluation in clinical trials). Radiation therapy is the traditional treatment of patients with stage IIA disease and it can achieve a cure in approximately 80% or more of treated patients. When chemotherapy or combined modality therapy is applied, laparotomy is not required. Patients with early-stage disease and favorable prognostic features can undergo radiation therapy after careful clinical staging.[122] These favorable subgroups of patients have an 80% relapse-free survival rate at 5 to 10 years with mantle field, para-aortic, and splenic radiation therapy and no laparotomy. Favorable features include sedimentation rate of less than 40 to 50, patient age of 40 to 50 years or younger, lymphocyte-predominant or nodular sclerosing histology, and no bulky adenopathy.

If chemotherapy regimens (with or without radiation therapy) prove to be just as effective as radiation therapy, the ultimate treatment choice may depend on differences in short-term and long-term toxic effects. The late mortality from cardiovascular disease and from solid tumors, especially in the lung, breast, gastrointestinal tract, and connective tissue, makes extended-field radiation therapy a less attractive option. The long-term effects (more than 15 years after completion of therapy) for patients treated with chemotherapy are not yet available. The most effective and least toxic chemotherapy regimen is ABVD (doxorubicin + bleomycin + vinblastine + dacarbazine).[123] In a randomized study of patients with clinical early-stage Hodgkin's disease, published only in abstract form, 4 months of ABVD

ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[122] Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.

Abrahamsen AF, Hannisdal E, Nome O, et al.: Clinical stage I and II Hodgkin's disease: long-term results of therapy without laparotomy - experience at one institution. Annals of Oncology 7(2): 145-150, 1996.

[123] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

followed by involved-field radiation or extended-field radiation showed equivalent overall survival and freedom from progression with 7 years median follow-up.[124] [Level of evidence: 1iiA] A randomized study comparing 4 months of ABVD versus 2 months of ABVD plus extended-field radiation therapy is being conducted by the National Cancer Institute of Canada and by the Eastern Cooperative Oncology Group.[125]

Most patients with a subdiaphragmatic presentation and clinical stage IIA disease should receive chemotherapy with or without involved- or extended-field radiation to avoid extended pelvic/abdominal fields which are myeloablative and to avoid staging laparotomy.[126] The use of chemotherapy alone in this setting is under evaluation in clinical trials. Patients with massive mediastinal disease should receive combined modality therapy; staging laparotomy is not required.[127]

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[124] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[125] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[126] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[127] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

Klimo P, Connors JM: An update on the Vancouver experience in the management of advanced Hodgkin's disease treated with the MOPP/ABV hybrid program. Seminars in Hematology 25(2, Suppl 2): 34-40, 1988.

Viviani S, Bonadonna G, Santoro A, et al.: Alternating versus hybrid MOPP and ABVD combinations in advanced Hodgkin's disease: ten-year results. Journal of Clinical Oncology 14(5): 1421-1430, 1996.

Longo DL, Glatstein E, Duffey PL, et al.: Alternating MOPP and ABVD chemotherapy plus mantle-field radiation therapy in patients with massive mediastinal Hodgkin's disease. Journal of Clinical Oncology 15(11): 3338-3346, 1997.

Loeffler M, Diehl V, Pfreundschuh M, et al.: Dose-response relationship of complementary radiotherapy following four cycles of combination chemotherapy in intermediate-stage Hodgkin's disease. Journal of Clinical Oncology 15(6): 2275-2287, 1997.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

Treatment options for supradiaphragmatic presentation without massive mediastinal involvement:

- Combination chemotherapy and radiation:
  - ABVD for 4 months + involved-field radiation.[128] ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
  - Clinical trial evaluating ABVD with or without radiation therapy.[129]
- Subtotal lymphoid irradiation to mantle and para-aortic fields (with splenic field if no laparotomy).[130]
- Combination chemotherapy alone (under clinical evaluation):
  - ABVD for 4 to 6 months.[131] ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
  - Clinical trial evaluating ABVD with or without radiation therapy.[132]
- Mantle-field irradiation alone with or without staging laparotomy.[133]

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[128] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[129] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[130] Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

Zanini M, Viviani S, Santoro A, et al.: Extended-field radiotherapy in favorable stage IA-IIA Hodgkin's disease (prognostic role of stage). International Journal of Radiation Oncology, Biology, Physics 30(4): 813-819, 1994.

Duhmke E, Franklin J, Pfreundschuh M, et al.: Low-dose radiation is sufficient for the noninvolved extended-field treatment in favorable early-stage Hodgkin's disease: long-term results of a randomized trial of radiotherapy alone. Journal of Clinical Oncology 19(11): 2905-2914, 2001.

[131] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

Rueda A, Alba E, Ribelles N, et al.: Six cycles of ABVD in the treatment of stage I and II Hodgkin's lymphoma: a pilot study. Journal of Clinical Oncology 15(3): 1118-1122, 1997.

[132] Meyer RM, NCIC-Clinical Trials Group: Phase III Randomized Study of Radiotherapy With or Without Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) Versus ABVD Only in Patients With Stage I-IIA Hodgkin's Disease (Summary Last Modified 09/2001), CAN-NCIC-HD6, clinical trial, active, 01/25/1994.

[133] Gospodarowicz MK, Sutcliffe SB, et al. for the Princess Margaret Hospital Lymphoma Group: Radiation therapy in clinical stage I and II Hodgkin's disease. European Journal of Cancer 28A(11): 1841-1846, 1992.

Treatment options for supradiaphragmatic presentation with massive mediastinal involvement (defined as a mediastinal mass width greater than one-third of the maximum chest diameter or 10 centimeter mass):

- Most patients with massive mediastinal disease will receive combined modality therapy; therefore, staging laparotomy is not required.
- Radiation therapy to a mantle field plus 1 of the following chemotherapy regimens[134] (mantle-field irradiation in the upright position should be considered if there has been an inadequate response to chemotherapy[135]):
  - Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[136]
  - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[137] MOPP/ABV hybrid: mechlorethamine + vincristine + procarbazine + prednisone/doxorubicin + bleomycin + vinblastine[138]

Horning SJ: Early stage Hodgkin's disease: can we have our cake and eat it, too? Annals of Oncology 7(2): 115-117, 1996.

Abrahamsen AF, Hannisdal E, Nome O, et al.: Clinical stage I and II Hodgkin's disease: long-term results of therapy without laparotomy - experience at one institution. Annals of Oncology 7(2): 145-150, 1996.

Leibenhaut MH, Hoppe RT, Efron B, et al.: Prognostic indicators of laparotomy findings in clinical stage I-II supradiaphragmatic Hodgkin's disease. Journal of Clinical Oncology 7(1): 81-91, 1989.

Backstrand KH, Ng AK, Takvorian RW, et al.: Results of a prospective trial of mantle irradiation alone for selected patients with early-stage Hodgkin's disease. Journal of Clinical Oncology 19(3): 736-741, 2001.

[134] Leopold KA, Canellos GP, Rosenthal D, et al.: Stage IA-IIB Hodgkin's disease: staging and treatment of patients with large mediastinal adenopathy. Journal of Clinical Oncology 7(8): 1059-1065, 1989.

Behar RA, Horning SJ, Hoppe RT: Hodgkin's disease with bulky mediastinal involvement: effective management with combined modality therapy. International Journal of Radiation Oncology, Biology, Physics 25(5): 771-776, 1993.

[135] Marcus KC, Svensson G, Rhodes LP, et al.: Mantle irradiation in the upright position: a technique to reduce the volume of lung irradiated in patients with bulky mediastinal Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 23(2): 443-447, 1992.

[136] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[137] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

- MOPP alternated with ABVD (MOPP/ABVD): mechlorethamine + vincristine + procarbazine + prednisone alternated with doxorubicin + bleomycin + vinblastine + dacarbazine[139]

Stage IIB

Patients with "B" symptoms require combination chemotherapy with or without radiation therapy.

Standard treatment options:

- Combination chemotherapy with or without radiation therapy:
  - Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[140]
  - ABVD for 6 months[141] ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine.

ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[142]

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[138] Klimo P, Connors JM: An update on the Vancouver experience in the management of advanced Hodgkin's disease treated with the MOPP/ABV hybrid program. Seminars in Hematology 25(2, Suppl 2): 34-40, 1988.
Viviani S, Bonadonna G, Santoro A, et al.: Alternating versus hybrid MOPP and ABVD combinations in advanced Hodgkin's disease: ten-year results. Journal of Clinical Oncology 14(5): 1421-1430, 1996.

[139] Viviani S, Bonadonna G, Santoro A, et al.: Alternating versus hybrid MOPP and ABVD combinations in advanced Hodgkin's disease: ten-year results. Journal of Clinical Oncology 14(5): 1421-1430, 1996.
Longo DL, Glatstein E, Duffey PL, et al.: Alternating MOPP and ABVD chemotherapy plus mantle-field radiation therapy in patients with massive mediastinal Hodgkin's disease. Journal of Clinical Oncology 15(11): 3338-3346, 1997.

[140] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[141] Bonfante V, Viviani S, Devizzi L, et al.: Ten-years experience with ABVD plus radiotherapy: subtotal nodal (STNI) vs involved field (IFRT) in early-stage Hodgkin's disease (Hd). Proceedings of the American Society of Clinical Oncology 20: A-1120, 281a, 2001.

[142] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

The Intergroup trial comparing ABVD with MOPP/ABV hybrid, published only in abstract form, showed equivalent efficacy in failure-free survival and overall survival, but increased toxic effects in the hybrid arm, especially from second malignancies.[143] [Level of evidence: 1iiA]

New dose-intensive, time-condensed regimens are under clinical evaluation.[144] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

Stage III Adult Hodgkin's Disease

Stage IIIA

Chemotherapy with or without radiation therapy is the treatment of choice for stage IIIA disease. While some trials support chemotherapy alone as an acceptable initial management approach in selected patients with stage IIIA adult Hodgkin's disease,[145] other trials suggest that combined modality therapy may be superior.[146]

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[143] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[144] Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

[145] Crowther D, Wagstaff J, Deakin D, et al.: A randomized study comparing chemotherapy alone with chemotherapy followed by radiotherapy in patients with pathologically staged IIIA Hodgkin's disease. Journal of Clinical Oncology 2(8): 892-897, 1984.

Lister TA, Dorreen MS, Faux M, et al.: The treatment of stage IIIA Hodgkin's disease. Journal of Clinical Oncology 1(12): 745-749, 1983.

[146] Brizel DM, Winer EP, Prosnitz LR, et al.: Improved survival in advanced Hodgkin's disease with the use of combined modality therapy. International Journal of Radiation Oncology, Biology, Physics 19(3): 535-542, 1990.

Fabian CJ, Mansfield CM, Dahlberg S, et al.: Low-dose involved field radiation after chemotherapy in advanced Hodgkin disease: a Southwest Oncology Group randomized study. Annals of Internal Medicine 120(11): 903-912, 1994.

Treatment options in the absence of massive mediastinal involvement:

1. Combination chemotherapy alone:
   - Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[147]
   - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
   - ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[148]
   - The Intergroup trial comparing ABVD with MOPP/ABV hybrid, published only in abstract form, showed equivalent efficacy in failure-free survival and overall survival, but increased toxic effects in the hybrid arm, especially from second malignancies.[149] [Level of evidence: 1iiA]
   - New dose-intensive, time-condensed regimens are under clinical evaluation.[150] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

Yahalom J, Ryu J, Straus DJ, et al.: Impact of adjuvant radiation on the patterns and rate of relapse in advanced-stage Hodgkin's disease treated with alternating chemotherapy combinations. Journal of Clinical Oncology 9(12): 2193-2201, 1991.

[147] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[148] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

[149] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[150] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

2. Combination chemotherapy plus radiation therapy:
   - Clinical trial evaluating ABVD with or without radiation therapy versus
     Stanford V with or without radiation therapy.[151]
   - ABVD plus radiation therapy[152]
   - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine
   - In a meta-analysis of 1,740 patients treated on 14 different trials, there was no improvement in overall 10-year survival for patients with advanced stage Hodgkin's disease who received combined modality therapy versus chemotherapy alone.[153] [Level of evidence: 1iiA] The lack of difference in overall survival was attributed to a greater number of second malignancies and poorer response and survival after relapse among patients who received combined modality therapy.
   - ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[154]
   - New dose-intensive, time-condensed regimens are under clinical evaluation.[155] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

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[151] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[152] Santoro A, Bonadonna G, Valagussa P, et al.: Long-term results of combined chemotherapy-radiotherapy approach in Hodgkin's disease: superiority of ABVD plus radiotherapy versus MOPP plus radiotherapy. Journal of Clinical Oncology 5(1): 27-37, 1987.

[153] Loeffler M, Brosteanu O, Hasenclever D, et al.: Meta-analysis of chemotherapy versus combined modality treatment trials in Hodgkin's disease. Journal of Clinical Oncology 16(3): 818-829, 1998.

[154] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

[155] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the

- Patients with the highest risk of relapse (defined as more than 3 poor prognostic factors in the International index)[156] are eligible for a clinical trial of ABVD alone versus ABVD followed by peripheral stem cell transplantation.[157]

Treatment options in the presence of massive mediastinal involvement:

1. Combination chemotherapy with radiation therapy:[158]
   - Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[159]
   - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine Bleomycin and/or doxorubicin combined with radiation may have overlapping cardiac and pulmonary toxic effects.
   - MOPP/ABV hybrid: mechlorethamine + vincristine + procarbazine + prednisone/doxorubicin + bleomycin + vinblastine[160]

German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

[156] Hasenclever D, Diehl V, for the International Prognostic Factors Project on Advanced Hodgkin's Disease: A prognostic score for advanced Hodgkin's disease. New England Journal of Medicine 339(21): 1506-1514, 1998.

[157] Gaynor ER, Southwest Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine With or Without Autologous Peripheral Blood Stem Cell Transplantation and High-Dose Chemotherapy in Patients With Stage III or IV Hodgkin's Disease (Summary Last Modified 01/2002), SWOG-S9901, clinical trial, active, 08/09/2001.

[158] Prosnitz LR, Cooper D, Cox EB, et al.: Treatment selection for stage IIIA Hodgkin's disease patients. International Journal of Radiation Oncology, Biology, Physics 11(8): 1431-1437, 1985.

Behar RA, Horning SJ, Hoppe RT: Hodgkin's disease with bulky mediastinal involvement: effective management with combined modality therapy. International Journal of Radiation Oncology, Biology, Physics 25(5): 771-776, 1993.

[159] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[160] Connors JM, Klimo P, Adams G, et al.: Treatment of advanced Hodgkin's disease with chemotherapy: comparison of MOPP/ABV hybrid regimen with alternating courses of MOPP and ABVD: a report from the National Cancer Institute of Canada Clinical Trials Group. Journal of Clinical Oncology 15(4): 1638-1645, 1997.

Glick JH, Young ML, Harrington D, et al.: MOPP/ABV hybrid chemotherapy for advanced Hodgkin's disease significantly improves failure-free and overall survival: the 8-year results of the Intergroup trial. Journal of Clinical Oncology 16(1): 19-26, 1998.

2. MOPP alternating with ABVD (MOPP/ABVD): mechlorethamine + vincristine +procarbazine + prednisone alternating with doxorubicin + bleomycin + vinblastine + dacarbazine[161]
   - MOPP: mechlorethamine + vincristine + procarbazine + prednisone[162]

ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[163]

New dose intense, time condensed regimens are under clinical evaluation.[164] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

Patients with the highest risk of relapse (defined as more than 3 poor prognostic factors in the International index)[165] are eligible for a clinical trial of ABVD alone versus ABVD followed by peripheral stem cell transplantation.[166]

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[161] Longo DL, Glatstein E, Duffey PL, et al.: Alternating MOPP and ABVD chemotherapy plus mantle-field radiation therapy in patients with massive mediastinal Hodgkin's disease. Journal of Clinical Oncology 15(11): 3338-3346, 1997.

[162] Longo DL, Young RC, Wesley MN, et al.: Twenty years of MOPP therapy for Hodgkin's disease. Journal of Clinical Oncology 4(9): 1295-1306, 1986.

[163] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

[164] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

[165] Hasenclever D, Diehl V, for the International Prognostic Factors Project on Advanced Hodgkin's Disease: A prognostic score for advanced Hodgkin's disease. New England Journal of Medicine 339(21): 1506-1514, 1998.

[166] Gaynor ER, Southwest Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine With or Without Autologous Peripheral Blood Stem Cell Transplantation and High-Dose Chemotherapy in Patients With Stage III or IV Hodgkin's Disease (Summary Last Modified 01/2002), SWOG-S9901, clinical trial, active, 08/09/2001.

Stage IIIB

Combination chemotherapy with or without radiation therapy to sites of bulky disease:

- Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[167]
- ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[168]

ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[169]

The Intergroup trial comparing ABVD with MOPP/ABV hybrid, published only in abstract form, showed equivalent efficacy in failure-free survival and overall survival but increased toxic effects in the hybrid arm, especially from second malignancies.[170] [Level of evidence 1iiA]

In a meta-analysis of 1,740 patients treated on 14 different trials, there was no improvement in overall 10-year survival for patients with advanced stage Hodgkin's disease who received combined modality therapy versus chemotherapy alone.[171] [Level of evidence: 1iiiA] The lack of difference in overall survival was attributed to a greater number of second malignancies and poorer response and survival after relapse among patients who received combined modality therapy. Another randomized trial comparing chemotherapy alone and combined modality therapy for advanced stage

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[167] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

[168] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

[169] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

[170] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[171] Loeffler M, Brosteanu O, Hasenclever D, et al.: Meta-analysis of chemotherapy versus combined modality treatment trials in Hodgkin's disease. Journal of Clinical Oncology 16(3): 818-829, 1998.

