



*E & N News to Use
for cancer patients, survivors and caregivers*

EXERCISE & NUTRITION during/after* CANCER

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

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*Studies on cancer prevention are included if they have special relevance to cancer survivors

► **Exercise & Nutrition**

Testis cancer survivors' health behaviors: comparison with age-matched relative and demographically matched population controls

Among 162 men surviving testis cancer, exercise was greater than control subjects matched for age, education and income level, but so was their consumption of alcohol

Shinn EH, Swartz RJ, Thornton BB, Spiess PE, Pisters LL, Basen-Engquist KM
J Clin Oncol. 2010 Apr 5. [Epub ahead of print]
University of Texas M.D. Anderson Cancer Center, Houston, TX
Department of Urology, H. Lee Moffitt Cancer Center, Tampa, FL

PURPOSE: To determine the prevalence rate of health behaviors in testis cancer survivors and to determine whether the rate of health behaviors in survivors was significantly different than those of their age-matched relative controls and a population-based control group matched for age, sex, education, and income.

PATIENTS AND METHODS: The health behaviors of 162 testis cancer survivors were compared with their age-matched relative controls (n = 74) and an age-, sex-, education-, and income-matched population-based control group (n ranged from 1,123 to 9,775). Health behaviors were assessed with the telephone-administered Behavioral Risk Factor and Surveillance Survey.

RESULTS: Nearly one in five testis cancer survivors reported current smoking and one third reported problem drinking. Only 11% reported having at least five servings of fruits and vegetables per day. Compared with their relative controls, the survivors were more likely to engage in regular exercise. For those participants who drank, survivors were twice as likely to engage in problem drinking and averaged a higher number of drinks compared to their Centers for Disease Control (CDC) controls. Survivors were also half as likely to have at least five servings of fruits and vegetables per day compared with the CDC controls.

CONCLUSION: The overall picture regarding testis cancer survivors' health behaviors was mixed compared with the relative and CDC control groups. Our results suggest that reduced alcohol use and increased fruit and vegetable consumption may be important targets for future disease prevention in testis cancer survivors.

Dr. Bleyer:

- ☑ This report is somewhat encouraging in that men surviving testis cancer were more likely to engage in regular exercise than persons without cancer matched for age, education, and income level
- ☑ It is mostly disappointing in that they were more likely to consume alcohol and have problem drinking
- ☑ Their infrequent eating of fruits and vegetables may be explained in part by being male and young (20-40 years) and emphasizes the importance of young adult cancer survivorship programs such as **DEFEATcancer** has started

► Exercise

A review of exercise interventions to improve bone health in adult cancer survivors

This report from Oregon State University concludes that the reported studies are not yet definitive regarding the skeletal benefits of exercise during or after cancer treatment

Winters-Stone KM, Schwartz A, Nail LM.

J Cancer Surviv. 2010 Apr 7 [Epub ahead of print]

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INTRODUCTION: Cancer-treatment induced bone loss and associated fracture risk is a growing concern for cancer survivors. Exercise offers a non-pharmacologic strategy for preserving bone health during and after treatment, but only until recently has it been studied for its efficacy and safety in cancer survivors. The purpose of this review is to provide an early qualitative evaluation of exercise trials in adult cancer survivors with bone health as a primary or secondary endpoint.

METHODS: Databases were searched for exercise trials in adult cancer survivors that reported data on bone health (bone mineral density (BMD) and/or bone remodeling markers) as an outcome measure and were published and indexed prior to January 1st, 2010. Data relevant to evaluation of study design, sample, exercise protocol, bone health assessment, statistical approach and findings were extracted, summarized and interpreted.

RESULTS: Eight trials were identified that met criteria for inclusion in the review. While most studies were conducted in breast cancer survivors, remaining study attributes including rigor, design, exercise program characteristics and length varied considerably across studies. Only three of the eight studies were controlled exercise trials with usual care control groups. Of these, two reported significant group x time interactions where aerobic exercise preserved BMD at the spine or whole body compared to losses in controls and none reported exercise benefits at the hip.

CONCLUSIONS: The recent emergence of exercise studies in cancer survivors with bone outcomes highlights the importance of this area of cancer survivorship. Collectively, the studies are limited in number and are too varied to warrant conclusions regarding the skeletal benefits of exercise during or after cancer treatment, though early results are encouraging and more rigorous study should follow.

Dr. Bleyer:

- ☑ That two of the three best studies report benefit of aerobic exercise in preserving bone mineral density is notable
- ☑ **DEFEATcancer** submits that if nutrition were considered along with exercise (**E+N**) more of the studies would have been positive and the amount of benefit would have been greater
- ☑ Also **DEFEATcancer** suggests that if exercise were performed both during *and* after therapy, instead of during *or* after as studied, the benefit would have been more apparent

Outcome expectations, expectancy accessibility, and exercise in endometrial cancer survivors

In females treated for uterus cancer, the quickness with which agreement that exercise is likely to help was reached, the more likely exercise was adopted or increased

Perkins HY, Waters AJ, Baum GP, Basen-Engquist KM.

J Sport Exerc Psychol. 2009 Dec;31(6):776-85.

Kinesiology Department, Rice University, Houston, TX, USA.

Studies have shown that expectations about exercise outcomes are associated with exercise behavior. Outcome expectations can be assessed by self-report questionnaires, but a new method-the expectancy accessibility task-may convey unique information about outcome expectations that is less subject to respondent biases. This method involves measuring the reaction time to endorse or reject an outcome We examined the relationship of self-reported outcome expectations and expectancy accessibility tasks in a pilot study of sedentary endometrial cancer survivors (N = 20). After measuring outcome expectations and expectancy accessibility, participants were given an exercise program and asked to monitor exercise for 7 days using diaries and accelerometers. Analyses revealed no relationship between outcome

expectation scores and exercise, but shorter response times to endorse positive exercise outcomes was related to more exercise in the next week ($p = .02$).

