

Certain meat components may increase bladder cancer risk

August 2 2010

A new study suggests that consuming specific compounds in meat related to processing methods may be associated with an increased risk of developing bladder cancer. Published early online in *Cancer*, a peer-reviewed journal of the American Cancer Society, the findings may be relevant for understanding the role of dietary exposures in cancer risk.

Eating red and processed meats has been linked to an increased risk of developing several different types of cancer. Animal studies have identified a number of compounds in meat that might account for this association. These include heterocyclic amines, polycyclic [aromatic hydrocarbons](#), and N-nitroso compounds. Nitrate and nitrite are added to processed meats and are known precursors to N-nitroso compounds.

Amanda J. Cross, PhD, of the National Cancer Institute in Rockville and colleagues conducted one of the first prospective studies - the NIH-AARP Diet and Health Study—to assess the relationship between intake of these meat-related compounds and the risk of developing bladder cancer. They used information gathered through questionnaires to assess the types of meat consumed as well as how meat was prepared and cooked to estimate the intake of these meat-related compounds.

The investigators had information from approximately 300,000 men and women aged 50 to 71 years from eight US states. At the start of the study (1995 to 1996), all participants completed lifestyle and dietary questionnaires about their usual consumption of foods and drinks. The participants were followed for up to eight years, during which time 854

people were diagnosed with bladder cancer.

People whose diets had the highest amount of total dietary nitrite (from all sources and not just from meat), as well as those whose diets had the highest amount of nitrate plus nitrite from processed meats had a 28 percent to 29 percent increased risk of developing bladder cancer compared with those who consumed the lowest amount of these compounds. This association between nitrate/nitrite consumption and bladder [cancer risk](#) may explain why other studies have observed an association between processed meats and increased bladder cancer risk.

"Our findings highlight the importance of studying meat-related compounds to better understand the association between meat and cancer risk," said Dr. Cross. "Comprehensive epidemiologic data on meat-related exposures and [bladder cancer](#) are lacking; our findings should be followed up in other prospective studies," she added.

More information: "Meat and components of meat and the risk of bladder cancer in the NIH-AARP Diet and Health Study." Leah M. Ferrucci, Rashmi Sinha, Mary H. Ward, Barry I. Graubard, Albert R. Hollenbeck, Briseis A. Kilfoy, Arthur Schatzkin, Dominique S. Michaud, and Amanda J. Cross. *CANCER*; Published Online: August 2, 2010 ([DOI: 10.1002/cncr.25463](https://doi.org/10.1002/cncr.25463)).

Provided by American Cancer Society

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