Hodgkin's disease showed no difference in disease-free or overall survival.[172] [Level of evidence: 1iiA]

New dose intense, time condensed regimens are under clinical evaluation.[173] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

Patients with the highest risk of relapse (defined as more than 3 poor prognostic factors in the International index)[174] are eligible for a clinical trial of ABVD alone versus ABVD followed by peripheral stem cell transplantation.[175]

Stage IV Adult Hodgkin's Disease

Combination chemotherapy is the treatment of choice for this stage of adult Hodgkin's disease. Radiation therapy is sometimes used to sites of initial disease or areas of bulky disease involvement.[176]

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[172] Ferme C, Sebban C, Hennequin C, et al.: Comparison of chemotherapy to radiotherapy as consolidation of complete or good partial response after six cycles of chemotherapy for patients with advanced Hodgkin's disease: results of the Groupe d'etudes des Lymphomes de l'Adulte H89 trial. Blood 95(7): 2246-2252, 2000.

[173] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

[174] Hasenclever D, Diehl V, for the International Prognostic Factors Project on Advanced Hodgkin's Disease: A prognostic score for advanced Hodgkin's disease. New England Journal of Medicine 339(21): 1506-1514, 1998.

[175] Gaynor ER, Southwest Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine With or Without Autologous Peripheral Blood Stem Cell Transplantation and High-Dose Chemotherapy in Patients With Stage III or IV Hodgkin's Disease (Summary Last Modified 01/2002), SWOG-S9901, clinical trial, active, 08/09/2001.

[176] Brizel DM, Winer EP, Prosnitz LR, et al.: Improved survival in advanced Hodgkin's disease with the use of combined modality therapy. International Journal of Radiation Oncology, Biology, Physics 19(3): 535-542, 1990.

New dose intense, time condensed regimens are under clinical evaluation.[177] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).
Standard treatment options:

1. Combination chemotherapy:
    - Clinical trial evaluating ABVD with or without radiation therapy versus Stanford V with or without radiation therapy.[178]
    - ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[179]
    - ABVD therapy for 6 to 8 months is as effective as 12 months of MOPP alternating with ABVD, and both are superior to MOPP alone in terms of failure-free survival.[180]
    - The Intergroup trial comparing ABVD and MOPP/ABV hybrid, published only in abstract form, showed equivalent efficacy in failure-free survival and overall survival, but increased toxic effects in the hybrid arm, especially from second malignancies.[181] [Level of evidence: 1iiA]

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[177] Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.
Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.
[178] Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.
[179] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.
Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.
[180] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.
[181] Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

- New dose-intensive, time-condensed regimens are under clinical evaluation.[182] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

2. Combination chemotherapy and radiation therapy to sites of bulky involvement or total nodal irradiation in a variety of sequences. ABVD and radiation therapy ABVD: doxorubicin + bleomycin + vinblastine + dacarbazine[183]

   - In a meta-analysis of 1,740 patients treated on 14 different trials, there was no improvement in overall 10-year survival for patients with advanced stage Hodgkin's disease who received combined modality therapy versus chemotherapy alone.[184] [Level of evidence: 1iiiA] The lack of difference in overall survival for any subgroup was attributed to a greater number of second malignancies and poorer response and survival after relapse among patients who received combined modality therapy. Another randomized trial comparing chemotherapy alone and combined modality therapy for advanced stage Hodgkin's disease showed no difference in disease-free or overall survival.[185] [Level of evidence: 1iiA]

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[182] Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

[183] Cannellos GP, Anderson JR, Propert KJ, et al.: Chemotherapy of advanced Hodgkin's disease with MOPP, ABVD, or MOPP alternating with ABVD. New England Journal of Medicine 327(21): 1478-1484, 1992.

Duggan D, Petroni G, Johnson J, et al.: MOPP/ABV versus ABVD for advanced Hodgkin's disease: a preliminary report of CALGB 8952 (with SWOG, ECOG, NCIC). Proceedings of the American Society of Clinical Oncology 16: A-43, 12a, 1997.

[184] Loeffler M, Brosteanu O, Hasenclever D, et al.: Meta-analysis of chemotherapy versus combined modality treatment trials in Hodgkin's disease. Journal of Clinical Oncology 16(3): 818-829, 1998.

[185] Ferme C, Sebban C, Hennequin C, et al.: Comparison of chemotherapy to radiotherapy as consolidation of complete or good partial response after six cycles of chemotherapy for patients with advanced Hodgkin's disease: results of the Groupe d'etudes des Lymphomes de l'Adulte H89 trial. Blood 95(7): 2246-2252, 2000.

- New dose-intensive, time-condensed regimens are under clinical evaluation.[186] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**).

3. Clinical trials are exploring the efficacy of chemotherapy with bone marrow transplantation.[187]

Recurrent Adult Hodgkin's Disease

Patients who experience a relapse after initial wide-field, high-dose radiation therapy have a good prognosis. Combination chemotherapy results in 10-year disease-free and overall survival rates of 57% to 80% and 57% to 81%, respectively.[188] For patients who experience a relapse after initial

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[186] Diehl V, Franklin J, et al., for the German Hodgkin's Lymphoma Study Group: BEACOPP, a new dose-escalated and accelerated regimen, is at least as effective as COPP/ABVD in patients with advanced-stage Hodgkin's lymphoma: interim report from a trial of the German Hodgkin's Lymphoma Study Group. Journal of Clinical Oncology 16(12): 3810-3821, 1998.

Horning SJ, Eastern Cooperative Oncology Group: Phase III Randomized Study of Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine (ABVD) versus Doxorubicin, Vinblastine, Vincristine, Bleomycin, Mechlorethamine, Etoposide, and Prednisone (Stanford V) With or Without Radiotherapy in Patients With Locally Extensive or Advanced Stage Hodgkin's Disease With 0-2 Risk Factors (Summary Last Modified 09/2001), E-2496, clinical trial, active, 05/01/2000.

Horning SJ, Williams J, Bartlett NL, et al.: Assessment of the Stanford V regimen and consolidative radiotherapy for bulky and advanced Hodgkin's disease: Eastern Cooperative Oncology Group Pilot Study E1492. Journal of Clinical Oncology 18(5): 972-980, 2000.

[187] Chopra R, McMillan AK, Linch DC, et al.: The place of high-dose BEAM therapy and autologous bone marrow transplantation in poor-risk Hodgkin's disease: a single-center eight-year study of 155 patients. Blood 81(5): 1137-1145, 1993.

Carella AM, Prencipe E, Pungolino E, et al.: Twelve years experience with high-dose therapy and autologous stem cell transplantation for high-risk Hodgkin's disease patients in first remission after MOPP/ABVD chemotherapy. Leukemia and Lymphoma 21(1-2): 63-70, 1996.

[188] Roach M, Brophy N, Cox R, et al.: Prognostic factors for patients relapsing after radiotherapy for early-stage Hodgkin's disease. Journal of Clinical Oncology 8(4): 623-629, 1990.

Specht L, Horwich A, Ashley S, et al.: Salvage of relapse of patients with Hodgkin's disease in clinical stages I or II who were staged with laparotomy and initially treated with radiotherapy alone: a report from the International Database on Hodgkin's Disease. International Journal of Radiation Oncology, Biology, Physics 30(4): 805-811, 1994.

Healey EA, Tarbell NJ, Kalish LA, et al.: Prognostic factors for patients with Hodgkin disease in first relapse. Cancer 71(8): 2613-2620, 1993.

Horwich A, Specht L, Ashley S: Survival analysis of patients with clinical stages I or II Hodgkin's disease who have relapsed after initial treatment with radiotherapy alone. European Journal of Cancer 33(6): 848-853, 1997.

combination chemotherapy, prognosis is determined more by the duration of the first remission than by the specific induction or salvage combination chemotherapy regimen. Patients whose initial remission after chemotherapy was longer than 1 year (late relapse) have long-term survivals with salvage chemotherapy of 22% to 54%.[189] Patients whose initial remission after chemotherapy was shorter than 1 year (early relapse) do much worse and have long-term survivals of 11% t0 28%.[190]

Patients who relapse after initial combination chemotherapy usually undergo reinduction with the same or another chemotherapy regimen followed by high-dose chemotherapy and autologous bone marrow or peripheral stem cell or allogeneic bone marrow rescue.[191] This therapy has resulted in a 3- to 4-year disease-free survival rate of 27% to 48%. Patients who are responsive to additional chemotherapy may have a better prognosis. The complete remission rate with autologous bone marrow transplantation (ABMT) was significantly higher in patients in whom only 1 prior chemotherapy regimen failed, compared with those in whom 2 or 3 failed. The only randomized trial that has been done is the British National

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[189] Harker WG, Kushlan P, Rosenberg SA: Combination chemotherapy for advanced Hodgkin's disease after failure of MOPP: ABVD and B-CAVe. Annals of Internal Medicine 101(4): 440-446, 1984.
Tourani JM, Levy R, Colonna P, et al.: High-dose salvage chemotherapy without bone marrow transplantation for adult patients with refractory Hodgkin's disease. Journal of Clinical Oncology 10(7): 1086-1094, 1992.
Canellos GP, Petroni GR, Barcos M, et al.: Etoposide, vinblastine, and doxorubicin: an active regimen for the treatment of Hodgkin's disease in relapse following MOPP. Journal of Clinical Oncology 13(8): 2005-2011, 1995.
Bonfante V, Santoro A, Viviani S, et al.: Outcome of patients with Hodgkin's disease failing after primary MOPP-ABVD. Journal of Clinical Oncology 15(2): 528-534, 1997.
Garcia-Carbonero R, Paz-Ares L, Arcediano A, et al.: Favorable prognosis after late relapse of Hodgkin's disease. Cancer 83(3): 560-565, 1998.
[190] Bonfante V, Santoro A, Viviani S, et al.: Outcome of patients with Hodgkin's disease failing after primary MOPP-ABVD. Journal of Clinical Oncology 15(2): 528-534, 1997.
Longo DL, Duffey PL, Young RC, et al.: Conventional-dose salvage combination chemotherapy in patients relapsing with Hodgkin's disease after combination chemotherapy: the low probability for cure. Journal of Clinical Oncology 10(2): 210-218, 1992.
[191] Nademanee A, O'Donnell MR, Snyder DS, et al.: High-dose chemotherapy with or without total body irradiation followed by autologous bone marrow and/or peripheral blood stem cell transplantation for patients with relapsed and refractory Hodgkin's disease: results in 85 patients with analysis of prognosis factors. Blood 85(5): 1381-1390, 1995.
Anderson JE, Litzow MR, Appelbaum FR, et al.: Allogeneic, syngeneic, and autologous marrow transplantation for Hodgkin's disease: the 21-year Seattle experience. Journal of Clinical Oncology 11(12): 2342-2350, 1993.
Horning SJ, Chao NJ, Negrin RS, et al.: High-dose therapy and autologous hematopoietic progenitor cell transplantation for recurrent or refractory Hodgkin's disease: analysis of the Stanford University results and prognostic indices. Blood 89(3): 801-813, 1997.

Lymphoma Investigation. In this trial, 40 patients were randomly assigned to either high-dose chemotherapy with ABMT or to the same drugs at lower doses that did not require bone marrow rescue. With a median 34 months of follow-up, the high-dose therapy resulted in significantly better event-free and progression-free survival.[192] In 2 retrospective reviews of patients who underwent ABMT for relapsed or refractory disease, a comparison was made of those who received involved-field radiation therapy for residual masses after high-dose therapy versus no further treatment.[193]

Those who received radiation therapy had improved progression-free survival. The use of human leukocyte antigen-matched sibling marrow (allogeneic transplantation) results in a lower relapse rate, but the benefit may be offset by increased toxic effects.[194] For patients with recurrent disease after ABMT, weekly vinblastine therapy has provided palliation with minimal toxic effects.[195] [Level of evidence: 3iiiDiii]

For the small subgroup of patients with only limited nodal recurrence following initial chemotherapy, radiation therapy with or without additional chemotherapy may provide long-term survival for about 50% of patients.[196]

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[192] Linch DC, Winfield D, Goldstone AH, et al.: Dose intensification with autologous bone-marrow transplantation in relapsed and resistant Hodgkin's disease: results of a BNLI randomised trial. Lancet 341(8852): 1051-1054, 1993.

[193] Mundt AJ, Sibley G, Williams S, et al.: Patterns of failure following high-dose chemotherapy and autologous bone marrow transplantation with involved field radiotherapy for relapsed/refractory Hodgkin's disease. International Journal of Radiation Oncology, Biology, Physics 33(2): 261-270, 1995.

Poen JC, Hoppe RT, Horning SJ: High-dose therapy and autologous bone marrow transplantation for relapsed/refractory Hodgkin's disease: the impact of involved field radiotherapy on patterns of failure and survival. International Journal of Radiation Oncology, Biology, Physics 36(1); 3-12, 1996.

[194] Anderson JE, Litzow MR, Appelbaum FR, et al.: Allogeneic, syngeneic, and autologous marrow transplantation for Hodgkin's disease: the 21-year Seattle experience. Journal of Clinical Oncology 11(12): 2342-2350, 1993.

Milpied N, Fielding AK, Pearce RM, et al.: Allogeneic bone marrow transplant is not better than autologous transplant for patients with relapsed Hodgkin's disease. Journal of Clinical Oncology 14(4): 1291-1296, 1996.

Gajewski JL, Phillips GL, Sobocinski KA, et al.: Bone marrow transplants from HLA-identical siblings in advanced Hodgkin's disease. Journal of Clinical Oncology 14(2): 572-578, 1996.

[195] Little R, Wittes RE, Longo DL, et al.: Vinblastine for recurrent Hodgkin's disease following autologous bone marrow transplant. Journal of Clinical Oncology 16(2): 584-588, 1998.

[196] Fox KA, Lippman SM, Cassady JR, et al.: Radiation therapy salvage of Hodgkin's disease following chemotherapy failure. Journal of Clinical Oncology 5(1): 38-45, 1987.

Roach M, Kapp DS, Rosenberg SA, et al.: Radiotherapy with curative intent: an option in selected patients relapsing after chemotherapy for advanced Hodgkin's disease. Journal of Clinical Oncology 5(4): 550-555, 1987.

The best results appear in patients who are aggressively restaged and re-treated with wide-field (subtotal nodal irradiation or total nodal irradiation) high-dose radiation therapy, or more limited (mantle) irradiation and combination chemotherapy. Initial stage IV disease may be a contraindication for this treatment; if it is used, there should be no evidence for disseminated disease at the time of nodal relapse.

Patients who do not respond to induction chemotherapy (about 10%-20% of all presenting patients) have less than a 10% survival at 8 years.[197] For these patients, high-dose chemotherapy and autologous bone marrow or peripheral stem cell or allogeneic bone marrow rescue are under clinical evaluation.[198] Information about ongoing clinical trials is available from the NCI (**http://cancer.gov/clinical_trials**). These trials have resulted in a 3- to 4-year disease-free survival rate of 27% to 48%.[199]

Uematsu M, Tarbell NJ, Silver B, et al.: Wide-field radiation therapy with or without chemotherapy for patients with Hodgkin disease in relapse after initial combination chemotherapy. Cancer 72(1): 207-212, 1993.

[197] Bonfante V, Santoro A, Viviani S, et al.: Outcome of patients with Hodgkin's disease failing after primary MOPP-ABVD. Journal of Clinical Oncology 15(2): 528-534, 1997.

[198] Marshall NA, DeVita VT Jr: Hodgkin's disease and transplantation: a room with a (nontransplanter's) view. Seminars in Oncology 26(1): 67-73, 1999.

Lazarus HM, Rowlings PA, Zhang MJ, et al.: Autotransplants for Hodgkin's disease in patients never achieving remission: a report from the Autologous Blood and Marrow Transplant Registry. Journal of Clinical Oncology 17(2): 534-545, 1999.

Dann EJ, Daugherty CK, Larson RA: Allogeneic bone marrow transplantation for relapsed and refractory Hodgkin's disease and non-Hodgkin's lymphoma. Bone Marrow Transplantation 20(5): 369-374, 1997.

Gajewski JL, Phillips GL, Sobocinski KA, et al.: Bone marrow transplants from HLA-identical siblings in advanced Hodgkin's disease. Journal of Clinical Oncology 14(2): 572-578, 1996.

Sweetenham JW, Carella AM, et al. on behalf of the Lymphoma Working Party of the European Group for Blood and Marrow Transplantation: High-dose therapy and autologous stem-cell transplantation for adult patients with Hodgkin's disease who do not enter remission after induction chemotherapy: results in 175 patients reported to the European Group for Blood and Marrow Transplantation. Journal of Clinical Oncology 17(10): 3101-3109, 1999.

Laurence AD, Goldstone AH: High-dose therapy with hematopoietic transplantation for Hodgkin's lymphoma. Seminars in Hematology 36(3): 303-312, 1999.

[199] Nademanee A, O'Donnell MR, Snyder DS, et al.: High-dose chemotherapy with or without total body irradiation followed by autologous bone marrow and/or peripheral blood stem cell transplantation for patients with relapsed and refractory Hodgkin's disease: results in 85 patients with analysis of prognosis factors. Blood 85(5): 1381-1390, 1995.

Anderson JE, Litzow MR, Appelbaum FR, et al.: Allogeneic, syngeneic, and autologous marrow transplantation for Hodgkin's disease: the 21-year Seattle experience. Journal of Clinical Oncology 11(12): 2342-2350, 1993.

Horning SJ, Chao NJ, Negrin RS, et al.: High-dose therapy and autologous hematopoietic progenitor cell transplantation for recurrent or refractory Hodgkin's disease: analysis of the Stanford University results and prognostic indices. Blood 89(3): 801-813, 1997.

For patients with recurrent disease after ABMT, weekly vinblastine therapy has provided palliation with minimal toxic effects.[200] [Level of evidence: 3iiiDiii]

NIH Databases

In addition to the various Institutes of Health that publish professional guidelines, the NIH has designed a number of databases for professionals.[201] 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:[202]

- **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

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[200] Little R, Wittes RE, Longo DL, et al.: Vinblastine for recurrent Hodgkin's disease following autologous bone marrow transplant. Journal of Clinical Oncology 16(2): 584-588, 1998.

[201] 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**).

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

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
- **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 adult Hodgkin's disease, 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 adult Hodgkin's disease using the "Detailed Search" option. Go 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 "adult Hodgkin's disease" (or synonyms) into the "For these words:" box above, you will only receive results on fact sheets dealing with adult Hodgkin's disease.

