



## RESEARCH UPDATES AUGUST 2013

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### FOR THE LATEST IN WORLDWIDE INTEGRATIVE CANCER CARE

**IN THIS ISSUE:** Richman et al. found that replacing carbohydrates and animal fat with vegetable fat may reduce the risk of mortality from prostate cancer and other causes. Fong and associates found that breast cancer survivors with Tai Chi Qigong training had greater shoulder muscle strength and functional well-being than those without the training. Greer and colleagues reported that Cognitive Behavioural Therapy modified to address cancer-specific anxieties was feasible and beneficial for terminally ill cancer patients. Germino et al. reported that breast cancer survivors who received an uncertainty management intervention showed significant improvements in cognitive behavioral coping, uncertainty management, and sexual function. Zick and colleagues found that in a group of cancer survivors, increased intake of grains, vegetables and anti-inflammatory foods decreased persistent cancer-related fatigue. Valadares and associates reported that a nutritional mushroom supplement was beneficial for breast cancer patients receiving chemotherapy. Zhan et al. found that an injection of Coix seed oil enhanced the efficacy and decreased the side effects of chemotherapy in gastric cancer patients. Parekh and colleagues reported that regular vigorous activity may reduce the risk of cancer-related mortality. Wenzel et al. found that patients undergoing active treatment for cancer who participated in a home-based walking intervention had less emotional distress and fatigue than those who were less active. In our study of the month, Hanson et al. reported that older black men undergoing androgen deprivation therapy for prostate cancer can benefit from strength training.

## PROSTATE CANCER

Richman, EL, S. A. Kenfield, J. E. Chavarro, et al.

### Fat Intake After Diagnosis and Risk of Lethal Prostate Cancer and all-Cause Mortality.

*JAMA Intern Med.* 2013 Jun; 101-8.

**IMPORTANCE:** Nearly 2.5 million men currently live with prostate cancer in the United States, yet little is known about the association between diet after diagnosis and prostate cancer progression and overall mortality. **OBJECTIVE:** To examine postdiagnostic fat intake in relation to lethal prostate cancer and all-cause mortality. **DESIGN, SETTING, AND PARTICIPANTS:** Prospective study of 4577 men with nonmetastatic prostate cancer in the Health Professionals Follow-up Study (1986-2010). **EXPOSURES:** Postdiagnostic intake of saturated, monounsaturated, polyunsaturated, trans, animal, and vegetable fat. **MAIN OUTCOMES AND MEASURES:** Lethal prostate cancer (distant metastases or prostate cancer-specific death) and all-cause mortality. **RESULTS:** We observed 315 events of lethal prostate cancer and 1064 deaths (median follow-up, 8.4 years). Crude rates per 1000 person-years for lethal prostate cancer were as follows (highest vs lowest quintile of fat intake): 7.6 vs 7.3 for saturated, 6.4 vs 7.2 for monounsaturated, 5.8 vs 8.2 for polyunsaturated, 8.7 vs 6.1 for trans, 8.3 vs 5.7 for animal, and 4.7 vs 8.7 for vegetable fat. For all-cause mortality, the rates were 28.4 vs 21.4 for saturated, 20.0 vs 23.7 for monounsaturated, 17.1 vs 29.4 for polyunsaturated, 32.4 vs 17.1 for trans, 32.0 vs 17.2 for animal, and 15.4 vs 32.7 for vegetable fat. Replacing 10% of energy intake from carbohydrate with vegetable fat was associated with a lower risk of lethal prostate cancer (hazard ratio [HR], 0.71; 95% CI, 0.51-0.98; P = .04) and all-cause mortality (HR, 0.74; 95% CI, 0.61-0.88; P = .001). No other fats were associated with lethal prostate cancer. Saturated and trans fats after diagnosis (replacing 5% and 1% of energy from carbohydrate, respectively) were associated with higher all-cause mortality (HR, 1.30 [95% CI, 1.05-1.60; P = .02] and 1.25 [95% CI, 1.05-1.49; P = .01], respectively). **CONCLUSIONS AND RELEVANCE:** Among men with nonmetastatic prostate cancer, replacing carbohydrates and animal fat with vegetable fat may reduce the risk of all-cause mortality. The potential benefit of vegetable fat for prostate cancer-specific outcomes merits further research.

**INSPIREHEALTH'S INTERPRETATION:** Replacement of energy intake from carbohydrates and animal fats with vegetable fats in men with localized prostate cancer can decrease risk of death from prostate cancer and other causes, whereas saturated and trans fats can increase risk of death.

