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NUTRITION | FRONTIERS

A newsletter of the Nutritional Science Research Group

Summer 2010

Volume 1, Issue 3

Dear Colleague,

Welcome to the Summer 2010 issue of *Nutrition Frontiers*, a quarterly newsletter from the Nutritional Science Research Group (NSRG), Division of Cancer Prevention, NCI. In this issue, learn about the latest on polymorphisms and breast density, curcumin's radiosensitizing properties and more. You may be interested to know that the number of NCI nutrition research awards is on the rise, stay tuned for more nutrition funding info in upcoming issues.

RESEARCH UPDATE: ON THE CLINICAL FRONT

According to new findings from Yong and colleagues (*Cancer Epidemiol Biomarkers Prev* 2010; 19 (2):537), UDP-glucuronosyltransferases (UGT) and sulfotransferases (SULT) polymorphisms may influence



Upcoming Events

October 4, 2010

Stars in Nutrition & Cancer
Lecture, Dr. Stephen Barnes,
University of Alabama
Birmingham,
NIH Main Campus
Bethesda, MD

[Stars in Nutrition & Cancer](#)

October 15, 2010 - Deadline

New NCI Funding Opportunity
Announcement (FOA)
"The Role of Microbial
Metabolites in Cancer
Prevention and Etiology"

[Submission Details](#)

October 21 & 22, 2010

*Food, Nutrition, Physical
Activity and Cancer*
[American Institute for Cancer
\(AICR\) Research Annual
Research Conference](#),
Washington, DC

percent breast density in premenopausal women. These genes may affect the clearance and exposure to estrogens and androgens. From the 175 women evaluated, women with the SULT1A1 (H213/H213) genotype had 16% lower percent breast density compared with women with the SULT1A1 (R213/R213) genotype. Breast density was 5% lower among women carrying at least one copy of the UGT1A1(TA7)-UGT1A3(R11)- UGT1A3 (A47) haplotype compared with the UGT1A1(TA6)- UGT1A3 (W11R)-UGT1A3(V47A) haplotype. These preliminary findings may aid in examining the role of polymorphisms in steroid hormone pathway genes as predictive markers of mammographic breast density and the identification of high-risk women for prevention efforts. *This study was supported by an NCI award.*

RESEARCH UPDATE: WHAT'S NEW IN BASIC SCIENCE



Curcumin's antioxidant and tumor cell radiosensitizing properties were recently evaluated. Lee and colleagues ([Radiation Research 2010; 173:590](#)) studied curcumin's properties by evaluating radiation-

induced pneumonopathy and lung tumor regression in mice inoculated with Lewis lung carcinoma cells. Those mice fed 5% dietary curcumin had significantly improved survival after irradiation and decreased radiation-induced lung fibrosis. Additionally, curcumin boosted antioxidant defenses by increasing heme oxygenase 1 levels in primary lung endothelial and fibroblast cells and blocked radiation-induced generation of reactive oxygen species. This study suggests that dietary curcumin ameliorates radiation-induced pulmonary fibrosis and increases mouse survival while not impairing tumor cell killing by radiation. *This study was supported by an NCI award.*

SPOTLIGHT: A CLINICIAN

March 14-18, 2011

*Nutrition & Cancer Prevention
Research Practicum*

[Practicums](#), Bethesda, MD

Quick Links

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Cynthia Thomson, PhD, RD, FADA, CSO, is a tenured Associate Professor in Nutritional Sciences, Medicine and Public Health at the University of Arizona, Tucson, AZ. Dr. Thomson conducts research in diet, cancer and women's health with particular emphasis on breast cancer, survivorship, energetics and dietary



measurement. Thomson earned a B.S. degree from West Virginia University; she received her M.S. and Ph.D. degrees from the University of Arizona and completed an NIH R25 postdoctoral fellowship at the Arizona Cancer Center. Dr. Thomson is a Registered Dietitian, Fellow of the American Dietetic Association and Certified Specialist in Oncology. She directs the Arizona Cancer Center Behavioral measurements Shared Service and the Graduate Program in Nutritional Sciences at the University of Arizona. Dr. Thomson was recently awarded a R01 for her project titled: *Evaluation of Di-indolylmethane Supplementation to Modulate Tamoxifen Efficacy*, a study that will be testing a hypothesis generated from her NIH/NCI K07 Award in Cancer Prevention and Population Sciences.

[Read more »](#)

SPOTLIGHT: A BASIC SCIENTIST



Scott D. Cramer, PhD is an Associate Professor, Cancer Biology, Comprehensive Cancer Center and Center for Cancer Genomics, Urology, Institute for Regenerative Medicine, Wake Forest University School of Medicine, North Carolina. In addition to Dr. Cramer's interest

in vitamin D signaling and agents that might stimulate vitamin D signaling, Scott studies the synergistic inhibition of prostate cancer growth by vitamin D and genistein, the role of TGF-beta activated kinase 1 loss in prostate cancer development, and the molecular and genetic characteristics of prostate tumor initiating cells. Dr. Cramer earned his B.A. and Ph.D. from the University of California in Santa Cruz. Following his doctoral studies, he completed a post-doctoral fellowship at Stanford University School of Medicine. He was awarded a R01 for his project titled, [*The Prostate Stem Cell is a Target of Vitamin D Chemoprevention.*](#)

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DID YOU KNOW?

Grilled Burgers Anyone?



Researchers at Kansas State University examined the inhibiting capacity of various spices, including cumin, coriander seeds, galangal, fingerroot, rosemary and tumeric for their effect on the cancer-causing compounds, heterocyclic amines (HCAs). In barbequed, grilled, broiled or fried beef, fingerroot, rosemary and tumeric decreased HCA production as much as 40% while rosemary extract inhibited HCA production by 61% to 79%.

Source: Food Safety Consortium, May 18, 2010

Sincerely,

Your friends at the Nutritional Science Research Group

Division of Cancer Prevention
National Cancer Institute
National Institutes of Health
U.S. Department of Health & Human Services

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