The NLM Gateway[203]

The NLM (National Library of Medicine) Gateway is a Web-based system that lets users search simultaneously in multiple retrieval systems at the U.S. National Library of Medicine (NLM). It allows users of NLM services to initiate searches from one Web interface, providing "one-stop searching" for many of NLM's information resources or databases.[204] 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.[205] To use the NLM Gateway, simply go to the search site at **http://gateway.nlm.nih.gov/gw/Cmd**. Type "adult Hodgkin's disease" (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.

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

[204] 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).

[205] 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.

Results Summary

Category	Items Found
Journal Articles	351111
Books / Periodicals / Audio Visual	2585
Consumer Health	294
Meeting Abstracts	2575
Other Collections	87
Total	356652

HSTAT[206]

HSTAT is a free, Web-based resource that provides access to full-text documents used in healthcare decision-making.[207] 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, 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.[208] Simply search by "adult Hodgkin's disease" (or synonyms) at the following Web site: **http://text.nlm.nih.gov**.

Coffee Break: Tutorials for Biologists[209]

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

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[206] Adapted from HSTAT: **http://www.nlm.nih.gov/pubs/factsheets/hstat.html**.
[207] The HSTAT URL is **http://hstat.nlm.nih.gov/**.
[208] 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.
[209] Adapted from **http://www.ncbi.nlm.nih.gov/Coffeebreak/Archive/FAQ.html**.

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.[210] 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.[211] 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/**.

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

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[210] 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.

[211] 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.

vocabularies; see the following Web site: **http://www.lexical.com/Metaphrase.html**.

The Genome Project and Adult Hodgkin's Disease

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 adult Hodgkin's disease. 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).[212] 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 "adult Hodgkin's disease" (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 adult Hodgkin's disease:

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[212] 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.

- **Ataxia-telangiectasia**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?208900
- **B-cell Cll/lymphoma 2**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?151430
- **Bloom Syndrome; Blm**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?210900
- **Cartilage-hair Hypoplasia**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?250250
- **Charcot-marie-tooth Disease, Type 1a**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?118220
- **Dyskeratosis Congenita, X-linked**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?305000
- **Glucose-6-phosphate Dehydrogenase**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?305900
- **Hypophosphatemia, X-linked**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?307800
- **Multiple Sclerosis, Susceptibility to**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?126200
- **Von Hippel-lindau Syndrome**
  Web site: http://www.ncbi.nlm.nih.gov/htbin-post/Omim/dispmim?193300

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:

- **Cancer:** Uncontrolled cell division.
  Examples: Breast And Ovarian Cancer, Burkitt lymphoma, chronic myeloid leukemia, colon cancer, lung cancer, malignant melanoma, multiple endocrine neoplasia, neurofibromatosis, p53 tumor suppressor, pancreatic cancer, prostate cancer, Ras oncogene, RB: retinoblastoma, von Hippel-Lindau syndrome.
  Web site: **http://www.ncbi.nlm.nih.gov/disease/Cancer.html**

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 "adult Hodgkin's disease" (or synonyms) and click "Go."

Jablonski's Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes Database[213]

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 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**.

The Genome Database[214]

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

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[213] Adapted from the National Library of Medicine:
http://www.nlm.nih.gov/mesh/jablonski/about_syndrome.html.
[214] Adapted from the Genome Database:
http://gdbwww.gdb.org/gdb/aboutGDB.html#mission.

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 "adult Hodgkin's disease" (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 adult Hodgkin's disease (sorted alphabetically by title, hyperlinks provide rankings, information, and reviews at Amazon.com):

- **Advanced and Critical Care Oncology Nursing: Managing Primary Complications** by Cynthia C. Chernecky (Editor), et al; Paperback - 736 pages (September 18, 1997), W B Saunders Co; ISBN: 0721668607; **http://www.amazon.com/exec/obidos/ASIN/0721668607/icongroupinterna**
- **Cancer: Etiology, Diagnosis, and Treatment** by Walter J. Burdette; Paperback - 287 pages, 1st edition (January 15, 1998), McGraw Hill Text; ISBN: 0070089922; **http://www.amazon.com/exec/obidos/ASIN/0070089922/icongroupinterna**
- **Cancer Management: A Multidisciplinary Approach: Medical, Surgical & Radiation** by Richard Pazdur (Editor), et al; Paperback - 982 pages, 5th edition (June 15, 2001), Publisher Research & Representation, Inc.; ISBN: 1891483080; **http://www.amazon.com/exec/obidos/ASIN/1891483080/icongroupinterna**
- **Familial Cancer and Prevention: Molecular Epidemiology: A New Strategy Toward Cancer Control** by Joji Utsunomiya (Editor), et al;

Hardcover (April 1999), Wiley-Liss; ISBN: 0471249378; **http://www.amazon.com/exec/obidos/ASIN/0471249378/icongroupinterna**

- **Fundamentals of Cancer Epidemiology** by Philip C. Nasca, Ph.D. (Editor), Pastides Harris, Ph.D., MPH (Editor); Hardcover - 368 pages, 1st edition (February 15, 2001), Aspen Publishers, Inc.; ISBN: 0834217767; **http://www.amazon.com/exec/obidos/ASIN/0834217767/icongroupinterna**
- **Helping Cancer Patients Cope: A Problem-Solving Approach** by Arthur M. Nezu (Editor), et al; Hardcover - 314 pages (December 15, 1998), American Psychological Association (APA); ISBN: 1557985332; **http://www.amazon.com/exec/obidos/ASIN/1557985332/icongroupinterna**
- **Quantitative Estimation and Prediction of Human Cancer Risks (Iarc Scientific Publications, 131)** by Suresh H. Moolgavkar (Editor), et al; Paperback (September 1999), Oxford University Press; ISBN: 9283221311; **http://www.amazon.com/exec/obidos/ASIN/9283221311/icongroupinterna**
- **Textbook of Cancer Epidemiology** by ADAMI, et al; Hardcover - 385 pages, 1st edition (July 15, 2002), Oxford University Press; ISBN: 0195109694; **http://www.amazon.com/exec/obidos/ASIN/0195109694/icongroupinterna**

Vocabulary Builder

Adenopathy: Large or swollen lymph glands. [NIH]

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

Ataxia: Loss of muscle coordination. [NIH]

Axilla: The underarm or armpit. [NIH]

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

Constitutional: 1. affecting the whole constitution of the body; not local. 2. pertaining to the constitution. [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]

Femoral: Pertaining to the femur, or to the thigh. [EU]

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

Hematocrit: Measurement of the volume of packed red cells in a blood specimen by centrifugation. The procedure is performed using a tube with graduated markings or with automated blood cell counters. It is used as an indicator of erythrocyte status in disease. For example, anemia shows a low hematocrit, polycythemia, high values. [NIH]

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

Hypothyroidism: Deficiency of thyroid activity. In adults, it is most common in women and is characterized by decrease in basal metabolic rate, tiredness and lethargy, sensitivity to cold, and menstrual disturbances. If untreated, it progresses to full-blown myxoedema. In infants, severe hypothyroidism leads to cretinism. In juveniles, the manifestations are intermediate, with less severe mental and developmental retardation and only mild symptoms of the adult form. When due to pituitary deficiency of thyrotropin secretion it is called secondary hypothyroidism. [EU]

Infertility: The inability to produce children. [NIH]

Inguinal: Pertaining to the inguen, or groin. [EU]

Intervertebral: Situated between two contiguous vertebrae. [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]

Leukopenia: A condition in which the number of leukocytes (white blood cells) in the blood is reduced. [NIH]

Lymphangiogram: X-rays of the lymphatic system. A dye is injected into a lymphatic vessel and travels throughout the lymphatic system. The dye outlines the lymphatic vessels and organs on the x-ray. [NIH]

Mechlorethamine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

Millimeter: A measure of length. A millimeter is approximately 26-times smaller than an inch. [NIH]

Necrosis: Refers to the death of living tissues. [NIH]

Pelvic: Pertaining to the pelvis. [EU]

Procarbazine: An anticancer drug that belongs to the family of drugs called alkylating agents. [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]

Recurrence: The return of cancer, at the same site as the original (primary) tumor or in another location, after the tumor had disappeared. [NIH]

Sedimentation: The act of causing the deposit of sediment, especially by the use of a centrifugal machine. [EU]

Sepsis: The presence of bacteria in the bloodstream. [NIH]

Telangiectasia: The permanent enlargement of blood vessels, causing redness in the skin or mucous membranes. [NIH]

Testicular: Pertaining to a testis. [EU]

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 adult Hodgkin's disease 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 adult Hodgkin's disease. 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 adult Hodgkin's disease. Research can give you information on the side effects, interactions, and limitations of prescription drugs used in the treatment of adult Hodgkin's disease. 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[215]

The Agency for Health Care Research and Quality has published extremely useful guidelines on how you can best participate in the medication aspects of adult Hodgkin's disease. 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 adult Hodgkin's disease 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**:**

- 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 adult Hodgkin's disease. 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.

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[215] This section is adapted from AHCRQ: **http://www.ahcpr.gov/consumer/ncpiebro.htm**.

- 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 adult Hodgkin's disease). 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 adult Hodgkin's disease. 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.[216]

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 adult Hodgkin's disease. 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 adult Hodgkin's disease:

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[216] Though cumbersome, the FDA database can be freely browsed at the following site: **www.fda.gov/cder/da/da.htm**.

Leucovorin

- **Systemic - U.S. Brands:** Wellcovorin
  http://www.nlm.nih.gov/medlineplus/druginfo/leucovorinsystemic202321.html

Rituximab

- **Systemic - U.S. Brands:** Rituxan
  http://www.nlm.nih.gov/medlineplus/druginfo/rituximabsystemic203423.html

Teniposide

- **Systemic - U.S. Brands:** Vumon
  http://www.nlm.nih.gov/medlineplus/druginfo/teniposidesystemic203661.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**.

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/**.

Drug Development and Approval

The following Web sites can be valuable resources when conducting research on the development and approval of new cancer drugs:

- FDA Home Page: Search for drugs currently in development or those which have been recently approved by the FDA.
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/
- Cancer Liaison Program: Answers questions from the public about drug approval processes, cancer clinical trials, and access to investigational therapies.
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/oashi/cancer/cancer.html
- Center for Drug Evaluation and Research
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/cder/
- Drug Approvals by Cancer Indications (Alphabetical List)
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/oashi/cancer/cdrugalpha.html

- Drug Approvals by Cancer Indications (Cancer Type)
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/oashi/cancer/cdrugind.html
- Electronic Orange Book of Approved Drug Products
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/cder/ob/default.htm
- Guidance Documents for Industry: Contains an archive of documents describing FDA policies on specific topics.
  http://redir.nci.nih.gov/cgi-bin/redir.pl?section=Cancerinfo&destURI=http://www.fda.gov/cder/guidance/index.htm
- Industry Collaboration: Provides information to industry on the process for getting new drugs into clinical trials.
  http://ctep.cancer.gov/industry/index.html
- Investigator's Handbook: Provides information to investigators on specific procedures related to clinical trial development.
  http://ctep.cancer.gov/handbook/index.html
- Questions and Answers About NCI's Natural Products Branch: A fact sheet that describes the functions of this branch, which collects and analyzes specimens of plant, marine, and microbial origin for possible anticancer properties.
  http://cis.nci.nih.gov/fact/7_33.htm

Understanding the Approval Process for New Cancer Drugs[217]

Since June 1996, about 80 new cancer-related drugs, or new uses for drugs already on the market, have been approved by the U.S. Food and Drug Administration (FDA), the division of the U.S. Department of Health and Human Services charged with ensuring the safety and effectiveness of new drugs before they can go on the market. (The FDA maintains an annotated online list of drugs approved for use with cancer since 1996.) Some of these drugs treat cancer, some alleviate pain and other symptoms, and, in one case, reduce the risk of invasive cancer in people who are considered high-risk. The FDA relied on the results of clinical trials in making every one of

[217] Adapted from the NCI:
http://www.cancer.gov/clinical_trials/doc_header.aspx?viewid=d94cbfac-e478-4704-9052-d8e8a3372b56.

these approvals. Without reliable information about a drug's effects on humans, it would be impossible to approve any drug for widespread use.

When considering a new drug, the FDA faces two challenges:

- First, making sure that the drug is safe and effective before it is made widely available;
- Second, ensuring that drugs which show promise are made available as quickly as possible to the people they can help.

To deal with these challenges, the FDA maintains a rigorous review process but also has measures in place to make some drugs available in special cases. This aim of this section is to acquaint you with the drug approval process and point you to other resources for learning more about it.

The Role of the Federal Drug Administration (FDA)

Approval is only one step in the drug development process. In fact, the FDA estimates that, on average, it takes eight and a half years to study and test a new drug before it can be approved for the general public. That includes early laboratory and animal testing, as well as the clinical trials that evaluate the drugs in humans. The FDA plays a key role at three main points in this process:

- Determining whether or not a new drug shows enough promise to be given to people in clinical trials
- Once clinical trials begin, deciding whether or not they should continue, based on reports of efficacy and adverse reactions
- When clinical trials are completed, deciding whether or not the drug can be sold to the public and what its label should say about directions for use, side effects, warnings, and the like.

To make these decisions, the FDA must review studies submitted by the drug's sponsor (usually the manufacturer), evaluate any adverse reports from preclinical studies and clinical trials (that is, reports of side effects or complications), and review the adequacy of the chemistry and manufacturing. This process is lengthy, but it is meant to ensure that only beneficial drugs with acceptable side effects will make their way into the hands of the public. At the same time, recent legislative mandates and streamlined procedures within the FDA have accelerated the approval of effective drugs, especially for serious illnesses such as cancer. In addition,

specific provisions make some drugs available to patients with special needs even before the approval process is complete.

From Lab to Patient Care

By law, the Food and Drug Administration (FDA) must review all test results for new drugs to ensure that products are safe and effective for specific uses. "Safe" does not mean that the drug is free of possible adverse side effects; rather, it means that the potential benefits have been determined to outweigh any risks. The testing process begins long before the first person takes the drug, with preliminary research and animal testing.
If a drug proves promising in the lab, the drug company or sponsor must apply for FDA approval to test it in clinical trials involving people. For drugs, the application, called an Investigational New Drug (IND) Application, is sent through the Center for Drug Evaluation and Research's (CDER) IND Review Process; for biological agents, the IND is sent to the Center for Biologics Evaluation and Research (CBER). Once the IND is approved by CDER or CBER, clinical trials can begin.

If the drug makes it through the clinical trials process—that is, the studies show that it is superior to current drugs—the manufacturer must submit a New Drug Application (NDA) or (for biological agents) a Biologics License Application (BLA) to the FDA. (Biological agents, such as serums, vaccines, and cloned proteins, are manufactured from substances taken from living humans or animals.) This application must include:

- The exact chemical makeup of the drug or biologic and the mechanisms by which it is effective
- Results of animal studies
- Results of clinical trials
- How the drug or biologic is manufactured, processed, and packaged
- Quality control standards
- Samples of the product in the form(s) in which it is to be administered.

Once the FDA receives the NDA or BLA from the manufacturer or developer, the formal New Drug Application Review Process or Biologics/Product License Application Review Process begins.

For an overview of the entire process from start to finish, see the CDER's visual representation of The New Drug Development Process: Steps from

Test Tube to New Drug Application Review, which is available for public viewing at the following Web address: **http://www.fda.gov/cder/handbook/develop.htm**.

Speed versus Safety in the Approval Process

The FDA's current goal is that no more than ten months will pass between the time that a complete application is submitted and the FDA takes action on it. But the process is not always smooth. Sometimes FDA's external advisory panels call for additional research or data. In other cases, the FDA staff asks for more information or revised studies. Some new drug approvals have taken as little as 42 days; other more difficult NDAs have spent years in the approval process.

Setting Priorities

The order in which NDAs are assessed by the FDA is determined by a classification system designed to give priority to drugs with the greatest potential benefits. All drugs that offer significant medical advances over existing therapies for any disease are considered "priority" drugs in the approval process. NDAs for cancer treatment drugs are reviewed for this status primarily by the Division of Oncology Drug Products in the FDA's Center for Drug Evaluation and Research (CDER). For Biologic License Applications (vaccines, blood products, and medicines made from animal products), the Center for Biologics Evaluation and Research (CBER) provides additional regulation and oversight.

Expert Advice

The FDA relies on a system of independent advisory committees, made up of professionals from outside the agency, for expert advice and guidance in making sound decisions about drug approval. Each committee meets as needed to weigh available evidence and assess the safety, effectiveness, and appropriate use of products considered for approval. In addition, these committees provide advice about general criteria for evaluation and scientific issues not related to specific products. The Oncologic Drugs Advisory Committee (ODAC) meets regularly to provide expert advice on cancer-related treatments and preventive drugs.

Each committee is composed of representatives from the research science and medical fields. At least one member on every advisory committee must represent the consumer perspective.

Final Approval

As the FDA looks at all the data submitted and the results of its own review, it applies two benchmark questions to each application for drug approval:

- Do the results of well-controlled studies provide substantial evidence of effectiveness?
- Do the results show the product is safe under the conditions of use in the proposed labeling? In this context, "safe" means that potential benefits have been determined to outweigh any risks.

Continued Vigilance

The FDA's responsibility for new drug treatments does not stop with final approval. The Office of Compliance in the Center for Drug Evaluation and Research (CDER) implements and tracks programs to make sure manufacturers comply with current standards and practice regulations. CDER's Office of Drug Marketing, Advertising, and Communication monitors new drug advertising to make sure it is truthful and complete. At the Center for Biologic Evaluation and Research, biologics are followed with the same vigilance after approval. And through a system called MedWatch, the FDA gets feedback from health professionals and consumers on how the new drugs are working, any adverse reactions, and potential problems in labeling and dosage.

