Eric R. Braverman, M.D., and
PATH Medical Present

YOUR CANCER BATTLE PLAN

A Step-by-Step Resource for
Prevention, Healing, and Wellness

By Richard Smayda, D.O.

Bookmark
PUBLISHING
DALLAS, TEXAS

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Published by
Bookmark Publishing
Dallas, Texas

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www.pathmed.com

ISBN: 1-59024-392-7

Printed in the United States of America

2009—First Edition

10 9 8 7 6 5 4 3 2 1

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Foreword

Alexis* came to the PATH Medical Center complaining of excessive, unexplained weight gain. She had gone through a battery of tests before coming to my office. The conclusion: "You're probably experiencing weight gain associated with menopause." Sometimes that is the right answer, but in this case, it was not. Though Alexis said that her endocrinologist had done a physical examination for nodules on her neck, I decided to order a thyroid ultrasound anyway, just to make sure. The ultrasound detected a small thyroid cancer nodule. Treatment, because of early detection, was very successful.

Barry, a 25-year-old male came to my office with anemia. Blood tests, bone marrow biopsy, and additional diagnostic tests revealed myelodysplastic syndrome, also called preleukemia or "smoldering" leukemia, which are diseases of the bone marrow (the spongy tissue inside the large bones). With early detection, high dosages of antioxidant nutrients and amino acids Barry's illness was reversed without a need for more traditional treatments such as blood cell transfusions, chemotherapy, or bone marrow transplants.

*Note: Though the following illustrations are based on actual medical testimonies and permission has been given by each person to share some details of his/her story, names have been changed to protect the privacy of each person and family.

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Within a relatively short time (especially compared to recuperation from more common treatments), he was able to reverse his illness, resume his career, and jump back into his whirlwind social calendar. Throughout the process, his proactive participation and attitude were among the most important keys to both survival and wellness. Today, he credits what he learned in the process, especially regarding nutrition, for changing his life for the better forever.

Catherine came to the PATH Medical Center (see appendix A for more information about the center) with a lesion in her breast and a previous history of breast cancer. Instead of returning to chemotherapy and radiation treatments as before, she decided to try a new oral drug, tamoxifen, along with a new regimen of exercise, food choices, and nutritional supplements. The cancer has not returned. Today, Catherine shares her story freely, imploring anyone who "has ears to hear" to make the positive life changes necessary to enjoy a long, cancer-free life.

Dean, a 55-year-old man, came to my office for an intensive one-day health assessment (called an Executive Health Program at the PATH Medical Center). During office visits with his previous physician, he had explained that he continued to feel fatigued and depressed. His follow-up was scant, at best, and the symptoms continued. During the examination, a whole body PET scan revealed that his bone marrow was riddled with multiple myeloma, even though he had been to annual checkups every year for his entire adult life. Multiple myeloma, also known as MM or Kahler's disease, is a cancer of the plasma (white) cells found in bone marrow. Myeloma is technically incurable, but as in Dean's case, he was able to go into remission, since today's treatments now include steroids, chemotherapy, thalidomide, and stem cell transplants.

Not every story ends well, as in any part of life, but having a battle plan can work wonders even in the midst of what would otherwise be a decidedly horrific story.

Ethan, another middle-aged man, came to see me. His appearance was unusual, since his skin had become more yellow than the sun. He had been diagnosed with pancreatic cancer was told he had less than two months to live, and was, understandably, completely depressed. His cancer, humanely

speaking, was not curable. However, I put him on 300–400 grams of DHEA, 7 grams of N-Acetyl Cysteine. He lived for two more years, much more comfortably and with an increasingly positive disposition.

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Live Strong

Though he has never been my patient, I cannot introduce a book with the title *Your Cancer Battle Plan* without mentioning one of our country's most recent well-known cancer patients. Not only has he become a champion as a legendary bicyclist, but he is also a shining example of surviving and thriving despite his disease. Lance Armstrong has lived and continues to live an extraordinary life.

Even as a boy, he could ride a bicycle like the wind. At 13, he won a triathlon. At 16 he became a professional cyclist and began a string of amazing victories—stage victories in the Tour de France, multiple wins in the Tour du Pont, and a slot on the United States Olympic team. During 1996, he reached the apex when he was named the top ranked cyclist in the entire world.

Then unspeakable tragedy struck. First came the report of testicular cancer, then came the additional crushing news—cancer had spread to his lungs and brain. Doctors gave him less than a 50 percent chance of recovery and started a chemotherapy treatment.

Strangely (though perhaps not peculiar to those who know him best), Lance spoke of cycling again, even during the darkest days. Doubtless, those around him hoped and prayed that he was right, but even his most supportive loved ones and friends must have occasionally wondered what might happen if…

The positive "live strong" attitude worked. The therapy worked. Prayers of people all over the world worked. Not only did he survive, but he eventually started cycling again. Then he became world-class competitive. Against all odds, by 1999 he entered the Tour de France, considered the most grueling cycling event in the world. He amazed the world, not only by finishing, but by winning. More astonishingly during subsequent years in what must undoubtedly be one of the greatest achievements in modern sports history, he continued winning the celebrated race—again and again.

