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Many breast cancer patients take high doses of antioxidants despite possible consequences

A new study finds that many women with breast cancer take antioxidant supplements while undergoing cancer treatment, even though the consequences of doing so are unknown.

Published in the July 15, 2009 issue of *CANCER*, a peer-reviewed journal of the American Cancer Society, the study indicates that additional research should be undertaken to determine the effects of antioxidant supplementation on the health and survival of breast cancer patients.

Antioxidant supplements include vitamin C, vitamin E, beta-carotene, and selenium. They are found in individual supplements as well as in many multivitamins. Many breast cancer patients believe that antioxidant supplements will protect them from the side effects of breast cancer treatment, help prevent breast cancer recurrence, and improve their overall health. However, the actual effects of taking antioxidants during cancer treatment are poorly understood and the findings to date are mixed. Some physicians believe antioxidants may in fact interfere with radiation and some types of chemotherapy, which often attacks tumor cells by generating reactive oxygen species (ROS), very small molecules that play a role in cell development.

Researchers led by Heather Greenlee, ND, PhD, Assistant Professor of Epidemiology and Medical Oncology (in Medicine) at Columbia University Mailman School of Public Health in New York, investigated the prevalence of antioxidant use in women with breast cancer who participated in the population-based Long Island Breast Cancer Study Project (LIBCSP). LIBCSP, which included more than 1,500 breast cancer patients, began as a federally mandated study that investigated whether breast cancer risk was associated with environmental exposures among women in Nassau and Suffolk counties in New York State. Dr. Greenlee's study is based on the 764 patients who completed a follow-up interview and provided information on antioxidant supplement use.

Among the 764 patients studied, 663 women (86.8 percent) reported receiving chemotherapy, radiation, or hormone therapy for breast cancer. Of these 663 women, six in ten (60.5 percent)

reported using antioxidants during breast cancer treatment, which included chemotherapy, radiation, and tamoxifen (anti-estrogen) therapy.

About seven in ten antioxidant users (69.3 percent) used high doses, defined as higher than the dose contained in a Centrum multivitamin. Women who took high doses of antioxidants during treatment were more likely to be using tamoxifen and to have a history of eating more fruits and vegetables, using herbal products, and engaging in mind-body practices.

"Given the common use of antioxidant supplements during breast cancer treatment, often at high doses and in conjunction with other complementary therapies, future research should address the effects of antioxidant supplementation on breast cancer outcomes," including whether antioxidants affect treatment toxicities, treatment efficacy, cancer recurrence, and survival, say the authors.

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Article: "Prevalence and predictors of antioxidant supplement use during breast cancer treatment: The Long Island Breast Cancer Study Project." Heather Greenlee, Marilie D. Gammon, Page E. Abrahamson, Mia M. Gaudet, Mary Beth Terry, Dawn L. Hershman, Manisha Desai, Susan L. Teitelbaum Alfred I. Neugut, and Judith S. Jacobson. *CANCER*, Published Online: June 08, 2009 (DOI: 10.1002/cncr.24378); Print Issue Date: July 15, 2009.