Online FDA Resources

The following information from the FDA should help you better understand the drug approval process:

- Center for Drug Evaluation and Research: **http://www.fda.gov/cder/handbook**
- From Test Tube to Patient: New Drug Development in the U.S. – a special January 1995 issue of the magazine FDA Consumer: **http://www.fda.gov/fdac/special/newdrug/ndd_toc.html**

- Milestones in U.S. Food and Drug Law History:
  http://www.fda.gov/opacom/backgrounders/miles.html
- Drug Approvals for Cancer Indications:
  http://www.fda.gov/oashi/cancer/cdrug.html

Getting Drugs to Patients Who Need Them

Clinical trials provide the most important information used by the FDA in determining whether a new drug shows "substantial evidence of effectiveness," or whether an already-approved drug can be used effectively in new ways (for example, to treat or prevent other types of cancer, or at a different dosage). The FDA must certify that a drug has shown promise in laboratory and animal trials before human testing can begin. The trials process includes three main stages and involves continuous review, which ensures that the sponsor can stop the study early if major problems develop or unexpected levels of treatment benefit are found. As with all clinical trials, benefits and risks must be carefully weighed by the researchers conducting the study and the patients who decide to participate.

Not everyone is eligible to participate in a clinical trial. Some patients do not fit the exact requirements for studies, some have rare forms of cancer for which only a limited number of studies are underway, and others are too ill to participate. Working with the NCI and other sponsors, the FDA has established special conditions under which a patient and his or her physician can apply to receive cancer drugs that have not yet been through the approval process. In the past, these special case applications for new drugs were grouped under the name "compassionate uses." More recently, such uses have expanded to include more patients and more categories of investigational drugs.

Access to Investigational Drugs

The process of new drug development has many parts. In the United States, until a drug has been approved by the FDA, it can generally be obtained only through several mechanisms: enrollment in a clinical trial studying the drug, an expanded access program or special exemption/compassionate use programs. For more information about investigational drugs, see "Questions and Answers: Access to Investigational Drugs" at **http://www.cancer.gov/cancer_information/doc_img.aspx?viewid=74b62d84-e135-451f-9bc9-d54358ede947**.

"Group C" Drugs

In the 1970s, researchers from the NCI became concerned about the lag between the date when an investigational drug was found to have anti-tumor activity and the time that drug became available on the market. Working with the FDA, the NCI established the "Group C" classification to allow access to drugs with reproducible activity. Group C drugs are provided to properly trained physicians who have registered using a special form to assure that their patient qualifies under guideline protocols for the drug. Each Group C drug protocol specifies patient eligibility, reporting methodology, and drug use. Not only does Group C designation (now called Group C/Treatment INDs) speed new drugs to patients who need them most, but the process also allows the NCI to gather important information on the safety as well as activity of the drugs in the settings in which they will be most used after final FDA approval. Drugs are placed in the Group C category by agreement between the FDA and the NCI. Group C drugs are always provided free of charge, and the Health Care Financing Administration provides coverage for care associated with Group C therapy.

Treatment INDs

In 1987, the FDA began authorizing the use of new drugs still in the development process to treat certain seriously ill patients. In these cases, the process is referred to as a treatment investigational new drug application (Treatment IND). Clinical trials of the new drug must already be underway and have demonstrated positive results that are reproducible. The FDA sets guidelines about what constitutes serious and life-threatening illnesses, how much must already be known about a drug's side effects and benefits, and where physicians can obtain the drug for treatment. For many seriously ill patients, the risks associated with taking a not-yet-completely proven drug are outweighed by the possible benefits.

Accelerated Approval

"Accelerated approval" is the short-hand term for the FDA's new review system which, in the 1990s, has been used to ensure rapid approval while at the same time putting new safeguards into place. Accelerated approval is based on "surrogate endpoint" judgments: FDA can grant marketing approval to drugs and treatments that, according to certain indicators, prove they are likely to have beneficial effects on a disease or condition, even before such direct benefits have been shown clinically. Accelerated approval

does NOT mean that additional clinical trials are not needed or that FDA stops gathering information about the effects of the drug; a follow-up study is required to demonstrate activity by more conventional endpoints.

Contraindications and Interactions (Hidden Dangers)

Some of the medications mentioned in the previous discussions can be problematic for patients with adult Hodgkin's disease--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 adult Hodgkin's disease or potentially create deleterious side effects in patients with adult Hodgkin's disease. 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 adult Hodgkin's disease. 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 adult Hodgkin's disease. The FDA warns patients to watch out for[218]:

- 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**.

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):

- **Antifolate Drugs in Cancer Therapy (Cancer Drug Discovery and Development)** by Ann L. Jackman (Editor); Hardcover: 480 pages; (March 1999), Humana Press; ISBN: 0896035964; **http://www.amazon.com/exec/obidos/ASIN/0896035964/icongroupinterna**
- **Consumers Guide to Cancer Drugs** by Gail M. Wilkes, et al; Paperback - 448 pages, 1st edition (January 15, 2000), Jones & Bartlett Publishing; ISBN: 0763711705; **http://www.amazon.com/exec/obidos/ASIN/0763711705/icongroupinterna**

[218] This section has been adapted from **http://www.fda.gov/opacom/lowlit/medfraud.html**.

- **Patient Education Guide to Oncology Drugs (Book with CD-ROM)** by Gail M. Wilkes, et al; CD-ROM - 447 pages, 1st edition (January 15, 2000), Jones & Bartlett Publishing; ISBN: 076371173X; **http://www.amazon.com/exec/obidos/ASIN/076371173X/icongroupinterna**
- **The Role of Multiple Intensification in Medical Oncology** by M. S. Aapro (Editor), D. Maraninchi (Editor); Hardcover (June 1998), Springer Verlag; ISBN: 3540635432; **http://www.amazon.com/exec/obidos/ASIN/3540635432/icongroupinterna**

Vocabulary Builder

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

Aspirin: A drug that reduces pain, fever, inflammation, and blood clotting. Aspirin belongs to the family of drugs called nonsteroidal anti-inflammatory agents. It is also being studied in cancer prevention. [NIH]

Leucovorin: A drug used to protect normal cells from high doses of the anticancer drug methotrexate. It is also used to increase the antitumor effects of fluorouracil and tegafur-uracil, an oral treatment alternative to intravenous fluorouracil. [NIH]

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

Teniposide: An anticancer drug that is a podophyllotoxin derivative and belongs to the family of drugs called mitotic inhibitors. [NIH]

APPENDIX B. RESEARCHING ALTERNATIVE MEDICINE

Overview[219]

Research indicates that the use of complementary and alternative therapies is increasing. A large-scale study published in the November 11, 1998, issue of the Journal of the American Medical Association found that CAM use among the general public increased from 34 percent in 1990 to 42 percent in 1997.

Several surveys of CAM use by cancer patients have been conducted with small numbers of patients. One study published in the February 2000 issue of the journal *Cancer* reported that 37 percent of 46 patients with prostate cancer used one or more CAM therapies as part of their cancer treatment. These therapies included herbal remedies, old-time remedies, vitamins, and special diets. A larger study of CAM use in patients with different types of cancer was published in the July 2000 issue of the Journal of Clinical Oncology . That study found that 83 percent of 453 cancer patients had used at least one CAM therapy as part of their cancer treatment. The study included CAM therapies such as special diets, psychotherapy, spiritual practices, and vitamin supplements. When psychotherapy and spiritual practices were excluded, 69 percent of patients had used at least one CAM therapy in their cancer treatment.

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 adult Hodgkin's disease. Finally, at the conclusion of this chapter, we will provide a list of readings on adult Hodgkin's disease from various authors. We will begin, however, with

[219]Adapted from the NCI: **http://cis.nci.nih.gov/fact/9_14.htm**.

the National Center for Complementary and Alternative Medicine's (NCCAM) overview of complementary and alternative medicine.

What Is CAM?[220]

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 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.

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.

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[220] Adapted from the NCCAM: **http://nccam.nih.gov/nccam/fcp/faq/index.html#what-is**.

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.

What Are the Domains of Alternative Medicine?[221]

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 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

[221] Adapted from the NCCAM: **http://nccam.nih.gov/nccam/fcp/classify/index.html**.

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.

Research indicates that the use of complementary and alternative therapies is increasing. A large-scale study published in the November 11, 1998, issue of the Journal of the American Medical Association found that CAM use among the general public increased from 34 percent in 1990 to 42 percent in 1997.

Several surveys of CAM use by cancer patients have been conducted with small numbers of patients. One study published in the February 2000 issue of the journal Cancer reported that 37 percent of 46 patients with prostate cancer used one or more CAM therapies as part of their cancer treatment. These therapies included herbal remedies, old-time remedies, vitamins, and special diets. A larger study of CAM use in patients with different types of cancer was published in the July 2000 issue of the Journal of Clinical Oncology . That study found that 83 percent of 453 cancer patients had used at least one CAM therapy as part of their cancer treatment. The study included CAM therapies such as special diets, psychotherapy, spiritual practices, and vitamin supplements. When psychotherapy and spiritual practices were excluded, 69 percent of patients had used at least one CAM therapy in their cancer treatment.

How Are Complementary and Alternative Approaches Evaluated?[222]

It is important that the same scientific evaluation which is used to assess conventional approaches be used to evaluate complementary and alternative therapies. A number of medical centers are evaluating complementary and alternative therapies by developing clinical trials (research studies with people) to test them.

Conventional approaches to cancer treatment have generally been studied for safety and effectiveness through a rigorous scientific process, including clinical trials with large numbers of patients. Often, less is known about the safety and effectiveness of complementary and alternative methods. Some of these complementary and alternative therapies have not undergone rigorous evaluation. Others, once considered unorthodox, are finding a place in cancer treatment—not as cures, but as complementary therapies that may help patients feel better and recover faster. One example is acupuncture. According to a panel of experts at a National Institutes of Health (NIH) Consensus Conference in November 1997, acupuncture has been found to be effective in the management of chemotherapy-associated nausea and vomiting and in controlling pain associated with surgery. Some approaches, such as laetrile, have been studied and found ineffective or potentially harmful.

NCI-Sponsored Clinical Trials in Complementary and Alternative Medicine

The NCI is currently sponsoring several clinical trials (research studies with patients) that study complementary and alternative treatments for cancer. Current trials include enzyme therapy with nutritional support for the treatment of inoperable pancreatic cancer, shark cartilage therapy for the treatment of non-small cell lung cancer, and studies of the effects of diet on prostate and breast cancers. Some of these trials compare alternative therapies with conventional treatments, while others study the effects of complementary approaches used in addition to conventional treatments. Patients who are interested in taking part in these or any clinical trials should talk with their doctor.

More information about clinical trials sponsored by the NCI can be obtained from NCCAM (http://nccam.nih.gov, 1-888-644-6226), OCCAM

[222]Adapted from the NCI: **http://cis.nci.nih.gov/fact/9_14.htm**

(http://occam.nci.nih.gov), and the NCI's Cancer Information Service (CIS) (http://cis.nci.nih.gov, 1-800-4-CANCER).

Questions to Ask Your Healthcare Provider about CAM

When considering complementary and alternative therapies, ask your healthcare provider the following questions:

- What benefits can be expected from this therapy?
- What are the risks associated with this therapy?
- Do the known benefits outweigh the risks?
- What side effects can be expected?
- Will the therapy interfere with conventional treatment?
- Is this therapy part of a clinical trial? If so, who is sponsoring the trial?
- Will the therapy be covered by health insurance?
- How can patients and their health care providers learn more about complementary and alternative therapies?

Finding CAM References on Adult Hodgkin's Disease

Having read the previous discussion, you may be wondering which complementary or alternative treatments might be appropriate for adult Hodgkin's disease. 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.

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 adult Hodgkin's disease 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 "adult Hodgkin's disease" (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 adult Hodgkin's disease:

- **A 2-step comprehensive high-dose chemoradiotherapy second-line program for relapsed and refractory Hodgkin disease: analysis by intent to treat and development of a prognostic model.**
  Author(s): Moskowitz CH, Nimer SD, Zelenetz AD, Trippett T, Hedrick EE, Filippa DA, Louie D, Gonzales M, Walits J, Coady-Lyons N, Qin J, Frank R, Bertino JR, Goy A, Noy A, O'Brien JP, Straus D, Portlock CS, Yahalom J.
  Source: Blood. 2001 February 1; 97(3): 616-23.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11157476&dopt=Abstract

- **A blood stem cell transplant in a person with concomitant Hodgkin disease and testicular carcinoma.**
  Author(s): Varterasian ML, Aref A, Karanes C.
  Source: Bone Marrow Transplantation. 1997 April; 19(8): 857-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9134184&dopt=Abstract

- **Activity of infusional etoposide, vincristine, and doxorubicin with bolus cyclophosphamide (EPOCH) in relapsed Hodgkin's disease.**
  Author(s): Stokoe CT, Ogden J, Jain VK.
  Source: The Oncologist. 2001; 6(5): 428-34.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11675520&dopt=Abstract

- **Advanced Hodgkin disease with large mediastinal involvement can be treated with eight cycles of chemotherapy alone after a major response to six cycles of chemotherapy: a study of 82 patients from the Groupes d'Etudes des Lymphomes de l'Adulte H89 trial.**
  Author(s): Brice P, Colin P, Berger F, de Kerviler E, Divine M, Bouaffia F, Kerneis Y, Blanc M, Lepage E, Ferme C.
  Source: Cancer. 2001 August 1; 92(3): 453-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11505388&dopt=Abstract

- **Aggressive conventional chemotherapy compared with high-dose chemotherapy with autologous haemopoietic stem-cell transplantation for relapsed chemosensitive Hodgkin's disease: a randomised trial.**
  Author(s): Schmitz N, Pfistner B, Sextro M, Sieber M, Carella AM, Haenel

M, Boissevain F, Zschaber R, Muller P, Kirchner H, Lohri A, Decker S, Koch B, Hasenclever D, Goldstone AH, Diehl V.
Source: Lancet. 2002 June 15; 359(9323): 2065-71.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12086759&dopt=Abstract

- **Agreement rates among single photon emission computed tomography using gallium-67, computed axial tomography and lymphangiography for Hodgkin disease and correlation of image findings with clinical outcome.**
  Author(s): Ha CS, Choe JG, Kong JS, Allen PK, Oh YK, Cox JD, Edmund E.
  Source: Cancer. 2000 September 15; 89(6): 1371-9.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11002233&dopt=Abstract

- **British National Lymphoma Investigation: pilot studies of neoadjuvant chemotherapy in clinical stage Ia and IIa Hodgkin's disease.**
  Author(s): Moody AM, Pratt J, Hudson GV, Smith P, Lamont A, Williams MV.
  Source: Clin Oncol (R Coll Radiol). 2001; 13(4): 262-8.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11554622&dopt=Abstract

- **CD20 expression in Hodgkin and Reed-Sternberg cells of classical Hodgkin's disease: associations with presenting features and clinical outcome.**
  Author(s): Rassidakis GZ, Medeiros LJ, Viviani S, Bonfante V, Nadali GP, Vassilakopoulos TP, Mesina O, Herling M, Angelopoulou MK, Giardini R, Chilosi M, Kittas C, McLaughlin P, Rodriguez MA, Romaguera J, Bonadonna G, Gianni AM, Pizzolo G, Pangalis GA, Cabanillas F, Sarris AH.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 March 1; 20(5): 1278-87.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11870170&dopt=Abstract

- **ChlVPP/EVA hybrid versus the weekly VAPEC-B regimen for previously untreated Hodgkin's disease.**
  Author(s): Radford JA, Rohatiner AZ, Ryder WD, Deakin DP, Barbui T, Lucie NP, Rossi A, Dunlop DJ, Cowan RA, Wilkinson PM, Gupta RK, James RD, Shamash J, Chang J, Crowther D, Lister TA.

Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 July 1; 20(13): 2988-94.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12089229&dopt=Abstract

- **C-MOPP/ABV yields good results in a public hospital population with Hodgkin disease in Brazil.**
  Author(s): Spector N, Costa MA, Pulcheri W, Salgado RC, Nucci M, Andrade CA, de Morais JC, de Castro O, Scaletsky AF, Brabo E, et al.
  Source: Cancer. 1993 May 1; 71(9): 2823-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7682152&dopt=Abstract

- **Communication challenges in a young man with Hodgkin's disease.**
  Author(s): Medoff E.
  Source: Cancer Practice. 2001 November-December; 9(6): 272-6. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11879328&dopt=Abstract

- **Cyclophosphamide, doxorubicin, vincristine, prednisone, and etoposide (CHOPE) for advanced-stage Hodgkin's disease: CALGB 8856.**
  Author(s): Lester EP, Petroni GR, Barcos M, Johnson JL, Millard FE, Cooper MR, Omura GA, Frei E 3rd, Peterson BA.
  Source: Cancer Investigation. 2001; 19(5): 447-58.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11458812&dopt=Abstract

- **Etoposide in combination as first-line chemotherapy for advanced Hodgkin disease. A Cancer and Leukemia Group B study.**
  Author(s): Kirshner JJ, Anderson JR, Parker B, Barcos M, Cooper MR, Burns LJ, Peterson BA, Gottlieb AJ.
  Source: Cancer. 1993 March 1; 71(5): 1852-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=8448749&dopt=Abstract

- **European Organization for Research and Treatment of Cancer and Groupe d'Etude des Lymphomes de l'Adulte very favorable and favorable, lymphocyte-predominant Hodgkin disease.**
  Author(s): Wilder RB, Schlembach PJ, Jones D, Chronowski GM, Ha CS, Younes A, Hagemeister FB, Barista I, Cabanillas F, Cox JD.

