

# DEFEAT Cancer

## EXERCISE & NUTRITION during/after CANCER

CURRENT PEER-REVIEWED MEDICAL LITERATURE  
and EXPERT COMMENTARY FROM RELIABLE MEDIA SOURCES and DR. BLEYER

December 2007  
*Seasons Greetings*



Note: In keeping with DEFEAT Cancer's premise that it is the *combination* of exercise and nutrition (E&N) that had the greatest impact, reports on studies that consider **both E&N** are now **listed first**. Also, cancer prevention reports will be included if they have relevance for prevention of cancer recurrence, and will be identified with a [*Prevention*] designation.

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### Exercise and Nutrition

#### **Food, Nutrition, Physical Activity and the Prevention of Cancer: A Global Perspective** [*Prevention*]

World Cancer Research Fund (WCRF) / American Institute for Cancer Research (AICR)

Washington, DC: AICR, 2007 – Second Report

517 pages

[www.dietandcancerreport.org](http://www.dietandcancerreport.org)

#### **Dr. Bleyer:**

- Albeit this resource, just published, addresses cancer prevention, it is a long awaited revision of the first publication that set the standard for cancer prevention via nutrition and physical activity (we refer to combination as our **E&N**, exercise and nutrition, and our E&N program as **E&Nergy**).
- Just released, it is a tome (517 pages) that is regarded as the bible of E&N for cancer prevention, authored by 25 world experts and 254 consultants from the following countries: U.S., United Kingdom, China, Nigeria, Japan, Germany, New Zealand, India, Mexico, the Netherlands, Chile, Italy, Australia, Spain. View [www.dietandcancerreport.org](http://www.dietandcancerreport.org) for background and development.
- Although what specifically works for *de novo* cancer prevention (*primary prevention*) may well not also work for prevention of cancer recurrence (*tertiary prevention*) or the development of a new cancer (*secondary prevention*), it is logical to assume that most of the principles do apply to both primary and secondary prevention and may apply to tertiary prevention.
- Thus, I recommend this resource in general for cancer patients and survivors to take what they can from this resource. We will provide specific recommendations from the peer reviewed medical literature on the value of E&N during and after cancer. Meanwhile, check out this new release.
- I've included an expert media review after the report on weight gain below that provides additional relevant information



- ☑ An electronic copy (pdf document) will be placed on our website or sent to you upon request, or you may download it at no charge or order a hard copy or CD version directly [www.dietandcancerreport.org](http://www.dietandcancerreport.org). Two hard copies are available in the St. Charles Cancer Center library, one for checkout and one for those who can review it on site
- ☑ With regard to nutrition, the bottom line is what Carol Schrader and Suzanne Dixon have been advising all along: *plant-based* diet; a synopsis of the dietary recommendations was the first nutrition handout of DEFEAT Cancer.

### ***Weight gain prior to diagnosis and survival from breast cancer***

Cleveland RJ, Eng SM, Abrahamson PE, Britton JA, Teitelbaum SL, Neugut AI, Gammon MD.

Department of Epidemiology, University of North Carolina

Cancer Epidemiol Biomarkers Prev. 2007 16(9):1803-11

**BACKGROUND:** To examine the effects of prediagnostic obesity and weight gain throughout the life course on survival after a breast cancer diagnosis, we conducted a follow-up study among a population-based sample of women diagnosed with first, primary invasive, and in situ breast cancer between 1996 and 1997 (n = 1,508).

**METHODS:** In-person interviews were conducted shortly after diagnosis to obtain information on height and weight at each decade of life from age 20 years until 1 year before diagnosis. Patients were followed to determine all-cause (n = 196) and breast cancer-specific (n = 127) mortality through December 31, 2002.

**RESULTS:** In multivariate Cox proportional hazards models, obese women had increased mortality due to breast cancer compared with ideal weight women among those who were premenopausal at diagnosis [hazard ratio (HR), 2.85; 95% confidence interval (95% CI), 1.30-6.23] and postmenopausal at diagnosis (HR, 1.91; 95% CI, 1.06-3.46). Among women diagnosed with premenopausal breast cancer, those who gained >16 kg between age 20 years and 1 year before diagnosis, compared with those whose weight remained stable (+/-3 kg), had more than a 2-fold elevation in all-cause (HR, 2.45; 95% CI, 0.96-6.27) and breast cancer-specific mortality (HR, 2.09; 95% CI, 0.80-5.48). Women diagnosed with postmenopausal breast cancer who gained more than 12.7 kg after age of 50 years up to the year before diagnosis had a 2- to 3-fold increased risk of death due to all-causes (HR, 2.69; 95% CI, 1.63-4.43) and breast cancer (HR, 2.95; 95% CI, 1.36-6.43).

