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NATIONAL CANCER INSTITUTE

IN THIS ISSUE

Frontiers in Nutritional Science and Cancer Prevention

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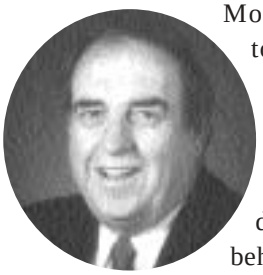

Mounting evidence points to variation in the consumption of foods as a significant contributor to worldwide disparities in the incidence and biological behavior of cancers. Compelling data demonstrates that numerous dietary components, including essential and non-essential nutrients, are capable of modifying the carcinogenic process. The bioactivity of these nutrients relate to biological effects including alterations in carcinogen formation or metabolism, influences on signals associated with cell proliferation and/or apoptosis, or to changes in immunocompetence.

We in the health research community can no longer minimize the significance of nutrition as a determinant of cancer risk, yet we must also be careful not to propagate the belief that diet is a "magic bullet." Some of the most compelling evidence that diet can impact cancer risk comes from the reduction in lung, prostate and colorectal cancers with supplemental selenium. These observations, coupled with a host of preclinical studies, serve as the rationale for a more comprehensive investigation of how selenium and vitamin E might function together to suppress prostate cancer in men as part of the Selenium Vitamin E Cancer Trial (SELECT) being conducted by the DCP Community Oncology and Prevention Trials Research Group. Variability in response to dietary components, both in terms of direction and magnitude, should be expected. In fact, evidence is surfacing that nutrients may be protective under some circumstances, yet harmful during others. Evidence that flavonoids can cause a translocation of the MLL gene and possibly increase the incidence of infantile leukemia while retarding the risk of various experimentally induced cancers in models systems serves to emphasize that uniformity in response

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Cancer Prevention Studies Employing Changes In Diet Or Specific Dietary Components

RON LUBET

"It is estimated that one-third of all cancers relate to diet. In fact five of the 10 leading causes of death are linked to the food we eat" (Greenwald and Milner)

Cancer rates for specific organs vary profoundly across different parts of the world. For example, breast cancer incidence and prostate cancer mortality rates are roughly 3-fold higher in the U.S. and Western Europe as compared with Southeast Asia. In contrast, the incidence of liver cancer is strikingly lower in the West than in Southeast Asia. Although some portion of this variability is due to a genetic component, a major portion is environmentally related. "Environmental" in this context, extends beyond impurities in water or air to include infections, smoking habits and, in particular, diet. Certain negative consequences of diet, for example, aflatoxin B1 exposure and its role in liver carcinogenesis, have been clearly defined. This relationship has been easier to define because the striking increases in cancer risk in persons consuming this food is primarily attributable to a single agent.

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Complexity of Foods

Defining the potential impact of diet can be quite difficult. The unexpected results with beta carotene in lung, which showed an increase in lung cancer among current smokers, demonstrates that it is often difficult to determine what, if any, specific component in a diet will confer chemopreventive properties, or if some combination of dietary components is more effective than any single component. Epidemiologic evidence that high consumption of fruits and vegetables is beneficial to long term health is more difficult to translate into a specific intervention than is epidemiologic evidence regarding a specific class of agents, for example, NSAIDs in colon cancer. The relatively specific nature of NSAIDs and their presumed targets, the cyclooxygenases 1 and 2, yield a relatively straightforward trial design. In contrast, determining that specific components in a high fruit and vegetable diet have chemopreventive properties, or even which classes of fruits and vegetables may be particularly relevant, is difficult. Nevertheless, dealing with the complexity while simultaneously attempting to define specific components remains a major goal in cancer-nutritional research with. The potential benefit of a healthy diet on a variety of chronic diseases, including cancer, and others, demands continued efforts in the area of general as well as specific examination of dietary interventions.

Nutritional Intervention Trial Design

Another difficulty in evaluating dietary interventions and in fact any long-term intervention, is how to optimally conduct a clinical trial. Design of most phase III clinical trials routinely require an intervention period of at least five years. Therefore any intervention that is primarily effective during the time of tumor initiation or early tumor progression will be difficult to confirm, as the carcinogenic process for many cancers may be greater than 20 years. A trial exposure period of only five years means that many of the pre-existing lesions that are present during the trial will already have significant genetic alterations. For example, the preinvasive lesions ductal carcinomas in situ (DCIS) in breast cancer or prostatic intraepithelial neoplasias (PIN) in prostate cancer already have many of the genetic changes associated with invasive cancer. Alternatively, one can conduct trials of considerably greater length. These trials, however, have potential problems regarding both cost and changes in standard of care during the trial. One scenario is that radiography or early detection improves during the course of a 10-15 year trial and as a result the tumor incidence for which the trial was designed and powered changes. Food and nutritional interventions have the additional difficulty of compliance. To that end, development of biochemical or pharmacologic markers of food or supplement intake is a significant goal for nutritional research.

There are many questions in nutrition and cancer that need to be answered. Which specific substances in foods are particularly beneficial? Do certain combinations of foods or food constituents provide more protection than the sum of the individual parts? Do the beneficial substances help protect against all cancers or in some instances do they increase risk? Can biomarkers be developed that will facilitate the study of interventions? The task is daunting but the potential impact is great. ■

HISTORY OF CANCER PREVENTION

Peyton Rous: Pioneer in Nutrition and Cancer Research

DOUGLAS L. WEED

Caloric restriction and reduced tumor incidence is a well-established relationship in nutrition and cancer research. One of its earliest investigators was Peyton Rous, a Texan by birth and a Huguenot by heritage, who spent most of his early life in Baltimore, graduating from Johns Hopkins University Medical School in 1905. After a short stint at the University of Michigan, Rous joined the Rockefeller Institute for Medical Research (now Rockefeller University). There he studied cancer, physiology, and blood transfusion. Rous's study of the influence of diet on transplanted and spontaneous mouse tumors, published in the Journal of Experimental Medicine in 1914, found dramatic and reversible reductions on recurrences and growth of tumors in underfed mice.

