MAYO CLINIC
Cancer Center

# Together

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# Debunking Cancer Myths

## An interview with a Mayo Clinic specialist

Timothy Moynihan, M.D.

## Inside this issue



As advances in the detection, diagnosis and treatment of cancer have increased, you may have discovered more opportunities to learn the facts about this disease. Yet some misleading ideas about cancer and cancer treatment still persist. Timothy Moynihan, M.D., a cancer specialist at Mayo Clinic, Rochester, Minn., helps debunk some of the most common misconceptions and explains the truth about them.

### *A positive attitude is all you need to beat cancer.*

Although many popular books on cancer talk about fighters and optimists, there's no scientific proof that a positive attitude gives you an advantage in cancer treatment or improves your chance of being cured.

What a positive attitude can do is improve the quality of your life during cancer treatment and beyond. You may be more likely to stay active, maintain ties to family and friends, and continue social activities. In turn, this may enhance your feeling of well-being and help you find the strength to deal with your cancer. A positive attitude may also help you become a more informed and active partner with your doctor during cancer treatment.

### *If we can put a man on the moon, we should have a cure for cancer by now.*

Cancer actually includes a large group of diseases. Each can be caused by many different factors. Despite advances in diagnosis and treatment, doctors still have much to learn about what triggers a cell to become cancerous and why some people with cancer do better than others.

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In addition, cancer is a moving target. Cancer cells may continue to mutate and change during the course of the disease. This may lead to the cancer cells no longer responding to the chemotherapy drugs or radiation treatments that were given initially.

Finding the cure for cancer is, in fact, proving to be more complex than mastering the engineering and physics required for space flight.

## *Drug companies and the Food and Drug Administration (FDA) are blocking or withholding new cancer treatments.*

Going through cancer treatment is never easy. Even when things are going well, it's natural to become frustrated and wish for a magic bullet to cure your cancer. You might even wonder if such a treatment is being withheld.

That's not the case. Your doctor and the FDA, which must approve new drugs before they can be marketed, are your allies. As such, they make your safety a high priority. Unfortunately, scientific studies to determine cancer treatment's safety and effectiveness take time. That may create the appearance or lead to reports that effective new treatments are being blocked. However, the thorough testing required has kept many unsafe and ineffective drugs from being used in the United States.

Hiding or withholding an important treatment advance would be difficult because the public has many ways to access medical information. In addition to verbal, print, video and electronic means, you may even gain access to information about experimental treatments by participating in a clinical trial.

If you still believe a cure is being purposefully withheld, ask yourself why a doctor may choose to specialize in cancer research. Oftentimes doctors go into cancer research because they have a family member or friend affected by the disease. They're just as interested in finding a cure as anyone else, for exactly the same reason — it affects them personally. They hate to see a loved one in pain and don't wish to lose this person. They also want to spare others what they have gone through.

As to suggestions that organizations keep cures a secret because they would otherwise lose their sources of funding, human nature makes this scenario highly unlikely. It is indeed an unusual human being who would pass up the prestige associated with finding a cure in order to keep funds flowing to a research organization.

## *Regular checkups and today's medical technology can detect all cancer early.*

Routine screening has clearly led to an impressive decrease in deaths from several cancers, including cervical, breast and colon cancers. Although regular medical care can indeed increase your ability to detect cancer early, it can't guarantee it. Cancer is a complicated disease, and there's no sure way to always spot it. Cancer cells can grow anywhere in your body — often deep within it. Until the cancer

reaches a certain size, there isn't a technology or exam capable of detecting it. By the time you feel a breast cancer lump, for instance, the cancer may have been there for four to six years. Scientists are looking for tests capable of detecting cancers even earlier, but these tests are experimental and have not yet been proved effective.

*Source: MayoClinic.com*

*Timothy Moynihan, M.D.*

## *General Cancer Resources*

MayoClinic.com
http://www.mayoclinic.com

American Cancer Society
http://www.cancer.org

National Cancer Institute
http://www.cancer.gov/

*Cancer and the Environment: What You Need to Know, What You Can Do.*
Publication is available to order online from cancer.gov under NCI publications.

# National Cancer Survivors Day Celebration

## *Sunday, June 4, 2006*

**ROCHESTER, Minn.** -- Save the date now and plan to participate in the 19th Annual National Cancer Survivors Day event on Sunday, June 4, 2006. We invite you, your family and friends to join us in a celebration to honor people whose lives have been touched by cancer. National Cancer Survivors Day is an annual international celebration of life that is held in more than 700 communities throughout the United States and Canada.

