



E & N News

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EXERCISE & NUTRITION during/after **CANCER**

CURRENT PEER-REVIEWED MEDICAL LITERATURE and EXPERT COMMENTARY
from **RELIABLE SOURCES and DR. BLEYER**

Note: The entire year of 2008 *E&N News* is now available as a year summary for downloading, either in its entirety or just for exercise (including exercise and nutrition), on the DEFEAT Cancer website: www.defeatcancer.info.

Both versions include executive summaries and are fully indexed and bookmarked.

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Exercise

Randomized controlled trial of resistance or aerobic exercise in men receiving radiation therapy for prostate cancer

[In comparison to usual care, a modest regimen of either resistance training or aerobic exercise during radiotherapy reduced fatigue, decreased serum triglycerides, and reduced body fat in men with prostate cancer](#)

Roanne J. Segal, Robert D. Reid, Kerry S. Courneya, Ronald J. Sigal, Glen P. Kenny, Denis G. Prud'Homme, Shawn C. Malone, George A. Wells, Chris G. Scott, Monika E. Slovinec D'Angelo
J. Clin. Oncol. 27: 344-351

From the Ottawa Hospital Regional Cancer Center; University of Ottawa Heart Institute; and University of Ottawa, Ottawa, Ontario; University of Alberta, Edmonton, Alberta; and the University of Calgary, Calgary, Alberta, Canada

Purpose: Radiotherapy for prostate cancer (PCa) may cause unfavorable changes in fatigue, quality of life (QOL), and physical fitness. We report results from the Prostate Cancer Radiotherapy and Exercise Versus Normal Treatment study examining the effects of 24 weeks of resistance or aerobic training versus usual care on fatigue, QOL, physical fitness, body composition, prostate-specific antigen, testosterone, hemoglobin, and lipid levels in men with PCa receiving radiotherapy.

Patients and Methods: Between 2003 and 2006, we conducted a randomized controlled trial in Ottawa, Canada, where 121 PCa patients initiating radiotherapy with or without androgen deprivation therapy were randomly assigned to usual care (n = 41), resistance (n = 40), or aerobic exercise (n = 40) for 24 weeks. Our primary end point was fatigue assessed by the Functional Assessment of Cancer Therapy–Fatigue scale.

Results: The follow-up assessment rate for our primary end point of fatigue was 92.6%. Median adherence to prescribed exercise was 85.5%. Mixed-model repeated measures analyses indicated both resistance (P = .010) and aerobic exercise (P = .004) mitigated fatigue over the short term. Resistance exercise also produced longer-term improvements (P = .002). Compared with usual care, resistance training improved QOL (P = .015), aerobic fitness (P = .041), upper- (P < .001) and lower-body (P < .001) strength, and triglycerides (P = .036), while preventing an increase in body fat (P = .049). Aerobic training also improved fitness (P = .052). One serious adverse event occurred in the group that performed aerobic exercise.

Conclusion: In the short term, both resistance and aerobic exercise mitigated fatigue in men with PCa receiving radiotherapy. Resistance exercise generated longer-term improvements and additional benefits for QOL, strength, triglycerides, and body fat.

Dr. Bleyer:

- ☑ As the most common adverse effect of radiation and chemotherapy, fatigue needs special attention for prevention and treatment.
- ☑ This trial emphasizes what DEFEAT Cancer stance that exercise should begin early during therapy, and for those who were physically active prior to their cancer diagnosis, enhanced during therapy, instead of the natural inclination to wait until treatment is completed. By then, the potential preventive benefit is likely more difficult to realize, to say nothing about bad habits that not only occur during treatment but are reinforced as a result of the psychological and physical stress of treatment
- ☑ A striking finding is that both resistance training and aerobic exercise significantly reduced circulation triglycerides and prevented an increase in body fat.
- ☑ Aerobic exercise was more effective than resistance training in reducing/preventing fatigue, but did not have as lasting an effect.

Nutrition

Dietary pattern influences breast cancer prognosis in women without hot flashes: The Women's Healthy Eating and Living Trial

[A diet enriched in vegetables and fruit beyond the 5-a-day vegetable/fruit guideline was associated with reduced recurrence rate of breast cancer in women who did not have hot flashes](#)

Ellen B. Gold, John P. Pierce, Loki Natarajan, Marcia L. Stefanick, Gail A. Laughlin, Bette J. Caan, Shirley W. Flatt, Jennifer A. Emond, Nazmus Saquib, Lisa Madlensky, Sheila Kealey, Linda Wasserman, Cynthia A. Thomson, Cheryl L. Rock, Barbara A. Parker, Njeri Karanja, Vicky Jones, Richard A. Hajek, Minya Pu, Joanne E. Mortimer
J. Clin. Oncol. 27: 352-359

From the Department of Public Health Sciences, University of California, Davis, Davis; Moores Cancer Center and Department of Family and Preventive Medicine, Division of Biostatistics, University of California, San Diego, La Jolla; Stanford Prevention Research Center, Stanford University, Stanford; Kaiser Permanente Northern California, Division of Research, Oakland; City of Hope Comprehensive Cancer Center, Duarte, CA; Department of Nutritional Sciences, Arizona Cancer Center, University of Arizona, Tucson, AZ; Center for Health Research, Portland, OR; Yakama Valley Memorial Hospital, Yakima, WA; and Department of Health Disparities Research, The University of Texas M.D. Anderson Cancer Center, Houston, TX

Purpose: To determine whether a low-fat diet high in vegetables, fruit, and fiber differentially affects prognosis in breast cancer survivors with hot flashes (HF) or without HF after treatment.