Copyright: The Nobel Foundation (www.nobel.se)

Rous is best known for his discovery of the viral etiology of a solid tumor in chickens—the Rous sarcoma virus—and for his insights into malignant transformation. Rous was one of the first to be convinced that, contrary to popular belief, the transformation of a normal cell to cancer—tumor progression—was not a sudden event but rather took a considerable length of time, what we now refer to as latency. For these discoveries, Rous was awarded the Nobel Prize in Medicine in 1966. ■

Dietary Data: A Tough Nut to Crack

PAMELA MARCUS

Perhaps you've be asked to fill out a questionnaire about what you eat. Sounded simple at first, didn't it? But then you were asked how many times a week you eat strawberries. It's December, and you haven't gotten near a strawberry in about 5 months. So you think back to the summer and you recall that during prime strawberry season, you ate a lot strawberries. How do you turn "a lot" into a number? How do you record that you eat strawberries obsessively for 3 weeks in June, but otherwise haven't really had any? Are you tempted to quietly turn away and toss the questionnaire in the recycling bin?

As any epidemiologist or biostatistician will tell you, collecting data is no easy task. But collecting dietary data has its own challenges. And as our diets diversify due to our ever-increasing food choices, the collection of nutritional data has become even more complex.

A number of dietary instruments have been developed to help collect this type of data. A commonly-employed instrument is the traditional questionnaire. Persons are instructed to note whether, at a certain point in their lives, they ate a specific food, and if so, how often they ate that food and how much of that food they ate. Such an instrument usually relies on memory, which can be problematic. Someone may forget that she occasionally eats an avocado. Or, someone may report that he eats carrots every day, when in fact they are only eaten on weekdays as part of a brown-bag lunch. Portion sizes can be problematic too. If someone asks me how much orange juice I drink a day, I couldn't say, because I drink it straight from the carton more often than not.

Food records can circumvent the problem of recalling what has been eaten. A food record allows a person to record exactly what he or she has ate, immediately after eating. While portion sizes can still be a problem with this dietary instrument, troubles regarding long-term recall are removed. New problems are introduced however. Because food records generally cover a short period of time, the diet during that time may not be representative of a person's usual diet. Additionally, the person recording his or her intake may either subtly (or not so subtly) change their diet if they view their usual diet as unhealthy or extreme.

All is not lost, however, in our efforts to collect dietary data. There have been a number of creative solutions to these problems, thanks to the work of nutritionists, nutritional epidemiologists, and biostatisticians. To avoid the problem of seasonal foods, for example, people are asked to report how many weeks of the year they eat a certain food. Food models - plastic renderings that show portion size - have allowed for more accurate reporting of how much of a certain food was consumed. Statistical methods have been developed that can account and partially correct for certain types of measurement error and thus, in some instances, produce more meaningful results.

Despite these improvements, dietary data will remain a tough nut to crack. Although the task of collecting dietary data is daunting, we won't give up: food consumption is a critical part of cancer research and is a particularly important area of cancer prevention science. Researchers in the Division of Cancer Prevention will continue to study the relationship of diet and cancer, and will, no doubt, make important contributions towards cracking the nut. ■

PreventionPOST

DCP Newsletter Project Team

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LAYOUT & CONTRACT GROUP
Terri Cornelison, Jennifer Flach, Ron Lubet

DISTRIBUTION & INTERNET GROUP
Kathleen Foster, Judy Smith, Susan Winer

CONGRATULATIONS

DCP is proud of Rose Mary Padberg, Office of the Associate Director for Clinical Research and Jennifer Flach, POI who along with Mary McCabe, Office of Education and Special Initiatives, NCI , received the Award for Creativity and Innovation in Bringing Government Services and Information to the American People from Vice President Gore's National Partnership for Reinventing Government. And, on March 5, 2001 all three also received the NIH Plain Language Award.

Plain Language Award left to right Rose Mary Padberg, Jennifer Flach and Mary McCabe.

AWARDS

Philip Castle received a Division of Cancer Epidemiology and Genetics Intramural Research Award for his proposal "Cytokine Profiles in Cervical Secretions and Their Relationship to HPV Persistence and Progression to Neoplasia."

Lisa Colbert, a third year fellow, has recently been awarded a grant from the Department of Defense's Breast Cancer Research Program. The award was for Dr. Colbert's proposal "Exercise and caloric restriction in a spontaneous mammary tumorigenesis model." She also won 2nd place for a poster presentation "Physical activity and lung cancer risk in a cohort of male smokers" in the Student and Junior Investigator Competition at the Physical Activity and Cancer Conference at the Cooper Institute in November, 2000.

Jackie Lavigne received an award for her doctoral dissertation in May 2000. It was the Cornelius Krusé Award for outstanding dissertation in the field of Environmental Health Sciences at Johns Hopkins University.

Susan Scott received a Lineberger Fellow Award in October, 2000. This award, given at the University of North Carolina, Chapel Hill, was for excellence in dissertation research and was supported by the Cancer Research Foundation of America.