**CONCLUSIONS:** These results indicate that high levels of prediagnostic weight and substantial weight gain throughout life can decrease survival in premenopausal and postmenopausal breast cancer patients.

#### **Dr. Bleyer:**

- ☑ We categorize studies on excessive weight and weight gain in the E&N category since weight status is not only influenced strongly by both exercise and nutrition, it is more greatly affected by the combination than by either factor alone—a synergistic effect
- ☑ Obesity continues to be increasingly implicated in cancer recurrence, with more evidence in the gynecologic cancers (malignant disease of the breast, ovary, uterus and cervix) than in other categories
- ☑ This report finds that survival after a breast cancer diagnosis is more likely in women who 1) are overweight at the time of diagnosis, 2) gain substantial weight throughout life before their diagnosis (not just those who are overweight most of their lives), 3) whether they are premenopausal (younger) or postmenopausal (older) when diagnosed with cancer, and 4) whether death is due directly to having the cancer or to other causes (obesity is associated with mortality from a variety of other causes, especially heart disease).
- ☑ Younger women has the highest risk from excessive weight gain, nearly a 3-fold increased risk on the average if premenopausal in comparison to a 2-fold average risk increase if postmenopausal
- ☑ On the other hand those who gained most of their excessive weight after age 50 were nearly as likely to die prematurely as young women

### ***Obesity and mortality in men with locally advanced prostate cancer***

Cancer 110(12):2691-9, 2007

Jason Efstathiou, Kyoung-hwa Bae, William Shipley, Gerald Hanks, Miljenko Pilepich, Howard Sandler, Matthew Smith

**BACKGROUND.** Greater body mass index (BMI) is associated with shorter time to prostate-specific antigen (PSA) failure following radical prostatectomy and radiation therapy (RT). Whether BMI is associated with prostate cancer-specific mortality (PCSM) was investigated in a large randomized trial of men treated with RT and androgen deprivation therapy (ADT) for locally advanced prostate cancer.

**METHODS.** Between 1987 and 1992, 945 eligible men with locally advanced prostate cancer were enrolled in a phase 3 trial (RTOG 85-31) and randomized to RT and immediate goserelin or RT alone followed by goserelin at recurrence. Height and weight data were available at baseline for 788 (83%) subjects. Cox regression analyses were

performed to evaluate the relations between BMI and all-cause mortality, PCSM, and nonprostate cancer mortality. Covariates included age, race, treatment arm, history of prostatectomy, nodal involvement, Gleason score, clinical stage, and BMI.

**RESULTS.** The 5-year PCSM rate for men with BMI <25 kg/m<sup>2</sup> was 6.5%, compared with 13.1% and 12.2% in men with BMI 25 to <30 and BMI ≥30, respectively (Gray's P = .005). In multivariate analyses, greater BMI was significantly associated with higher PCSM (for BMI 25 to <30, hazard ratio [HR] 1.52, 95% confidence interval [CI], 1.02-2.27, P = .04; for BMI ≥30, HR 1.64, 95% CI, 1.01-2.66, P = .04). BMI was not associated with nonprostate cancer or all-cause mortality.

**CONCLUSIONS.** Greater baseline BMI is independently associated with higher PCSM in men with locally advanced prostate cancer. Further studies are warranted to evaluate the mechanism(s) for increased cancer-specific mortality and to assess whether weight loss after prostate cancer diagnosis alters disease course.

**Dr. Bleyer:**

- In this study of nearly 1000 men with prostate cancer that had spread outside the prostate gland by the time of diagnosis, the chance of dying of prostate cancer within 5 years was at least 50% greater among those who were overweight at diagnosis according to body mass index (BMI)
- The increase associated with being overweight was not due to a difference in treatment, age, race, stage (extent of disease beyond the prostate), grade of the tumor, or prior surgery for prostate enlargement; it was due to excessive weight *per se*, or something directly related to being overweight
- For prostate cancer at least, it appears that being overweight is as bad as being obese (excessively overweight).
- Moreover, the increased death rate was due to prostate cancer itself and not to other diseases or another cancer, suggesting that the cancer itself (prostate cancer) was affected directly or indirectly by being overweight

***Extra weight increases prostate cancer patients' risk of dying***

By Nicole Ostrow

Nov. 12 (Bloomberg) -- Overweight men are more likely to die of prostate cancer within five years of diagnosis than those who are thinner, according to a study in the U.S.