Who will ever forget that day in 2005 in Paris as "The Star-Spangled Banner" rang out over the Champs-Elysees in honor of Lance Armstrong? On the podium against the backdrop of the Arc de Triomphe, the cancer

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survivor who became the greatest cyclist in Tour de France history slipped into the leader's yellow jersey. This time, it was the winner's jersey, for an unprecedented seventh consecutive year in the world's most grueling race!

Armstrong retired from racing on July 24, 2005, at the end of the 2005 Tour de France, but returned to competitive cycling in January 2009, finishing third in the 2009 Tour de France.

Just as the legacy has continued, so has his influence in bringing a new awareness to cancer, the power of survival, and the tools that are needed for each new cancer patient to begin his or her own cancer battle plan. In fact, Lance Armstrong has been quoted as saying that cancer was "the best thing that ever happened to me." Remarkable!

Courage in the Midst of the Battle

Your Cancer Battle Plan is written specifically for you—whether you are the next Alexis, Barry, Catherine, Dean, Ethan, or even another Lance Armstrong searching for hope and healing after hearing the crushing news about the "Big C." This book is also for the family and friends of new patients who have received that same overwhelming news and want to know how to be courageous during the coming days.

In addition, because of PATH Medical Clinic's and Dr. Richard Smayda's emphasis on integrative healing, this book has also been written for those who want to learn how to prevent cancer—the greatest cancer battle plan of all!

Let me begin by saying that every organ of the body can become cancerous, including the bones and skin. One out of every three Americans will develop cancer, and this disease affects virtually every family. In the United States alone, cancer accounts for up to 25 percent of our national health costs. It is the second leading cause of death throughout, and currently there is no absolute cure for most cancers.

Still, you do not have to be a victim. There is a great and growing variety of treatment options available that can effectively bring remission and a long life. There is hope!

Your Cancer Battle Plan has been developed as a labor of love to answer many of the basic questions that swirl around the subject, diagnosis, and prevention of cancer. If you have received the news of a cancer diagnosis, the first response

may have been one of mind-numbing confusion, overwhelming anxiety, and devastating fear. Yet something inside you looked for hope and help as you began to make the many important decisions concerning treatment.

If that is why this book's title caught your eye and you are now reading through these pages, let me assure you that this information has been designed to help you play an active part in the fight against cancer.

Here is an overview:

- Part 1 is a point-blank and candid discussion of what cancer is, including the different types and risk factors.
- Part 2 focuses on the battle itself, including early detection, diagnosis tools, therapies, breakthroughs, and winning the battle against this dreaded disease.
- Part 3 moves into the very exciting field of cancer prevention.
- Part 4 offers a variety of information and forms to help in your personal journey.

Wherever you are in the process, it is important to know as much as you can so you can know what to ask the medical professionals, including information on treatments, side effects, and clinical trials. Equally vital is a self-empowering knowledge of the emotional, physical, and psychological factors that are associated with cancer and its treatment.

Hope and Healing

There has never been a time of greater hope in regard to cancer. Statistics alone are on the side of each person who is affected:

- Today there are more than eight million cancer survivors in the United States.
- Cancer treatments have improved dramatically over the past three decades, with many more people going into remission and becoming long-term survivors.
- Five-year survival rates of many cancers now have reached 90 percent or greater. If you are new to the discussion of cancer, a five-year survival means that you are considered cured and theoretically can expect the same life span as others of your age and condition who never had cancer!

Yes, each cancer case is unique, but these survival statistics (and many more

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that I shared through this book) are not only exciting and significant, but also very helpful in planning your treatment.

I am proud to be part of a profession that has focused so much attention on helping you win this battle, and it is thrilling that the medical world knows more about identifying and treating this disease than ever before. A diagnosis of cancer is no longer a reason to despair. Cancer patients now have a much better chance to overcome this disease and return to a full and active life. Therefore, if you or a loved one has received a diagnosis of cancer, this can be a life-changing reason to learn more, take action, and be an active participant in winning the battle over this disease.

Above all else, patients can regain a sense of control at this critical moment in their life. Information brings power. Information, especially in relation to the understanding of God's design and concern, brings inordinate power.

This book has been developed through collaboration with and guidance from caring professionals with a variety of medical, research, and educational expertise. Still, it is not meant to be a comprehensive, end-all resource. It is just a beginning in your journey to become better informed.

What is presented here should not replace your physician's advice or information that you will receive from cancer treatment specialists. Know that, as with any illness, you are as much a part of the cure as the medication, treatment, protocols or medical personnel. You are the key, not only if you receive the dreaded news that you or a loved one has cancer, but especially in terms of prevention.

The Point of Prevention

So many healthcare professionals still focus on treating disease once it is diagnosed. They still aren't getting the big picture. While early detection is vitally important, prevention is equally (and often even more) important in guaranteeing a longer, healthier life.

This book uncovers the most innovative preventative treatments in cancer care, including medications, natural bioidentical hormone therapies, nutrient supplementation, and lifestyle changes that anyone can incorporate into their daily routine. By taking care of your body and your brain today, you will not only prevent cancer later but also begin to look and feel younger now. You will learn

how to compensate for your genetics with the latest information that researchers are uncovering about the power of antioxidants and other vital nutrients found in fruits, vegetables, whole grains, and lean proteins. You will also learn how to slow down the aging process and its correlation with cancer by supplementing with natural, bioidentical hormones.

