

CANCER PREVENTION RESEARCH

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SPOTLIGHT

139 Use of Freeze-dried Watercress for Detoxification of Carcinogens and Toxicants in Smokers: Implications of the Findings and Potential Opportunities

Karam El-Bayoumy and Gary Stoner

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RESEARCH ARTICLES

143 Preparation of a Beverage Containing Freeze-Dried Watercress for a Clinical Trial of Carcinogen and Toxicant Detoxification

Melissa J.L. Bonorden, Steven G. Carmella, Oliver T. Ballinger, Jessica Williams, Irv Dorn, Hanna Vanderloo, Naomi Fujioka, Dorothy K. Hatsukami, and Stephen S. Hecht

This study describes the preparation of a beverage containing freeze-dried watercress suitable for consumption in a clinical trial to determine whether a constituent of this beverage—PEITC, which has cancer prevention properties—can enhance detoxification of common environmental carcinogens and toxicants such as benzene, which may have a role in environmentally induced cancer.

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151 Variant Identification in *BARD1*, *PRDM9*, *RCC1*, and *RECQL* in Patients with Ovarian Cancer by Targeted Next-generation Sequencing of DNA Pools

Malwina Suszynska, Magdalena Ratajska, Paulina Galka-Marciniak, Aleksandra Ryszkowska, Dariusz Wydra, Jaroslaw Debniak, Anna Jasiak, Bartosz Wasag, Cezary Cybulski, and Piotr Kozlowski
BARD1, *PRDM9*, *RCC1*, and *RECQL* are not high/moderate-risk ovarian cancer susceptibility genes. Pooled sequencing is a reliable and cost-effective method to detect rare variants in candidate genes.

161 Deciphering the Polygenic Basis of Racial Disparities in Prostate Cancer By an Integrative Analysis of Genomic and Transcriptomic Data

Wensheng Zhang, Thea Nicholson, and Kun Zhang
This study reveals the relevance of index risk SNP markers with racial disparities in prostate cancer. The findings also indicate that PRS can be used in prostate cancer subtype prediction.

173 Analgesic Use and Circulating Estrogens, Androgens, and Their Metabolites in the Women’s Health Initiative Observational Study

Lauren M. Hurwitz, Aladdin H. Shadyab, Fred K. Tabung, Garnet L. Anderson, Nazmus Saquib, Robert B. Wallace, Robert A. Wild, Ruth M. Pfeiffer, Xia Xu, and Britton Trabert

This study explores a potential pathway by which analgesic medications such as aspirin may prevent hormone-related cancers. The findings support a positive association between low-dose aspirin use and endogenous estrogens, indicating that further elucidation of the interplay between low-dose aspirin, estrogen concentrations, and cancer risk is needed.

185 Weight is More Informative than Body Mass Index for Predicting Postmenopausal Breast Cancer Risk: Prospective Family Study Cohort (ProF-SC)

Zhoufeng Ye, Shuai Li, Gillian S. Dite, Tuong L. Nguyen, Robert J. MacInnis, Irene L. Andrulis, Sandra S. Buys, Mary B. Daly, Esther M. John, Allison W. Kurian, Jeanine M. Genkinger, Wendy K. Chung, Kelly-Anne Phillips, Heather Thorne; for kConFab, Ingrid M. Winship, Roger L. Milne, Pierre-Antoine Dugué, Melissa C. Southey, Graham G. Giles, Mary Beth Terry, and John L. Hopper

Our results suggest that the relationship between BMI and breast cancer could be due to a relationship between weight and breast cancer, downgraded by inappropriately adjusting for height; potential importance of anthropometric measures other than total body fat; breast cancer risk associations with BMI and weight are across a continuum.

193 Hunger Training as a Self-regulation Strategy in a Comprehensive Weight Loss Program for Breast Cancer Prevention: A Randomized Feasibility Study

Susan M. Schembre, Michelle R. Jospe, Edward J. Bedrick, Liang Li, Abenaa M. Brewster, Erma Levy, Danika D. Dirba, Morgan Campbell, Rachael W. Taylor, and Karen M. Basen-Engquist

This study found that it was feasible to add a short glucose-guided eating intervention to a comprehensive weight management program targeting postmenopausal women at high risk of breast cancer. However, further development of this novel intervention as a cancer prevention strategy is needed.

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ABOUT THE COVER

Watercress (*Nasturtium officinale*), a vegetable commonly used in salads or as a garnish and readily available in most grocery markets, is a member of the family of cruciferous vegetables known for their content of glucosinolates. These unique plant defense compounds are converted during chewing or cutting to sharp tasting isothiocyanates in a reaction catalyzed by the plant enzyme myrosinase. Many of the released isothiocyanates have potential cancer prevention properties. Thus, consumption of normal salad size portions of watercress releases milligram amounts of 2-phenethyl isothiocyanate (PEITC), shown in many studies to prevent cancer in laboratory animals treated with carcinogens and to induce detoxifying enzymes such as glutathione S-transferases. In the study starting on page 143, Bonorden and colleagues describe a collaboration between the food industry and scientists in academia to prepare approximately 100 lbs of freeze-dried watercress. This watercress will be incorporated into a beverage to be used in a clinical trial which will determine its ability to induce the detoxification of commonly occurring environmental carcinogens such as benzene, 1,3-butadiene, and acrolein. This food based approach to cancer prevention has many practical advantages compared to the use of pure drug substances but has not yet been widely tested and validated in trials such as the one described here.



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