

# ***DEFEAT Cancer***

## **CURRENT PEER-REVIEWED MEDICAL LITERATURE and MEDIA COMMENTS on EXERCISE & NUTRITION during/after CANCER**

May 2007

Exercise.....	1
Physical Activity, Body Mass Index, and Mammographic Density in Postmenopausal Breast Cancer Survivors.....	1
Effectiveness After 1 Year of a Short-Term Physical Activity Intervention on Cardiorespiratory Fitness in Cancer Patients.....	2
Nutrition.....	3
Plant foods may cut breast cancer risk.....	3
Animal protein & fat raise endometrial cancer risk.....	3
To avoid colon cancer, eat more fruit, study finds .....	4
High-fat diet may increase breast cancer risk.....	4
Exercise & Nutrition .....	4
.....	<b>Error! Bookmark not defined.</b>

---

### **Exercise**

---

#### ***Physical Activity, Body Mass Index, and Mammographic Density in Postmenopausal Breast Cancer Survivors***

Irwin ML, Aiello AJ, McTiernan A, Bernstein L, Gilliland FD, Baumgartner RN, Baumgartner KB, Ballard-Barbash R

J Clin Oncol 25:1061-1066. © 2007

**Purpose.** To investigate the association between physical activity, body mass index (BMI), and mammographic

density in a racially/ethnically diverse population-based sample of 522 postmenopausal women diagnosed with stage 0-IIIa breast cancer and enrolled in the Health, Eating, Activity, and Lifestyle Study.

**Methods.** We collected information on BMI and physical activity during a clinic visit 2 to 3 years after diagnosis. Weight and height were measured in a standard manner. Using an interview-administered questionnaire, participants recalled the type, duration, and frequency of physical activities they had performed in the last year. We estimated dense area and percentage density as a continuous measure using a computer-assisted software program from mammograms imaged approximately 1 to 2 years after diagnosis. Analysis of covariance methods were used to obtain mean density across WHO BMI categories and physical activity tertiles adjusted for confounders.

**Results.** We observed a statistically significant decline in percentage density (P for trend = .0001), and mammographic dense area (P for trend = .0052), with increasing level of BMI adjusted for potential covariates. We observed a statistically significant decline in mammographic dense area (P for trend = .036) with increasing level of sports/recreational physical activity in women with a BMI of at least 30 kg/m<sup>2</sup>. Conversely, in women with a BMI less than 25 kg/m<sup>2</sup>, we observed a non-statistically significant increase in mammographic dense area and percentage density with increasing level of sports/recreational physical activity.

**Conclusion.** Increasing physical activity among obese postmenopausal breast cancer survivors may be a reasonable intervention approach to reduce mammographic density

---

---

**Effectiveness After 1 Year of a Short-Term Physical Activity Intervention on Cardiorespiratory Fitness in Cancer Patients**

---

Thorsen L, Dahl AA, Skovlund E, Hornslien K, Fosså SD, University of Oslo, Norway

---

J Clin Oncol 25:1301-1302, 2007

In 2005 we published a randomized study in Journal of Clinical Oncology,<sup>1</sup> evaluating the effectiveness of a 3-month home-based training program on cardiorespiratory fitness (CRF) and quality of life parameters in cancer patients shortly after curative chemotherapy. This low-cost training program had beneficial effect on maximum oxygen uptake (VO<sub>2</sub>max [mL/kg-1/min-1]), representing the CRF. In this communication we will briefly report on the results from the 6- and 12-month follow-up evaluations, by answering the following question: does the beneficial 3-month effect on VO<sub>2</sub>max persist until the 6- and 12-month follow-ups?

Recent published reviews conclude that physical exercise has promising effects on a broad range of quality of life parameters in cancer patients. However, the majority of the studies performed are with relatively short intervention periods and without follow-up evaluations.<sup>2-4</sup> Optimally such exercise interventions should lead to long-standing lifestyle changes and thereby continually beneficial effects in these patients. Two studies<sup>5,6</sup> have reported 1-year effects of short-lasting training programs in cancer patients, observing that improvements in fatigue, physical training, physical strength, and fighting spirit were maintained over the entire year of follow-up. As far as we know, no studies have reported the long-term effects of short-lasting training programs on CRF in cancer patients.