If you have received a cancer diagnosis, or there is a history of cancer in your family, this book will also provide valuable information about the latest breakthroughs in diagnostics and treatment of this disease. Whether it is finding the smallest nodules through PET scans and imaging, or integrative techniques for dealing with side effects, or simply improving mood, the best care involves treating each patient as a whole person rather than just treating the cancer.

Above all, you can discover why a personal connection to God might be the best medicine of all. A positive attitude and a focus on spirituality and prayer, as well as meditation on God's Word offer an opportunity to heal beyond our greatest expectations. As always, the power to heal is in your hands.

Your Battle, Your Plan, Your Journey

Your Cancer Battle Plan will help you answer many of the basic questions that arise with a diagnosis of cancer, providing information to help you play an active part in your treatment and in the many important decisions that come with fighting cancer. It also provides information about other resources available for additional information and support.

You will learn what to ask your doctor, when to seek second opinions, information on treatments, side effects and clinical trials, the emotional, physical and psychological factors associated with cancer and its treatment, the dietary factors associated with cancer and its treatment, and definitions of terms commonly used in the field.

Frankly, you are undoubtedly reading this book now because you are on a journey that involves a search for answers. Whether your current road is a smooth turnpike, bumpy street, unpaved trail, or rocky-ledged mountain trail, and no matter if you are going uphill, straining to make it to the next crest, or maybe momentarily coasting, this book has been written to offer you a practical road map toward prevention, healing, and wellness from cancer.

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As you go through these pages, here are a few quick points to remember:

- Use this book as a personal journal. Write. Scribble. Underline. Highlight. Fill the margins with your own ideas. Use it as a tool to chronicle your thoughts, actions, and goals. Read it more than once as you personalize and internalize the principles.
- Especially as you go through parts 2 and 3, prioritize and apply the material as soon as possible. There is an old saying, "Hear something, you often forget it; see something, you often remember it; do something, you understand and remember it." The secret is to apply what you learn as quickly as you can.
- Use the appendices as resources for additional study and discovery.

No matter where you are in your journey, may God bless you as you move forward boldly toward a victorious life of health, wellness, and wholeness—beginning today!

—Eric R. Braverman, M.D.

Part 1

Cancer

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What Is Cancer?

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There are many things about my chosen profession that I enjoy—helping people find short- and long-term solutions to their most pressing medical and lifestyle challenges, encouraging prevention and self-responsibility, seeing men, women, young people, and children overcome "impossible" odds and fight monumental battles—but one of the toughest parts of my job is sitting with people who have just entered the world known as cancer.

Whether they are in my office to discuss symptoms or nagging questions or the sometimes overwhelming process of diagnostics, treatment, and follow-up, or to begin a preventative program, cancer opens them to an entirely new dimension. This new dimension, the baffling world of oncology (the branch of medicine concerned with the study, diagnosis, treatment, and prevention of cancer), with its own puzzling language, mysterious equipment, mystifying tests, and peculiar processes.

As I often do in my practice, let me offer a brief overview of the "Big C."

What Is It?

Cancer (the medical term is malignant neoplasm) is a class of diseases that occurs when a group of cells (the body's basic building blocks) displays uncontrolled growth (division beyond the normal limits), invasion (intrusion

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on and destruction of adjacent tissues), and sometimes metastasis (spread to other locations in the body via lymph or blood). Within the body, when healthy cells go "bad," they multiply and invade both organs and entire organ systems. These bad cells cause cancer—perpetual abnormal growth rather than perpetual normal growth.

These abnormalities may be due to the effects of carcinogens, such as tobacco smoke, radiation, chemicals, or infectious agents (see more about risk factors in chapter 3). Other cancer-promoting genetic abnormalities may be randomly acquired through errors in DNA replication, or are inherited, and thus present in all cells from birth.

Cancer is a group of many related diseases that begin in cells, the body's basic building blocks.

Why Do Cells Play Such an Important Role?

To understand cancer, it is helpful to know more about the body's cells and what happens when normal cells become cancerous.

Every cell in the body has a control center called a nucleus. The nucleus contains the information that tells the cell what to do and when to grow and divide. This information is contained in genes, which are the building blocks of chromosomes. Within the nucleus of each cell are 23 pairs of chromosomes, the unique combination of which make up *you*. These chromosomes are passed from parent to child. One chromosome of each pair is inherited from the mother, and the other comes from the father. This is why children resemble their parents, both physically and in their tendency to develop certain diseases.

Chromosomes are made up of long strands of a substance called DNA (deoxyribonucleic acid), which is a collection of molecules arranged in a unique sequence. Within each chromosome there are hundreds, even thousands, of genes. Genes are segments of DNA that tell the cell to do a specific task, usually to make a particular protein. Each protein has a specific job: certain proteins help one cell divide into two, while others prevent the cell from dividing at all.

A cell uses its genes selectively, that is, it will activate, or "turn on," the genes it needs at the right moment. Some genes stay active all the time; others shut down when their job is finished. The body is made up of many types of

cells, and normally, these cells grow and divide to produce more cells as they are needed to keep the body healthy.

In this process, genes serve two roles in relation to cancers: some contribute to the development of cancer and others protect us from cancer. When this orderly process goes wrong, a cancer occurs, since the genetic message has been destroyed or processed incorrectly because of a dysfunction in the master oncogenes (genes that contribute to the conversion of normal cells to cancer cells) controlled in the brain.

