

# Study Finds Western-Style "Meat-Sweet" Diet Increases Risk of Breast Cancer in Postmenopausal Women

A new study finds that the more "Western" the diet – marked by red meat, starches, and sweets – the greater the risk for breast cancer among postmenopausal Chinese women. According to researchers who conducted the analysis at Fox Chase Cancer Center in Philadelphia, Harvard University, Shanghai Cancer Institute, and Vanderbilt University, the findings mark the first time a specific association between a Western diet and breast cancer has been identified in Asian women.

The study, published in the July issue of *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research, is the latest set of findings derived from the Shanghai Breast Cancer Study, conducted in the 1990s by Wei Zheng, MD, PhD, MPH, and colleagues at Vanderbilt University. The Fox Chase researchers identified dietary habits among women in the study based on their reported eating habits, classifying them as either "meat-sweet" or "vegetable-soy" eaters.

"The Shanghai data gave us a unique look at a population of Chinese women who were beginning to adopt more Western-style eating habits," said, Marilyn Tseng, PhD, associate member in the population science division at Fox Chase. "We found an association between a Western-style diet and breast cancer was pronounced in postmenopausal women, especially heavier women with estrogen receptor-positive tumors."

Breast cancers marked by the excessive production of estrogen receptors (ER+ breast cancers) form the majority of breast cancers and are often associated with obesity. According to Tseng, there seems to be a specific interaction between

obesity and Western cuisine among postmenopausal women that drives breast cancer, although the study did not offer a specific mechanism.

Tseng and her colleagues examined cases of women from the Shanghai Breast Cancer Study, 25 to 64 years of age, who were newly diagnosed with breast cancer from August 1996 to March 1998. Controls were selected from the Shanghai Resident Registry of permanent residents in urban Shanghai. Through in-person interviews with the Shanghai study participants and residents of Shanghai, researchers established the existence of two primary dietary patterns – a "meat-sweet" diet and a "vegetable-soy" diet. The "meat-sweet" diet is characterized by various meats, primarily pork but also poultry, organ meats, beef and lamb, and shrimp, saltwater fish, and shellfish, as well as candy, dessert, bread, and milk. The "vegetable-soy" pattern is associated with various vegetables, soy-based products, and freshwater fish. Of 1,602 breast cancer cases identified during the study period, in-person interviews were completed for 1,459 (91.1%). In-person interviews were completed for 1,556 (90.3%) of the 1,724 control group participants.

The "meat-sweet" pattern was significantly associated with increased risk of breast cancer among overweight postmenopausal women. Specifically, high intake of the "meat-sweet" pattern was associated with a greater than twofold increased risk of ER+ breast cancer among these women. The results showed no overall association of breast cancer risk with the "vegetable-soy" pattern.

"Our study suggests the possibility that the "meat-sweet" pattern interacts with obesity to

increase breast cancer risk," Tseng said. "Low consumption of a Western dietary pattern plus successful weight control may protect against breast cancer in a traditionally low-risk Asian population that is poised to more broadly adopt foods characteristic of Western societies."

This research was funded through grants from the National Institutes of Health, the American Cancer Society, and the Commonwealth of Pennsylvania. Tseng's co-authors include Xiaohui Cui from the Department of Epidemiology of the Harvard School of Public Health, Yu-Tang Gao from the Shanghai Cancer Institute, and Qi Dai, Xiao-Ou Shu, and Wei Zheng from the School of Medicine, and the Vanderbilt-Ingram Cancer Center at Vanderbilt University.

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