Our previous article contained detailed information about the study.<sup>1</sup> Among 220 patients invited, 139 consented to participate and were randomly assigned to an intervention (n = 69) or a control group (n = 70) at baseline. At the 3-month evaluation 59 patients remained in the intervention group and 52 patients in the control group. Between the 3- and 6-month evaluations, nine patients dropped out of each group and from the 6- to the 12-month follow-ups an additional nine patients left the intervention group and seven patients left the control group.

At the 6- and 12-month follow-ups, no intergroup differences in types of performed activities or the numbers of activities per patients were observed. Repeated analysis of variance was used to analyze the effect on CRF of the intervention over time. Scores at 3-, 6-, and 12 month follow-ups were included as dependent variables and groups (intervention or control) and baseline score served as explanatory variables. Furthermore, activity before diagnosis, age, sex, diagnosis, and stage of the disease were each included as additional covariates in the models. The analyses were based on those patients who provided data for all points of assessment. In order to assess robustness of estimates, we also performed intention-to-treat analyses with last observation carried forward for all patients who had a baseline measurement registered.

Table 1 displays the crude VO<sub>2</sub>max values over time in each group. The CRF developed differently in the two groups. In the intervention group VO<sub>2</sub>max decreased over time, whereas it increased in the control group. There was a significant group by time interaction (P = .028). Adjusted for baseline values, the effect of the intervention on VO<sub>2</sub>max persisted until the 6-month follow-up, but not to the 12-month follow-up. The mean VO<sub>2</sub>max difference between the groups at 3, 6, and 12 months were 3.61, 2.74, and 0.18, respectively. The estimated difference in VO<sub>2</sub>max between the groups over the whole period of time was 2.12 mL (95% CI, -0.70 to 4.95; P = .139). The corresponding estimate in the intention-to-treat population (n = 139) was 1.92 (95% CI, 0.19 to 3.81; P = .048).

**Table 1.** Mean Values for Dependent Variables in the Intervention and Control Group and the Time-Effects Within and Between Groups

Cardiorespiratory Fitness (VO <sub>2max</sub> [mL/kg <sup>-1</sup> /min <sup>-1</sup> ]) (n = 77)	Mean Values				ANOVA Effects		
	Baseline	3 months	6 months	12 months	Group x Time	Time	Group
Control	31.72*	34.97	35.84	36.56	0.028	0.626	0.139
Intervention	28.70	35.75	35.84	34.08			

\* Statistically significant group difference ( $P < .05$ );  $t$ -test (unpaired, two tailed).

Our longer lasting and favorable effect on CRF in the intervention group at the 6-month follow-up could have been either due to the previous temporary short-lasting exercise program or to continued exercise during follow-up. We found that contrary to the 3-month observation, the 6- and 12-month observations show no intergroup differences in mean number of activities performed weekly or in number of patients performing different activities at the 6-month and 12-month follow-ups. This finding indicates that the beneficial effect on CRF at the 6-month follow-up were not due to the subjects' ongoing exercise, but to the previous intervention program.

We conclude that in order to change a cancer patient's lifestyle more permanently and thereby gain beneficial effects over time, a longer intervention or booster sessions are probably necessary..

---

### Nutrition

---

#### ***Plant foods may cut breast cancer risk***

American Scientific - March 21, 2007

NEW YORK (Reuters Health) - Postmenopausal women who eat healthy amounts of plant foods rich in estrogen-like compounds called lignans may reduce their risk of developing breast cancer, according to a new study.

"Following the general dietary guidelines for a healthy and prudent diet, that is, consuming large amounts and varieties of fruits, vegetables and whole-grain cereal products daily (all foods rich in lignans) may also help prevent breast cancer in postmenopausal women," Dr. Françoise Clavel-Chapelon told Reuters Health.