That dysfunction results in the stem cells being unable to link to the body's genetic material in a healthy way. New cells form even though the body does not need them, and old cells do not die when they should. The extra cells form a mass of tissue, called a growth or tumor.

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What Determines the Difference Between Benign and Malignant?

Most cancers form a tumor but some, like leukemia, do not. Even when a tumor is formed, not all are cancerous. These tumors can be benign or malignant, and the difference determines both diagnosis and treatment of these tissues:

- Benign tumors are not cancer. Usually they can be removed and, in most cases, they do not come back. Cells in benign tumors do not spread to other parts of the body. Most importantly, benign tumors are rarely a threat to life. Benign tumors are named using *-oma* as a suffix, with the organ name as the root. For instance, a benign tumor of the smooth muscle of the uterus is called leiomyoma (the common name of this frequent tumor is fibroid). Unfortunately, some malignant tumors also use the -oma suffix, examples being melanoma and seminoma.
- Malignant tumors are cancerous. The cells in malignant tumors are abnormal and divide without control or order. Cancer cells invade and destroy the tissue around them. Cancer cells can also break away from a malignant tumor and enter the bloodstream or lymphatic system, which can carry the cells to all the tissues of the body. By moving through the bloodstream or lymphatic system, cancer can spread from the primary (original) cancer site to form new tumors in other organs. The spread of cancer is called

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metastasis. These malignant tumors (cancers) are usually named using *-carcinoma, -sarcoma* or *-blastoma* as a suffix, with the Latin or Greek word for the organ of origin as the root. For instance, a cancer of the liver is called hepatocarcinoma; a cancer of the fat cells is called liposarcoma. For common cancers, the English organ name is used.

What Are the Different Classifications of Cancers?

Cancers are classified by the type of cell that resembles the tumor and, therefore, the tissue presumed to be the origin of the tumor. Examples of general categories include the following:

- **Carcinomas** are malignant tumors derived from epithelial cells (closely packed cells forming the epithelium, which is membranous tissue covering internal organs and other internal surfaces of the body). This group represents the most common cancers, including the common forms of breast, prostate, lung, and colon cancer.
- **Sarcoma** are malignant tumors derived from connective tissue, or mesenchymal cells which develop at different locations into any of the types of connective or supporting tissues, such as smooth muscle, vascular endothelium, and blood cells.
- **Lymphoma and leukemia** are malignancies derived from hematopoietic (blood-forming) cells.
- **Germ cell tumors** are derived from totipotent cells (totipotency is the ability of a single cell to divide and produce all the different cells throughout an organism) and most often for adults are found in the testicles and ovaries. Among babies (born and unborn) and young children, germ cell tumors are most often found on the body midline, particularly at the tip of the tailbone.
- **Blastoma** or blastic tumors are usually malignant and resemble an immature or embryonic tissue. They occur most often in children.

Who Is Affected?

There is rarely a person in the world who has not been touched by cancer, either directly or indirectly. Around the world, one in eight deaths worldwide is due to cancer. It is estimated that there will be more than 12 million new cancer

cases each year worldwide, of which 5.4 million will occur in economically developed countries and 6.7 million in economically developing countries. The corresponding estimates for total cancer deaths each year are 7.6 million (about 20,000 cancer deaths a day), 2.9 million in economically developed countries and 4.7 million in economically developing countries.

Globally, cancer causes more deaths than AIDS, tuberculosis, and malaria combined! It is the second leading cause of death in economically developed countries (following heart diseases) and the third leading cause of death in developing countries (following heart diseases and diarrhoeal diseases). Cancer is increasing in developing countries as childhood mortality and deaths from infectious diseases decline and more people live longer. Additionally, as more and more people in developing countries adopt the lifestyle behaviors of more advanced nations (tobacco use, saturated fat and high-calorie foods, and reduced physical activity are among the worst trends), rates of cancers now common in Western countries will rise in the developing regions if preventive measures are not widely taught, encouraged, and practiced.[1]

By 2050, the global burden is expected to grow to 27 million new cancer cases and 17.5 million cancer deaths simply due to the growth and aging of the population. The charts and graphs in this chapter provide additional statistics on cancer cases, survival rates, and deaths.

In the United States alone, 1.4 million new cases of cancer are diagnosed each year, and more than 550,000 people will die of the disease, now the second leading cause of death in the U.S.[2] The good news, however, is that improvements in cancer detection, diagnosis, and treatment have increased the survival rate for many types of cancer, and 64 percent of all people diagnosed with cancer will be alive five years after diagnosis. [3]

In economically developed countries, the three most commonly diagnosed cancers among men are prostate, lung/bronchus, and colorectal; in women it is breast, colorectal, and lung/bronchus. In economically developing countries, the three most commonly diagnosed cancers in men are lung/bronchus, stomach, and liver; for women it is breast, cervix/uteri, and stomach. In both economically developed and developing countries, the three most common cancer sites are also the three leading causes of cancer death.

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What Does and Doesn't Cause Cancer?

There are many myths about cancer and all disease. You can read about all those crazy ideas and wild claims of cures on the Internet. Then disregard 99 percent of all of them.

