Eating Fried Foods May Increase Prostate Cancer Risk

SEATTLE (Newswise) — Regular consumption of deep-fried foods such as French fries, fried chicken and doughnuts is associated with an increased risk of prostate cancer, and the effect appears to be slightly stronger with regard to more aggressive forms of the disease, according to a study by investigators at Fred Hutchinson Cancer Research Center [1].

Corresponding author Janet L. Stanford, Ph.D., [2] and colleagues Marni Stott-Miller, Ph.D., a postdoctoral research fellow and Marian Neuhouser, Ph.D., all of the Hutchinson Center's Public Health Sciences Division, have published their findings online in The Prostate [3].
While previous studies have suggested that eating foods made with high-heat cooking methods, such as grilled meats, may increase the risk of prostate cancer, this is the first study to examine the addition of deep frying to the equation.

From French fries to doughnuts: Eating more than once a week may raise risk
Specifically, Stanford, co-director of the Hutchinson Center's Program in Prostate Cancer Research, and colleagues found that men who reported eating French fries, fried chicken, fried fish and/or doughnuts at least once a week were at an increased risk of prostate cancer as compared to men who said they ate such foods less than once a month.

In particular, men who ate one or more of these foods at least weekly had an increased risk of prostate cancer that ranged from 30 to 37 percent. Weekly consumption of these foods was associated also with a slightly greater risk of more aggressive prostate cancer. The researchers controlled for factors such as age, race, family history of prostate cancer, body-mass index and PSA screening history when calculating the association between eating deep-fried foods and prostate cancer risk.

"The link between prostate cancer and select deep-fried foods appeared to be limited to the highest level of consumption – defined in our study as more than once a week – which suggests that regular consumption of deep-fried foods confers particular risk for developing prostate cancer," Stanford said.

Deep frying may trigger formation of carcinogens in food
Possible mechanisms behind the increased cancer risk, Stanford hypothesizes, include the fact that when oil is heated to temperatures suitable for deep frying, potentially carcinogenic compounds can form in the fried food. They include acrylamide (found in carbohydrate-rich foods such as French fries), heterocyclic amines and polycyclic aromatic hydrocarbons (chemicals formed when meat is cooked at high temperatures), aldehyde (an organic compound found in perfume) and acrolein (a chemical found in herbicides). These toxic compounds are increased

with re-use of oil and increased length of frying time.
Foods cooked with high heat also contain high levels of advanced glycation endproducts, or AGEs, which have been associated with chronic inflammation and oxidative stress. Deep-fried foods are among the highest in AGE content. A chicken breast deep fried for 20 minutes contains more than nine times the amount of AGEs as a chicken breast boiled for an hour, for example.

For the study, Stanford and colleagues analyzed data from two prior population-based case-control studies involving a total of 1,549 men diagnosed with prostate cancer and 1,492 age-matched healthy controls. The men were Caucasian and African-American Seattle-area residents and ranged in age from 35 to 74 years. Participants were asked to fill out a dietary questionnaire about their usual food intake, including specific deep-fried foods.

The first study of its kind
“To the best of our knowledge, this is the first study to look at the association between intake of deep-fried food and risk of prostate cancer,” Stanford said. However, deep-fried foods have previously been linked to cancers of the breast, lung, pancreas, head and neck, and esophagus.

Because deep-fried foods are primarily eaten outside the home, it is possible that the link between these foods and prostate cancer risk may be a sign of high consumption of fast foods in general, the authors wrote, citing the dramatic increase in fast-food restaurants and fast-food consumption in the U.S. in the past several decades.

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