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File: ■ Green Tea (*Camellia sinensis*)
■ Cancer Prevention

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RE: Epidemiological Assessment of Green Tea for Cancer Prevention

Zhang M, Li L, Liu P, Holman CDJ. Green tea for the prevention of cancer: evidence of field epidemiology. *Functional Foods in Health and Disease*. 2012;2(10):339-350.

In vivo and in vitro studies have demonstrated that green tea (*Camellia sinensis*) has anticancer effects. The evidence in humans has been inconclusive. The variability in humans may have to do with tea-drinking practices (type, frequency, and quantity). The authors conducted 1 cohort study and 5 case-controlled studies that assessed whether green tea was associated with longer survival rates in patients with ovarian cancer and a lower risk of incidence of ovarian, breast, and colorectal cancers, and adult leukemia. Since all of the studies had similar methods, the purpose of the present study was to combine all of the data.

A total of 6,308 participants were in the 6 studies. The following four studies were conducted in southeast China from 2004-2005: a cohort study (n = 254) and a case-controlled study (n = 906) of women with ovarian cancer, a case-controlled study (n = 2,018) of women with breast cancer, and a case-controlled study (n = 217) of adults with leukemia. The following two studies were conducted in northeast China from 2008-2009: a case-controlled study (n = 1,233) of women with breast cancer, and another 3 parallel case-controlled studies (n = 1,680) on breast cancer, colorectal cancer, and adult leukemia. All studies included age- and gender-matched controls that did not have cancer. A validated questionnaire was used to collect information on demographics and lifestyle characteristics, tea consumption (patterns, preparation, type of tea, duration, frequency, and quantity of dried tea-leaf consumed), food consumption as assessed with a 100-item food frequency questionnaire, factors relevant to hormonal status, and family history of cancers.

A total of 55.1% of Chinese women in southeast China were tea drinkers compared with 26.1% of women in northeast China. Among the tea-drinkers in southeast China, 89% drank green tea only, 4.9% drank black tea only, 0.3% drank oolong tea only, and 5.8% drank both green and black tea. Among the tea-drinkers in northeast China, 61% drank green tea only, 9.3% drank black tea only, 1.2% drank oolong tea only, and 25.7% drank both green and black tea. An inverse association was observed between quantity, duration, and frequency of green tea consumed and risks of ovarian cancer, breast

cancer, colorectal cancer, and adult leukemia. In particular, mortality from ovarian cancer decreased in those who consumed the highest quantity of green tea compared with non-tea-drinkers. In both Chinese populations, the apparent protective effects on breast cancer were of mostly the same magnitude, despite differences in tea usage.

The authors conclude that green tea consumption was consistently associated with a lower mortality from ovarian cancer, and with decreased risks of incidence of ovarian, breast, and colorectal cancers, and leukemia in China. The findings are consistent with data from in vivo and in vitro studies. The authors claim that their studies have been ranked as having a very high quality by a Cochrane review of green tea and cancer. A limitation of the study was that they did not determine whether diet, lifestyle, and hormonal status had any impact on the study outcomes.

—Heather S. Oliff, PhD

Referenced article can be found at http://functionalfoodscenter.net/files/58004791.pdf.