Clavel-Chapelon, from the National Institute of Health and Medical Research, Villejuif, France, and associates evaluated the relationship between the amount of four types of plant ligands in the diet and breast cancer risk in 58,049 postmenopausal French women.

Over an average follow-up period of 7.7 years, 1469 women were diagnosed with breast cancer, according to the study, published in the Journal of the National Cancer Institute

---

#### ***Animal protein & fat raise endometrial cancer risk***

American Scientific - March 21, 2007

NEW YORK (Reuters Health) - A new study provides more evidence that animal-derived foods increase the risk of endometrial cancer, while foods from plant sources reduce it.

Women who received the most calories from animal protein had twice the risk of the disease compared to those who took in the fewest calories from animal sources, Dr. Wang-Hong Xu of Fu Dan University School of Public Health in Shanghai and colleagues found.

High levels of calories from animal fat boosted the risk by 50 percent. However, the women who ate the most protein from plant sources cut their endometrial cancer risk by 30 percent.

The results suggest that it's the source of fat or protein, not the macronutrients themselves, that is related to endometrial cancer risk, Xu and his team conclude.

---

---

***To avoid colon cancer, eat more fruit, study finds***

American Scientific - March 21, 2007

Residents swallow watermelons during a watermelon-eating competition in Zhongmu county of Zhengzhou, central China's Henan province in this May 25, 2006 file photo. People who eat a diet high in fruit and low in meat reduce their risk of developing colon cancer, researchers reported on Wednesday. REUTERS/Stringer WASHINGTON (Reuters) - People who eat a diet high in fruit and low in meat reduce their risk of developing colon cancer, researchers reported on Wednesday.



Their study supports other research showing that meat can raise the risk of getting cancer, especially colon cancer, and offers details about what other factors in the diet might be important.

The team at the University of North Carolina in Chapel Hill interviewed 725 people who had just had colonoscopies about their diet, smoking and other habits.

Of these, 203 had learned they had adenomas, polyps that often turn into tumors and are removed during a colonoscopy.

---

***High-fat diet may increase breast cancer risk***

Mar 21, 2007

By Megan Rauscher

SOURCE: Journal of the National Cancer Institute, March 21, 2007.

NEW YORK (Reuters Health) - A large study of middle-age women with a wide range of fat in their diet shows that eating a high-fat diet raises the risk of developing invasive breast cancer.

The findings, reported in the Journal of the National Cancer Institute, stem from the National Institutes of Health-AARP Diet and Health Study, in which 188,736 postmenopausal women reported detailed information on their diet in the mid-1990s.

During an average follow-up of 4.4 years, 3501 women developed breast cancer.

Based on responses to a 124-item "food frequency" questionnaire, researchers found that women who got 40 percent of their calories from fat had about a 15 percent increased risk of developing breast cancer compared with women got 20 percent of their calories from fat.

Using a more precise 24-hour dietary recall questionnaire, "we found a 32-percent increased risk of breast cancer" among women with a high level of fats in their diet, study chief Dr. Anne C. M. Thiebaut from the National Cancer Institute in Bethesda, Maryland, noted in a telephone interview with Reuters Health. The increased risk of breast cancer associated with a high-fat diet was seen for all types of fat (saturated, monounsaturated and polyunsaturated) and seemed to be confined to women who were not using hormone replacement therapy at the start of the study.

The suggestion that hormone therapy mediates the association between dietary fat intake and risk of breast cancer should be studied further, the authors suggest.

Thiebaut noted that "other studies have also found these associations; the higher the fat intake, the higher your risk for breast cancer." Nonetheless, there is ongoing debate about the association between dietary fat and the risk of breast cancer, she noted.

In a commentary on the study, two researchers from Harvard School of Public Health in Boston think that focusing on controlling body fat, rather than fat intake, would be more effective in preventing breast cancer.

The "modest associations" that have been observed between high-fat diets and increased breast cancer risk "stand in sharp contrast to the robust evidence for a strong link between (body fat) and the risk of postmenopausal breast cancer," write Drs. Stephanie Smith-Warner and Meir Stampfer.

---

**Exercise & Nutrition**

---

...

---