



## Carcinogens in Cooked Meat Increase Breast Cancer Risk

Researchers at the University of South Carolina recently evaluated the effects of exposure to two carcinogenic compounds found in cooked meat—polycyclic aromatic hydrocarbons (PAHs) and heterocyclic amines (HCAs)—and breast cancer risk. The study found that postmenopausal women who consumed grilled, barbecued, or smoked red meat more than once a week had a 47 percent increased risk of developing breast cancer over their lifetime, compared with women who ate meat less than one time per week. Breast cancer risk increased to 74 percent for women who consumed meat and ate fewer than five servings a day of fruits and vegetables. PAHs and HCAs are formed when barbecuing, grilling, smoking, and pan-frying meats at high temperatures. Exposure to these harmful substances can be limited simply by eating a plant-based diet that is rich in beans, fruits, vegetables, and whole grains.

Steck SE, Gaudet MM, Eng SM, et al. Cooked meat and risk of breast cancer—lifetime versus recent dietary intake. *Epidemiology*. May 2007;18:373-382.

## Fat May Inhibit the Beneficial Effects of Vitamin C

Researchers from the University of Glasgow found that fat in foods diminishes the ability of vitamin C to protect against cancer-forming compounds in

the stomach. N-nitroso compounds are formed in the body by a chemical process that starts with nitrates such as cured meats and dairy products. Antioxidants, such as vitamin C, usually neutralize these potential carcinogenic compounds by turning them into nitric oxide. Researchers from the study found that consuming fat may cause N-nitroso compounds to re-form in the stomach.

Fat counters vitamin C benefits. *BBC News*. April 8, 2007.

## Flavonoids May Decrease Pancreatic Cancer Risk

Researchers from the Cancer Research Center of Hawaii found that consuming foods rich in flavonoids may decrease pancreatic cancer risk by as much as 23 percent in nonsmokers and 59 percent in smokers (smokers generally have a higher pancreatic cancer risk). Foods rich in flavonoids include apples, broccoli, onions, kale, and berries. These compounds play important roles in cancer prevention and survival, including apoptosis or cancer cell death.

The study was part of the ongoing, eight-year Multiethnic Cohort Study involving 183,518 participants. Investigators looked at three specific classes of flavonoids—quercetin, kaempferol, and myricetin. Kaempferol was found to have the strongest cancer-fighting effects in smokers. Foods rich in kaempferol include grapefruit, spinach, and cabbage.

Nöthlings U, Murphy SP, Wilkens L, Henderson BE, Kolonel LN. Flavonols and pancreatic cancer risk: the multiethnic cohort study. Presented at the Annual Meeting of the American Association for Cancer Research. April 2007. Abstract 856.



Copyright of *Good Medicine* is the property of Physicians Committee for Responsible Medicine and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.