Dr. Bleyer:

- ☑ No surprise here in that the more one is motivated to accept a recommendation, the more likely it will be followed
- ☑ Somewhat surprising is that it is rapidly to agree to a recommendation rather than the rate of ultimate agreement that seems to make the difference in prediction who will exercise and who may need more help

Exercise in adult and pediatric hematological cancer survivors: an intervention review

[Surgeon authors conclude that the literature supports regular physical activity as safe and with potential benefits for both adult and pediatric leukemia cancer survivors](#)

Wolin KY, Ruiz JR, Tuchman H, Lucia A.

Leukemia. 2010 Apr 22. [Epub ahead of print]

Department of Surgery, Washington University in School of Medicine, St Louis, MO, USA.

Observational research has shown that the physical activity levels of survivors of hematological cancer are low, with deleterious health consequences. This review summarizes the research on exercise interventions in adult and pediatric hematological cancer survivors. We searched MEDLINE, SPORTDiscus, CINAHL, Embase, Cochrane and PEDro through September 2009 for exercise intervention studies in children and adults with any type of hematological cancer. In the 24 adult intervention studies reviewed, we found strong evidence (that is, ≥ 3 high-quality studies and $\geq 75\%$ reporting a significant benefit) for a benefit on body composition. Weak, but promising, evidence (≥ 3 high-quality studies, but $< 75\%$ reporting a significant benefit) was found for cardiorespiratory fitness, fatigue, muscle strength, physical functioning and quality of life. In pediatric interventions (13 studies), we found strong evidence for a benefit on muscle strength and cardiorespiratory fitness, particularly, if training was conducted in the hospital setting. Evidence is weak for ankle dorsiflexion, physical functioning and body composition. No exercise-related risks were identified in adults or children studies. Though more randomized controlled trials are needed, a growing body of literature supports the notion that regular physical activity is safe and has potential benefits for both adult and pediatric hematological cancer survivors.

Dr. Bleyer:

- ☑ The evidence that regular exercise in leukemia patients benefits cardiorespiratory fitness, fatigue, muscle strength, physical functioning and quality of life is "weak but promising" would likely be stronger if nutrition were also evaluated (E+N)... a **DEFEATcancer** premise of repeated emphasis
- ☑ Since leukemia therapy requires more aggressive chemotherapy than most any other chemotherapy regimen, the conclusion has greater relevance than alluded to in the report
- ☑ Nonetheless, that surgeons conclude exercise has no demonstrable risks when they may be concerned that the success of their operations may be in jeopardy (e.g. decreased incision healing or increased lymphema after a mastectomy, breaking a bone after limb salvage, wound healing in general) is remarkable

► **Nutrition**

Fruits, vegetables provided minimal protective effect against cancer [Prevention]

[A diet rich in fruits and vegetables was associated with a small reduction in cancer risk, according to researchers who studied the eating habits of more than 400,000 people for nearly nine years](#)

HemOnc Today, April 7, 2010, p. 36

Source: Boffetta P. J Natl Cancer Inst. 2010;doi:10.1093.jnci/djq072.

A diet rich in fruits and vegetables was associated with only a small reduction in cancer risk, according to researchers who studied the eating habits of more than 400,000 people for nearly nine years. Researchers conducting the European Prospective Investigation into Cancer and Nutrition (EPIC) study in 10 western European nations set out to determine whether the World Health Organization's recommended five daily servings of fruits and vegetables would reduce cancer risk. Boffetta and colleagues collected detailed dietary data on 142,605 men and 335,873 women.

After a median of 8.7 years of follow-up, 9,604 men and 21,000 women were diagnosed with cancer, a crude incidence rate of 7.9 per 1,000 person-years for men and 7.1 per 1,000 person-years for women. Researchers found an association between a daily increase of 200 g of fruits and vegetables and reduction in overall risk (HR=0.97; 95% CI, 0.96-0.99). Adjustments for age, sex and center did not change the estimates.

When patients were stratified into quintiles by daily fruit and vegetable intake, there was a decreased risk for patients in the second (227 g to 338 g) through fifth (>647 g) quintiles when compared with the first quintile (0 g to 226 g).

Additionally, researchers found that an increase of 100 g of daily intake of vegetables produced similar results as found with fruits and vegetables combined (HR=0.98; 95% CI, 0.97-0.99). However, a high intake of fruits and vegetables was also associated with factors such as lower alcohol intake, never smoking and a higher level of physical activity, all of which may have contributed to a reduced risk for cancer.

Writing in an accompanying editorial, Walter C. Willett, MD, DrPH, chair of the department of nutrition at the Harvard School for Public Health, said the results showed a 4% reduction in overall incidence — a “weak but statistically significant” finding.

“Most fundamentally, this study strongly confirms the findings from other prospective studies that results of case-control studies were overly optimistic and that any association between intake of fruits and vegetables with the risk of cancer is weak at best,” Willett wrote. “For prevention of cancer, the primary focus at present should be heightened efforts to reduce smoking and obesity because obesity in the United States has become similar to smoking as an avoidable cause.”

Dr. Bleyer:

☑ The importance of this report is that relying on fruits and vegetable to prevent cancer is insufficient to be of much help by itself

☑ **DEEATcancer's** perspective is that nutrition and exercise (**E+N**) are required together to have a significant impact

☑ For persons diagnosed with cancer the same principle is not only likely to apply but may well be more important