The Rochester-area celebration will be held from 11:30 a.m. to 3:00 p.m. on Sunday, June 4, at the Mayo Civic Center Auditorium, located at 30 Civic Center Drive S.E. in Rochester, Minn. The celebration will include a catered lunch by the Canadian Honker Restaurant starting at Noon, followed by a program to celebrate and honor cancer survivors at 1:00 p.m. Other activities will include local entertainment, games, music, bingo, plus door prizes for children and the entire family.

"This celebration of life is for everyone," says Janine Kokal, chair of the local planning committee. "Whether you're a cancer survivor, a family member, a friend or a medical professional, National Cancer Survivors Day provides an opportunity for cancer survivors to connect with other survivors, and reunite with medical staff and families they've met along the way. Having the opportunity to meet other cancer survivors, especially the many long-term survivors, is an inspiring experience for all of us."

Locally, the Rochester event is sponsored by Mayo Clinic Cancer Center and the American Cancer Society. Five hundred people are expected to attend the event again this year, please plan to join us.

The Rochester-area celebration is free-of-charge, but reservations are required by May 26, 2006 for meal planning purposes. **Please call the American Cancer Society - Rochester Office at 1-888-535-4227 for the Rochester-area event.**

Please call the National Cancer Survivors Day Foundation at 615-794-3006 for more information about a survivorship event in your local area.

# Role of Exercise in Cancer

**By Maik H. Schutze**

### What are the benefits of a physical activity program?

Scientific research clearly demonstrates that physical activity plays a major role in preventing several diseases and in reducing risk factors for many other illnesses, including cancer. Regular physical activity provides many benefits such as controlling excess body weight and improving heart and lung function. Maintaining muscular strength, endurance and flexibility are also important and help contribute to a higher quality of life. Continuous exercise (e.g., walking, pool exercises and bicycling) improves the function of the heart and lung systems, and being physically fit means having more energy to enjoy all pleasures of life.

### How does exercise affect cancer risk and can exercise help prevent certain cancers?

Maintaining a healthy body weight has been shown to reduce the incidence of cancer. Obesity increases the risk for several cancers, and regular exercise can help maintain a healthy body weight. Regular physical activity also improves physical functioning by increasing endurance, muscular strength, and flexibility.

Many factors combine to strengthen the body. Scientific evidence shows that a regular physical activity program reduces the risk for colon cancer. The risk for several hormone-related cancers, such as breast, endometrial, prostate, and testicular, has also been shown to be reduced through exercise. Regular exercise also strengthens the stress-response mechanisms of the body, making it more resilient in managing the physical changes and stresses associated with disease.

### How much exercise is needed to receive its positive effects?

An exact answer is difficult to quantify because of individual differences. The most recent recommendation by federal agencies states that 30 to 45 minutes of moderate to vigorous physical activity most days of the week helps individuals maintain a healthy weight and may prevent diseases such as cancer. Think of enjoyable ways to include physical activity into your daily life.

People who have not been active or only minimally active should gradually increase daily exercise to 30 minutes of moderate activity at least five days a week. Moderate levels of physical activity can be achieved by a brisk walk. Vigorous activity is defined by an increase in heart rate, breathing, and the onset of sweating.

### Can I exercise during treatment? What are the benefits?

Yes. But it may be wise to start slowly and to monitor your response to physical activity. Engage in favorite activities to reduce anxiety and other stresses that may be detrimental to your treatment. Enjoy leisurely walks with friends and family. For many people going through cancer treatment, fatigue may make physical activity difficult. Fatigue has many causes such as depression, poor nutrition, poor-quality sleep, side effects of medications, or the cancer itself. Maintaining or starting some physical activity, however, can help with managing fatigue issues, as well as alleviating constipation or other side effects of cancer treatment.

### Are there reasons for not exercising?

A reason for not exercising may be extreme fatigue and an inability to recover from very short bouts of activity, or certain blood counts such as red blood cells, white blood cells, or platelets may be too low. Talk with your doctor or chemotherapy nurse about your blood counts and any limitations or precautions that may be necessary. Generally speaking, however, even a few minutes of relatively light activity (standing, short walks) can make a difference in your sense of well-being. Try to incorporate short intervals of physical activity into your day.