Patients and Methods: A secondary analysis was conducted on 2,967 breast cancer survivors, age 18 to 70 years, who were randomly assigned between 1995 and 2000 in a multicenter, controlled trial of a dietary intervention to prevent additional breast cancer events and observed through June 1, 2006. We compared the dietary intervention group with a group who received five-a-day dietary guidelines.

Results: Independent of HF status, a substantial between-group difference among those who did and did not receive dietary guidelines was achieved and maintained at 4 years in intake of vegetable/fruit servings per day (54% higher; 10 v 6.5 servings/d, respectively), fiber (31% higher; 25.5 v 19.4 g/d, respectively), and percent energy from fat (14% lower; 26.9% v 31.3%, respectively). Adjusting for tumor characteristics and antiestrogen treatment, HF-negative women assigned to the intervention had 31% fewer events than HF-negative women assigned to the comparison group (hazard ratio [HR] = 0.69; 95% CI, 0.51 to 0.93; P = .02). The intervention did not affect prognosis in the women with baseline HFs. Furthermore, compared with HF-negative women assigned to the comparison group, HF-positive women had significantly fewer events in both the intervention (HR = 0.77; 95% CI, 0.59 to 1.00; P = .05) and comparison groups (HR = 0.65; 95% CI, 0.49 to 0.85; P = .002).

Conclusion: A diet with higher vegetable, fruit, and fiber and lower fat intakes than the five-a-day diet may reduce risk of additional events in HF-negative breast cancer survivors. This suggestive finding needs confirmation in a trial in which it is the primary hypothesis.

Dr. Bleyer:

- ☑ This is a provocative observation that suggests the more vegetable and fruits are taken the greater the benefit of nutrition in preventing breast cancer recurrence
- ☑ The explanation may also have to include the lower meat (animal-based diet) consumption that probably occurred as a result of having to eat considerable more fruits and vegetable (plant-based items)
- ☑ The caveat that the benefit was observed in women who did not have hot flashes and not in women who did is important because 1) this relationship was not prospectively evaluated (a priori) and could be entirely due to retrospective subset analysis (and not be real) and 2) there is no demonstrated biologic evidence (yet) for why hot flashes 'affects the effect' of a plant-based diet on breast cancer recurrence
- ☑ A possible explanation for the hot-flash dependent association that DEFEAT Cancer can offer is that the hormonal status of women with premature postmenopausal symptoms may modulate either the benefit of cancer prevention and recurrence of a plant-based diet or the increased rate of cancer development or recurrence of an animal-based diet; that women without premature menopause had a better outcome regardless of whether they were in the group that ate more vegetable and fruits supports this hypothesis
- ☑ The observed rate of reduction in cancer recurrence among the subgroup with benefit (more than 30%) is striking

Supplement Hampers Thyroid Cancer Treatment

[Iodine from kelp in dietary supplements can compromise therapy](#)

Iodine from kelp in dietary aid compromised therapy, researchers say

By Steven Reinberg

WEDNESDAY, Jan. 21 (HealthDay News) -- People taking dietary supplements need to be careful that those don't interfere with any medical treatments they might be getting, a new report emphasizes.

The case in point was a 55-year-old man being treated for thyroid cancer who was supposed to be on a low-iodine diet as part of his treatment, but his levels of iodine continued to increase. The researchers found that a selenium supplement he was taking contained kelp, which is a rich source of iodine and significantly increased his iodine levels.

"This was a patient with thyroid cancer who had surgery and was treated with radioactive iodine," said lead author **Dr. Lewis E. Braverman, a professor of medicine at Boston University.** "It is very important that he consume a low-iodine diet, which would result in an uptake of the radioactive iodine."

The report was published in the **Jan. 22 issue of the New England Journal of Medicine.**

When doctors discovered the source of the iodine, they stopped all the 20 over-the-counter supplements the patient was taking. After eight weeks, iodine levels dropped to normal. The patient was then put on a low-iodine diet, and after four weeks, iodine levels dropped even further.

"Who would have thought that kelp would be in a selenium tablet?" Braverman said.

"If you want to treat patients with radioactive iodine -- if you want them to be on a low-iodine diet -- you must be extremely inquisitive and cautious, and find out all the over-the-counter remedies they are taking," Braverman noted.

Don't only look at the label that's on the bottle, get a complete description from the manufacturer, Braverman stressed.

There is no reason for people in the United States to be taking selenium, Braverman said, since most people get the selenium they need through diet.

"People are taking too much of the over-the-counter natural food products," Braverman said. "This guy was taking 20 of these, that's ridiculous."

Braverman also noted that taking too much iodine can be dangerous.

"Patients are ingesting large amounts of iodine purposely, because some practitioners of voodoo medicine are suggesting that iodine is good for you," Braverman said. "It is necessary to take small amounts, but large amounts can be injurious to the thyroid."

One expert said that supplements can contain substances that while not listed as an active ingredient are not inert. Moreover, kelp is commonly used in supplements because of its high mineral content.

"Dietary supplements can contain plant extracts, or even plant parts like kelp," said **Andrew Shao, vice president for scientific & regulatory affairs at the Council for Responsible Nutrition.** "But it is not an inactive ingredient."

Shao thinks the problem resulted from doctors not knowing enough about dietary supplements.

"In this case, what was needed was the knowledge on the part of the physicians that kelp is an excellent source of iodine," Shao said. "Had they known that, they would have known to eliminate those [supplements with kelp] immediately."

Dr. Bleyer:

☑ Not only was selenium found to have no benefit in preventing prostate cancer and increase the rate of late-onset diabetes (type 2) (previously reported in *E&N News*), the supplement it comes in may decrease the effectiveness of thyroid cancer treatment.

☑ What you don't know (is in supplements) can hurt you