Rachael Stolzenberg-Solomon was awarded an NCI intramural grant entitled "Evaluation of integrative molecular markers of methylation status." In addition, she received the NIH Fellows Award for Research Excellence (FARE). Also, she received the Poster Presentation Award from the Society of Epidemiologic Research Annual Meeting in 2000 and won First Place in a poster presentation at the American Society of Preventive Oncology Annual Meeting in 2001. ■

ON THE PERSONAL SIDE

Best wishes go to Claudine Kavanaugh and her husband Joe and to Jackie Lavigne and her husband Matt on their recent marriages ■

CAREER MOVES

Christian Abnet has taken a position in the Division of Clinical Sciences as a Senior Research Fellow. In the fall, Beth Dixon will be taking a position as an Assistant Professor at New York University in New York City. ■

SAVE THE DATE

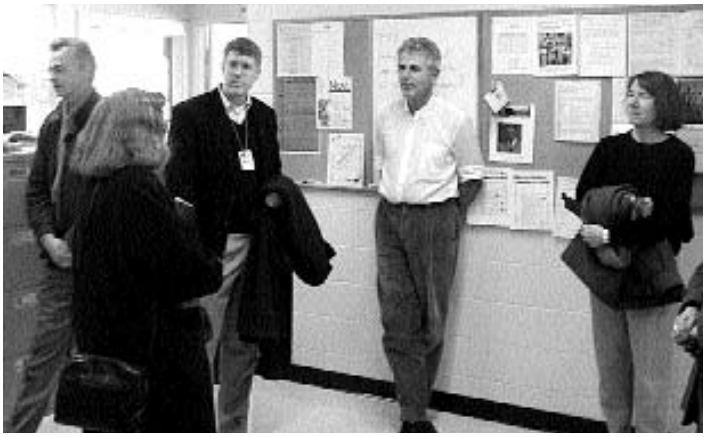
The Annual Advances in Cancer Prevention Lecture will be held on August 2, 2001, 3:00 pm in Lister Hill Auditorium on the main NIH campus. The keynote speaker will be Dr. Frederick P. Li from the Dana-Farber Cancer Institute in Boston, Massachusetts. ■

At the Forefront of Training

SUSAN WINER

Molecular Prevention Training Lab

The newest addition to the Cancer Prevention Fellowship Program is the establishment of a Molecular Prevention Laboratory located at the Frederick Cancer Research and Development Center in Frederick, MD. Through the Molecular Prevention Lab, prevention fellows and other NCI trainees can obtain advanced training in applying laboratory techniques to address problems in cancer prevention through short-term training exercises as well as intermediate and long-term mentored research experiences. The laboratory, under the direction of Drs. Stephen Hursting and Susan Perkins, facilitates the Nutrition and Molecular Carcinogenesis Section of the NCI's Laboratory of Biosystems and Cancer.



Doug Weed, Mary Lou Carter, Steve Hursting, Larry Keefer, Chief of the Laboratory of Comparative Carcinogenesis and Susan Perkins, tour the Laboratory of Biosystems and Cancer at NCI-Frederick.

Steve Husting shows off the Nutritional and Molecular Carcinogenesis Section in the Laboratory of Biosystems and Cancer.

Summer Curriculum

Next month, the Office of Preventive Oncology will hold its annual Summer Curriculum. Two courses will be featured: Principles and Practice of Cancer Prevention and Control, and Molecular Prevention. Space for 75 participants has been reserved. Sixteen international participants sponsored by the Office of International Affairs, NCI, will attend the summer program along with ten individuals sponsored by the NCI/All Ireland Consortium. Countries represented are Bolivia, Brazil, China, India, Ireland and Northern Ireland, Jordan, Kenya, Korea, Lithuania, Peoples Republic of China, Romania, Spain, Thailand, Turkey, Vietnam and Yugoslavia. Fifteen Cancer Prevention fellows returning to the NCI after just completing their Master in Public Health will also attend. The courses will be held in the Neuroscience Building on Executive Boulevard.

Recruitment

Recruitment is an ongoing activity for the Cancer Prevention Fellowship Program. Recently, the Cancer Prevention Fellowship Program has begun a partnership with the Office of Communications. Together, we attend many meetings and share a display booth. For the past two years, the NCI booth has won first place at the American Public Health Association meeting! Every year the Fellowship Program sets up a display at the Johns Hopkins University School of Public Health Career Day. Current fellows and former Hopkins graduates helped answer questions about the fellowship program.

Prevention Fellows

The Cancer Prevention Fellowship Program is sending 11 first year fellows to their school of choice to earn a Master of Public Health degree:

Hala Azzam, Dilyara Barzani, Amanda Greene, Qing Lan, Nomeli Nunez, Arti Patel, and Shanita Williams Brown will be attending Johns Hopkins University.

Lila Finney and Kay Wanke will be attending Harvard University. Somdat Mahabir will attend New York Medical College. Whitney Randolph will be attending the University of North Carolina at Chapel Hill.

Gary Ellison, a PhD in Epidemiology and a MPH in Biostatistics, one of our first year fellows, will come directly into the fellowship program. ■

Frontiers in Nutritional Science continued from page 1

across all cells is an unrealistic expectation. Intriguing evidence also suggests that selenium inadequacy, and possibly inadequacies in other nutrients, can lead to mutations in the genome of some viruses. Could it be that while genetic polymorphism may alter nutrient needs, nutrient availability might also lead to non-viral genomic mutations and/or instability?