Source: Cancer. 2002 March 15; 94(6): 1731-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11920535&dopt=Abstract

- **Evaluation of the efficacy of the VEEP regimen in adult Hodgkin's disease with assessment of gonadal and cardiac toxicity.**
  Author(s): Hill M, Milan S, Cunningham D, Mansi J, Smith I, Catovsky D, Gore M, Zulian G, Selby P, Horwich A, et al.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 1995 February; 13(2): 387-95.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7844599&dopt=Abstract

- **Fifteen-year secondary leukaemia risk observed in 761 patients with Hodgkin's disease prospectively treated by MOPP or ABVD chemotherapy plus high-dose irradiation.**
  Author(s): Delwail V, Jais JP, Colonna P, Andrieu JM.
  Source: British Journal of Haematology. 2002 July; 118(1): 189-94.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12100147&dopt=Abstract

- **Gonadal function in young patients successfully treated for Hodgkin disease.**
  Author(s): Papadakis V, Vlachopapadopoulou E, Van Syckle K, Ganshaw L, Kalmanti M, Tan C, Sklar C.
  Source: Medical and Pediatric Oncology. 1999 May; 32(5): 366-72.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10219339&dopt=Abstract

- **Hematologic toxic reaction to radiation therapy adjuvant to autologous peripheral blood stem cell transplantation for recurrent or refractory Hodgkin disease.**
  Author(s): Bogart JA, Ungureanu C, Ryu S, Chung CT, Zamkoff KW.
  Source: Radiology. 2000 February; 214(2): 421-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10671589&dopt=Abstract

- **High-dose ifosfamide and vinorelbine as salvage therapy for relapsed or refractory Hodgkin's disease.**
  Author(s): Bonfante V, Viviani S, Devizzi L, Di Russo A, Di Nicola M, Magni M, Matteucci P, Grisanti S, Valagussa P, Bonadonna G, Gianni AM.

Source: Eur J Haematol Suppl. 2001 July; (64): 51-5.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11486403&dopt=Abstract

- **High-dose ifosfamide in combination with etoposide and epirubicin (IVE) in the treatment of relapsed/refractory Hodgkin's disease and non-Hodgkin's lymphoma: a report on toxicity and efficacy.**
  Author(s): Proctor SJ, Taylor PR, Angus B, Wood K, Lennard AL, Lucraft H, Carey PJ, Stark A, Iqbal A, Haynes A, Russel N, Leonard RC, Culligan D, Conn J, Jackson GH.
  Source: Eur J Haematol Suppl. 2001 July; (64): 28-32.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11486397&dopt=Abstract

- **High-dose therapy in patients with Hodgkin's disease: the use of selected CD34(+) cells is as safe as unmanipulated peripheral blood progenitor cells.**
  Author(s): Blystad AK, Holte H, Kvaloy S, Smeland E, Delabie J, Kvalheim G.
  Source: Bone Marrow Transplantation. 2001 November; 28(9): 849-57.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11781645&dopt=Abstract

- **Hodgkin's disease complicated by the nephrotic syndrome in a man with Kugelberg-Welander disease.**
  Author(s): Thomson JA, Seymour JF, Wolf M.
  Source: Leukemia & Lymphoma. 2001 July; 42(3): 561-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11699426&dopt=Abstract

- **Hodgkin's disease in the elderly: improved treatment outcome with a doxorubicin-containing regimen.**
  Author(s): Weekes CD, Vose JM, Lynch JC, Weisenburger DD, Bierman PJ, Greiner T, Bociek G, Enke C, Bast M, Chan WC, Armitage JO.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 February 15; 20(4): 1087-93.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11844834&dopt=Abstract

- **Hybrid chemotherapy consisting of cyclophosphamide, vincristine, procarbazine, prednisone, doxorubicin, bleomycin, and vinblastine (C-MOPP/ABV) as first-line treatment for patients with advanced**

Hodgkin disease.
Author(s): Montoto S, Camos M, Lopez-Guillermo A, Bosch F, Cervantes F, Blande J, Esteve J, Cobo F, Nomdedeu B, Campo E, Montserrat E.
Source: Cancer. 2000 May 1; 88(9): 2142-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10813727&dopt=Abstract

- **Intensified ABVP chemotherapy for the primary treatment of Hodgkin's disease.**
  Author(s): Spector N, Costa MA, Morais JC, Biasoli I, Solza C, De Fatima Gaui M, Ferreira CG, Portugal RD, Loureiro M, Nucci M, Pulcheri W.
  Source: Oncol Rep. 2002 March-April; 9(2): 439-42.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11836623&dopt=Abstract

- **Intensive salvage therapy with high-dose chemotherapy for patients with advanced Hodgkin's disease in relapse or failure after initial chemotherapy: results of the Groupe d'Etudes des Lymphomes de l'Adulte H89 Trial.**
  Author(s): Ferme C, Mounier N, Divine M, Brice P, Stamatoullas A, Reman O, Voillat L, Jaubert J, Lederlin P, Colin P, Berger F, Salles G.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 January 15; 20(2): 467-75.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11786576&dopt=Abstract

- **Peroneal mononeuropathy in pediatric Hodgkin's disease.**
  Author(s): Matsubara K, Nigami H, Harigaya H, Osaki M, Baba K.
  Source: Leukemia & Lymphoma. 2000 December; 40(1-2): 205-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11426622&dopt=Abstract

- **Phase III randomized intergroup trial of subtotal lymphoid irradiation versus doxorubicin, vinblastine, and subtotal lymphoid irradiation for stage IA to IIA Hodgkin's disease.**
  Author(s): Press OW, LeBlanc M, Lichter AS, Grogan TM, Unger JM, Wasserman TH, Gaynor ER, Peterson BA, Miller TP, Fisher RI.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2001 November 15; 19(22): 4238-44.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11709567&dopt=Abstract

- **Randomized comparison of low-dose involved-field radiotherapy and no radiotherapy for children with Hodgkin's disease who achieve a complete response to chemotherapy.**
  Author(s): Nachman JB, Sposto R, Herzog P, Gilchrist GS, Wolden SL, Thomson J, Kadin ME, Pattengale P, Davis PC, Hutchinson RJ, White K.
  Source: Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology. 2002 September 15; 20(18): 3765-71.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12228196&dopt=Abstract

- **Renal Hodgkin's disease.**
  Author(s): Pilatrino C, Cataldi A, Guerrasio A, Saglio G.
  Source: British Journal of Haematology. 2002 March; 116(4): 732. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11886375&dopt=Abstract

- **Sequential chemotherapy (etoposide, vinblastine, and doxorubicin) and subtotal lymph node radiation for patients with localized Hodgkin disease and unfavorable prognostic features: A phase II Cancer and Leukemia Group B Study (9051).**
  Author(s): Wasserman TH, Petroni GR, Millard FE, Chung CT, Barcos M, Johnson JL, Canellos GP, Peterson BA.
  Source: Cancer. 1999 October 15; 86(8): 1590-5.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10526290&dopt=Abstract

- **Short term treatment with Escherichia coli recombinant human granulocyte-macrophage-colony stimulating factor prior to chemotherapy for Hodgkin disease.**
  Author(s): Aglietta M, Montemurro F, Fagioli F, Volta C, Botto B, Cantonetti M, Racanelli V, Teofili L, Ferrara R, Amadori S, Castoldi GL, Dammacco F, Levis A.
  Source: Cancer. 2000 January 15; 88(2): 454-60.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=10640980&dopt=Abstract

- **Stanford V regimen and concomitant HAART in 59 patients with Hodgkin disease and HIV infection.**
  Author(s): Spina M, Gabarre J, Rossi G, Fasan M, Schiantarelli C, Nigra E, Mena M, Antinori A, Ammassari A, Talamini R, Vaccher E, di Gennaro G, Tirelli U.

Source: Blood. 2002 September 15; 100(6): 1984-8.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12200356&dopt=Abstract

- **Subdiaphragmatic Hodgkin's disease: the University of Florida experience.**
  Author(s): Hull MC, Price Mendenhall N, Colgan ME.
  Source: International Journal of Radiation Oncology, Biology, Physics. 2002 January 1; 52(1): 161-6.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11777634&dopt=Abstract

- **The serum levels of eosinophil cationic protein (ECP) are related to the infiltration of eosinophils in the tumours of patients with Hodgkin's disease.**
  Author(s): Molin D, Glimelius B, Sundstrom C, Venge P, Enblad G.
  Source: Leukemia & Lymphoma. 2001 July; 42(3): 457-65.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11699410&dopt=Abstract

- **Transformation of Hodgkin's disease to high-grade B-cell lymphoma: remission after Rituximab monotherapy.**
  Author(s): Kirchner EM, Ebsen M, Kirchner J, Theegarten D, Voigtmann R.
  Source: Annals of Oncology : Official Journal of the European Society for Medical Oncology / Esmo. 2001 August; 12(8): 1169-71.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11583202&dopt=Abstract

- **Treatment of refractory Hodgkin's disease with modified Stanford V program.**
  Author(s): Aviles A, Neri N, Garcia EL, Talavera A, Diaz-Maqueo JC.
  Source: Med Oncol. 2001; 18(4): 261-7.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11918452&dopt=Abstract

- **Unilateral proptosis in an immunocompetent man as the initial clinical manifestation of systemic Hodgkin disease.**
  Author(s): Klapper SR, Jordan DR, McLeish W, Pelletier C.

Source: Ophthalmology. 1999 February; 106(2): 338-41.
http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9951487&dopt=Abstract

- **Vanishing bile duct syndrome occurring after high-dose chemotherapy and autologous peripheral stem cell transplantation in a patient with Hodgkin's disease.**
  Author(s): Komurcu S, Ozet A, Altundag MK, Arpaci F, Ozturk B, Celasun B, Tezcan Y.
  Source: Annals of Hematology. 2002 January; 81(1): 57-8. No Abstract Available.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11807639&dopt=Abstract

- **Wide-field radiation therapy with or without chemotherapy for patients with Hodgkin disease in relapse after initial combination chemotherapy.**
  Author(s): Uematsu M, Tarbell NJ, Silver B, Coleman CN, Rosenthal DS, Shulman LN, Canellos G, Weinstein H, Mauch P.
  Source: Cancer. 1993 July 1; 72(1): 207-12.
  http://www.ncbi.nlm.nih.gov:80/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7685241&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**

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):

- **Alternative Medicine Definitive Guide to Cancer** by W. John Diamond, et al; Hardcover - 1120 pages Package edition (March 18, 1997), Alternativemedicine.Com Books; ISBN: 1887299017; **http://www.amazon.com/exec/obidos/ASIN/1887299017/icongroupinterna**
- **Beating Cancer With Nutrition - Revised** by Patrick Quillin, Noreen Quillin (Contributor); Paperback - 352 pages; Book & CD edition (January 1, 2001), Bookworld Services; ISBN: 0963837281; **http://www.amazon.com/exec/obidos/ASIN/0963837281/icongroupinterna**
- **Cancer: Increasing Your Odds for Survival - A Resource Guide for Integrating Mainstream, Alternative and Complementary Therapies** by David Bognar, Walter Cronkite; Paperback (August 1998), Hunter House; ISBN: 0897932471; **http://www.amazon.com/exec/obidos/ASIN/0897932471/icongroupinterna**
- **Choices in Healing** by Michael Lerner; Paperback - 696 pages; (February 28, 1996), MIT Press; ISBN: 0262621045; **http://www.amazon.com/exec/obidos/ASIN/0262621045/icongroupinterna**
- **The Gerson Therapy: The Amazing Nutritional Program for Cancer and Other Illnesses** by Charlotte Gerson, Morton Walker, D.P.M.; Paperback - 448 pages (October 2001), Kensington Publishing Corp.; ISBN: 1575666286; **http://www.amazon.com/exec/obidos/ASIN/1575666286/icongroupinterna**

- **Natural Compounds in Cancer Therapy** by John C. Boik; Paperback - 520 pages (March 2001), Oregon Medical Press; ISBN: 0964828014; **http://www.amazon.com/exec/obidos/ASIN/0964828014/icongroupinterna**
- **There's No Place Like Hope: A Guide to Beating Cancer in Mind-Sized Bites** by Vickie Girard, Dan Zadra (Editor); Hardcover - 161 pages (April 2001), Compendium Inc.; ISBN: 1888387416; **http://www.amazon.com/exec/obidos/ASIN/1888387416/icongroupinterna**
- **Your Life in Your Hands** by Jane A. Plant, Ph.D; Hardcover - 272 pages (December 13, 2000), St. Martins Press (Trade); ISBN: 0312275617; **http://www.amazon.com/exec/obidos/ASIN/0312275617/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:

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

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

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

Epirubicin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. [NIH]

Escherichia: A genus of gram-negative, facultatively anaerobic, rod-shaped bacteria whose organisms occur in the lower part of the intestine of warm-blooded animals. The species are either nonpathogenic or opportunistic pathogens. [NIH]

Gonadal: Pertaining to a gonad. [EU]

Ifosfamide: An anticancer drug that belongs to the family of drugs called

alkylating agents. [NIH]

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

Inoperable: Not suitable to be operated upon. [EU]

Macrophage: A type of white blood cell that surrounds and kills microorganisms, removes dead cells, and stimulates the action of other immune system cells. [NIH]

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

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

Non-small cell lung cancer: A group of lung cancers that includes squamous cell carcinoma, adenocarcinoma, and large cell carcinoma. [NIH]

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

Proptosis: Forward projection or displacement especially of the eyeball : exophthalmos. [EU]

Psychotherapy: A generic term for the treatment of mental illness or emotional disturbances primarily by verbal or nonverbal communication. [NIH]

Radiology: The use of radiation (such as x-rays) or other imaging technologies (such as ultrasound and magnetic resonance imaging) to diagnose or treat disease. [NIH]

Vinorelbine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. [NIH]

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 adult Hodgkin's disease. 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 adult Hodgkin's disease may be given different recommendations. Some recommendations may be directly related to adult Hodgkin's disease, 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 adult Hodgkin's disease. We will then show you how to find studies dedicated specifically to nutrition and adult Hodgkin's disease.

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 B^{12} 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:[223]

- **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.

[223] Adapted from the FDA: **http://www.fda.gov/fdac/special/foodlabel/dvs.html**.

- **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."
- **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?[224]

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."[225] According to the ODS, dietary supplements can have an important impact on the prevention and management of disease and on the maintenance of health.[226] The ODS notes that considerable research on the effects of dietary supplements has been conducted in Asia and Europe where

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[224] This discussion has been adapted from the NIH: **http://ods.od.nih.gov/whatare/whatare.html**.

[225] 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**.

[226] 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."

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 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 Adult Hodgkin's Disease

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.[227] 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

[227] 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.

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 references in a comprehensive format. Type "adult Hodgkin's disease" (or synonyms) into the search box. To narrow the search, you can also select the "Title" field.

The following information is typical of that found when using the "Full IBIDS Database" when searching using "adult Hodgkin's disease" (or a synonym):

- **A mononuclear cell dose of 3 x 10(8)/kg predicts early multilineage recovery in patients with malignant lymphoma treated with carmustine, etoposide, Ara-C and melphalan (BEAM) and peripheral blood progenitor cell transplantation.**
  Author(s): CRC Wessex Medical Oncology Unit, University of Southampton, UK.
  Source: Smith, R J Sweetenham, J W Exp-Hematol. 1995 December; 23(14): 1581-8 0301-472X
- **A phase I trial of standard and cyclophosphamide dose-escalated CHOP with granulocyte colony stimulating factor in elderly patients with non-Hodgkin's lymphoma.**
  Author(s): Hamilton Regional Cancer Centre and McMaster University, Ontario, Canada.
  Source: Meyer, R M Gyger, M Langley, R Lesperance, B Caplan, S N Leuk-Lymphoma. 1998 August; 30(5-6): 591-600 1042-8194
- **A pilot study of a response oriented chemotherapeutic regimen combined with autologous peripheral blood progenitor cell transplantation in aggressive non-Hodgkin's lymphoma.**
  Author(s): Department of Internal Medicine II, Hokkaido University School of Medicine, Japan.
  Source: Tarumi, T Sawada, K Koizumi, K Takano, H Fukada, Y Nishio, M Fujie, T Ohnishi, K Kohno, M Sato, N Sekiguchi, S Koike, T Leuk-Lymphoma. 1999 July; 34(3-4): 361-71 1042-8194
- **A prospective clinical trial comparing chemotherapy, radiotherapy and combined therapy in the treatment of early stage Hodgkin's disease with bulky disease.**
  Author(s): Department of Haematology, Oncology Hospital, National Medical Centre, Mexico, D.F., Mexico.
  Source: Aviles, A Delgado, S Clin-Lab-Haematol. 1998 April; 20(2): 95-9 0141-9854

- **A randomized study in stage IIIB and IV Hodgkin's disease comparing eight courses of MOPP versus an alteration of MOPP with ABVD: a European Organization for Research and Treatment of Cancer Lymphoma Cooperative Group and Groupe Pierre-et-Marie-Curie controlled clinical trial.**
  Author(s): Department of Internal Medicine, Netherlands Cancer Institute, Amsterdam.
  Source: Somers, R Carde, P Henry AMarch, M Tarayre, M Thomas, J Hagenbeek, A Monconduit, M de Pauw, B E Breed, W P Verdonck, L et al. J-Clin-Oncol. 1994 February; 12(2): 279-87 0732-183X
- **Acute exacerbation of hepatitis due to reactivation of hepatitis B virus with mutations in the core region after chemotherapy for malignant lymphoma.**
  Author(s): Fourth Department of Internal Medicine, Sapporo Medical University School of Medicine, Japan.
  Source: Sato, T Kato, J Kawanishi, J Kogawa, K Ohya, M Sakamaki, S Niitsu, Y J-Gastroenterol. 1997 October; 32(5): 668-71 0944-1174
- **Administration of rhG-CSF increases complete remission rates after CHOP and ProMACE/CytaBOM for non-Hodgkin's lymphoma: a pilot study. Hokkaido Study Group of Malignant Lymphoma and rhG-CSF.**
  Author(s): Third Department of Internal Medicine, Hokkaido University School of Medicine, Sapporo, Japan.
  Source: Okabe, M Maekawa, I Suzuki, S Higuchi, M Morioka, M Nishi, K Itaya, T Ohmura, T Kawamura, M Fuzimoto, N et al. Leuk-Lymphoma. 1995 November; 19(5-6): 485-91 1042-8194
- **AIDS-related malignant lymphoma: results of prospective treatment trials.**
  Source: Gill, P S Levine, A M Krailo, M Rarick, M U Loureiro, C Deyton, L Meyer, P Rasheed, S J-Clin-Oncol. 1987 September; 5(9): 1322-8 0732-183X
- **Alcohol, smoking, and dietary status and susceptibility to malignant lymphoma in japan: results of a hospital-based case-control study at aichi cancer center.**
  Author(s): Division of Epidemiology and Prevention, Aichi Cancer Center Research Institute, Aichi Cancer Center Hospital, Chikusa-ku, Nagoya 464-86811, Japan. kmatsuo@aichi-cc.jp
  Source: Matsuo, K Hamajima, N Hirose, K Inoue, M Takezaki, T Kuroishi, T Tajima, K Jpn-J-Cancer-Res. 2001 October; 92(10): 1011-7 0910-5050