Extra fat raised the risk of dying from the disease by 52 percent and obesity increased it to 64 percent, after researchers adjusted for some other medical reasons, scientists reported in the **Dec. 15 issue of the *Cancer***.

More than 218,000 American men are expected to be diagnosed with prostate cancer this year, according to the researchers. More studies are needed to determine whether weight loss will lower the chances of dying from prostate cancer, said senior author Matthew Smith.

"There's lots of reasons to try to maintain an ideal body weight: lesser risk of cardiovascular disease and diabetes," said Smith, a director of research at Massachusetts General Hospital Cancer Center in Boston, in a telephone interview on Nov. 9. "It may be that those same lifestyle approaches would reduce the risk of adverse outcomes from prostate cancer."

The researchers examined the records of 788 patients who were diagnosed with advanced prostate cancer. Of those, 241 were considered of normal weight, 402 were overweight and 145 were obese, according to a measure called body mass index. BMI is weight in kilograms divided by height in meters squared. A figure of less than 25 is deemed normal, while a BMI over 30 is considered obese.

The five-year rate of mortality ascribed specifically to the disease was 13.1 percent for "overweight" men in the study and 12.2 percent for "obese" men, compared with 6.5 percent for other men, according to the study. The relative risk suggested by those rates is before adjustment for tumor size at the time of diagnosis and other circumstances.

**More Work Urged**

It may be that prostate cancer treatments are less effective in men who have higher weights, Smith said, or that other illnesses these men may have, such as diabetes, play a role in the increased risk of prostate cancer death.

"More work needs to be done to understand the mechanisms," Smith said.

Prostate cancer occurs in the tissue of the prostate, a walnut-sized gland in the male reproductive system that is found below the bladder. More than 27,000 Americans are expected to die of the disease this year.

**Dr. Bleyer:**

- The report is a good summary of the original article cited immediately above
- The senior author, director of research at the pre-eminent Massachusetts General Hospital, is appropriately quoted

***Obesity a stronger risk for cancer than previously known*** [Prevention]

Peggy Eastman

Oncology Times: Volume 29(22)25 November 2007, pp 8,10-11

WASHINGTON, DC-Even as Americans, Britons, and many other populations are growing fatter, scientific evidence is mounting that obesity puts people at a far higher risk of cancer than had been understood before now.

That is the most striking conclusion from the most comprehensive international report on diet and cancer published to date, the 517-page Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective.

The report, a joint project of the American Institute for Cancer Research (AICR) and the World Cancer Research Fund (WCRF), was released at a news briefing at the National Press Club here, and it updates a similar AICR/WCRF report published in 1997.

Today there are an estimated one billion overweight or obese people worldwide, according to the new report, which is based on 7,000 large, carefully culled studies. Even China, which has historically had a lean population, is now confronting the problem of increasing obesity.

The report links excess body fat to six cancers: colon, kidney, pancreas, adenocarcinoma of the esophagus, endometrium, and breast in postmenopausal women. Recommendations are given to prevent cancer (see box), and the expert panel plans to release a second report in about a year that will address public health policy for diet, nutrition, physical activity, and cancer prevention. The recommendation to cut back on red meat consumption (beef, lamb and pork) is controversial-see below.

It's clear that being fat induces and causes more cancers than we thought last time, said London-based Prof W. Philip T. James, CBE, DSc, MD, a member of the panel that wrote the report. He is Chairman of the International Obesity Task Force (which he established), Chairman of the Alliance Presidential Council, and President-elect of the International Association for the Study of Obesity.

### **Best to Be at Low End of Leanness**

Indeed it is best for people to be at the very lower end of leanness in the normal weight range for their height- especially around the waist, emphasized Dr. James, who wrote the United Kingdom's reports on obesity in 1976 and 1983, the UK's first preventive and management strategies for obesity.

This means maintaining a body mass index (BMI) of somewhere between 18.4 and 24.9. You might think of this as a drastic recommendation... but that's the evidence, he said. And, he added of the report, This is an analysis of the evidence; it's very robust.

He compared the challenge of reducing cancer risk by weight control and a healthy diet to the challenge of reducing heart disease 30 to 40 years ago (although he said it is more difficult), and noted that no one expects the results called for by the panel to be achieved instantly.