While it remains prudent to eat a variety of foods and avoid over indulgences, such generic recommendations may be insufficient to address the specific dietary challenges that individuals face. Thus, future dietary recommendations will likely need to be based on the physiological status of the individual and his/her genetic profile.

The overall response to a bioactive food component probably reflects numerous genetic and epigenetic events that are highly dependent on the quantity consumed, interactions with other dietary constituents, and the duration of exposure. Unraveling the myriad of possible interactions between specific dietary components and specific genetic pathways involved with the cancer process is fundamental to establishing tailored dietary recommendations. The significance of this approach is that it not only provides clues to "optimizing" nutrition for health, but also provides a non-invasive strategy for altering potentially every aspect of the cancer process.

Innovative research that builds on current knowledge and moves the science of nutrition forward to develop effective, targeted cancer prevention strategies that can be readily integrated into everyday lifestyles is needed. Without dedicated and enthusiastic investigators who are willing and able to initiate studies in basic science and molecular biology, the deciphering of the complexities will be unduly protracted. Sophisticated technologies are continually emerging that will assist in identifying the critical molecular targets where nutrients influence the cancer process. Identification and validation of sensitive biomarkers that can be used to predict those who will and will not benefit from dietary intervention are of paramount importance.

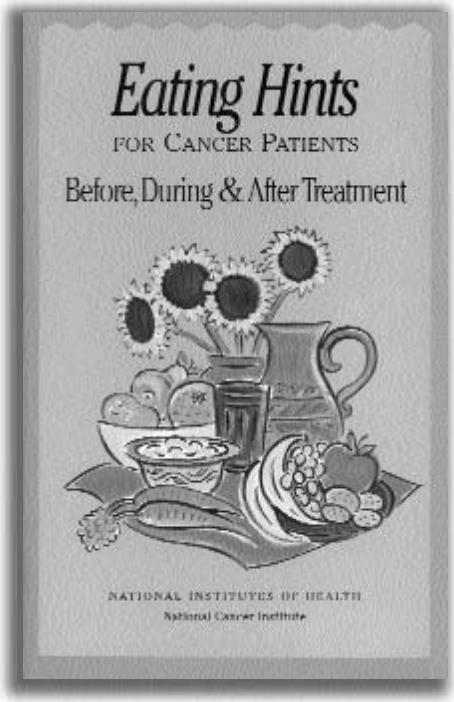
Researchers should not only be aware, but take advantage of, the opportunities that exist in nutrition and cancer research at the NCI. A summary of the resources that the NCI offers to scientists can be found at http://www.nci.gov/scienceresources/index.html. The Nutritional Science Research Group is eager to assist in advancing the science of nutrition. ■

Nutrition Management and the Cancer Patient

KATHLEEN FOSTER

The relationship of nutrition and cancer has been described since the time of the Ancient Egyptians writing on papyrus manuscripts. Compounds of barley and pigs ears were concocted in an effort to treat this age-old disease. Modern scientists are still examining the interplay between the food that we eat and its role in the management of cancer.

Advanced cancer and its treatment is frequently associated with a host of symptoms known as cancer cachexia. Among these are anorexia, early satiety, anemia, malnutrition, and organ dysfunction. Over half of patients with cancer have a history of weight loss. The process of cancer cachexia involves an equal metabolism of both body fat and muscle protein for energy, leading to weakness and wasting. In addition to problems caused by the progression of disease, cancer treatments such as chemotherapy and radiation often exacerbate problems with malnutrition, because of changes to the gastrointestinal tract. Treatment side effects such as dry mouth and altered taste can affect the desire for food. These changes can have a long-term impact on a healthy diet, and present challenges to the patient and their caregivers.



A person newly-diagnosed with cancer often experiences an increased awareness of, and a new resolve to adhere more closely to standard guidelines for healthy eating. However, depending on the stage of the disease, the nutritional advice that he or she receives may vary from what has been heard in the past. Dietary counseling may be needed to address a new set of nutritional needs.

Dietary recommendations for persons with cancer frequently focus on ways to ingest adequate amounts of the nutrients needed to help maintain energy levels. Often this includes higher calorie foods that emphasize protein. It could also mean an increased intake of dairy products, sauces and other food sources. Sometimes a decrease in high-fiber foods is suggested.

From a research perspective, evidence from ecological, epidemiological, and laboratory studies consistently support the contention that diet may provide a protective effect against breast cancer and its recurrence. In the Division of Cancer Prevention, Dr. Carolyn Clifford monitors two randomized clinical trials, the Women's Healthy Eating and Living Study (WHELS), and the Women's Intervention Nutrition Study (WINS).

WHELS is a multi-center randomized trial testing whether a daily dietary pattern high in vegetables (5 servings, plus 16 ounces vegetable juice), fruits (3 servings), fiber (30 grams) and low fat (15-20% of calories) will affect the course of breast cancer in women with Stage I, II, or IIIA disease after they have received standard treatment therapy. This trial is being conducted in 3,000 pre-and post-menopausal women enrolled at 7 clinical centers. Women are randomized to one of two dietary groups: dietary intervention group (dietary counseling) or control group (no dietary counseling). Data collection includes dietary assessment, anthropometrics, health status and quality of life. Blood specimens are collected for measurements of carotenoids, lipids, estrogens, and future mechanistic studies of recurrence.