There are many risk factors (more about these in chapter 3), but it is important to know up front that cancer is not caused by an injury or bruise. Neither is it contagious. Although infections of certain contagious viruses, including the human papillomavirus (HPV), hepatitis B and C (HepB and HepC), and human immunodeficiency virus (HIV), increase the risk of some types of cancer, but a person cannot catch cancer from someone who has one of these diseases.

How Is Cancer Diagnosed and Treated?

Diagnosis usually requires histological examination (tissue biopsy under a microscope), although the initial suspicion of malignancy can be through a variety of symptoms, physician findings, lab results, or radiographic imaging abnormalities.

Most cancers can be treated and some cured, depending on the specific type, location, and stage. Once diagnosed, cancer is usually treated with a combination of surgery, chemotherapy, and/or radiotherapy. As research continues, treatments are becoming more advanced and specific for different types of cancer. There has been significant progress in the development of targeted therapy drugs that act specifically on detectable molecular receptors in certain tumors, and which minimize damage to normal cells. The prognosis of cancer patients is most influenced by the type of cancer, as well as the stage, or extent of the disease. In addition, histological grading and the presence of specific molecular markers can also be useful in establishing prognosis, as well as in determining individual treatments.

What Are the Costs of Cancer?

In addition to the human toll of cancer, the financial cost of cancer is substantial. The direct costs include payments and resources used for treatment, as well as the costs of care and rehabilitation related to the illness. Indirect costs include the loss of economic output due to days missed from work (morbidity costs)

and premature death (mortality costs). There are also hidden costs of cancer, such as health insurance premiums and nonmedical expenses (transportation, child or elder care, housekeeping assistance, wigs, etc.). Data limitations do not allow estimating the worldwide economic costs of cancer. However, the costs of cancer are staggering. With the growth and aging of the population, prevention efforts are important to help reduce new cancer cases, human suffering, and economic costs.

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What about the Chances for Survival?

For a growing number of people around the world, breakthroughs in cancer testing and treatment have provided a new window of hope. For example, the rate of cancer survival of all stages of melanoma over five years is 91.5 percent, breast cancer 88.5 percent, kidney cancer 65.6 percent, colorectal cancer 64.1 percent, and mouth/pharynx cancer 58.8 percent. Ongoing research and clinical trials with other types of cancer are also showing promising results. It just may be that in our lifetime, we will find a cure for cancer.

How Can I Prevent Cancer?

According to the American Cancer Society, it is estimated that more than half of all new cancers and cancer deaths worldwide are potentially preventable. Cancers related to tobacco use, heavy use of alcohol, and obesity are most effectively prevented through a combination of education and social policies that encourage healthy behaviors and discourage unhealthy practices.

Certain cancers that are related to infectious agents, such as hepatitis B (HBV), human immunodeficiency virus (HIV), human papilloma virus (HPV), and helicobacter pylori (H. pylori), could be prevented through known interventions such as vaccines, antibiotics, improved sanitation, and education. Colorectal and cervical can be avoided by detection and removal of precancerous lesions through regular screening examinations by a healthcare professional.

Early detection of cancer is important, as it provides a greater chance that treatment will be successful. Cancers that can be detected at an early stage through screening include breast, cervix, colorectal, prostate, oral cavity, and skin. Screening has been proven effective in reducing the severity of disease and mortality for all of these sites except prostate and skin cancers.

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What Is the Key?

Cutting-edge research for cures for different types of cancer could bring breakthroughs in the coming year. Certainly we are seeing major advancements in the diagnosis and treatment of the disease; however, we cannot wait for science. Each of us must take our health into our own hands.

As explained in part 3 of this book, aging is marked by repair debt. When we fall in repair debt, our body develops more precancers. The good news is that we can reverse the body's trend toward aging and disrepair by taking better care of ourselves today. This involves taking the initiative for early and frequent testing, understanding the latest breakthroughs in medical treatment, boosting our health with bioidentical hormones, and making lasting lifestyle changes.

Your Cancer Battle Plan focuses on the diagnosis and treatment of this dreaded (but not unbeatable) disease. The greatest emphasis will be on winning the biggest battle of all—beating the odds by preventing cancer through a protocol of early and frequent testing combined with a multimodal approach including an individualized program of exercise, hormone replacement, nutritional supplementation, medications, and diet.

Looking Ahead

It is my hope that this brief overview has helped you in navigating through the sometimes-baffling world of oncology and its unique language. The overview of specific types of diseases continues in chapter 2.

Just remember that no matter where you are in the process, your survival and success depends on your attitude and internal strength. Through the years, I have found that when I work with each one of my cancer patients, success is based on finding the right treatment options that address not only the disease, but also total well-being.

You must insist on this type of treatment from your physician as well. Fighting cancer is a team effort that will only yield results if everyone is on the same page—your physician, medical team, family, friends, support group, and you—working synergistically together!

Chart 1.1

Estimated New Cancer Cases in 2007 by United Nations Area

	Worldwide	**12,332,300**
1	Eastern Africa	290,100
2	Middle Africa	87,800
3	Northern Africa	142,100
4	Southern Africa	78,100
5	Western Africa	166,300
6	Caribbean	73,500
7	Central America	184,800
8	South America	733,100
9	North America	1,745,400
10	Eastern Asia	3,313,600
11	Southeastern Asia	618,800
12	South Central Asia	1,451,700
13	Western Asia	225,900
14	Eastern Europe	939,500
15	Northern Europe	448,700
16	Southern Europe	675,000
17	Western Europe	950,500
18	Australia/New Zealand	117,700
19	Melanesia	7,700
20	Micronesia	700
21	Polynesia	900

Source: American Cancer Society. *Cancer Facts & Figures 2007*.

