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NATIONAL CANCER INSTITUTE

DCP Division of Cancer Prevention

NUTRITION FRONTIERS

A newsletter of the Nutritional Science Research Group

Fall 2012 Volume 3, Issue 4

Dear Colleague,

Welcome to the Fall 2012 issue of the *Nutrition Frontiers*, a quarterly newsletter from the Nutritional Science Research Group (NSRG), Division of Cancer Prevention, NCI. In this issue, you will learn about microRNA changes with exposure to heterocyclic amines and spinach, the reliability of inflammatory serum markers, and much more.

RESEARCH UPDATE: ON THE CLINICAL FRONT

Inflammatory Serum Markers are Reliable in Healthy Individuals

Inflammatory biomarkers have been associated with the risk of chronic diseases including cancer. Typically, the reliability of inflammatory biomarkers are studied at 2 time points over a span of years. Navarro *et al.* looked at intra-individual variability, such as, test-retest, of 6 inflammatory markers in *healthy* adults; the markers included high sensitivity C-reactive protein, interleukin (IL)-6, tumor necrosis factor-alpha, IL-8, and soluble TNF receptor I and II. The reliability of all 6-inflammatory biomarkers were evaluated at 4 time points over 6-months and were good to excellent with the exception of IL-6, which was fair. Navarro's findings suggest that a single measure of the biomarkers studied, besides IL-6, could be a reliable marker for inflammatory status in short term intervention (4-6 month period) and population studies.

RESEARCH UPDATE: WHAT'S NEW IN BASIC SCIENCE

MicroRNA Changes with Heterocyclic Amines and the Effects of Spinach

Heterocyclic amines from cooked meats are a known carcinogen and are associated with increased colon cancer risk. In a recent study by Parasramka and colleagues, microRNA (miRNA) profiles were altered in rats exposed to the heterocyclic amine carcinogen, PhIP. Colonic tumors induced by PhIP resulted in dysregulation of miRNA profiles —

Announcements

Name Change Notification

We have recently changed the name of our listserv – the *Nutrition Frontiers* e-newsletter is now being sent from the NUTRITIONCANCER list – same list, new name. The change is automatic, no need for you to do a thing.

Request for Nominations - 2015 Dietary Guidance Advisory Committee

The Departments of Health and Human Services and Agriculture are pleased to announce their intent to establish the 2015 Dietary Guidelines Advisory Committee (DGAC) and to invite nominations for the DGAC. Nominations will be accepted until 6:00 pm EST, on Tuesday, December 11, 2012 to DG2015Nominations@hhs.gov or via fax or postal mail as described in the Federal Register notice. Visit www.dietaryguidelines.gov for more information.

Stars in Nutrition & Cancer lecture series, "Can We Win the War Against Cancer by Prevention?" by Dr. Zigang Dong View here

specifically, the let-7 family, and targets of altered miRNA, such as c-Myc and Lin28, Sox2, Nanog, and Oct-3/4. These targets have been implicated in tumor recurrence and reduced patient survival. In parallel, when rats were given dietary spinach, miRNA profiles were partially normalized. This is the first report to detail miRNA changes in a heterocyclic amine-induced colon carcinogenesis model, and that tumor suppressive effects of dietary spinach are associated with partial normalization of these molecular targets.

SPOTLIGHT: PAUL GRIPPO

Paul Grippo, PhD is an Assistant Research Professor in the Department of Surgery at the Feinberg School of Medicine, Northwestern University. He received his BS from Oral Roberts University and completed a MS in Biochemistry and a PhD in Animal Health from the University of Wisconsin. His laboratory focuses on the contribution of polyunsaturated fatty acids on the early development of pancreatic neoplasia and cancer in genetically modified mice, with a growing interest in the mechanisms of action of these fatty acids. His research is geared towards improving the understanding of the relationship between metabolism and early stages of cancer. He was recently awarded a R01 entitled *N-3 Fatty Acid-Induced Akt Suppression: Chemoprevention for Pancreatic Neoplasia*.

Read more »

SPOTLIGHT: LEENA HILAKIVI-CLARKE

Leena Hilakivi-Clarke, PhD is a tenured Professor of Oncology at Georgetown University and the Co-Director of the Division of Molecular Endocrinology, Nutrition and Obesity at the Lombardi Comprehensive Cancer Center. She earned a PhD from University of Helsinki, Finland and completed a Fogarty fellowship at the NIH. Her research focuses on the impact of maternal diet during pregnancy in affecting breast cancer risk among mothers and their female offspring. She also studies dietary exposures during childhood, such as high n-6 and n-3 PUFA fat diets, obesity-inducing high fat diet,

Upcoming Events

February 11-12, 2013
Implementing a National Cancer Clinical Trials System for the 21st Century: Workshop #2
Washington, DC or via webcast

Quick Links

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- National Cancer Institute

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genistein in soyfoods and vitamin D. She was recently awarded a R01 entitled *Transgenerational Effects of Maternal High Fat Diet During Pregnancy on Breast Cancer*.

Read more »

DID YOU KNOW?

The Entire Pumpkin: Fruit, Seed & Oil are Beneficial

Pumpkin comes from the Greek work "pepon" or "big melon" and pumpkin seeds found in Mexico date back 7,500 years. Pumpkin seeds are a home remedy for reducing enlarged prostate glands and in some parts of the world, pumpkin seed oil is a preventative agent for prostate diseases.

The nutrition low-down: pumpkin is loaded with fiber, potassium, selenium, vitamin A, beta-carotene, alpha-carotene, beta-cryptoxanthin, and lutein and the seeds are a good source of lutein and zeaxanthin, along with vitamin E, magnesium, fiber, protein and omega-3 fats.

So this holiday season, enjoy a bit of pumpkin with your meal!

Sources: Grotto, D. 101 Foods That Could Save Your Live, Bantam Books, NY, 2007.
J Food Sci. 2012 Jun;77(6):C653-7. Doi: 10.1111/ j.1750-3841.2012.02736.x.
J Sci Food Agric. 2012 Aug 30. Doi: 10/1002/jsfa.5843
http://ndb.nal.usda.gov/ndb/foods/show/3596

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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