WINS is testing the hypothesis that dietary fat reduction as an adjuvant to standard breast cancer therapy will reduce recurrence and increase survival for post-menopausal women with localized breast cancer. This randomized clinical trial is being conducted in 2,500 women, enrolled at 38 clinical centers. Women are randomized to one of two dietary groups: Intensive Intervention Group (IIG) or a control Non-Intensive Group (NIG). The IIG participants receive an individualized nutrition program targeted to reduce dietary fat intake to 15% of calories. The NIG participants receive the Dietary Guidelines for Americans, which recommends 30% of calories from fat, as well as minimal ongoing nutrition education. Data is being collected on dietary intake, supplement intake, food patterns, anthropometrics, and quality of life. Banking of blood specimens will provide a unique resource for the future testing of hypotheses regarding mechanisms of dietary fat reduction.

The results of these two clinical trials will have major implications for future research in breast cancer prevention and control of recurrence, and will provide insight into the mechanisms of how diet might influence this disease. Both trials are slated for completion in approximately 5 years.

NCI researchers have established many links between dietary intake and cancer. As nutrition science continues to advance, it will hopefully reveal the answers to not only how to prevent cancer, but how to best utilize the foods that nourish us in both health and disease. ■

DCP Convenes First SCORE Workshop

JUDY SMITH

Welcoming site coordinators representing research centers from across the nation and around the globe, Dr. Peter Greenwald eloquently opened the first annual Site Coordinator's Opportunity for Research Excellence (SCORE) Workshop. The conference was held on March 19-20 at the Pooks Hill Marriott in Bethesda, Maryland. Citing the mission of the division, Dr. Greenwald thanked participants for their ongoing commitment and collaborative efforts with DCP to advance biomedical science, strengthen preventive medicine, and improve public health. Through their role as site coordinators, these individuals are responsible for the local management of Phase II and III chemoprevention clinical trials conducted through a contract mechanism with DCP.

SCORE was the result of a pioneer effort of a DCP Project Team, headed by Ellen Richmond (GOCRG), to unite site coordinators of DCP-sponsored cancer prevention clinical trials with members of the DCP staff. Project team members included Jenny Gaegler (BRG), Jennifer Flach (POI), Martha Basinger (CADRG), Kathleen Foster (BOCRG), Judy Smith (LUACRG), Linda Parreco (POI), and Rose Mary Padberg (OADCR). The goal of the conference was to build a collegial atmosphere among research partners by providing an educational forum to discuss issues such as chemoprevention agent development, trial design, trial implementation, contract mechanisms, recruitment, compliance, and ethics. Additionally, the conference provided six individual break-out sessions led by DCP and NCI staff addressing issues such as common study problems, audit preparation, data management, media and outreach strategies, as well as an opportunity to meet and talk with medical monitors.

"Dr. Peter Greenwald and Jenny Gaegler exhibit the kind of tireless efforts that made SCORE a huge success."

Among the highlights of the workshop was a Power Point presentation by Dr. Leslie Ford that included a comprehensive overview of clinical chemoprevention research. Other presentations were provided by James Crowell (Chief, CADRG), Ernest Hawk (Chief, GOCRG), Anne Ryan (OD), Gary Topper (Contracts), Eva Szabo (Chief, LUACRG), Linda Parreco, Kara Smigel-Croker (OD), Jaye Viner (GOCRG), Mary Wargo (University of Texas), Linda McClure (Clinical Trials Monitoring Branch, NCI), Joan James (Fox Chase Cancer Center), Worta McCaskill-Stevens (COPTRG), Jennifer Flach, Charmaine Cummings (Professional Continuing Education Branch), Jeff Cohen (OHRP), and Judy Smith. Kathleen Foster hosted a NCI information table, replete with cancer chemoprevention and clinical trials materials. ■

DCP Recipe Contest

PAMELA MARCUS

And the winner is...

Mark Zweig, a Special Volunteer in the Biometry Research Group. Mark submitted a zesty dish entitled "Chick Peas with Apricots".

The DCP Recipe Contest was held earlier this year. All members of DCP were invited to participate. The only requirements were that the dish contain fruits and/or vegetables, and that the dish be vegetarian. Seven DCP'er submitted recipes, and six partook in the taste-test on March 2. In addition to the winning recipe, Terri Cornelison (BGCRG) prepared chili, Nancy Simpson (EDRG) prepared vegetarian stuffed cabbage, Rose Mary Padberg (OADCR) prepared "Rosie's Rice," Vance Berger (BRG) prepared lentil and barley casserole, and Susan Perkins (OPO) prepared pumpkin bread. The judges, Dave Levin (BRG), Sharon Ross (NSRG), and Rachael Stolzenberg-Solomon (OPO), rated the dishes on taste as well as healthfulness. It was tough to pick a winner, as all the dishes were excellent!

The five runner-up recipes can be found at the PreventionPOST website.

Chick Peas with Apricots

2 cups cooked chick peas (garbanzos)
3 tablespoons olive oil
1 onion, chopped
2 to 4 cloves garlic, finely chopped
2 teaspoons salt (unless chick peas were salted in cooking)
1/2 teaspoon freshly ground pepper
2 teaspoons marjoram or oregano
1 teaspoon cumin powder
14-ounce can tomatoes or a scant pound of fresh tomatoes, chopped
1/2 pound dried apricots
Water or stock as required (minimum of 2 cups)
1 tablespoon chopped parsley or cilantro

Drain the chick peas. In a pan, heat the oil and gently fry the onion for 2 minutes. Add the chick peas, garlic, seasonings, tomatoes, and apricots. Stir together and fry for 5 minutes. Add 2 cups of water or stock and allow to simmer until the apricots are tender. Add more water or stock if necessary. Serve garnished with chopped parsley or cilantro. Excellent with lemon juice, yogurt, and lettuce. (4 servings)

Walking for Research

DON HENSON

Since January, "Joan" has been rising every morning at 5, putting on her jogging gear, and going for a brisk walk. At first, 3 miles was her limit, but with persistence, that soon doubled. By March, she reached 10 miles. Although rising at 5 AM became a habit, initially it was difficult for "Joan". But "Joan" had a reason.