Importantly, the new report states that cancer survivors who have completed treatment should follow the same recommendations given for those who have not had cancer in order to reduce their risk of recurrence or risk of a new primary tumor.

We see no reason at all for not applying the same recommendations to those who have survived cancer, Dr. James said. Asked by OT to clarify this recommendation for patients who have become too thin during active treatment, he said that weight loss in cancer patients can be a real hazard, and that these patients need to have an exceedingly nutritious diet to build up their strength. But, he said, once a cancer survivor has completed treatment, is eating normal meals, and has reached a BMI of 21, he or she should stay there and not gain more weight.

### **Avoid Megadoses of Supplements**

For cancer patients and survivors, the report explicitly recommends against megadoses of dietary supplements. The evidence does not support the use of high-dose supplements of microconstituents as a means of improving outcome in people with a diagnosis of cancer, the report states, counseling patients to consult their physician or a nutritional professional on this issue.

Today, obesity comes in not far behind smoking as an avoidable cause of cancer and may at some point surpass smoking as a risk factor, stressed Walter W. Willett, MD, PhD, also a member of the panel that wrote the new report and Chair of the Department of Nutrition at Harvard School of Public Health.

He said that carrying excess weight, which is really excess body fat, appears to change the body's hormonal environment in ways that increase cancer risk. But despite the global trend toward obesity in industrialized and even in developing nations, Dr. Willett said, It's not hopeless to think we can achieve these goals [in the report]. Dr. Willett, a lean runner, stressed that even in affluent nations where food is plentiful and the lifestyle can be sedentary, weight gain is not inevitable.

We should be emphasizing making small adjustments at the time of putting on those first five pounds, he said. And, if a postmenopausal woman loses 15 or 20 pounds, she can reduce her risk of breast cancer by about 60%-That's very good news.

### **'Exercise in Medicine'**

Since the majority of cancers are not inherited, lifestyle choices play a key role in cancer risk, he noted. The panel's report states that as human populations have evolved from being hunter-gatherers to industrialized peoples, their physical activity has declined radically, with pronounced consequences for body weight. Coincidentally, the American College of Sports Medicine and the American Medical Association are launching a new campaign called Exercise as Medicine to encourage physicians to make exercise part of treatment plans for patients.

## Red Meat

Since 1997, when the first AICR/WCRF report on diet and cancer was released, the evidence linking red meat consumption to a higher risk of colon and rectal cancer has become stronger, according to the new report. It states, Red or processed meats are convincing or probable causes of some cancers.

The expert panel emphasizes that it is not recommending a diet containing no meat or no foods of animal origin, just limiting red meat consumption to no more than 18 ounces per week. But some nutrition researchers take issue with this recommendation on red meat.

My review of the evidence is a little different, Eric C. Westman, MD, MHS, Director of the Lifestyle Medicine Clinic at Duke University, explained in an interview.

I don't think there is enough evidence to reduce meat consumption; it's a weak association...a weak association does not mean causation, added Dr. Westman, who was at the National Press Club to talk to news reporters at the invitation of the National Cattlemen's Beef Association (Dr. Westman told OT that he receives no research funding from this group).

For cancer risk I like the message of focusing on obesity; that's new, he said. I don't like focusing on one specific food. He said he uses many different diets to help his obese patients lose weight, including ones that stress lean meat as a source of high-quality protein.

**Cancer Prevention Recommendations** from the AICR/WCRF Report:

1. **Body fatness.** Be as lean as possible within the normal range of body weight. Ideal BMI: 21-23 or even lower.
2. **Physical activity.** Be physically active as a part of everyday life, aiming for vigorous exercise for 30 minutes a day or moderate exercise for 60 minutes a day. Sedentary habits such as watching TV should be limited.
3. **Foods and drinks that promote weight gain.** Limit energy-dense foods such as fast foods and avoid sugary drinks such as soda and fizzy beverages.
4. **Plant foods.** Eat mostly foods of plant origin: five servings of non-starchy vegetables and fruits every day.
5. **Animal foods.** Limit the intake of red meat (beef, lamb, and pork) to no more than 18 ounces a week, with very little (if any) processed meats preserved by smoking, curing, or salting.
6. **Alcoholic drinks.** A man should have  $\leq 2$  drinks a day and a woman  $\leq 1$  drink a day.
7. **Preservation, processing, preparation.** Consumption of processed foods with added salt should be limited, to ensure an intake of less than 2.4 grams of sodium per day. Avoid moldy cereals and legumes.
8. **Dietary supplements.** Meet nutritional needs through diet alone; dietary supplements are not recommended.
9. **Breastfeeding.** Mothers should breastfeed and babies should be breastfed (exclusively for the first six months).
10. **Cancer survivors. They should follow the recommendations for people who have not had cancer unless otherwise advised, and should seek nutritional care from an appropriately trained professional.**