- **Allogeneic marrow transplantation for refractory Hodgkin's disease.**
  Author(s): Leukemia and Bone Marrow Transplantation Program of British Columbia, Vancouver General Hospital.
  Source: Phillips, G L Reece, D E Barnett, M J Connors, J M Fay, J W Herzig, G P Herzig, R H Klingemann, H G Shepherd, J D Wolff, S N J-Clin-Oncol. 1989 August; 7(8): 1039-45 0732-183X
- **Alternating combination chemotherapy C-MOPP (cyclophosphamide, vincristine, procarbazine, prednisone) and ABVd (adriamycin, bleomycin, vinblastine, dacarbazine) in clinical stage II-IV Hodgkin's disease: a multicenter phase II study (JCOG 8905). The Lymphoma Study Group of the Japan Clinical Oncology Group.**
  Author(s): Hematology Division, National Cancer Center Hospital, Tokyo, Japan.
  Source: Takenaka, T Mikuni, C Miura, A Sasaki, T Suzuki, H Hotta, T Hirano, M Fukuhara, S Sugiyama, H Nasu, K Dohi, H Kozuru, M Tomonaga, M Tajima, K Niimi, M Fukuda, H Mukai, K Shimoyama, M Jpn-J-Clin-Oncol. 2000 March; 30(3): 146-52 0368-2811
- **An effective oral combination in advanced relapsed Hodgkin's disease prednisolone, etoposide, chlorambucil and CCNU.**
  Author(s): Department of Haematology, Royal Victoria Infirmary, Newcastle upon Tyne, UK.
  Source: Lennard, A L Carey, P J Jackson, G H Proctor, S J Cancer-Chemother-Pharmacol. 1990; 26(4): 301-5 0344-5704
- **Anaplastic large cell lymphoma Hodgkin's-like: a randomized trial of ABVD versus MACOP-B with and without radiation therapy.**
  Author(s): Institute of Hematology and Medical Oncology "Seragnoli," University of Bologna, Bologna, Italy.
  Source: Zinzani, P L Martelli, M Magagnoli, M Zaccaria, A Ronconi, F Cantonetti, M Bocchia, M Marra, R Gobbi, M Falini, B Gherlinzoni, F Moretti, L De Renzo, A Mazza, P Pavone, E Sabattini, E Amendola, A Bendandi, M Pileri, S A Mandelli, F Tura, S Blood. 1998 August 1; 92(3): 790-4 0006-4971
- **Anthracycline containing regimens in intermediate grade lymphoma. Italian Cooperative Study Group on Intermediate Grade Malignant Lymphoma.**
  Author(s): Institute of Hematology LeA Seragnoli, Bologna, Italy.
  Source: Zinzani, P L Tura, S Cajozzo, A Leone, G Papa, G Gentilini, P Rossi, G Aitini, E Mandelli, F Leuk-Lymphoma. 1993; 10 Suppl39-41 1042-8194

- **Antiemetic efficacy of ondansetron and metoclopramide, both combined with corticosteroid, in malignant lymphoma patients receiving non-cisplatin chemotherapy.**
  Author(s): Department of Internal Medicine, Copenhagen County Hospital Herlev, Denmark.
  Source: Jorgensen, M Victor, M A Acta-Oncol. 1996; 35(2): 159-63 0284-186X
- **Approach to Hodgkin's lymphoma in the new millennium.**
  Author(s): Division of Hematology/Bone Marrow Transplantation, City of Hope National Medical Center, Duarte, CA 91010, USA. hfung@coh.org
  Source: Fung, Henry C Nademanee, Auayporn P Hematol-Oncol. 2002 March; 20(1): 1-15 0278-0232
- **Association between alopecia and response to aggressive chemotherapy in patients with Hodgkin's disease.**
  Author(s): Department of Medicine, Meir Hospital Kfar Saba and Sackler Faculty of Medicine, Tel Aviv University, Israel.
  Source: Lishner, M Manor, Y Kitay Cohen, Y Avishay, A E Med-Hypotheses. 1999 November; 53(5): 447-9 0306-9877
- **Atypical presentation of Hodgkin's disease in a patient at risk for the acquired immunodeficiency syndrome.**
  Author(s): Department of Hematology and Oncology, University Medical Center Steglitz, Free University of Berlin, West Berlin, Federal Republic of Germany.
  Source: Keyserlingk, H Ludwig, W D Seibt, H Ruhl, H Hoffken, G Cancer-Detect-Prevolume 1988; 12(1-6): 243-8 0361-090X
- **Autologous bone marrow transplantation for patients with relapsed or refractory diffuse aggressive non-Hodgkin's lymphoma: value of augmented preparative regimens--a Southwest Oncology Group trial.**
  Author(s): Loyola University Stritch School of Medicine, Maywood, IL, USA.
  Source: Stiff, P J Dahlberg, S Forman, S J McCall, A R Horning, S J Nademanee, A P Blume, K G LeBlanc, M Fisher, R I J-Clin-Oncol. 1998 January; 16(1): 48-55 0732-183X
- **Autologous stem cell transplantation (ASCT) for poor prognostic Hodgkin's disease (HD): comparative results with two CBV regimens and importance of disease status at transplant.**
  Author(s): Department of Hematology, Hospital Universitario de la Princesa, Madrid, Spain.

Source: Arranz, R Tomas, J F Gil Fernandez, J J Martinez Chamorro, C Granados, E Alegre, A Figuera, A Vazquez, L Camara, R Fernandez Ranada, J M Bone-Marrow-Transplant. 1998 April; 21(8): 779-86 0268-3369

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**

Vocabulary Builder

Alopecia: Baldness; absence of the hair from skin areas where it normally is present. [EU]

Anaplastic: A term used to describe cancer cells that divide rapidly and bear little or no resemblance to normal cells. [NIH]

Anthracycline: A member of a family of anticancer drugs that are also antibiotics. [NIH]

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

Atypical: Irregular; not conformable to the type; in microbiology, applied specifically to strains of unusual type. [EU]

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

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

Carmustine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

Chlorambucil: An anticancer drug that belongs to the family of drugs called alkylating agents. [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]

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]

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

Melphalan: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

Metoclopramide: A drug that prevents or reduces nausea and vomiting. [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]

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]

Ondansetron: A drug that prevents or reduces nausea and vomiting. [NIH]

Overdose: 1. to administer an excessive dose. 2. an excessive dose. [EU]

Phosphorous: Having to do with or containing the element phosphorus. [NIH]

Potassium: A metallic element that is important in body functions such as regulation of blood pressure and of water content in cells, transmission of nerve impulses, digestion, muscle contraction, and heart beat. [NIH]

Prednisolone: A synthetic corticosteroid used in the treatment of blood cell cancers (leukemias) and lymph system cancers (lymphomas). [NIH]

Reactivation: The restoration of activity to something that has been inactivated. [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]

Selenium: An essential dietary mineral. [NIH]

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.[228]

[228] 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):[229]

- **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/**

[229] 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. YOUR RIGHTS AND INSURANCE

Overview

Any patient with adult Hodgkin's disease faces a series of issues related more to the healthcare industry than to the medical condition itself. This appendix covers two important topics in this regard: your rights and responsibilities as a patient, and how to get the most out of your medical insurance plan.

Your Rights as a Patient

The President's Advisory Commission on Consumer Protection and Quality in the Healthcare Industry has created the following summary of your rights as a patient.[230]

Information Disclosure

Consumers have the right to receive accurate, easily understood information. Some consumers require assistance in making informed decisions about health plans, health professionals, and healthcare facilities. Such information includes:

- ***Health plans.*** Covered benefits, cost-sharing, and procedures for resolving complaints, licensure, certification, and accreditation status, comparable measures of quality and consumer satisfaction, provider

[230]Adapted from Consumer Bill of Rights and Responsibilities: **http://www.hcqualitycommission.gov/press/cbor.html#head1**.

network composition, the procedures that govern access to specialists and emergency services, and care management information.

- ***Health professionals.*** Education, board certification, and recertification, years of practice, experience performing certain procedures, and comparable measures of quality and consumer satisfaction.
- ***Healthcare facilities.*** Experience in performing certain procedures and services, accreditation status, comparable measures of quality, worker, and consumer satisfaction, and procedures for resolving complaints.
- ***Consumer assistance programs.*** Programs must be carefully structured to promote consumer confidence and to work cooperatively with health plans, providers, payers, and regulators. Desirable characteristics of such programs are sponsorship that ensures accountability to the interests of consumers and stable, adequate funding.

Choice of Providers and Plans

Consumers have the right to a choice of healthcare providers that is sufficient to ensure access to appropriate high-quality healthcare. To ensure such choice, the Commission recommends the following:

- ***Provider network adequacy.*** All health plan networks should provide access to sufficient numbers and types of providers to assure that all covered services will be accessible without unreasonable delay -- including access to emergency services 24 hours a day and 7 days a week. If a health plan has an insufficient number or type of providers to provide a covered benefit with the appropriate degree of specialization, the plan should ensure that the consumer obtains the benefit outside the network at no greater cost than if the benefit were obtained from participating providers.
- ***Women's health services.*** Women should be able to choose a qualified provider offered by a plan -- such as gynecologists, certified nurse midwives, and other qualified healthcare providers -- for the provision of covered care necessary to provide routine and preventative women's healthcare services.
- ***Access to specialists.*** Consumers with complex or serious medical conditions who require frequent specialty care should have direct access to a qualified specialist of their choice within a plan's network of providers. Authorizations, when required, should be for an adequate number of direct access visits under an approved treatment plan.

- ***Transitional care.*** Consumers who are undergoing a course of treatment for a chronic or disabling condition (or who are in the second or third trimester of a pregnancy) at the time they involuntarily change health plans or at a time when a provider is terminated by a plan for other than cause should be able to continue seeing their current specialty providers for up to 90 days (or through completion of postpartum care) to allow for transition of care.
- ***Choice of health plans.*** Public and private group purchasers should, wherever feasible, offer consumers a choice of high-quality health insurance plans.

Access to Emergency Services

Consumers have the right to access emergency healthcare services when and where the need arises. Health plans should provide payment when a consumer presents to an emergency department with acute symptoms of sufficient severity--including severe pain--such that a "prudent layperson" could reasonably expect the absence of medical attention to result in placing that consumer's health in serious jeopardy, serious impairment to bodily functions, or serious dysfunction of any bodily organ or part.

Participation in Treatment Decisions

Consumers have the right and responsibility to fully participate in all decisions related to their healthcare. Consumers who are unable to fully participate in treatment decisions have the right to be represented by parents, guardians, family members, or other conservators. Physicians and other health professionals should:

- Provide patients with sufficient information and opportunity to decide among treatment options consistent with the informed consent process.
- Discuss all treatment options with a patient in a culturally competent manner, including the option of no treatment at all.
- Ensure that persons with disabilities have effective communications with members of the health system in making such decisions.
- Discuss all current treatments a consumer may be undergoing.
- Discuss all risks, benefits, and consequences to treatment or nontreatment.

- Give patients the opportunity to refuse treatment and to express preferences about future treatment decisions.
- Discuss the use of advance directives -- both living wills and durable powers of attorney for healthcare -- with patients and their designated family members.
- Abide by the decisions made by their patients and/or their designated representatives consistent with the informed consent process.

Health plans, health providers, and healthcare facilities should:

- Disclose to consumers factors -- such as methods of compensation, ownership of or interest in healthcare facilities, or matters of conscience -- that could influence advice or treatment decisions.
- Assure that provider contracts do not contain any so-called "gag clauses" or other contractual mechanisms that restrict healthcare providers' ability to communicate with and advise patients about medically necessary treatment options.
- Be prohibited from penalizing or seeking retribution against healthcare professionals or other health workers for advocating on behalf of their patients.

Respect and Nondiscrimination

Consumers have the right to considerate, respectful care from all members of the healthcare industry at all times and under all circumstances. An environment of mutual respect is essential to maintain a quality healthcare system. To assure that right, the Commission recommends the following:

- Consumers must not be discriminated against in the delivery of healthcare services consistent with the benefits covered in their policy, or as required by law, based on race, ethnicity, national origin, religion, sex, age, mental or physical disability, sexual orientation, genetic information, or source of payment.
- Consumers eligible for coverage under the terms and conditions of a health plan or program, or as required by law, must not be discriminated against in marketing and enrollment practices based on race, ethnicity, national origin, religion, sex, age, mental or physical disability, sexual orientation, genetic information, or source of payment.

Confidentiality of Health Information

Consumers have the right to communicate with healthcare providers in confidence and to have the confidentiality of their individually identifiable healthcare information protected. Consumers also have the right to review and copy their own medical records and request amendments to their records.

Complaints and Appeals

Consumers have the right to a fair and efficient process for resolving differences with their health plans, healthcare providers, and the institutions that serve them, including a rigorous system of internal review and an independent system of external review. A free copy of the Patient's Bill of Rights is available from the American Hospital Association.[231]

Patient Responsibilities

Treatment is a two-way street between you and your healthcare providers. To underscore the importance of finance in modern healthcare as well as your responsibility for the financial aspects of your care, the President's Advisory Commission on Consumer Protection and Quality in the Healthcare Industry has proposed that patients understand the following "Consumer Responsibilities."[232] In a healthcare system that protects consumers' rights, it is reasonable to expect and encourage consumers to assume certain responsibilities. Greater individual involvement by the consumer in his or her care increases the likelihood of achieving the best outcome and helps support a quality-oriented, cost-conscious environment. Such responsibilities include:

- Take responsibility for maximizing healthy habits such as exercising, not smoking, and eating a healthy diet.
- Work collaboratively with healthcare providers in developing and carrying out agreed-upon treatment plans.
- Disclose relevant information and clearly communicate wants and needs.

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[231] To order your free copy of the Patient's Bill of Rights, telephone 312-422-3000 or visit the American Hospital Association's Web site: **http://www.aha.org**. Click on "Resource Center," go to "Search" at bottom of page, and then type in "Patient's Bill of Rights." The Patient's Bill of Rights is also available from Fax on Demand, at 312-422-2020, document number 471124.

[232] Adapted from **http://www.hcqualitycommission.gov/press/cbor.html#head1**.

- Use your health insurance plan's internal complaint and appeal processes to address your concerns.
- Avoid knowingly spreading disease.
- Recognize the reality of risks, the limits of the medical science, and the human fallibility of the healthcare professional.
- Be aware of a healthcare provider's obligation to be reasonably efficient and equitable in providing care to other patients and the community.
- Become knowledgeable about your health plan's coverage and options (when available) including all covered benefits, limitations, and exclusions, rules regarding use of network providers, coverage and referral rules, appropriate processes to secure additional information, and the process to appeal coverage decisions.
- Show respect for other patients and health workers.
- Make a good-faith effort to meet financial obligations.
- Abide by administrative and operational procedures of health plans, healthcare providers, and Government health benefit programs.

Choosing an Insurance Plan

There are a number of official government agencies that help consumers understand their healthcare insurance choices.[233] The U.S. Department of Labor, in particular, recommends ten ways to make your health benefits choices work best for you.[234]

1. Your options are important. There are many different types of health benefit plans. Find out which one your employer offers, then check out the plan, or plans, offered. Your employer's human resource office, the health plan administrator, or your union can provide information to help you match your needs and preferences with the available plans. The more information you have, the better your healthcare decisions will be.

2. Reviewing the benefits available. Do the plans offered cover preventive care, well-baby care, vision or dental care? Are there deductibles? Answers to these questions can help determine the out-of-pocket expenses you may

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[233] More information about quality across programs is provided at the following AHRQ Web site:
http://www.ahrq.gov/consumer/qntascii/qnthplan.htm.

[234] Adapted from the Department of Labor:
http://www.dol.gov/dol/pwba/public/pubs/health/top10-text.html.

face. Matching your needs and those of your family members will result in the best possible benefits. Cheapest may not always be best. Your goal is high quality health benefits.

3. Look for quality. The quality of healthcare services varies, but quality can be measured. You should consider the quality of healthcare in deciding among the healthcare plans or options available to you. Not all health plans, doctors, hospitals and other providers give the highest quality care. Fortunately, there is quality information you can use right now to help you compare your healthcare choices. Find out how you can measure quality. Consult the U.S. Department of Health and Human Services publication "Your Guide to Choosing Quality Health Care" on the Internet at **www.ahcpr.gov/consumer**.

4. Your plan's summary plan description (SPD) provides a wealth of information. Your health plan administrator can provide you with a copy of your plan's SPD. It outlines your benefits and your legal rights under the Employee Retirement Income Security Act (ERISA), the federal law that protects your health benefits. It should contain information about the coverage of dependents, what services will require a co-pay, and the circumstances under which your employer can change or terminate a health benefits plan. Save the SPD and all other health plan brochures and documents, along with memos or correspondence from your employer relating to health benefits.

5. Assess your benefit coverage as your family status changes. Marriage, divorce, childbirth or adoption, and the death of a spouse are all life events that may signal a need to change your health benefits. You, your spouse and dependent children may be eligible for a special enrollment period under provisions of the Health Insurance Portability and Accountability Act (HIPAA). Even without life-changing events, the information provided by your employer should tell you how you can change benefits or switch plans, if more than one plan is offered. If your spouse's employer also offers a health benefits package, consider coordinating both plans for maximum coverage.