"Joan" was determined to make a personal contribution to breast cancer research as a memorial for her sister who died from the disease two years ago. According to "Joan" the best memorial would be a donation of her time and energy to raise money for the fight against breast cancer.

Because the problem is so great, an estimated 182,800 new cases and 43,000 breast cancer deaths this year, all available resources are needed to secure funds for research and treatment. For this reason, "Joan" volunteered to take part in the Avon Breast Cancer Crusade walkathon, which raises money for research and treatment. This walkathon is more than merely giving; it reflects a personal sacrifice and commitment on the part of the participants, and for "Joan" a tribute to her sister.

The Walkathon was held May 4-6 in the D.C. area. It covered approximately 60 miles from Frederick, MD to the mall in Washington. More than 3000 participated including men and women. Linda Gray from DCP was also a participant.

The distance walked per day was 20 miles. A support crew of more than 550 volunteers was available to provide meals and sleeping facilities for the night. These volunteers spent up to 20 hours preparing for the event and worked with the walkers for the entire distance. For transportation, the volunteers were provided with mobile lounges, however. More than 25,000 meals were served, 14,000 energy bars distributed, and nearly 1500 tents used. The biggest casualty, beside sore muscles, was walking shoes. "Joan" wore out three pair. Doctors, podiatrists, and massage therapists were all available to relieve the sore tender muscles and aching swollen feet.

The Avon walk for breast cancer is a national event. Walks have been held in major cities including Chicago, Boston, Los Angeles, and Atlanta. The first walk was held in Los Angeles in the fall of 1998. Four walks were held in 1999, seven in 2000, and 9 are scheduled for 2001. The first walk in Washington was held last year. All proceeds are for the Avon Breast Cancer Crusade. Each participant is requested in advance to ask friends, colleagues, and neighbors to pledge to the Crusade. In fact, pledge support is a requirement for the walk. The average pledge per walker is $3200. More than 60 million dollars have been raised for research and treatment through these walks.

Another walkathon will be held next year. Walkers from DCP will be welcome. ■

Reflections from Inside STAR a DCP Clinical Prevention Trial

"Reflections" was written by a STAR (Study of Tamoxifen and Raloxifene) participant from Washington, DC. Following are excerpts from the original article which was printed in the Constellation, the STAR participant newsletter. The thoughts and words are her own and we thank her for sharing them with all of us.

Some people I've known wanted more than anything to be rich; others dreamed of beauty, influence, accomplishment. Myself, I've harbored the dream that I might be remembered as *interesting*, a character whose secrets, observations and habits were seen as noteworthy, even instructive.

I'm a middle-aged woman… famous only within my nuclear family. My dramas have been small, my triumphs parochial.

Suddenly, however, …I've been celebrated, fed, photographed, and quoted. The mere act of taking one daily dose of [Tamoxifen, or maybe: Raloxifene] has turned me into something of a fascination, even a hero of sorts.

How can this be, when hundreds of thousands of women take these medicines every day? Because of the leap of faith required of us who participate, we are esteemed by the [STAR] study staff. To them, we are pioneers who risk the consequences of taking a pill we can't name… We hope to further a science that may save many lives.

I have lived all my life under the shadow of breast cancer. And then I read about Tamoxifen and Raloxifene. I began to think I could take a hand in steering my life instead of waiting for it to happen to me. I felt exhilaration lightly tinged with the panic I'd experienced once running downhill when gravity got more of a hold on me than I liked. But…this was an invitation to do something in my own interest that would also fulfill a scientific need and give me a shot at saving lives in the future, among them those of my beloved daughter and niece, swimmers in my own gene pool.

I said yes.

I know absolutely that something good will come out of this for all women. I know that, if something sorry *should* befall me or my study fellows, someone will detect it good and early. And I know we have a rooting section of wise and wonderful people who would say that we are, without exception, interesting! ■

TERRI L. CORNELISON

LINDA GRAY joined in the Avon Breast Cancer Three Day Walk on May 4-6, 2001. Participants trekked 60 miles from Frederick, Maryland, camping in tents along routes once traveled by Civil War soldiers, and completed their journey on the Mall in Washington, D.C., raising nearly 6.6 million dollars for breast cancer research. Linda Gray is a native Washingtonian and enjoys discussing politics. She is currently a Program Specialist in the Early Detection Research Group, Division of Cancer Prevention (DCP) where she works with the PLCO Cancer Screening Trial and Lung Screening Study (LSS). It was her administrative background and interest in cancer research that brought her to the DCP nine years ago.

Who was your most influential teacher?
My dad because he taught me about life – how to be self-sufficient, how to get along with others, and how to be well rounded. He raised my sister, brother, and me with the help of my grandmother, after my mom died of breast cancer when I was 11.

What event has had the biggest effect on your life?
My marriage: finding a partner with whom I can be myself, be comfortable, and have fun.

What do you like most about your work?
Variety. I am encouraged to grow and to become involved.

Tell about your most perfect day.
A leisurely breakfast, more than one cup of coffee, in the summertime with my husband. We put our kayaks on top of the car, go to Eastern Shore, and paddle around all day.