### Dr. Bleyer:

- I bolded recommendation 10 since it considers how persons who have already had cancer should regard this report
- If I would *otherwise advise* that the report should not be considered entirely applicable to cancer survivors, as I indicated in my comment at the end of the first report above. Nonetheless, I agree that there are benefits in following the report guidelines for *secondary* cancer prevention (another cancer after a prior one) and the possibility the *tertiary* cancer prevention (of the prior cancer)

## Exercise

### Exercise as cancer treatment

Elizabeth Quinn, reviewed by Rich Fogoros, MD

Your Guide to Sports Medicine. <http://sportsmedicine.about.com/cs/exercisephysiology/a/aa090501a.htm>

Evidence seems to support the benefits of exercise as a treatment for cancer. Several studies have examined the relationship between exercise, rehabilitation and quality of life in cancer patients and reported positive findings. Studies have followed women undergoing breast cancer treatment who added moderate exercise to their treatment regimen. In most studies women exercised at a moderate intensity (60-85% maximal heart rate) for twenty to thirty minutes, 3 times per week from 4 to 12 weeks. The exercise programs included bicycle ergometer and walking programs.

These studies have found that overall, exercise had a positive effect on physical and psychological functioning of cancer patients while in treatment. These benefits include the following objective and self-reported findings:

- increased functional capacity and maximum oxygen consumption capacity
- decreased body fat and increased lean muscle mass
- decreased nausea and fatigue
- improved sense of control
- improved mood and self-esteem

- self reported improved quality of life

Other studies found that exercising cancer patients had improved work capacity, lower heart rates at given exercise intensity, increased maximum workloads and time to exhaustion than did non-exercising cancer patients.

Psychological changes, including a decrease in total mood disturbances, decrease in depression and fewer problems sleeping were noted between the exercise and non-exercise groups.

A review of the literature shows some evidence that exercise rehabilitation has a beneficial effect on the physical and psychological well-being of patients with breast cancer. However, more focused studies are needed to draw specific conclusions. While these results must be considered with some degree of caution, it would suggest that performing moderate exercise can provide great benefit and little risk to cancer patients.

Friedenreich CM, Courneya KS. Exercise as rehabilitation for cancer patients. *Clin J Sport Medicine* 1996;6:237-44.

Winningham ML. Strategies for managing cancer-related fatigue syndrome. *Cancer*. 2001;92(S4):988-97.

Schwartz AL, Mori M, Gao R, Nail LM, King ME. Exercise reduces daily fatigue in women with breast cancer receiving chemotherapy. *Med Sci Sports Exerc*. 2001 33:718-23.

Schwartz AL. Daily fatigue patterns and effect of exercise in women with breast cancer. *Cancer Pract*. 2000:816-24.

MacVicar MG, Winningham ML, Nickel JL. Effects of aerobic interval training on cancer patients' functional capacity. *Nurs Res*. 1989;38:348-51.

Winningham ML, MacVicar MG, Bondoc M, Anderson JI, Minton JP. Effect of aerobic exercise on body weight and composition in patients with breast cancer on adjuvant chemotherapy. *Oncol Nurs Forum*. 1989;16:683-9.

#### Dr. Bleyer:

This succinct statement of how *exercise is a cancer treatment* is worth re-posting here

### Nutrition

#### ***Finding the true power of a pungent bulb***

By Laura Johannes - Wall Street Journal - December 4, 2007

Garlic has been used in medicine since ancient times. Today, companies that sell garlic pills, liquids and topical ointments say garlic can prevent or treat a number of maladies from the common cold to even cancer. Scientists say garlic has powerful antimicrobial effects in the laboratory, but so far there isn't adequate proof of any benefit in humans.

When garlic is cut, allicin, a sulfur-based compound, is released -- giving garlic its distinctive smell and believed to be garlic's defense against microbes, fungi and other natural enemies. Scientists have found garlic and allicin extracts kill bacteria in the lab. It may also kill viruses, but evidence is less compelling, says Larry Lawson, an Orem, Utah, chemist who studies garlic and garlic supplements.

Garlic has been tested to prevent or treat a variety of maladies, including high cholesterol, cancer, the common cold, coronary artery disease, infection by antibiotic-resistant bacteria and even toenail fungus.