Chart 1.2

Five-Year Relative Survival (%) for Selected Cancers among Men and Women (Aged 15 and Older)

	United States (1996–2002)		**Europe** (1990–1994)	
	Males	**Females**	**Males**	**Females**
Acute lymphocytic leukemia	32.0	31.3	24.2	21.6
Brain	23.4	25.8	16.4	18.5
Breast (female)	–	88.5	–	6.1
Colon	65.2	62.4	49.2	51.0
Corpus uteri	–	84.1	–	76.0
Esophagus	15.4	15.9	8.5	10.5
Hodgkin's lymphoma	82.8	86.2	75.2	81.5
Kidney	65.2	64.6	54.2	57.2
Larynx	65.9	57.5	60.7	59.4
Chronic lymphocytic leukemia	72.6	75.2	62.2	66.4
Liver	9.9	11.5	6.2	6.7
Lung & bronchus	13.1	17.2	9.7	9.6
Melanoma of the skin	90.1	93.1	74.8	84.3
Multiple myeloma	35.4	30.1	28.5	33.0
Non-Hodgkin's lymphoma	59.9	64.8	47.7	53.7
Oral cavity & pharynx	57.5	61.1	28.7	43.5
Ovary	–	44.4	–	36.7
Prostate	99.9	–	65.4	–
Stomach	22.7	25.6	20.0	25.4
Testis	95.7	–	91.4	–
Thyroid	94.5	97.3	71.8	81.4
Urinary bladder	82.8	75.4	69.5	67.1
Uterine cervix	–	71.6	–	62.1
All sites	**65.2**	**64.7**	**39.8**	**51.2**

Source: NCI Seer Program Data, 1994–1998.

Chart 1.3

Trends in 5-year Relative Survival (%)* Rates, U.S., 1975–2004

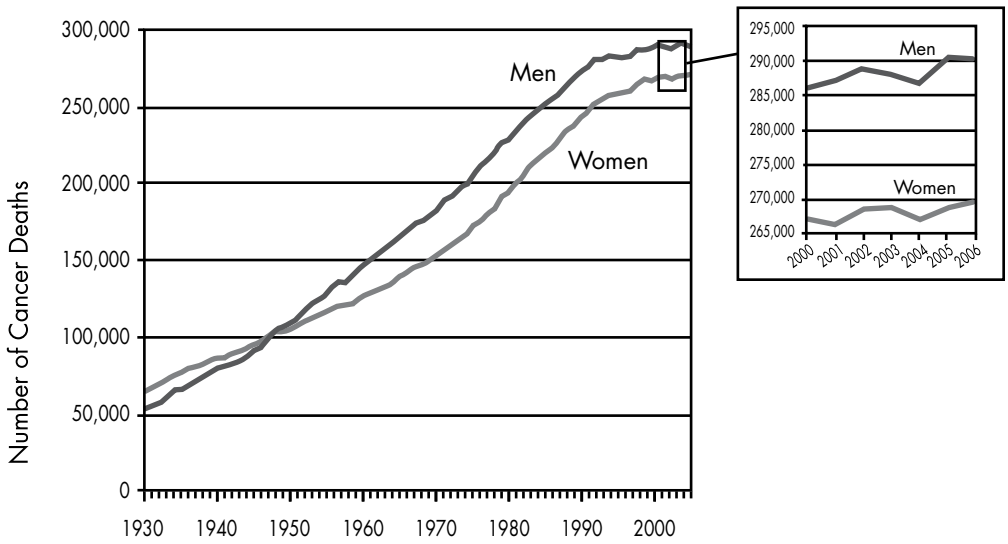
Site	1975–1977	1984–1986	1996–2004
All sites	50	54	66
Breast (female)	75	79	89
Colon	52	59	65
Leukemia	35	42	51
Lung and bronchus	13	13	16
Melanoma	82	87	92
Non-Hodgkin's lymphoma	48	53	65
Ovary	37	40	46
Pancreas	3	3	5
Prostate	69	76	99
Rectum	49	57	67
Urinary bladder	74	78	81

*5-year relative survival rates based on follow-up of patients through 2005.

Source: Surveillance, Epidemiology, and End Results Program, 1975–2005, Division of Cancer Control and Population Sciences, National Cancer Institute, 2008.