### What exercise program is right for me?

Talk with your doctor before beginning an exercise program, however, most exercise programs that gradually increase in intensity are fine. All programs should start slowly and then progressively increase in intensity over months of training. Exercise routines should always start with a general warm-up to slowly increase body temperature and heart rate. The general warm-up can be followed by a stretching routine to improve joint motion. Beginners should gradually increase to 30 minutes of moderate exercise five days a week. A great example of moderate exercise is a brisk walk. More vigorous exercise increases heart rate and the depth of breathing. Current physical activity guidelines recommend 30 to 45 minutes of moderate exercise on most days of the week or three days of vigorous exercise lasting at least 20 minutes per session for healthy adults. If you are dealing with a cancer diagnosis and treatment issues, you may need to modify those recommendations to what is safe and reasonable for you. Regardless of your health status, however, a well-balanced exercise program includes endurance, strength, and stretching exercises.

*Mark H. Schutze, CSCS, Health and Wellness Specialist, Dan Abraham Healthy Living Center*

# Clinical Trials and Patient Advocacy: A Growing Force

**By Cynthia Chauhan**

*Cynthia Chauhan*
*Cancer Survivor, Co-chair of the NCCTG Patient Advocacy Group*

Within the last year, I have been invited to visit two North Central Cancer Treatment Group (NCCTG) member practices in Wisconsin and Illinois and have been overwhelmed by the altruism in those communities. These facilities are part of the NCCTG consortium of community oncology practices that conduct cancer clinical trials with Mayo Clinic as their research base.

Last spring, I visited Green Bay, Wis., and learned that the passion of that community is not just football. I spent a week before my visit being tutored by my football-fanatic sister on who Brett Favre is and why it matters. But while the football stadium there is beautiful and football may be in the heart of Green Bay, it is not the driving force of that community. They are motivated by loving, active concern for others.

I was invited to speak at St. Vincent Regional Cancer Center, a Community Clinical Oncology Program (CCOP), where Anthony J. Jaslowski, M.D., is the NCCTG principle investigator (PI). I was cautioned that few, if any, people would come to hear me speak about patient advocacy. Well, they came. On a weekday evening, 75 people who have been on clinical trials in Green Bay came to the presentation wanting to explore how they might expand their roles in the community to include teaching others about cancer clinical trials. I discussed the different kinds of advocacy and the rich rewards that come from doing this type of volunteer work. Dr. Jaslowski's research coordinator, Jolene Cheslock, who is also the patient advocate liaison, spoke about the importance of clinical trials in cancer research, emphasizing the selfless dedication to the future inherent in the decision to participate in a trial. Since that meeting, with Jolene's guidance and support, Green Bay has developed a strong core group of patient advocates from the meeting attendees. These advocates continue to have regularly scheduled meetings.

In the autumn, I visited Peoria, Ill., where participation in clinical trials, both treatment and prevention, is also extraordinary. Oncology Hematology Associates of Central Illinois (OHACI) has a beautiful, inviting, prairie-style building where patients look out over a lake while receiving their chemotherapy. Entering the building, you are warmly greeted by volunteers who are themselves cancer survivors or caregivers. Throughout the building, which was designed by the staff, the thoughtful attention to details in making treatment as efficient and comfortable as possible is evident. Even the small things matter and the Peoria folks know it and act on that knowledge.

When the NCCTG PI there, John Kugler, M.D., and his staff sent out invitations to former clinical trial participants to come learn about patient advocacy, the response was so great that we held four meetings with about 50 people at each one. The volunteer coordinator, Laura Matus, a high energy, enthusiastic person who infuses OHACI's volunteers with a "can do" radiating optimism, started each meeting with an icebreaking exercise that relaxed everyone and focused us on sharing our gifts. Heather Burks, a research coordinator, discussed the importance of trial participants and patient advocates. I spoke about possibilities for patient advocacy. Other presenters were also part of the event. We concluded the evening with a questionnaire on which participants could indicate areas of interest for volunteering.

At Green Bay and Peoria, I met with the staff to talk about the role of patient advocates and ways to incorporate advocates into the agency structure. Each program develops and utilizes its advocates very individually. If you visit Green Bay and Peoria, you won't see rubber-stamp models. You'll see individually tailored, community-based, community-oriented programs that bring out the best each person has to offer.