6. Changing jobs and other life events can affect your health benefits. Under the Consolidated Omnibus Budget Reconciliation Act (COBRA), you, your covered spouse, and your dependent children may be eligible to purchase extended health coverage under your employer's plan if you lose your job, change employers, get divorced, or upon occurrence of certain other events. Coverage can range from 18 to 36 months depending on your situation. COBRA applies to most employers with 20 or more workers and

requires your plan to notify you of your rights. Most plans require eligible individuals to make their COBRA election within 60 days of the plan's notice. Be sure to follow up with your plan sponsor if you don't receive notice, and make sure you respond within the allotted time.

7. HIPAA can also help if you are changing jobs, particularly if you have a medical condition. HIPAA generally limits pre-existing condition exclusions to a maximum of 12 months (18 months for late enrollees). HIPAA also requires this maximum period to be reduced by the length of time you had prior "creditable coverage." You should receive a certificate documenting your prior creditable coverage from your old plan when coverage ends.

8. Plan for retirement. Before you retire, find out what health benefits, if any, extend to you and your spouse during your retirement years. Consult with your employer's human resources office, your union, the plan administrator, and check your SPD. Make sure there is no conflicting information among these sources about the benefits you will receive or the circumstances under which they can change or be eliminated. With this information in hand, you can make other important choices, like finding out if you are eligible for Medicare and Medigap insurance coverage.

9. Know how to file an appeal if your health benefits claim is denied. Understand how your plan handles grievances and where to make appeals of the plan's decisions. Keep records and copies of correspondence. Check your health benefits package and your SPD to determine who is responsible for handling problems with benefit claims. Contact PWBA for customer service assistance if you are unable to obtain a response to your complaint.

10. You can take steps to improve the quality of the healthcare and the health benefits you receive. Look for and use things like Quality Reports and Accreditation Reports whenever you can. Quality reports may contain consumer ratings -- how satisfied consumers are with the doctors in their plan, for instance-- and clinical performance measures -- how well a healthcare organization prevents and treats illness. Accreditation reports provide information on how accredited organizations meet national standards, and often include clinical performance measures. Look for these quality measures whenever possible. Consult "Your Guide to Choosing Quality Health Care" on the Internet at **www.ahcpr.gov/consumer**.

Medicare and Medicaid

Illness strikes both rich and poor families. For low-income families, Medicaid is available to defer the costs of treatment. The Health Care Financing Administration (HCFA) administers Medicare, the nation's largest health insurance program, which covers 39 million Americans. In the following pages, you will learn the basics about Medicare insurance as well as useful contact information on how to find more in-depth information about Medicaid.[235]

Who is Eligible for Medicare?

Generally, you are eligible for Medicare if you or your spouse worked for at least 10 years in Medicare-covered employment and you are 65 years old and a citizen or permanent resident of the United States. You might also qualify for coverage if you are under age 65 but have a disability or End-Stage Renal disease (permanent kidney failure requiring dialysis or transplant). Here are some simple guidelines:

You can get Part A at age 65 without having to pay premiums if:

- You are already receiving retirement benefits from Social Security or the Railroad Retirement Board.
- You are eligible to receive Social Security or Railroad benefits but have not yet filed for them.
- You or your spouse had Medicare-covered government employment.

If you are under 65, you can get Part A without having to pay premiums if:

- You have received Social Security or Railroad Retirement Board disability benefit for 24 months.
- You are a kidney dialysis or kidney transplant patient.

Medicare has two parts:

- Part A (Hospital Insurance). Most people do not have to pay for Part A.
- Part B (Medical Insurance). Most people pay monthly for Part B.

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[235] This section has been adapted from the Official U.S. Site for Medicare Information: **http://www.medicare.gov/Basics/Overview.asp**.

Part A (Hospital Insurance)

Helps Pay For: Inpatient hospital care, care in critical access hospitals (small facilities that give limited outpatient and inpatient services to people in rural areas) and skilled nursing facilities, hospice care, and some home healthcare.

Cost: Most people get Part A automatically when they turn age 65. You do not have to pay a monthly payment called a premium for Part A because you or a spouse paid Medicare taxes while you were working.

If you (or your spouse) did not pay Medicare taxes while you were working and you are age 65 or older, you still may be able to buy Part A. If you are not sure you have Part A, look on your red, white, and blue Medicare card. It will show "Hospital Part A" on the lower left corner of the card. You can also call the Social Security Administration toll free at 1-800-772-1213 or call your local Social Security office for more information about buying Part A. If you get benefits from the Railroad Retirement Board, call your local RRB office or 1-800-808-0772. For more information, call your Fiscal Intermediary about Part A bills and services. The phone number for the Fiscal Intermediary office in your area can be obtained from the following Web site: **http://www.medicare.gov/Contacts/home.asp**.

Part B (Medical Insurance)

Helps Pay For: Doctors, services, outpatient hospital care, and some other medical services that Part A does not cover, such as the services of physical and occupational therapists, and some home healthcare. Part B helps pay for covered services and supplies when they are medically necessary.

Cost: As of 2001, you pay the Medicare Part B premium of $50.00 per month. In some cases this amount may be higher if you did not choose Part B when you first became eligible at age 65. The cost of Part B may go up 10% for each 12-month period that you were eligible for Part B but declined coverage, except in special cases. You will have to pay the extra 10% cost for the rest of your life.

Enrolling in Part B is your choice. You can sign up for Part B anytime during a 7-month period that begins 3 months before you turn 65. Visit your local Social Security office, or call the Social Security Administration at 1-800-772-1213 to sign up. If you choose to enroll in Part B, the premium is usually taken out of your monthly Social Security, Railroad Retirement, or Civil Service Retirement payment. If you do not receive any of the above

payments, Medicare sends you a bill for your part B premium every 3 months. You should receive your Medicare premium bill in the mail by the 10th of the month. If you do not, call the Social Security Administration at 1-800-772-1213, or your local Social Security office. If you get benefits from the Railroad Retirement Board, call your local RRB office or 1-800-808-0772. For more information, call your Medicare carrier about bills and services. The phone number for the Medicare carrier in your area can be found at the following Web site: **http://www.medicare.gov/Contacts/home.asp**. You may have choices in how you get your healthcare including the Original Medicare Plan, Medicare Managed Care Plans (like HMOs), and Medicare Private Fee-for-Service Plans.

Medicaid

Medicaid is a joint federal and state program that helps pay medical costs for some people with low incomes and limited resources. Medicaid programs vary from state to state. People on Medicaid may also get coverage for nursing home care and outpatient prescription drugs which are not covered by Medicare. You can find more information about Medicaid on the HCFA.gov Web site at **http://www.hcfa.gov/medicaid/medicaid.htm**.

States also have programs that pay some or all of Medicare's premiums and may also pay Medicare deductibles and coinsurance for certain people who have Medicare and a low income. To qualify, you must have:

- Part A (Hospital Insurance),
- Assets, such as bank accounts, stocks, and bonds that are not more than $4,000 for a single person, or $6,000 for a couple, and
- A monthly income that is below certain limits.

For more information on these programs, look at the Medicare Savings Programs brochure, **http://www.medicare.gov/Library/PDFNavigation/PDFInterim.asp?Language=English&Type=Pub&PubID=10126**. There are also Prescription Drug Assistance Programs available. Find information on these programs which offer discounts or free medications to individuals in need at **http://www.medicare.gov/Prescription/Home.asp**.

Financial Assistance for Cancer Care[236]

Cancer imposes heavy economic burdens on both patients and their families. For many people, a portion of medical expenses is paid by their health insurance plan. For individuals who do not have health insurance or who need financial assistance to cover health care costs, resources are available, including government-sponsored programs and services supported by voluntary organizations.

Cancer patients and their families should discuss any concerns they may have about health care costs with their physician, medical social worker, or the business office of their hospital or clinic.

The organizations and resources listed below may offer financial assistance. Organizations that provide publications in Spanish or have Spanish-speaking staff have been identified.

- The American Cancer Society (ACS) office can provide the telephone number of the local ACS office serving your area. The local ACS office may offer reimbursement for expenses related to cancer treatment including transportation, medicine, and medical supplies. The ACS also offers programs that help cancer patients, family members, and friends cope with the emotional challenges they face. Some publications are available in Spanish. Spanish-speaking staff are available. Telephone: 1–800–ACS–2345 (1–800–227–2345). Web site: **http://www.cancer.org**
- The *AVONCares* Program for Medically Underserved Women provides financial assistance and relevant education and support to low income, under- and uninsured, underserved women throughout the country in need of diagnostic and/or related services (transportation, child care, and social support) for the treatment of breast, cervical, and ovarian cancers. Telephone: 1–800–813–HOPE (1–800–813–4673). Web site: **http://www.cancercare.org**.

Community voluntary agencies and service organizations such as the Salvation Army, Lutheran Social Services, Jewish Social Services, Catholic Charities, and the Lions Club may offer help. These organizations are listed in your local phone directory. Some churches and synagogues may provide financial help or services to their members.
Fundraising is another mechanism to consider. Some patients find that friends, family, and community members are willing to contribute

[236] Adapted from the NCI: **http://cis.nci.nih.gov/fact/8_3.htm**.

financially if they are aware of a difficult situation. Contact your local library for information about how to organize fundraising efforts.

General assistance programs provide food, housing, prescription drugs, and other medical expenses for those who are not eligible for other programs. Funds are often limited. Information can be obtained by contacting your state or local Department of Social Services; this number is found in the local telephone directory.

Hill-Burton is a program through which hospitals receive construction funds from the Federal Government. Hospitals that receive Hill-Burton funds are required by law to provide some services to people who cannot afford to pay for their hospitalization. Information about which facilities are part of this program is available by calling the toll-free number or visiting the Web site shown below. A brochure about the program is available in Spanish. Telephone: 1–800–638–0742. Web site: **http://www.hrsa.gov/osp/dfcr/obtain/consfaq.htm**.

Income Tax Deductions

Medical costs that are not covered by insurance policies sometimes can be deducted from annual income before taxes. Examples of tax deductible expenses might include mileage for trips to and from medical appointments, out-of-pocket costs for treatment, prescription drugs or equipment, and the cost of meals during lengthy medical visits. The local Internal Revenue Service office, tax consultants, or certified public accountants can determine medical costs that are tax deductible. These telephone numbers are available in the local telephone directory. Web site: **http://www.irs.ustreas.gov**.

The Patient Advocate Foundation

The Patient Advocate Foundation (PAF) is a national nonprofit organization that provides education, legal counseling, and referrals to cancer patients and survivors concerning managed care, insurance, financial issues, job discrimination, and debt crisis matters. Telephone: 1–800–532–5274. **Web site: http://www.patientadvocate.org**.

Patient Assistance Programs are offered by some pharmaceutical manufacturers to help pay for medications. To learn whether a specific drug might be available at reduced cost through such a program, talk with a physician or a medical social worker.

Transportation

There are nonprofit organizations that arrange free or reduced cost air transportation for cancer patients going to or from cancer treatment centers. Financial need is not always a requirement. To find out about these programs, talk with a medical social worker. Ground transportation services may be offered or mileage reimbursed through the local ACS or your state or local Department of Social Services.

Veterans Benefits

Eligible veterans and their dependents may receive cancer treatment at a Veterans Administration Medical Center. Treatment for service-connected conditions is provided, and treatment for other conditions may be available based on the veteran's financial need. Some publications are available in Spanish. Spanish-speaking staff are available in some offices. Telephone: 1–877–222–VETS. Web site: **http://www.va.gov/vbs/health**.

NORD's Medication Assistance Programs

Finally, the National Organization for Rare Disorders, Inc. (NORD) administers medication programs sponsored by humanitarian-minded pharmaceutical and biotechnology companies to help uninsured or under-insured individuals secure life-saving or life-sustaining drugs.[237] NORD programs ensure that certain vital drugs are available "to those individuals whose income is too high to qualify for Medicaid but too low to pay for their prescribed medications." The program has standards for fairness, equity, and unbiased eligibility. It currently covers some 14 programs for nine pharmaceutical companies. NORD also offers early access programs for investigational new drugs (IND) under the approved "Treatment INDs" programs of the Food and Drug Administration (FDA). In these programs, a limited number of individuals can receive investigational drugs that have yet to be approved by the FDA. These programs are generally designed for rare diseases or disorders. For more information, visit **www.rarediseases.org**.

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[237] Adapted from NORD: **http://www.rarediseases.org/cgi-bin/nord/progserv#patient?id=rPIzL9oD&mv_pc=30**.

Additional Resources

In addition to the references already listed in this chapter, you may need more information on health insurance, hospitals, or the healthcare system in general. The NIH has set up an excellent guidance Web site that addresses these and other issues. Topics include:[238]

- Health Insurance: **http://www.nlm.nih.gov/medlineplus/healthinsurance.html**
- Health Statistics: **http://www.nlm.nih.gov/medlineplus/healthstatistics.html**
- HMO and Managed Care: **http://www.nlm.nih.gov/medlineplus/managedcare.html**
- Hospice Care: **http://www.nlm.nih.gov/medlineplus/hospicecare.html**
- Medicaid: **http://www.nlm.nih.gov/medlineplus/medicaid.html**
- Medicare: **http://www.nlm.nih.gov/medlineplus/medicare.html**
- Nursing Homes and Long-term Care: **http://www.nlm.nih.gov/medlineplus/nursinghomes.html**
- Patient's Rights, Confidentiality, Informed Consent, Ombudsman Programs, Privacy and Patient Issues: **http://www.nlm.nih.gov/medlineplus/patientissues.html**
- Veteran's Health, Persian Gulf War, Gulf War Syndrome, Agent Orange: **http://www.nlm.nih.gov/medlineplus/veteranshealth.html**

Vocabulary Builder

Blushing: Involuntary reddening, especially of the face, associated with feelings of embarrassment, confusion or shame. [NIH]

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

Ferritin: An iron-containing protein complex that is formed by a combination of ferric iron with the protein apoferritin. [NIH]

Flank Pain: Pain emanating from below the ribs and above the ilium. [NIH]

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

Neck Pain: Discomfort or more intense forms of pain that are localized to the cervical region. This term generally refers to pain in the posterior or lateral regions of the neck. [NIH]

Splenomegaly: Enlargement of the spleen. [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 adult Hodgkin's disease and keep them on file. The NIH, in particular, suggests that patients with adult Hodgkin's disease visit the following Web sites in the ADAM Medical Encyclopedia:

- **Basic Guidelines for Adult Hodgkin's Disease**

  Hodgkin's lymphoma
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/000580.htm

- **Signs & Symptoms for Adult Hodgkin's Disease**

  Anemia
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/000560.htm

  Clubbing of the fingers or toes
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003282.htm

  Diarrhea
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003126.htm

  Fatigue
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003088.htm

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

  Flank pain
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003113.htm

  Glands, swollen
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003097.htm

  Hair loss
  Web site:
  http://www.nlm.nih.gov/medlineplus/ency/article/003246.htm

Itching
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003217.htm

Leukemia
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/001299.htm

Loss of appetite
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003121.htm

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

Neck pain
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003025.htm

Skin blushing/flushing
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003241.htm

Splenomegaly
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003276.htm

Stress
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm

Sweating, excessive
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003218.htm

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

Weight loss
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003107.htm

- **Diagnostics and Tests for Adult Hodgkin's Disease**

ACE levels
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003567.htm

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

Blood chemistry tests
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003468.htm

Blood differential
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003657.htm

Bone marrow aspiration
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003658.htm

Bone marrow biopsy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003934.htm

Cryoglobulins
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003555.htm

CT scans of the chest, abdomen
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003789.htm

Cytology exam of pleural fluid
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003866.htm

Ferritin
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003490.htm

Gallium (Ga.) scan
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003450.htm

Lymph node biopsy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003933.htm

Mediastinoscopy with biopsy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003864.htm

Peritoneal fluid analysis
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003626.htm

Small bowel biopsy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003889.htm

T(thymus derived) lymphocyte count
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/003516.htm

- **Nutrition for Adult Hodgkin's Disease**

Carbohydrates
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002469.htm

Protein in diet
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002467.htm

- **Background Topics for Adult Hodgkin's Disease**

Acute
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002215.htm

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

Cancer - support group
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002166.htm

Chemotherapy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002324.htm

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

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

Physical examination
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002274.htm

Radiation therapy
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/001918.htm

Support group
Web site:
http://www.nlm.nih.gov/medlineplus/ency/article/002150.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**

ADULT HODGKIN'S DISEASE 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: The part of the body that contains the pancreas, stomach, intestines, liver, gallbladder, and other organs. [NIH]

Adenopathy: Large or swollen lymph glands. [NIH]

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

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

Alopecia: Baldness; absence of the hair from skin areas where it normally is present. [EU]

Anaplastic: A term used to describe cancer cells that divide rapidly and bear little or no resemblance to normal cells. [NIH]

Anemia: A condition in which the number of red blood cells is below normal. [NIH]

Anthracycline: A member of a family of anticancer drugs that are also antibiotics. [NIH]

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

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

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

Antigens: Substances that cause the immune system to make a specific immune response. [NIH]

Aspergillus: A genus of mitosporic fungi containing about 100 species and eleven different teleomorphs in the family Trichocomaceae. [NIH]

Aspiration: Removal of fluid from a lump, often a cyst, with a needle and a syringe. [NIH]

Aspirin: A drug that reduces pain, fever, inflammation, and blood clotting. Aspirin belongs to the family of drugs called nonsteroidal anti-inflammatory agents. It is also being studied in cancer prevention. [NIH]

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

Ataxia: Loss of muscle coordination. [NIH]

Atypical: Irregular; not conformable to the type; in microbiology, applied specifically to strains of unusual type. [EU]

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

Axilla: The underarm or armpit. [NIH]

Bereavement: Refers to the whole process of grieving and mourning and is associated with a deep sense of loss and sadness. [NIH]

Bile: A fluid made by the liver and stored in the gallbladder. Bile is excreted into the small intestine where it helps digest fat. [NIH]