## BREAST CANCER

Fong, SS, S. S. Ng, W. S. Luk, et al.

### Shoulder Mobility, Muscular Strength, and Quality of Life in Breast Cancer Survivors with and without Tai Chi Qigong Training.

*Evid Based Complement Alternat Med.* 2013 2013; 2013

**OBJECTIVES:** To compare the shoulder mobility, muscular strength, and quality of life (QOL) among breast cancer survivors with and without Tai Chi (TC) Qigong training to those of healthy individuals and to explore the associations between shoulder impairments and QOL in breast cancer survivors with regular TC Qigong training. **METHODS:** Eleven breast cancer survivors with regular TC Qigong training, 12 sedentary breast cancer survivors, and 16 healthy participants completed the study. Shoulder mobility and rotator muscle strength were assessed by goniometry and isokinetic dynamometer, respectively. QOL was assessed using the Functional Assessment of Cancer Therapy-Breast (FACT-B) questionnaire. **RESULTS:** Goniometric measurements of the active range of motion in the flexion, abduction, and hand-behind-the-back directions were similar among the three groups. The TC Qigong-trained breast cancer survivors had significantly higher isokinetic peak torques of the shoulder rotator muscles (at 180°/s) than untrained survivors, and their isokinetic shoulder muscular strength reached the level of healthy individuals. Greater shoulder muscular strength was significantly associated with better functional wellbeing in breast cancer survivors with TC Qigong training. However, no significant between-group difference was found in FACT-B total scores. **CONCLUSIONS:** TC Qigong training might improve shoulder muscular strength and functional wellbeing in breast cancer survivors.

**INSPIREHEALTH'S INTERPRETATION:** Breast cancer survivors with Tai Chi Qigong training had greater shoulder mobility, muscle strength (comparable to that of healthy individuals) and consequently, functional well-being, than those without the training.

## COGNITIVE BEHAVIORAL THERAPY

Greer, JA, L. Traeger, H. Bemis, et al.

### A Pilot Randomized Controlled Trial of Brief Cognitive-Behavioral Therapy for Anxiety in Patients with Terminal Cancer.

*Oncologist.* 2012 1710: 1337-1345.

**INTRODUCTION:** Patients with terminal cancer often experience marked anxiety that is associated with poor quality of life. Although cognitive-behavioral therapy (CBT) is an evidence-based treatment for anxiety disorders, the approach needs to be adapted to address realistic concerns related to having cancer, such as worries about disease progression, disability, and death. In this pilot randomized controlled trial (clinicaltrials.gov identifier NCT00706290), we examined the feasibility and potential efficacy of brief CBT to reduce anxiety in patients with terminal cancer. **METHODS:** We adapted CBT by developing treatment modules targeting skills for relaxation, coping with cancer worries, and activity pacing. Adults with incurable malignancies and elevated anxiety based on the Hamilton Anxiety Rating Scale (HAM-A) were randomly assigned to individual CBT or a waitlist control group. Primary outcomes included the number of completed CBT visits and the change in HAM-A scores from baseline to 8-week follow-up per a treatment-blind evaluator. The feasibility criterion was 75% adherence to the intervention. **RESULTS:** We randomized 40 patients with terminal cancers to CBT (n = 20) or waitlist control (n = 20) groups; 70% completed posttreatment assessments. Most patients who received CBT (80%) participated in at least five of the required six therapy sessions. Analysis of covariance models, adjusted for baseline scores, showed that those assigned to CBT had greater improvements in HAM-A scores compared to the control group, with an adjusted mean difference of -5.41 (95% confidence interval: -10.78 to -0.04) and a large effect size for the intervention (Cohen's d = 0.80). **CONCLUSION:** Providing brief CBT tailored to the concerns of patients with terminal cancer was not only feasible but also led to significant improvements in anxiety.

**INSPIREHEALTH'S INTERPRETATION:** In this randomized controlled trial, providing brief Cognitive Behavioral Therapy to terminally ill cancer patients that targeted skills for relaxation, coping with cancer worries, and activity pacing, was feasible and significantly decreased their anxiety.

## UNCERTAINTY MANAGEMENT

Germino, BB, M. H. Mishel, J. Crandell, et al.

### Outcomes of an Uncertainty Management Intervention in Younger African American and Caucasian Breast Cancer Survivors.