"The problem is most of the trials come from companies that make the garlic supplements -- and they are small and not very compelling," says Christopher Gardner, an associate professor of Medicine at Stanford University's Stanford Prevention Research Center.

A number of studies had shown that garlic supplements appeared to lower cholesterol, but a study published earlier this year by Dr. Gardner and colleagues found no effect. The study tested raw garlic eaten in sandwiches -- one clove a day, six days a week -- plus two different supplements and a placebo in 192 patients for six months.

While garlic is used to ward off colds and flus, evidence for its efficacy is limited. A 146-patient study published in 2001 in *Advances in Natural Therapy* found those taking a garlic pill daily had fewer colds than those taking a placebo, and recovered more quickly if they did catch a cold. The author was Peter Josling, a scientist at Allicin International Ltd., a British concern that sells an allicin supplement called Allimax. The study has yet to be replicated by independent researchers.

**One of the most promising areas is cancer. So far, much of the research is in the lab or in animals, but some studies -- particularly on rectal and colon cancers -- have been done in human populations. Last month, an expert panel of the nonprofit American Institute for Cancer Research concluded that garlic "probably" protects against colorectal cancer, but noted more evidence is needed.**

A catch is that garlic, and some supplements, can cause bad breath. Getting allicin into your bloodstream also is tricky. Most pills involve a powder that is supposed to make allicin when it dissolves, but stomach acid harms the enzyme that makes allicin. Many pills are coated to keep them from dissolving until they pass the stomach -- but often the coating works too well and the pills are never digested, scientists say.

Scientists say it is most plausible that garlic will be effective when used topically, like in creams to treat toenail fungus.

The best way to eat garlic for health is raw, says Dr. Lawson. You can stir fry it or roast it, but you'll likely get less allicin since the enzyme used to make it is harmed by heat. A study by Pennsylvania State University researchers found letting cut garlic sit for 10 minutes at room temperature before heating helped retain its anticancer properties

**Dr. Bleyer:**

- Whereas I like garlic, it is much too preliminary to recommend it *per se* for prevention of cancer recurrence
- I definitely would discount a report by a scientist at the company manufacturing the putative active ingredient, and am not impressed by publication in a journal that I've not heard of before, *Advances in Natural Therapy*.

***Fiber, whole grains may cut pancreatic cancer risk*** [Prevention]

Nov 23, 2007

NEW YORK (Reuters Health) - Eating more whole grain and fiber-rich food may lower the risk of pancreatic cancer by about 40 percent, study findings suggest.

Dr. June M. Chan, of the University of California, San Francisco, and colleagues identified this reduced risk among adults who ate two or more servings of whole grains each day compared with those who ate less than one serving a day.

They also noted about a 35 percent reduction in risk among individuals who ate the highest amount of fiber (26.5 grams per day or more) compared with those who ate the least (15.6 grams per day or less). "There is a possibility that diet can affect one's risk of pancreatic, as well as other cancers," Chan told Reuters Health, "and that eating a diet rich in a wide variety of grains is likely to not only help in the prevention of diabetes and heart disease, but also this very deadly cancer."

The researchers looked at grain intake among 532 people with pancreatic cancer and 1,701 people without pancreatic cancer among the San Francisco Bay area population.

The two groups were similar in age, gender, and body weight, and had a similar history of diabetes, but those with pancreatic cancer were more frequently current smokers, the investigators noted.

Overall, the results of the study suggest that eating more whole grains may protect against pancreatic cancer.

On the other hand, eating two or more servings of doughnuts a week, compared with less than a serving a month, was found to raise the risk of pancreatic cancer. However, so did eating two or more servings a week of cooked breakfast cereals such as oatmeal, which the investigators suspect may be explained by their inability to distinguish between sweetened or 'instant' cereals and less refined cereals.

"The risk reductions associated with some whole grain foods and fiber provide general support for the hypothesis that whole grains are better than more refined and sweetened grains for pancreatic cancer prevention," Chan said. However, "further studies are needed to confirm this," Chan added.

SOURCE: American Journal of Epidemiology, November 15, 2007

**Dr. Bleyer:**

- Two steps backward (donuts), one step forward (whole grain) for pancreatic cancer prevention
- Although DEFEAT is focused on prevention of cancer recurrence, and not on prevention *per se*, increased whole grain consumption and exercise should have benefit in recurrence of pancreatic and, I suspect, colon cancer.