Red meat linked to increased mortality: Study

By Stephen Daniells, 24-Mar-2009

Choosing between red and processed meat, and white meat, may affect how long you live, according to new findings from a study with half a million people.

Writing in the new issue of the Archives of Internal Medicine, researchers from the US' National Cancer Institute (NCI) report that increased consumption of red and processed meat may have a modestly increased risk of death from all causes and also from cancer or heart disease.

The study adds to an ever increasing list of bad news for red and processed meat, following a previous study from the NCI that reported high intakes of red and processed meats may raise the risk of lung and colorectal cancer by up to 20 per cent.

The World Cancer Research Fund published a report in 2007 that directly linked diet to cancer, with alcohol and red and processed meats posing particular risks.

"Red and processed meat intakes, as well as a high-risk meat diet, were associated with a modest increase in risk of total mortality, cancer, and CVD mortality in both men and women," wrote the authors, led by Rashmi Sinha, PhD.

"In contrast, high white meat intake and a low-risk meat diet was associated with a small decrease in total and cancer mortality.

"These results complement the recommendations by the American Institute for Cancer Research and the World Cancer Research Fund to reduce red and processed meat intake to decrease cancer incidence," they added.

Study details

Sinha and coworkers analyzed data from 500,000 participants of the National Institutes of Health-AARP Diet and Health Study aged between 50 and 71 years at the start of the study. Food frequency questionnaires were used to estimate intakes of white, red and processed meats.

During 10 years of follow-up the researchers documented 71,252 deaths, including 47,976 men and 23,276 women. Men and women with the highest intakes of red meat (average of 62.5 grams per 1,000 calories per day), were found to have a higher overall risk of death, including death from heart disease and cancer, than men and women who had the lowest average intakes (9.8 grams per 1,000 calories per day).

Similar results were observed for men and women with the highest average intakes of processed meat (22.6 grams), compared to those with the lowest (1.6 grams).

On the other hand, the high consumption levels of white meat were associated with slightly lower risk for total death, death from cancer and death from causes other than heart disease or cancer, compared to lowest consumption levels, said the researchers.

"For overall mortality, 11 percent of deaths in men and 16 percent of deaths in women could be prevented if people decreased their red meat consumption to the level of intake in the first quintile [one-fifth]," wrote Sinha and co-workers.

"The impact on cardiovascular disease mortality was an 11 percent decrease in men and a 21 percent decrease in women if the red meat consumption was decreased to the amount consumed by individuals in the first quintile," they added.

"For women eating processed meat at the first quintile level, the decrease in cardiovascular disease mortality was approximately 20 percent."

Mechanisms

The researchers note that meat may increase mortality rate via several mechanisms. One is the formation of carcinogenic compounds during high-temperature cooking, while another is linked to the high levels of saturated fat. On the flip side, dietary patterns with low intakes of meat have been linked to reduced risks of heart disease.

Comment

In an accompanying editorial, Barry Popkin from the University of North Carolina said the study was "excellent". Popkin added that the results "reiterate the concerns echoed in other major reviews and studies on the adverse effects of excessive meat intake".

Source: Archives of Internal Medicine
2009, Volume 169, Number 6, Pages 562-571
"Meat Intake and Mortality - A Prospective Study of Over Half a Million People"
Authors: R. Sinha, A.J. Cross, B.I. Graubard, M.F. Leitzmann, A. Schatzkin

Editorial: Archives of Internal Medicine
Volume 169, Number 6, Pages 543-545
"Reducing Meat Consumption Has Multiple Benefits for the World's Health"
Author: B.M. Popkin