*Oncol Nurs Forum.* 2013 Jan; 401: 82-92

**PURPOSE/OBJECTIVES:** To determine whether breast cancer survivors (BCSs) who received an uncertainty management intervention, compared to an attention control condition, would have less uncertainty, better uncertainty management, fewer

breast cancer-specific concerns, and more positive psychological outcomes. **DESIGN:** A 2 × 2 randomized block, repeated-measures design, with data collected at baseline and two other points postintervention, as well as a few days before or after either a mammogram or oncologist visit. **SETTING:** Rural and urban clinical and community settings. **SAMPLE:** 313 female BCSs aged 50 or younger; 117 African Americans and 196 Caucasians. **METHODS:** Participants were blocked on ethnicity and randomly assigned to intervention or control. The intervention, consisting of a scripted CD and a guide booklet, was supplemented by four scripted, 20-minute weekly training calls conducted by nurse interventionists. The control group received the four scripted, 20-minute weekly training calls. **MAIN RESEARCH VARIABLES:** Uncertainty in illness, uncertainty management, breast cancer-specific concerns, and positive psychological outcomes. **FINDINGS:** BCSs who received the intervention reported reductions in uncertainty and significant improvements in behavioral and cognitive coping strategies to manage uncertainty, self-efficacy, and sexual dysfunction. **CONCLUSIONS:** The intervention was effective as delivered in managing uncertainties related to being a younger BCS. **IMPLICATIONS FOR NURSING:** The intervention can realistically be applied in practice because of its efficient and cost-effective nature requiring minimal direct caregiver involvement. The intervention allows survivors who are having a particular survival issue at any given point in time to access information, resources, and management strategies. **KNOWLEDGE TRANSLATION:** Materials tested in CD and guide booklet format could be translated into online format for survivors to access as issues arise during increasingly lengthy survivorship periods. Materials could be downloaded to a variety of electronic devices, fitting with the information needs and management styles of younger BCSs.

**INSPIREHEALTH'S INTERPRETATION:** Breast cancer survivors who received an uncertainty management intervention that included a scripted CD, guide book and four 20-minute training phone calls, showed significant improvements in cognitive and behavioral coping, uncertainty management, self-efficacy and sexual function.

## CANCER-RELATED FATIGUE

Zick, SM, A. Sen, T. L. Han-Markey and R. E. Harris.

### Examination of the Association of Diet and Persistent Cancer-Related Fatigue: A Pilot Study.

*Oncol Nurs Forum.* 2013 Jan; 40(1): E41-9.

**PURPOSE/OBJECTIVES:** To examine associations between diet and persistent cancer-related fatigue (PCRF) in cancer survivors. **DESIGN:** A cross-sectional pilot study. **SETTING:** A university cancer center in Michigan. **SAMPLE:** 40 adult cancer survivors who were recruited from July 2007 to August 2008 and had completed all cancer treatments at least 12 weeks prior to recording their dietary intakes and fatigue severity. **METHODS:** Participants' fatigue was assessed with the Brief Fatigue Inventory (BFI). Based on the BFI score, participants were placed into one of three fatigue levels: no fatigue, moderate fatigue, or severe fatigue. Dietary data were collected using a four-day food diary and analyzed using Nutrition Data System for Research software. Diet data were collected during the same week that fatigue was measured. **MAIN RESEARCH VARIABLES:** Fatigue and dietary intake. **FINDINGS:** Mean daily intake of whole grains, vegetables, and, in particular, green leafy vegetables and tomatoes were significantly higher in the nonfatigued group compared to fatigued cancer survivors. Also, cancer survivors reporting no fatigue had significantly higher intakes of certain anti-inflammatory and antioxidant nutrients. **CONCLUSIONS:** Increased consumption of whole grains, vegetables, and foods rich in certain anti-inflammatory nutrients was associated with decreased levels of PCRF. Additional rigorous studies are required to investigate possible mechanisms and causal relationships regarding the benefits of particular diets on PCRF. **IMPLICATIONS FOR NURSING:** Nurses, as one of the main providers of care to cancer survivors, should continue to follow National Comprehensive Cancer Network recommendations until additional data on diet and fatigue are evaluated. **KNOWLEDGE TRANSLATION:** Nurses should be aware of national guidelines for nutritional recommendations for treating cancer-related fatigue. In addition, nurses should ask about and record the cancer survivor's typical dietary intake. Referrals to registered dietitians, in accordance with national guidelines for cancer survivors, should be considered when advising a fatigued patient.

**INSPIREHEALTH'S INTERPRETATION:** Paying attention to diet quality is important in cancer survivors, and increasing consumption of whole grains, vegetables, and foods rich in anti-inflammatory nutrients can decrease persistent cancer-related fatigue.