I came away from those meetings reinforced in my belief that each community has a core of cancer survivors who are ready, eager and able to help other patients through their diagnosis and treatment. They want to help their communities learn about the availability of cancer clinical trials and the importance of cancer research. What's needed are coordination and direction.

The NCCTG Patient Advocacy Committee supports the community advocates with quarterly telephone conferences, a list-serv, and a yearly symposium.

The NCCTG 2006 Symposium, to be held in Rochester, Minn., Aug. 7-9, will focus on these topics:

- Bringing cancer clinical trials to communities where patients live
- NCCTG community advocates
- Informing and supporting patients, families, and communities

More information on NCCTG Patient Advocacy can be obtained by emailing the Operations Office at ncctg@mayo.edu.

# Survivor
# Kathy Anderson

**Written by Nicole Bennett Engler**

**At age 47, Kathy Anderson seemed to have life perfectly under control.** Married with two children and happy in her career as an eighth-grade literature teacher in scenic Wisconsin Dells, Wis., life couldn't get much better, she thought.

When she began to experience fatigue, aching joints and hair loss, her doctors agreed that it was the onset of menopause.

But when her rheumatologist suggested blood tests that later revealed an elevated white blood count level, she knew that this was more than just menopause. That weekend, after in-depth online research, Kathy had a hunch that she knew what her hematologist was later going to tell her: she had leukemia.

### Devastating Diagnosis

The next week, her doctor confirmed that she had chronic myelogenous leukemia (CML), or cancer of the white blood cells. Only weeks before her annual trip to Japan to chaperone the student exchange class in June 1999, the news could not have come at a worse time in her life.

"I was absolutely devastated," says Kathy. "My first thought was that I wasn't going to be able to take my children to Japan. But afterward, I thought, you have to because this may be your last chance."

Kathy's family was also overwhelmed by this shocking news. Her husband, Richard, was initially in denial and was concerned about how he was going to raise two children on his own. Kathy's fifth-grade daughter, Keara, went into a shell and showed no emotion. And as Keara would say, her seventh-grade brother, Kyle, had enough emotions for both of them. Like his mother, Kyle searched for knowledge so he spent countless hours helping her research the disease.

### A Second Opinion

Kathy's doctors explained that her only treatment option was a bone marrow transplant (BMT). Because her siblings were not exact matches, she was placed on a national bone marrow recipient list. When she was not convinced that this was her only option, she decided to visit Mayo Clinic in Rochester, Minn., for a second opinion.

After an initial consultation, Timothy Call M.D., a hematologist, explained to Kathy that since she did not have an exact match within her family, alternatives to BMT should seriously be considered. He recommended that Kathy begin taking interferon, a drug to ward off infections, which could be administered via self-injections. Kathy agreed, but asked if she could postpone treatment until she returned from Japan. Dr. Call granted Kathy's wish and she went on the trip as planned with her students and both of her children.

She soon returned home to the reality of the disease, however, which meant beginning treatment. Not knowing how her body would respond, Kathy took a year off from teaching. She initially began interferon injections, but when they did not work alone, Dr. Call prescribed an additional drug, Cytosine arabinoside (Ara-C), in hopes that her body would respond better. She soon began having severe side effects including pancreatitis, medication-induced hepatitis and sores in her mouth.

That holiday season, Kathy had colitis and spent Thanksgiving eating ice chips in lieu of turkey, and had oatmeal for Christmas dinner.

### Clinical Trial Offers Hope

Coincidentally, Kathy later saw an ABC television 20/20 special on the drug Gleevec. She and Dr. Call discussed the drug, and he put her in touch with a clinical trial at Northwestern University in Chicago.

Upon consultation in May 2000, Kathy was informed there were no immediate openings, but she could expect a phone call when one became available. Instead of waiting for a call, Kathy called back every week to check for availability.

"I was determined that I was going to be a part of this trial and nobody was going to stop me," she says. "When a spot became available, I wanted them to remember me and say, 'We better get that annoying woman in here.'"

After six months of waiting, Kathy finally heard the news she'd been hoping for: the university had an opening in the trial. She began Gleevec a month later and within three months, Kathy went from a 98 percent involvement of abnormal cells in her bone marrow to complete remission. She was originally expected to live for three to five years, so this prognosis was much better than Kathy or her doctors could have ever imagined. She credits this positive outcome to both the clinical trial and her persistency.