How do you relax?
Well, on an imperfect day, I walk, exercise, work in the garden, and read.

What are your favorite books, and why?
Patricia Cornwell novels. The stories occur local to Washington DC, and deal with crime, death, mystery, and medicine.

What are you currently reading?
The Brethren by John Grisham.

Who is your favorite musician?
I like blues: BB King, Eric Clapton, Aretha Franklin, and Bonnie Raitt.

What place have you never been to that you would like to visit?
Alaska and Switzerland because the mountains seem so clean and fresh, and Italy because of my heritage.

What is the best meal you have ever had?
Oh that's easy! Italian Christmas at grandma's house – antipasto, bread, wine, lasagna, meat, braccioles, meat balls, salad, cannoli, coffee. It takes hours to enjoy.

What is your favorite color?
Blue.

What is your favorite sound?
Rain on the roof.

What is your favorite vegetable?
I like them all.

What is your favorite sport?
Basketball.

What do you hate the most?
Aggressive drivers.

Who is your greatest love?
My husband.

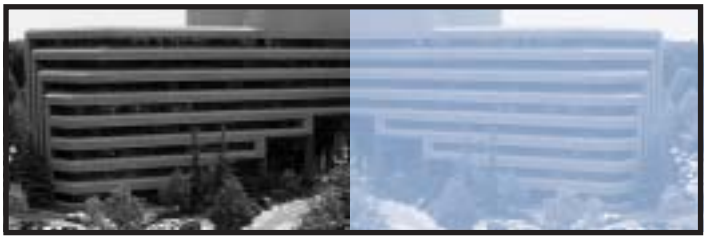
If you could change just one thing in the world, what would it be?
For all parents to love their children unconditionally and spend time with them so they feel loved and important.

What is your greatest accomplishment to date?
Raising our two children.

For what do you wish to be most remembered?
Being a good friend, wife, and mother.

What made you want to do the Avon Breast Cancer Walk?
I wanted to challenge myself physically and mentally, and I wanted to walk in honor of my mother. ■

Linda Gray



DCP home base: Executive Plaza

DCP Colorectal Cancer Screening Workshop Stirs Discussion on Good Tests, Better Technologies, and Best Choices

KARA SMIGEL CROKER

The world's leading experts on screening for colorectal cancer gathered in Bethesda in March – not coincidentally Colorectal Cancer Awareness Month – to debate and discuss the role of screening for people at average risk of colon cancer. Gathered by invitation of the Division of Cancer Prevention, they debated the role of seemingly conflicting recommendations from various groups and discussed the kind of research the National Cancer Institute could sponsor to help fill in the scientific gaps.

Dr. Peter Greenwald, Dr. Ernie Hawk and Dr. Bernard Levin listen intently to speakers at the Colorectal Cancer Screening Workshop.

One common message was that any kind of colorectal cancer screening — be it fecal occult blood testing, sigmoidoscopy, double-contrast barium enema, or colonoscopy – it is better that nothing at all, and most Americans who might be screened, are not. Depending on the test, only 20% to 40% of people over age 50 get tested for colorectal cancer.

Compared to no screening at all, any test is cost effective, according to Michael Pignone, M.D., M.P.H., of the University of North Carolina, Chapel Hill, one of the evidence-based practice centers that inform the Agency for Healthcare Research Quality, the government agency called on to address medical practice issues. AHRQ is in the process of updating the U.S. Preventive Services Task Force recommendations on colorectal screening (http://www.ahrq.gov/).

Marion Nadel, Ph.D., from the Centers for Disease Control and Prevention in Atlanta, pointed out the complexities with choosing one test over the other, noting that cost, acceptability of the procedure, effectiveness of the test, and its availability will all come into play. "While colonoscopy is the most effective and we may choose it for ourselves, we have to weigh these other factors when making recommendations to the public."

Speaking for the public, Kevin Lewis, co-founder and chairman of the Colon Cancer Alliance noted that most people "assume they are at low-risk for colorectal cancer" and don't need to be screened. And those who are screened say that insurance coverage, the unpleasant preparation needed for most tests (laxative solutions), and the procedures themselves are major obstacles.

Two main viewpoints emerged among workshop participants: those who look at colonoscopy as a gateway – i.e. start with colonoscopy and then add other screening as needed. The other perspective is that other, often simpler or less invasive, tests could be used to signal a need for full-fledged colonoscopy. Bernard Levin, M.D., co-chair of the meeting and vice president for cancer prevention at the University of Texas M. D. Anderson Cancer Center in Houston espoused the latter view. "We need to think of strategies to reduce the need for colonoscopy," said Dr. Levin.

Researchers also discussed new techniques on the horizon, some closer to common use than others. One that is heading to large-scale study is a genetic test done from a Fecal Occult Test stool sample. A positive results would lead to colonoscopy. On the far horizon is a Virtual Colonscopy—using computer technology with a CT scan to "see" the structure of the colon and its lining—where the screenee doesn't have to prepare the colon with cleansing agents/laxatives, as is usually the case. Virtual colonoscopy *with* cleansing is not in large-scale trials, and the added benefit of doing so without cleansing the colon is farther away.

Equally important, there was discussion about what the target of screening should be – cancer itself or a preinvasive growth? And which preinvasive growth is the best determinant of risk for cancer? Current practice focuses on small adenomatous polyps, but more advanced lesions might be a better target, noted DCP's Ernie Hawk, M.D., chief of the Gastrointestinal and Other Cancer Research Group and co-chair of the meeting.