Graph 1.1

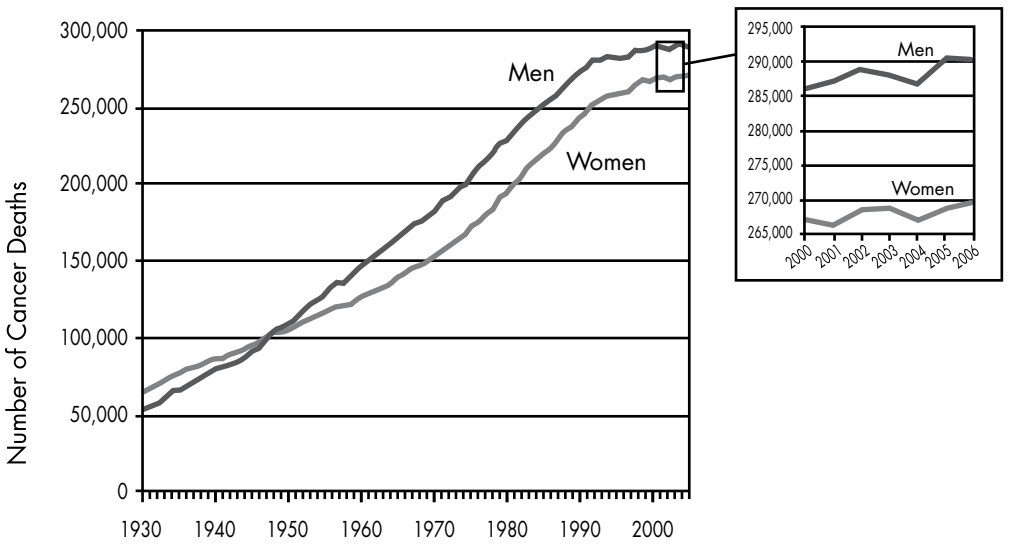
Trends in the Number of Cancer Deaths Among Men and Women, U.S., 1930–2006



Source: U.S. Mortality Data, 1930–2006, National Center for Health Statistics, Centers for Disease Control and Prevention, 2009.

Graph 1.2

Trends in the Number of Cancer Deaths Among Men and Women, U.S., 1930–2006



Source: U.S. Mortality Data, 1930–2006, National Center for Health Statistics, Centers for Disease Control and Prevention, 2009.

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Cancer by Any Other Name

Notes

Let's recap a few cancer basics: when masses of tissue form a tumor, not all are cancerous. These tumors can be benign (not cancerous) or malignant (cancerous), and the difference determines both diagnosis and treatment of these tissues.

Malignant cancers are generally classified by their origin as judged by the organ cell that the tumor cells resemble. Examples of general categories include the following:

- **Adenocarcinoma**—originates in glandular tissue. This cancer is most commonly associated with cancer in your lungs (it is responsible for around 40 percent of all lung cancer cases diagnosed every year), but is actually a glandular tissue cancer that can affect cells in any tissue of this type and includes cancer of the stomach, breast, cervix, lung, prostate, pancreas, and colon, as well as any other internal organ.
- **Blastoma**—originates in the embryonic tissue of organs. The term is commonly used as part of the name for a tumor, such as glioblastoma and medulloblastoma (brain tumors), hepatoblastoma (liver tumor), nephroblastoma (Wilms tumor of the kidney), neuroblastoma (childhood tumor of neural origin), osteoblastoma (bone tumor) and retinoblastoma (tumor of the retina).

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- **Carcinoma**—derived from epithelial cells, the closely packed cells forming the epithelium, which is membranous tissue covering internal organs and other internal surfaces of the body (tissue that lines organs and tubes). This group represents the most common cancers, including the common forms of breast, prostate, lung, and colon cancer.
- **Leukemia**—originates in tissues that form blood cells, is a cancer of the blood or bone marrow, and is characterized by an abnormal multiplication of blood cells, usually white blood cells. Leukemia is a broad term covering a number of blood cell diseases. An estimated 245,225 people in the United States are living with, or are in remission from, leukemia. An estimated 44,790 new cases of leukemia will be diagnosed in the United States in 2009.[1]
- **Lymphoma**—another blood disease (as is leukemia and myeloma) derived from hematopoietic (blood-forming) cells. Lymphoma is the most common type of blood cancer in the United States. It is the sixth most common cancer in adults and the third most common in children. Lymphomas fall into two major categories—Hodgkin's lymphoma (HL, previously called Hodgkin's disease) and all other lymphomas (non-Hodgkin's lymphomas or NHLs). Non-Hodgkin's lymphoma is far more common than Hodgkin's disease.
- **Myeloma**—starts in plasma cells, a type of white blood cell. It is the most common type of plasma cell cancer. In time, myeloma cells collect in the bone marrow. They may damage the solid part of the bone. When myeloma cells collect in several of your bones, the disease is called "multiple myeloma." This disease may eventually harm other tissues and organs, such as the kidneys.[2]
- **Sarcoma**—derived from connective tissue, or mesenchymal cells, which develop at different locations into any of the types of connective or supporting tissues (such as bone, cartilage, muscle), to smooth muscle, to vascular endothelium, and to blood cells). Sarcomas are a rare type of malignant tumor that can be divided into two groups: bone sarcomas and soft tissue sarcomas. Each year, approximately 8,900 new cases of bone and soft tissue sarcomas are diagnosed. Of the approximate 8,900 new cases, 650–700 children and adolescents younger than 20 years

of age are diagnosed with bone sarcomas and 850–900 with soft tissue sarcomas.[3]

As mentioned earlier, most cancers are named for where they start. For example, lung cancer starts in the lung, and breast cancer starts in the breast. Lymphoma is cancer that starts in the lymphatic system. Leukemia is cancer that starts in white blood cells (leukocytes).