### Holding Onto Hope

During her bout with cancer, Kathy says that her mission to continue offering her children a normal life kept her going.

"I wasn't going to let my disease affect their lives, especially during such a normally vulnerable time of their adolescence," she says.

The devoted mother made a priority of continuing everyday routines, including driving her children to and from school despite having to take naps between trips. She met with each of their teachers to explain that, as a family, they were dealing with her cancer at home, so she did not want her children to receive preferential treatment because of her disease.

Kathy also surrounded herself with positive people.

"I didn't want anyone near me who was going to do the 'poor Kathy' thing," she says. "I wanted to have a life and not be defined by my cancer."

She attended a support group that welcomed families, but went alone because they offered her a safe place to focus on herself.

"This was my one place that I could go and break down if I wanted to - I didn't want to share that with my family," says Kathy.

In addition to this group, her family was extremely supportive. Besides Kathy's immediate family who helped in any way that they could, Kathy's sister and Richard's five siblings were always there when she needed them.

### Sharing Her Success Story

Although Kathy truly appreciates the support she received from her Mayo Clinic and Northwestern University medical teams, she stresses the importance of being your own patient advocate and never giving up hope.

"No one is going to be that advocate for you so you need to find as much information as you can and pursue every option," she says. "Knowledge is sometimes the only power you have against cancer. If I wouldn't have researched the dangers of a bone marrow transplant or come to Mayo for a second opinion, I may not be here today."

Now cancer-free, Kathy says she no longer takes life for granted.

"I don't put anything off - if there is something I want to do, I do it, because I know that I don't have the 90-year life span like I had always planned," she says, adding that she now more openly expresses her feelings. She tells Richard and her children daily that she loves them.

A compassionate survivor willing to share her success story, Kathy enjoys giving back to her community through her local high school's American Cancer Society Relay for Life organized by her former eighth grade students. She also mentors recently diagnosed cancer patients who call her for help.

"I think it's important as a survivor to give back to others who have cancer - it's a special bond that only cancer patients themselves can explain," says Kathy. "Doctors can explain what the side effects will be, but most haven't personally experienced them."

Five years later, Kathy remains in complete remission by taking Gleevec. She has even returned to Japan with her children and plans to chaperone another trip this summer. Kathy is now a middle school art teacher and enjoys spending time with her family. Together, they enjoy traveling, bicycling and music.

Except when she returns to Mayo for her six-month checkups, Kathy places cancer in her past.

"No one - including myself - thinks of me as a cancer patient anymore," she says. "I pretty much go through life now not even thinking about the disease."

*Nicole Bennett Engler*

# Cancer Terms

**Blood Counts:** A test to check the number of red blood cells, white blood cells, and platelets in a sample of blood. Also called complete blood count (CBC).

**Bone Marrow:** The soft, sponge-like tissue in the center of most bones. It produces white blood cells, red blood cells, and platelets.

**Bone Marrow Transplant (BMT):** A procedure to replace bone marrow that has been destroyed by treatment with high doses of anticancer drugs or radiation. Transplantation may be autologous (an individual's own marrow saved before treatment), allogeneic (marrow donated by someone else), or syngeneic (marrow donated by an identical twin).

**Cooperative Group:** A group of physicians, hospitals, or both formed to treat a large number of persons in the same way so that a new treatment can be evaluated quickly. Clinical trials of new cancer treatments often require many more people than a single physician or hospital can care for.

**Genes:** Pieces of DNA that contain inherited instructions to tell a cell a how to build a particular kind of protein. Chemicals, radiation, viruses, and heredity all contribute to the development of cancer by triggering changes in a cell's genes.

**Genetic:** Determined by genes.

**Hereditary:** Transmitted from parent to child by information contained in the genes. Cancer is not considered an inherited illness; however, a person's chances of developing cancer can be influenced by the inheritance of certain kinds of genetic alterations or mutations. These alterations tend to increase an individual's susceptibility to developing cancer in the future. Hereditary conditions are thought to be involved in only 10 percent or fewer of all cancer cases.

**Inherited:** Transmitted through genes that have been passed from parents to their children.

**Mutation:** Any change in the DNA of a cell. Mutations may be caused by mistakes during cell division, or they may be caused by exposure to DNA-damaging agents in the environment. Mutations can be harmful, beneficial, or have no effect. If they occur in cells that make eggs or sperm, they can be inherited; if mutations occur in other types of cells, they are not inherited. Certain mutations may lead to cancer or other diseases.