While many workshop participants voiced support of a large-scale trial of colonoscopy, there was debate as to what colonscopy would be compared to in such a trial. In addition, Ted Levin, M.D., of the Kaiser Permanent Division of Research in Okaland, Calif, noted, "If we did a colonoscopy trial that showed no benefit, would anybody believe it? The horse it already out of the barn."

Summary and recommendations from the workshop are being formulated and will be submitted to a journal for publication. ■

DEE SULLIVAN

We would like you to join us in welcoming new staff to DCP:

Raheleh Amini, MS
Clinical Research Program Specialist, Protocol Information Office
From NIAID

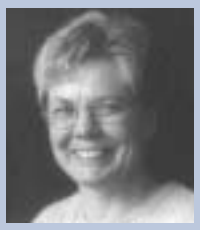
Dawn Fisher
Office Automation Clerk, Office of Preventive Oncology
She is a also Biology major at Bowie State University

Jill Hughes
Administrative/Personnel Technician, Administrative Resource Center
From SAIC

Elizabeth McMillan
Administrative Program Assistant, Nutrition Science Research Group
from the Department of Commerce

Robert Negm, PhD
Bioinformatics Specialist, Cancer Biomarkers Research Group
From Boston University

Susan Perkins, PhD
Special Expert, Office of Preventive Oncology, NCI at Frederick
From Division of Basic Sciences



Anne Ryan
Program Specialist, Office of the Associate Director
From the Southwest Oncology Group, Statistical Center, Seattle, WA

Asad Umar, PhD, DVM
Program Director, Gastrointestinal and Other Cancers Research Group
From NIEHS

Good Luck!

Please join us in wishing Ann Malner well as she begins her new position as Secretary to the Deputy Director of NIAAA.

CONGRATULATIONS!

Congratulations are in order for James Crowell, PhD named the Chief of the Chemoprevention Agent Development Research Group and Eva Szabo, MD named the Chief of the Lung and Upper Aerodigestive Cancer Research Group.

True Corn-fession

PAMELA MARCUS

Did you know that corn is a vegetable? I didn't.

I have claimed for years that corn was NOT a vegetable, because it is classified, botanically-speaking, as a grain. Grains aren't vegetables, right?

Wrong. Grains are vegetables. Beans are vegetables. In fact, any edible plant, or edible part of a plant, is considered to be a vegetable.

I have more news for you. Fruits are parts of plants and therefore they are vegetables too.

Troubled by this knowledge? Wondering where it's leading? Let me explain.

The botanists say that a fruit is a mature ovary of any plant[1]. Take a guess as to what those corn kernels are.

Yes, the corn we eat is actually a fruit.

Who knew?

I ought to apologize for all those times I've been wrong. For all the times I made my mother serve something green instead of something yellow. For all the times I've scowled when corn appeared with potatoes (gasp!) next to my chicken.

Potatoes????? I guess I have to apologize for that one too.

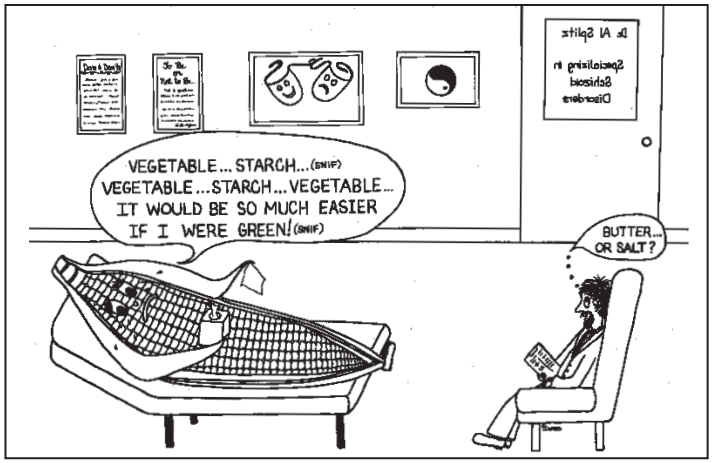
[1] Ensminger, Ensminger, Konlande, and Robson. The concise encyclopedia of foods and nutrition. Boca Raton, Florida: CRC Press, 1995.

Teams Work

DOUGLAS L. WEED
Editor-in-Chief

Two years have passed since the Division of Cancer Prevention began to recreate itself as a team-based matrix organization. Painless is not the best word to describe our transformation. We needed to learn a new vocabulary; we adjusted to new working relationships, and we took on responsibilities added to those that accumulate in any state-of-the-art scientific research institution like the National Cancer Institute. Change is hard but change we did. Team participation is now a part of each DCP staff's performance evaluation. Leadership opportunities for scientists and support staff regularly emerge as new teams are developed and old teams complete their tasks. Each DCP employee spends some portion of their week working with individuals outside their respective research groups. As a result, we know each other better and can help each other succeed. There is a palpable sense of accomplishment and progress among those who have championed these changes; teams *work*, to put it bluntly. Scientific concepts—such as the Lung Screening Study—have successfully emerged from teams with members not only from DCP but also from other Divisions and from beyond the NCI. The support staff team meets regularly to examine and improve the working lives of the unsung heroes of our organization. And the newsletter team—of which I am extremely proud—keeps you posted on news about NCI's cancer prevention efforts, complementing the efforts of a new DCP-based communications and marketing team. Over two dozen teams help to define the future of cancer prevention at the NCI. Why not join us? ■

GRAÇA DORES



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