Top 40 List of Cancers

Every part of the body can become cancerous with one of the above classifications of cancer, including organs, bones, skin, and connecting tissue. Following is an alphabetical list of 40 of the most common types of cancer.[4]

1. **Adrenal Gland Cancer**—a rare form of carcinoma that originates in the adrenal glands which are located on top of the kidneys. The most common type is called adrenocortical carcinoma (may produce both pain and symptoms related to increased hormone production). Other types of adrenal cancers are pheochromocytoma (extremely rare, most often occurring among men and women in their 30s and 40s), and neuroblastoma (often in infants and children).
2. **B-Cell Lymphoma**—B-cells, in the normal immune system, fight bacteria. However, when they mutate, become cancerous, and begin cloning the mutated cell, the condition is called B-cell lymphoma. It takes several forms including diffuse and mediastinal. The most common form is diffuse large B-cell lymphoma, a high-grade lymphoma that requires prompt treatment to avoid spreading.
3. **Basal Cell Cancer**—the slowest-growing and most common skin cancer (90 percent of all skin cancers), basal cell and less-common squamous cell skin cancers typically occur on areas that receive more sun exposure (hands, arms, neck, and face).
4. **Bile Duct Cancer**—starts in the bile duct, a thin tube, about four to five inches long, that connects the liver to the small intestine. Most bile duct cancers are adenocarcinomas.
5. **Bladder Cancer**—most commonly a transitional cell carcinoma affecting the hollow oval-shaped organ in the pelvis with flexible, muscular

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walls that receives urine from the kidneys through the urethra. This may also be squamous cell carcinoma, adenocarcinoma, sarcoma, and small cell carcinoma.

6. **Bone Cancer**—may include primary cancers that originate in tissue of the bone or secondary bone cancers that start in another part of the body and spread to the brain. Bone cancers are generally a form of sarcoma.
7. **Brain Cancer**—may include primary cancers that originate in the brain or secondary cancers that start in another part of the body and spread to the brain. The most common primary brain tumors are gliomas, meningiomas, pituitary adenomas, vestibular schwannomas, and primitive neuroectodermal tumors (medulloblastomas), tumors named after the part of the brain or the type of brain cell from which they arise.
8. **Breast Cancer**—cancer developing in the breast's lobules is termed lobular cancer. Other less common types of breast cancer include inflammatory breast cancer, medullary cancer, phyllodes tumors, angiosarcoma, mucinous (colloid) carcinoma, mixed tumors, and Paget's disease (a type of cancer involving the nipple).
9. **Cervical Cancer**—starting in the lower part of the uterus that opens at the top of the vagina, these cancers begin in the cells on the surface of the cervix as either squamous or columnar (also called adenocarcinoma).
10. **Colon Cancer**—also called colorectal cancer, this disease occurs in the large intestine (colon) or the rectum (end of the colon). Most are adenocarcinomas, tumors that develop from the glands lining the colon's inner wall.
11. **Endometrial Cancer**—these begin in the inner lining of the uterus or womb (see also Uterine Cancer).
12. **Esophageal Cancer**—beginning in the esophagus (the tube that connects your throat with your stomach), this occurs as both squamous cell carcinoma and adenocarcinoma.
13. **Gallbladder Cancer**—occurs in the oval organ that is actually an extension of the bile duct that carries bile (a fluid manufactured by the liver to help digest fat) from the liver to the intestine. More than 9 out of 10 gallbladder cancers are adenocarcinomas.

14. **Hodgkin's Lymphoma** (sometimes called Hodgkin's disease)—one of the basic categories of lymphomas that occurs in the lymph or immune system, HL generally begins in lymph nodes in the upper part of the body.
15. **Intestinal Cancer** (also see Colon Cancer)—occurs in the lower gastrointestinal tract (intestines and the anus) and may include adenocarcinoma, sarcoma, carcinoid tumors, gastrointestinal stromal tumors and lymphomas.
16. **Kidney Cancer**—can be divided into two major groups, renal parenchyma cancers (the most common form of kidney cancer in adults) and renal pelvis cancers (transitional cell cancer or carcinoma is a less common form of kidney cancer).
17. **Laryngeal Cancer**—most cancers in the head and neck region, including the larynx, are squamous cell carcinomas (tumors that develop in the tissue that lines the hollow organs of the body); however, other tumor types also occur in the head, neck, and larynx, including lymphoepithelioma, spindle cell carcinoma, verrucous cancer, undifferentiated carcinoma and cancers of the lymph nodes (lymphoma, including non-Hodgkin's lymphoma).
18. **Leukemia**—occurs in the blood cells, starting in the bone marrow (the soft tissue inside most bones). There are two major classifications of leukemia: myelogenous and lymphocytic (depending upon which cell type is involved), and each type of leukemia can be acute (rapidly progressing) or chronic (slowly progressing).
19. **Liver Cancer**—several types of tumors can develop in this vital organ, including hepatocellular carcinoma (HCC, common in the young), hepatoblastoma (most form in the right lobe and occur more commonly in children), cholangiocarcinomas (bile duct cancers which account for 10–20 percent of all liver cancers), and angiosarcomas and hemangiosarcomas (rare forms of cancer that start in the blood vessels of the liver).
20. **Lung Cancer**—the deadliest type of cancer for both men and women, there are two main types of lung cancer—non-small cell lung cancer (NSCLC, the most common type, comprising more than 80 percent of lung cancers) and small cell lung cancer (SCLC, about 20 percent of all

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