Biomarkers: Substances sometimes found in an increased amount in the blood, other body fluids, or tissues and that may suggest the presence of some types of cancer. Biomarkers include CA 125 (ovarian cancer), CA 15-3 (breast cancer), CEA (ovarian, lung, breast, pancreas, and GI tract cancers), and PSA (prostate cancer). Also called tumor markers. [NIH]

Biopsy: The removal of cells or tissues for examination under a microscope. When only a sample of tissue is removed, the procedure is called an incisional biopsy or core biopsy. When an entire tumor or lesion is removed, the procedure is called an excisional biopsy. When a sample of tissue or fluid is removed with a needle, the procedure is called a needle biopsy or fine-needle aspiration. [NIH]

Bleomycin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. [NIH]

Blushing: Involuntary reddening, especially of the face, associated with feelings of embarrassment, confusion or shame. [NIH]

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

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

Calcium: A mineral found in teeth, bones, and other body tissues. [NIH]

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

Carbohydrate: An aldehyde or ketone derivative of a polyhydric alcohol, particularly of the pentahydric and hexahydric alcohols. They are so named because the hydrogen and oxygen are usually in the proportion to form

water, (CH2O)n. The most important carbohydrates are the starches, sugars, celluloses, and gums. They are classified into mono-, di-, tri-, poly- and heterosaccharides. [EU]

Carcinogenic: Producing carcinoma. [EU]

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

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

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

Carmustine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

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

Cerebellar: Pertaining to the cerebellum. [EU]

Cervical: Relating to the neck, or to the neck of any organ or structure. Cervical lymph nodes are located in the neck; cervical cancer refers to cancer of the uterine cervix, which is the lower, narrow end (the "neck") of the uterus. [NIH]

Charities: Social welfare organizations with programs designed to assist individuals in times of need. [NIH]

Chemotherapy: Treatment with anticancer drugs. [NIH]

Chlorambucil: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

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

Cisplatin: An anticancer drug that belongs to the family of drugs called platinum compounds. [NIH]

CNS: Central nervous system. The brain and spinal cord. [NIH]

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

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

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

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

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

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

Cyclophosphamide: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

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

Cytokines: A class of substances that are produced by cells of the immune system and can affect the immune response. Cytokines can also be produced in the laboratory by recombinant DNA technology and given to people to affect immune responses. [NIH]

Cytotoxic: Cell-killing. [NIH]

Dacarbazine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

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

Dexamethasone: A synthetic steroid (similar to steroid hormones produced naturally in the adrenal gland). Dexamethasone is used to treat leukemia and lymphoma and may be used to treat some of the problems caused by other cancers and their treatment. [NIH]

Diaphragm: The thin muscle below the lungs and heart that separates the chest from the abdomen. [NIH]

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

Doxorubicin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. It is an anthracycline. [NIH]

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

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

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

Epirubicin: An anticancer drug that belongs to the family of drugs called antitumor antibiotics. [NIH]

Escherichia: A genus of gram-negative, facultatively anaerobic, rod-shaped bacteria whose organisms occur in the lower part of the intestine of warm-blooded animals. The species are either nonpathogenic or opportunistic pathogens. [NIH]

Etoposide: An anticancer drug that is a podophyllotoxin derivative and belongs to the family of drugs called mitotic inhibitors. [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]

Femoral: Pertaining to the femur, or to the thigh. [EU]

Ferritin: An iron-containing protein complex that is formed by a combination of ferric iron with the protein apoferritin. [NIH]

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

Filgrastim: A colony-stimulating factor that stimulates the production of neutrophils (a type of white blood cell). It is a cytokine that belongs to the family of drugs called hematopoietic (blood-forming) agents. Also called granulocyte colony-stimulating factor (G-CSF). [NIH]

Flank Pain: Pain emanating from below the ribs and above the ilium. [NIH]

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

Flushing: A transient reddening of the face that may be due to fever, certain drugs, exertion, stress, or a disease process. [NIH]

Gallium: A rare, metallic element designated by the symbol, Ga, atomic number 31, and atomic weight 69.72. [NIH]

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

Gonadal: Pertaining to a gonad. [EU]

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

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

Granulocyte: A type of white blood cell that fights bacterial infection. Neutrophils, eosinophils, and basophils are granulocytes. [NIH]

Groin: The area where the thigh meets the abdomen. [NIH]

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

Haemopoietic: Haematopoietic; pertaining to or effecting the formation of blood cells. [EU]

Hematocrit: Measurement of the volume of packed red cells in a blood specimen by centrifugation. The procedure is performed using a tube with graduated markings or with automated blood cell counters. It is used as an indicator of erythrocyte status in disease. For example, anemia shows a low hematocrit, polycythemia, high values. [NIH]

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

Hepatitis: Inflammation of the liver. [NIH]

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

HIV: Human immunodeficiency virus, the cause of acquired immunodeficiency syndrome (AIDS). [NIH]

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

Hypothermia: A low body temperature, as that due to exposure in cold weather or a state of low temperature of the body induced as a means of decreasing metabolism of tissues and thereby the need for oxygen, as used in various surgical procedures, especially on the heart, or in an excised organ being preserved for transplantation. [EU]

Hypothyroidism: Deficiency of thyroid activity. In adults, it is most common in women and is characterized by decrease in basal metabolic rate, tiredness and lethargy, sensitivity to cold, and menstrual disturbances. If untreated, it progresses to full-blown myxoedema. In infants, severe hypothyroidism leads to cretinism. In juveniles, the manifestations are intermediate, with less severe mental and developmental retardation and only mild symptoms of the adult form. When due to pituitary deficiency of thyrotropin secretion it is called secondary hypothyroidism. [EU]

Ifosfamide: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

Immunization: The induction of immunity. [EU]

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

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

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

Immunotherapy: Treatment to stimulate or restore the ability of the immune system to fight infection and disease. Also used to lessen side effects that may be caused by some cancer treatments. Also called biological

therapy or biological response modifier (BRM) therapy. [NIH]

Immunotoxin: An antibody linked to a toxic substance. Some immmunotoxins can bind to cancer cells and kill them. [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]

Infertility: The inability to produce children. [NIH]

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

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

Infuse: To pour (a liquid) into something. [EU]

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

Inguinal: Pertaining to the inguen, or groin. [EU]

Inoperable: Not suitable to be operated upon. [EU]

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

Intervertebral: Situated between two contiguous vertebrae. [EU]

Intravenous: IV. Into a vein. [NIH]

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

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

Laparoscopy: The insertion of a thin, lighted tube (called a laparoscope) through the abdominal wall to inspect the inside of the abdomen and remove tissue samples. [NIH]

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

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

Leucovorin: A drug used to protect normal cells from high doses of the anticancer drug methotrexate. It is also used to increase the antitumor effects of fluorouracil and tegafur-uracil, an oral treatment alternative to intravenous fluorouracil. [NIH]

Leukaemia: An acute or chronic disease of unknown cause in man and other warm-blooded animals that involves the blood-forming organs, is characterized by an abnormal increase in the number of leucocytes in the tissues of the body with or without a corresponding increase of those in the circulating blood, and is classified according of the type leucocyte most prominently involved. [EU]

Leukapheresis: Removal of the blood to collect specific blood cells; the remaining blood is returned to the body. [NIH]

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

Leukopenia: A condition in which the number of leukocytes (white blood cells) in the blood is reduced. [NIH]

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

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

Lymphangiogram: X-rays of the lymphatic system. A dye is injected into a lymphatic vessel and travels throughout the lymphatic system. The dye outlines the lymphatic vessels and organs on the x-ray. [NIH]

Lymphangiography: An x-ray study of the lymphatic system. A dye is injected into a lymphatic vessel and travels throughout the lymphatic system. The dye outlines the lymphatic vessels and organs on the x-ray. [NIH]

Lymphocyte: A white blood cell. Lymphocytes have a number of roles in the immune system, including the production of antibodies and other substances that fight infection and diseases. [NIH]

Lymphocytic: Referring to lymphocytes, a type of white blood cell. [NIH]

Lymphography: An x-ray study of lymph nodes and lymphatic vessels made visible by the injection of a special dye. [NIH]

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

Lymphoma: Cancer that arises in cells of the lymphatic system. [NIH]

Lymphosarcoma: An obsolete term for a malignant tumor of lymphatic tissue. [NIH]

Macrophage: A type of white blood cell that surrounds and kills

microorganisms, removes dead cells, and stimulates the action of other immune system cells. [NIH]

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

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

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

Mammography: The use of x-rays to create a picture of the breast. [NIH]

Mechlorethamine: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

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

Mediate: Indirect; accomplished by the aid of an intervening medium. [EU]

Melphalan: An anticancer drug that belongs to the family of drugs called alkylating agents. [NIH]

Meningioma: A type of tumor that occurs in the meninges, the membranes that cover and protect the brain and spinal cord. Meningiomas usually grow slowly. [NIH]

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

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

Metoclopramide: A drug that prevents or reduces nausea and vomiting. [NIH]

Millimeter: A measure of length. A millimeter is approximately 26-times smaller than an inch. [NIH]

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

Molecule: A chemical made up of two or more atoms. The atoms in a molecule can be the same (an oxygen molecule has two oxygen atoms) or different (a water molecule has two hydrogen atoms and one oxygen atom). Biological molecules, such as proteins and DNA, can be made up of many thousands of atoms. [NIH]

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

Mycosis: Any disease caused by a fungus. [EU]

Myelodysplasia: Abnormal bone marrow cells that may lead to

myelogenous leukemia. [NIH]

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

Myeloma: Cancer that arises in plasma cells, a type of white blood cell. [NIH]

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

Neck Pain: Discomfort or more intense forms of pain that are localized to the cervical region. This term generally refers to pain in the posterior or lateral regions of the neck. [NIH]

Necrosis: Refers to the death of living tissues. [NIH]

Neoplasm: A new growth of benign or malignant tissue. [NIH]

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

Neurology: A medical specialty concerned with the study of the structures, functions, and diseases of the nervous system. [NIH]

Neurosurgery: A surgical specialty concerned with the treatment of diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system. [NIH]

Neutropenia: An abnormal decrease in the number of neutrophils, a type of white blood cell. [NIH]

Niacin: Water-soluble vitamin of the B complex occurring in various animal and plant tissues. Required by the body for the formation of coenzymes NAD and NADP. Has pellagra-curative, vasodilating, and antilipemic properties. [NIH]

Non-small cell lung cancer: A group of lung cancers that includes squamous cell carcinoma, adenocarcinoma, and large cell carcinoma. [NIH]

Oncologist: A doctor who specializes in treating cancer. Some oncologists specialize in a particular type of cancer treatment. For example, a radiation oncologist specializes in treating cancer with radiation. [NIH]

Oncology: The study of cancer. [NIH]

Ondansetron: A drug that prevents or reduces nausea and vomiting. [NIH]

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

Osteomyelitis: Inflammation of bone caused by a pyogenic organism. It may remain localized or may spread through the bone to involve the marrow, cortex, cancellous tissue, and periosteum. [EU]

Otolaryngology: A surgical specialty concerned with the study and

treatment of disorders of the ear, nose, and throat. [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]

Palliative: 1. affording relief, but not cure. 2. an alleviating medicine. [EU]

Pancytopenia: Deficiency of all cell elements of the blood; aplastic anaemia. [EU]

Pap test: The collection of cells from the cervix for examination under a microscope. It is used to detect changes that may be cancer or may lead to cancer, and can show noncancerous conditions, such as infection or inflammation. Also called a Pap smear. [NIH]

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

Pediatrics: A medical specialty concerned with maintaining health and providing medical care to children from birth to adolescence. [NIH]

Pelvic: Pertaining to the pelvis. [EU]

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

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]

Phosphorous: Having to do with or containing the element phosphorus. [NIH]

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

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

Pneumonia: An inflammatory infection that occurs in the lung. [NIH]

Potassium: A metallic element that is important in body functions such as regulation of blood pressure and of water content in cells, transmission of nerve impulses, digestion, muscle contraction, and heart beat. [NIH]

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

Prednisolone: A synthetic corticosteroid used in the treatment of blood cell cancers (leukemias) and lymph system cancers (lymphomas). [NIH]

Prednisone: Belongs to the family of drugs called steroids and is used to treat several types of cancer and other disorders. Prednisone also inhibits the body's immune response. [NIH]

Procarbazine: An anticancer drug that belongs to the family of drugs called

alkylating agents. [NIH]

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

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

Proptosis: Forward projection or displacement especially of the eyeball : exophthalmos. [EU]

Prostate: A gland in males that surrounds the neck of the bladder and the urethra. It secretes a substance that liquifies coagulated semen. It is situated in the pelvic cavity behind the lower part of the pubic symphysis, above the deep layer of the triangular ligament, and rests upon the rectum. [NIH]

Pseudomonas: A genus of gram-negative, aerobic, rod-shaped bacteria widely distributed in nature. Some species are pathogenic for humans, animals, and plants. [NIH]

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

Psychotherapy: A generic term for the treatment of mental illness or emotional disturbances primarily by verbal or nonverbal communication. [NIH]

Radioactive: Giving off radiation. [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]

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

Radiology: The use of radiation (such as x-rays) or other imaging technologies (such as ultrasound and magnetic resonance imaging) to diagnose or treat disease. [NIH]

Radiotherapy: The treatment of disease by ionizing radiation. [EU]

Radium: Radium. A radioactive element of the alkaline earth series of metals. It has the atomic symbol Ra, atomic number 88, and atomic weight 226. Radium is the product of the disintegration of uranium and is present in pitchblende and all ores containing uranium. It is used clinically as a source of beta and gamma-rays in radiotherapy, particularly brachytherapy. [NIH]

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

Reactivation: The restoration of activity to something that has been inactivated. [EU]

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

Recombinant: 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 cancer, at the same site as the original (primary) tumor or in another location, after the tumor had disappeared. [NIH]

Refractory: Not readily yielding to treatment. [EU]

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

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

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

Rheumatoid: Resembling rheumatism. [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]

Rituximab: A type of monoclonal antibody used in cancer detection or therapy. Monoclonal antibodies are laboratory-produced substances that can locate and bind to cancer cells. [NIH]

Rosales: An order of the angiosperms, subclass Rosidae. Its members include some of the most known ornamental and edible plants of temperate zones including roses, apples, cherries, and peaches. Plants of a number of the species of the rose family contain cyanide compounds, for example, peach pits and bitter almonds. [NIH]

Sclerosis: A induration, or hardening; especially hardening of a part from inflammation and in diseases of the interstitial substance. The term is used chiefly for such a hardening of the nervous system due to hyperplasia of the connective tissue or to designate hardening of the blood vessels. [EU]

Screening: Checking for disease when there are no symptoms. [NIH]

Secretion: 1. the process of elaborating a specific product as a result of the activity of a gland; this activity may range from separating a specific substance of the blood to the elaboration of a new chemical substance. 2. any substance produced by secretion. [EU]

Sedimentation: The act of causing the deposit of sediment, especially by the use of a centrifugal machine. [EU]

Selenium: An essential dietary mineral. [NIH]

Sepsis: The presence of bacteria in the bloodstream. [NIH]

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

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

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

Splenomegaly: Enlargement of the spleen. [EU]

Staging: Performing exams and tests to learn the extent of the cancer within the body, especially whether the disease has spread from the original site to other parts of the body. [NIH]

Sweat: The fluid excreted by the sweat glands. It consists of water containing sodium chloride, phosphate, urea, ammonia, and other waste products. [NIH]

Systemic: Affecting the entire body. [NIH]

Telangiectasia: The permanent enlargement of blood vessels, causing redness in the skin or mucous membranes. [NIH]

Teniposide: An anticancer drug that is a podophyllotoxin derivative and belongs to the family of drugs called mitotic inhibitors. [NIH]

Testicular: Pertaining to a testis. [EU]

Thermoregulation: Heat regulation. [EU]

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

Thrombocytopenia: A decrease in the number of platelets in the blood that may result in easy bruising and excessive bleeding from wounds or bleeding in mucous membranes and other tissues. [NIH]

Thymus: An organ that is part of the lymphatic system, in which T lymphocytes grow and multiply. The thymus is in the chest behind the breastbone. [NIH]

Thyroid: A gland located near the windpipe (trachea) that produces thyroid hormone, which helps regulate growth and metabolism. [NIH]

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

Tomography: A series of detailed pictures of areas inside the body; the pictures are created by a computer linked to an x-ray machine. [NIH]

Tonsils: Small masses of lymphoid tissue on either side of the throat. [NIH]

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

Transfusion: The infusion of components of blood or whole blood into the

bloodstream. The blood may be donated from another person, or it may have been taken from the person earlier and stored until needed. [NIH]

Transplantation: The replacement of an organ with one from another person. [NIH]

Tumour: 1. swelling, one of the cardinal signs of inflammations; morbid enlargement. 2. a new growth of tissue in which the multiplication of cells is uncontrolled and progressive; called also neoplasm. [EU]

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

Vaccine: A substance or group of substances meant to cause the immune system to respond to a tumor or to microorganisms, such as bacteria or viruses. [NIH]

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

Vinblastine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. It is a mitotic inhibitor. [NIH]

Vincristine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. [NIH]

Vinorelbine: An anticancer drug that belongs to the family of plant drugs called vinca alkaloids. [NIH]

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

Virus: Submicroscopic organism that causes infectious disease. In cancer therapy, some viruses may be made into vaccines that help the body build an immune response to, and kill, tumor cells. [NIH]

Yttrium: A rare elemental metal. A radioactive form of yttrium is used in radiation therapy and some types of immunotherapy. [NIH]

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):

- **The Cancer Dictionary** by Roberta Altman, Michael J., Md Sarg; Paperback - 368 pages, 2nd Revised edition (November 1999), Checkmark Books; ISBN: 0816039542; **http://www.amazon.com/exec/obidos/ASIN/0816039542/icongroupinterna**
- **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
- **Stedman's Oncology Words** by Beverly J. Wolpert (Editor), Stedmans; Paperback - 502 pages, 3rd edition (June 15, 2000), Lippincott, Williams & Wilkins; ISBN: 0781726549;
http://www.amazon.com/exec/obidos/ASIN/0781726549/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**

INDEX


9 780597 834554