**NCCTG:** North Central Cancer Treatment Group is a national clinical research group sponsored by the National Cancer Institute. NCCTG consists of a network of cancer specialists at community clinics, hospitals and medical centers in the United States, Canada and Mexico. The research base for NCCTG is located at Mayo Clinic in Rochester, Minn.

**Prognosis:** The prospect of recovery as anticipated from the usual course of disease.

**Risk Factor:** Something that may increase the chance of developing a disease. Some examples of risk factors for cancer include age, a family history of certain cancers, use of tobacco products, certain eating habits, obesity, lack of exercise, exposure to radiation or other cancer-causing agents, and certain genetic changes.

**Sedentary:** Doing or requiring much sitting.

**White Blood Cell (WBC):** Refers to a blood cell that does not contain hemoglobin. White blood cells include lymphocytes, neutrophils, eosinophils, macrophages, and mast cells. These cells are made by bone marrow and help the body fight infection and other diseases.

# Notes from your American Cancer Society Navigators

*Jeri Lensing, Kelly McGuire, Angela Young*
*Mayo Clinic Rochester*

*Shayna Diamond*
*Mayo Clinic Arizona*

"A rose by any other name …" does not apply to acronyms. An acronym in one setting can have a completely different meaning elsewhere. Example: ACS – Affiliated Credit Services, American Cancer Society, and so forth. Here is a brief list of frequently used acronyms when speaking about cancer. The Web site for Biomedical Acronym Definition has an extensive listing, http://invention.swmed.edu/argh. Please contact your American Cancer Society Navigator if you have questions regarding these and other cancer-related acronyms.

## Prevention, Detection and Related Topics

**BPH** - Benign Prostatic Hyperplasia is a noncancerous enlargement of the prostate.

**BRCA1 and BRCA2** are genes which, when mutated, are thought to predispose women to breast and ovarian cancer.

**BSE** - Breast Self Exam.

**CAT scan** - Computerized Axial Tomography. See CT scan.

**CBC** - Complete Blood Count.

**CNS** – Central Nervous System is the portion of the nervous system consisting of the brain, spinal cord, and cranial (head) nerves.

**CT scan** – Computed Tomography is a diagnostic procedure combining X-ray with computer imaging to produce highly detailed cross-sectional pictures (slices) of the body and/or brain.

**DRE** – Digital Rectal Exam.

**FAP** - Familial Adenomatous Polyposis is the genetic disorder that can lead to cancer of the large intestine and, less commonly, other organs.

**GI tract** – Gastrointestinal tract refers to the digestive system including the esophagus, stomach, small and large intestine, and the rectum.

**MRI** - Magnetic Resonance Imaging produces internal pictures of the body using powerful electromagnets, radio frequency waves, and a computer. Pictures are greater definition than a CT scan.

**PET scan** - Positron Emission Tomography scan can pinpoint changes in metabolic activity which indicate certain abnormalities.

**PSA** - Prostate-Specific Antigen test is an analysis of blood for levels of a protein produced by the prostate.

**TSE** - Testicular Self Exam.

# Cancer Risk in Families

**By Mary Amundsen in collaboration with Noralane Lindor, M.D.**

When you are diagnosed with cancer, you may be the first in the family, or one in a line of others who have had cancer. When should you become concerned about a genetic predisposition or a pattern of similar cancers in your family? How do you know which cancers are connected and what this means to your family? How close genetically do the relatives need to be to concern you or your immediate family? Should you have a consultation with someone from the Familial Cancer Program (FCP)?

The Familial Cancer Program offers a personalized risk assessment and recommendations for cancer screening based on a detailed family history; however, only for a minority of people is genetic testing indicated. Genetic tests have limitations and may not change the recommended cancer screening guidelines for you.

All cancers are caused by changes or damage to "genes," which are pairs of information units in the cells of our bodies. Genes have different functions in our bodies. Some genes tell cells which type of tissue to become, when to divide and make new cells, how to repair damaged cells or when to stop dividing and growing. Because our bodies have two copies (pairs) of genes, and our cells have many ways to repair themselves, not all damage results in cancer. However, when "mutations" or changes to both copies of a gene occur repeatedly over several years and can't be repaired, cells grow out of control, leading to cancer. This process typically involves multiple steps and occurs over several years.