## CAM THERAPIES AND CHEMOTHERAPY

Valadares, F, M. R. Garbi Novaes and R. Cañete.

### Effect of Agaricus Sylvaticus Supplementation on Nutritional Status and Adverse Events of Chemotherapy of Breast Cancer: A Randomized, Placebo-Controlled, Double-Blind Clinical Trial.

*Indian Journal of Pharmacology.* 2013 May; 45(3): 217-222.

**BACKGROUND:** Breast cancer (BC) represents the highest incidence of malignancy in women throughout the world. Medicinal fungi can stimulate the body, reduce side-effects associated with chemotherapy and improve the quality of life in patients with cancer. **AIM:** To evaluate the effects of dietary supplementation of Agaricus sylvaticus on clinical and nutritional parameters

in BC patients undergoing chemotherapy. **MATERIALS AND METHODS:** A randomized, placebo-controlled, double-blind, clinical trial was carried out at the Oncology Clinic, Hospital of the Federal District-Brazil from September 2007 to July 2009. Forty six patients with BC, Stage II and III, were randomly assigned to receive either nutritional supplement with *A. sylvaticus* (2.1 g/day) or placebo. Patients were evaluated during treatment period. **RESULTS:** Patient supplemented with *A. sylvaticus* improved in clinical parameters and gastrointestinal functions. Poor appetite decreased by 20% with no changes in bowel functions (92.8%), nausea and vomiting (80%). **CONCLUSION:** Dietary supplementation with *A. sylvaticus* improved nutritional status and reduced abnormal bowel functions, nausea, vomiting, and anorexia in patients with BC receiving chemotherapy.

**INSPIREHEALTH'S INTERPRETATION:** In early stage breast cancer patients receiving chemotherapy, supplementation with the mushroom *A. sylvaticus* can improve nutritional status and reduce nausea, vomiting, anorexia, and abnormal bowel functions.

Zhan, YP, X. E. Huang, J. Cao, et al.

### Clinical Safety and Efficacy of Kanglaite (Coix Seed Oil) Injection Combined with Chemotherapy in Treating Patients with Gastric Cancer.

*Asian Pac J Cancer Prev.* 2012 1310: 5319-5321.

**OBJECTIVE:** To observe efficacy and side effects, as well as the impact on quality of life, of Kanglaite® (Coix Seed Oil) injections combined with chemotherapy in the treatment of advanced gastric cancer patients. **METHOD:** A consecutive cohort of 60 patients were divided into two groups: the experimental group receiving Kanglaite® Injection combined with chemotherapy and the control group with chemotherapy alone. After more than two courses of treatment, efficacy, quality of life and side effects were evaluated. **RESULTS:** The response rate and KPS score of experimental group were significantly improved as compared with those of the control group ( $P < 0.05$ ). In addition, gastrointestinal reactions and bone marrow suppression were significantly lower than in the control group ( $P < 0.05$ ). **CONCLUSIONS:** Kanglaite® Injection enhanced efficacy and reduced the side effects of chemotherapy, improving quality of life of gastric cancer patients; use of Kanglaite® injections deserves to be further investigated in randomized control clinical trials.

**INSPIREHEALTH'S INTERPRETATION:** When compared with those on chemotherapy alone, gastric cancer patients given Kanglaite® coix seed oil injection in combination with chemotherapy had a better response rate and experienced fewer side effects.

## EXERCISE

Parekh, N, Y. Lin, L. L. Craft, et al.

### Longitudinal Associations of Leisure-Time Physical Activity and Cancer Mortality in the Third National Health and Nutrition Examination Survey (1986-2006).

*J Obes.* 2012 2012; 2012518358.

**BACKGROUND:** Longitudinal associations between leisure-time physical activity (LTPA) and overall cancer mortality were evaluated within the Third National Health and Nutrition Examination Survey (NHANES III; 1988-2006;  $n = 15,535$ ). **METHODS:** Mortality status was ascertained using the National Death Index. Self-reported LTPA was divided into inactive, regular low-to-moderate and vigorous activity. A frequency-weighted metabolic equivalents (METS/week) variable was also computed. Hazard ratios (HRs) and 95% confidence intervals (CI) were calculated for overall cancer mortality in the whole sample, by body mass index categories and insulin resistance (IR) status. **RESULTS:** Nonsignificant protective associations were observed for regular low-to-moderate and vigorous activity, and for the highest quartile of METS/week (HRs range: 0.66-0.95). Individuals without IR engaging in regular vigorous activity had a 48% decreased risk of cancer mortality (HR: 0.52; 95% CI: 0.28-0.98) in multivariate analyses. Conversely, nonsignificant positive associations were observed in people with IR. **CONCLUSION:** In conclusion, regular vigorous activity may reduce risk of cancer mortality among persons with normal insulin-glucose metabolism in this national sample.