Hereditary cancer occurs when a person was born with a change or mutation in one gene pair. Since there would only be one copy of a normal healthy gene, the chance of developing cancer is greater. This increased risk is not for every type of cancer and not everyone with a gene mutation will develop cancer. Many different factors, including type of gene mutation, environmental toxins, diet, hormones and other causes, have a role in cancer development. Only 10 percent to 15 percent of cancers are hereditary. Most cancers are random. Knowing your family history of cancers, however, can help with a prevention and screening program tailored to your risk factors.

American Cancer Society screening recommendations are based on the average family. If your detailed family history indicates your family is at higher risk than average, meeting with a counselor in the Familial Cancer Program might help you.

Questions typically asked by individuals who are being seen in the FCP include:

- What is my chance, or that of my children or close relatives, of getting cancer?
- What should I, or they, do to screen or prevent cancer?
- Is there a relevant genetic test?

The consultation may consist of all or some of these:

- your medical history
- a detailed family history
- a review of relevant outside medical records
- physical exam
- risk assessment discussion with interpretations and options for screening and testing

Meeting with a counselor in the Familial Cancer Program can result in answers to your questions and can help relieve your anxieties about decisions regarding future health care.

Patterns that a genetic counselor looks for to determine hereditary cancer risk are:

- more than one person in the family with the same type of cancer
- more than one person with related cancers
- patterns of cancers that relate to each other such as breast/ovarian
- more than one primary cancer in the same person
- a young age (i.e. before age 50) at diagnosis
- patterns that are statistically different from the average family

The relationship of relatives is important and counselors look at first- and second-degree relatives and sometimes more distant relatives as well. A pattern might consist of one or more first- or second-degree relatives with the same or related type of cancer. First-degree (blood related) relatives are parents, siblings (brothers and sisters) and children. Second-degree relatives are aunts, uncles, nieces, nephews and grandparents. For blended families this history can become complicated.

A referral by a physician for the Familial Cancer Program is not necessary. The cost is the same as any medical consultation. This service is available at all three Mayo Clinic sites. After risk assessment and future screening recommendations, a small percent may learn that genetic

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# Nutrition for the Cancer Survivor

**Jacalyn See, MS, RD, LD**

**Q. What is the best nutritional advice for cancer survivors?**

A. Nutritional needs change for most people during the different phases of cancer, including treatment, recovery from treatment, living after recovery and dealing with advanced cancer. The site of the cancer, type of treatment, and the person's overall medical situation must also be considered when deciding on nutritional goals.

The 2005 Dietary Guidelines for Americans can be the basis for a healthy diet during all phases of cancer survival. However, some survivors may need to modify these guidelines to accommodate special nutritional needs imposed by treatment or their medical condition. For example, people receiving chemotherapy, radiation or other cancer treatment should focus on getting adequate calories, even if it means eating more fat and sugar. For long-term survivors, weight control and proper diet aimed at preventing new primary cancers, as well as other diseases such as heart diseases and diabetes, become a priority.

Although no convincing evidence proves that proper diet can prevent cancer recurrence, researchers suspect that the same factors that affect cancer risk may affect recurrence and survival.

**2005 Dietary Guidelines for Americans**

- Maintain a healthy weight
- Be physically active every day
- Eat vegetables, fruits and whole grain products
- Choose lean meats and low-fat dairy products
- Choose fats wisely
- Choose carbohydrates wisely
- Use alcohol in moderation, if at all

**Q. I'd like to start eating more fruits and vegetables but worry about the pesticides. How can I protect myself from pesticide toxicity?**

A. Many benefits come from eating fruits and vegetables and no convincing evidence indicates that pesticides and additives increase cancer risk. The American food supply is the safest in the world due to government regulations of both the food supply and pesticide levels. Government agencies including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), and the U.S. Department of Agriculture (USDA) set safety limits based on the maximum amount someone could consume in a 70-year life span, and inspect both domestic and imported foods for illegal amounts of pesticides.

It is still a good idea, however, to protect yourself further by:

- Selecting produce without mold, cuts or decay
- Scrubbing under running water
- Discarding outer leaves
- Eating a variety of foods

**Q. My treatment had to be withheld because of my low white blood count (WBC). What can I do to bring my WBC count back up?**

A. Some chemotherapy drugs can lower the WBC. Depending on the type of chemotherapy and how it has affected your white blood cells, your doctor may recommend you receive a medication to help stimulate your body to make new white blood cells. Most people receiving chemotherapy, however, will not need this medication and the white blood cells will recover on their own, given enough time. Unfortunately, no foods, supplements, or exercises can raise your WBC.

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testing would help in their situation. The probability of having a gene mutation, whether it would be useful information or affect recommended screening, would be thoroughly discussed with you prior to any testing. You would also want to know cost of testing and who in the family might want to know the information.

Appropriate cancer screening is important to protecting you and your family's health. The Familial Cancer Program can help.

*Mary Amundsen*

*Noralane Lindor, M.D.*

## *Genetic Testing Resources*

Mayo Clinic Familial Cancer Program
Rochester 507-284-8004
Jacksonville 904-953-2865
Scottsdale 480-301-4945

National Center for Human Genome Research
301-402-0911

National Society of Genetic Counselors
312-321-6834
http://www.nsgc.org/

## *Out of the Sun Run — Rochester, Minnesota*
## *May 19, 2006*

*A Benefit Walk/Run Event for Melanoma Research*

In an effort to benefit melanoma research at the Mayo Clinic Cancer Center a 5K walk/run and 10K run will be held on Friday, May 19, 2006. Registration begins at 5:00 p.m. at Holy Spirit Church 5455 50th Avenue NW, Rochester, Minn. The run/walk will start at 6:30 p.m. Cost is $16 in advance and $20 the week of the race and same day registration. This event is also intended to raise public awareness about the seriousness of melanoma. The motive for this event being held in the evening hours is to accentuate the importance of staying out of the sun during peak sun hours of the day. Participants will receive a long-sleeved t-shirt and free samples of sunscreen. More information on this race will become available shortly on the Rochester Track Club website: www.rochestertrackclub.com. Please contact Timothy Burriss at 507-538-1447 or Susan Burriss at 507-282-4576 or email at: sustimburriss@hotmail.com if there are any questions or for offers of donations. All proceeds will go toward melanoma research at Mayo Clinic.

Hope to see you at the first Out of the Sun Run on May 19th!!!

## *Cancer Resource Room - Jacksonville, Fla.*

*Mayo Clinic • Davis Building • 8th floor Lobby*

*10 a.m. - 2 p.m., Monday through Friday*

We've teamed up with the American Cancer Society to offer a range of resources and information about cancer. Designed with comfort in mind, the quiet room provides a spot where you can search on Mayo Clinic's online information pages and register with the American Cancer Society to receive free services – from literature to support groups.

Here you'll also find:

- A wig display
- Information about wigs and prostheses from local American Cancer Society "Gift Closets" and vendors
- Books (to read in the Cancer Resource Room)
- Pamphlets and brochures
- A phone (local calls only), fax and printer

A volunteer is available to help with the computer and answer questions.

## *Calendar of Events 2006*

*May*

**Melanoma/Skin Cancer Detection and Prevention Month**

*1* **Melanoma Monday**
American Academy of Dermatology
888-462-DERM — www.aad.org

**Oncology Nursing Month**

*4* **Oncology Nursing Day**
Oncology Nursing Society
866-257-4667 — www.ons.org

*1-7* **Brain Tumor Action Week**
North American Brain Tumor Coalition
630-325-2619 — www.nabraintumor.org

*14-20* **National Women's Health Week**
Office on Women's Health
US Department of Health and Human Services
202-690-7651 — www.womenshealth.gov

*31* **World No Tobacco Day**
Coalition for World No Tobacco Day
212-601-8499 — www.wntd.org

*June*

*4* **National Cancer Survivors Day**
National Cancer Survivors Day Foundation
615-794-3006 — www.ncsdf.org

*12-18* **National Men's Health Week**
Men's Health Network
202-543-6461 — www.menshealthweek.org

*11-17* **Sarcoma Awareness Week**
The Sarcoma Alliance
415-381-7236 — www.sarcomaalliance.org

MAYO CLINIC
**Cancer Center**

4500 San Pablo Road
Jacksonville, FL 32224

200 First Street SW
Rochester, MN 55905

13400 East Shea Boulevard
Scottsdale, AZ 85259

**cancercenter.mayo.edu**



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