**INSPIREHEALTH'S INTERPRETATION:** In this large cohort study, vigorous physical activity reduced the risk of cancer-related mortality by 48% in patients with normal glucose metabolism.

Wenzel, JA, K. A. Griffith, J. Shang, et al.

### Impact of a Home-Based Walking Intervention on Outcomes of Sleep Quality, Emotional Distress, and Fatigue in Patients Undergoing Treatment for Solid Tumors.

*Oncologist.* 2013 2013; 184: 476-484.

**BACKGROUND:** Exercise use among patients with cancer has been shown to have many benefits and few notable risks. The purpose of this study was to evaluate the impact of a home-based walking intervention during cancer treatment on sleep quality, emotional distress, and fatigue. **METHODS:** A total of 138 patients with prostate (55.6%), breast (32.5%), and other

solid tumors (11.9%) were randomized to a home-based walking intervention or usual care. Exercise dose was assessed using a five-item subscale of the Cooper Aerobics Center Longitudinal Study Physical Activity Questionnaire. Primary outcomes of sleep quality, distress, and fatigue were compared between the two study arms. **RESULTS:** The exercise group (n = 68) reported more vigor (p = .03) than control group participants (n = 58). In dose response models, greater participation in aerobic exercise was associated with 11% less fatigue (p < .001), 7.5% more vigor (p = .001), and 3% less emotional distress (p = .03), after controlling for intervention group assignment, age, and baseline exercise and fatigue levels. **CONCLUSION:** Patients who exercised during cancer treatment experienced less emotional distress than those who were less active. Increasing exercise was also associated with less fatigue and more vigor. Home-based walking is a simple, sustainable strategy that may be helpful in improving a number of symptoms encountered by patients undergoing active treatment for cancer.

**INSPIREHEALTH'S INTERPRETATION:** Home-based walking is a simple and sustainable strategy for patients undergoing active treatment for cancer because patients who were more physically active during cancer treatment had less emotional distress and fatigue than those who were less active.

## STUDY OF THE MONTH

Hanson, ED, A. K. Sheaff, S. Sood, et al.

### Strength Training Induces Muscle Hypertrophy and Functional Gains in Black Prostate Cancer Patients Despite Androgen Deprivation Therapy.

*Journals of Gerontology Series A-Biological Sciences & Medical Sciences.* 2013 Apr; 684: 490-498.

**BACKGROUND:** Androgen deprivation therapy (ADT) for prostate cancer (PCa) is associated with weakness, fatigue, sarcopenia, and reduced quality of life (QoL). Black men have a higher incidence and mortality from PCa than Caucasians. We hypothesized that despite ADT, strength training (ST) would increase muscle power and size, thereby improving body composition, physical function, fatigue levels, and QoL in older black men with PCa. **METHODS:** Muscle mass, power, strength, endurance, physical function, fatigue perception, and QoL were measured in 17 black men with PCa on ADT before and after 12 weeks of ST. Within-group differences were determined using t tests and regression models. **RESULTS:** ST significantly increased total body muscle mass (2.7%), thigh muscle volume (6.4%), power (17%), and strength (28%). There were significant increases in functional performance (20%), muscle endurance (110%), and QoL scores (7%) and decreases in fatigue perception (38%). Improved muscle function was associated with higher functional performance (R (2) = 0.54) and lower fatigue perception (R (2) = 0.37), and both were associated with improved QoL (R (2) = 0.45), whereas fatigue perception tended to be associated with muscle endurance (R (2) = 0.37). **CONCLUSIONS:** ST elicits muscle hypertrophy even in the absence of testosterone and is effective in counteracting the adverse functional consequences of ADT in older black men with PCa. These improvements are associated with reduced fatigue perception, enhanced physical performance, and improved QoL. Thus, ST may be a safe and well-tolerated therapy to prevent the loss of muscle mass, strength, and power commonly observed during ADT.

**INSPIREHEALTH'S INTERPRETATION:** Strength training may safely counteract adverse effects of androgen deprivation therapy in prostate cancer patients by building muscle mass and enhancing physical performance and quality of life.

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