

A Measure to Reduce Cancer Risk

Colorectal cancer is a common and serious condition. The National Cancer Institute predicts that in 2008, 108,070 individuals will develop colon cancer, 40,740 will develop rectal cancer, and 49,960 will die from these conditions (NCI 2008). Colorectal cancer is the fourth most common cancer in both men and women.

Environmental exposures affect the risk of many forms of cancer. Lung cancer risk, for example, is related to smoking and asbestos exposure, among other factors. The intestinal tract is in constant contact with foods, food additives, and the products of digestion. Abundant evidence shows that consumption of processed meats is strongly associated with risk of cancer of the colon and rectum.

Processed meats are those that are often prepared or preserved by smoking, curing, or salting, or by the addition of preservatives. This group includes ham, bacon, pastrami, and salami. It also includes sausages and hot dogs to which nitrites or nitrates have been added, and may include hamburgers and minced meats, depending on processing.

A Convincing Cause of Cancer

In 2007, the World Cancer Research Fund and American Institute for Cancer Research released a landmark report, *Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective*, providing an up-to-date and comprehensive summary of evidence on cancer prevention. This report summarized the evidence on processed meats and cancer risk and concluded that “processed meat is a convincing cause of colorectal cancer” (WCRF 2007).

This conclusion was based on a review of 44 case-control studies (in which the diets of individuals with cancer were compared with those of individuals who did not have cancer, but who were similar in other respects) and 14 cohort studies (in which the diets of individuals were assessed before cancer onset, and the individuals were followed over time to assess relationships between diet patterns and cancer risk). These studies show that individuals who consume processed meats are at significantly increased risk of developing colorectal cancer later in life, compared with those who avoid these products.

Risk increases with increasing consumption. According to the World Cancer Research Fund and American Institute for Cancer Research, risk of colorectal cancer increases, on average, by 21 percent for every 50 grams of processed meat consumed daily. A 50-gram serving is approximately the size of a typical hotdog.

Some studies have also suggested that processed meats may contribute to risk of cancer of the esophagus, lung, stomach, and prostate, but evidence is more limited than for colorectal cancer.

There are several possible explanations for the contribution of processed meats to cancer risk. Nitrites used in meats as a preservative, as well as a coloring and flavoring agent, can combine with amino acid

degradation products during the curing process or during digestion to produce N-nitroso compounds (nitrosamines or nitrosamides), which are suspected carcinogens. Nitrates, used as preservatives, are converted to nitrites. In addition, processed meats cooked at high temperatures may contain carcinogens, including heterocyclic amines and polycyclic aromatic hydrocarbons. Heme iron is also plentiful in red and processed meats. Heme promotes the production of N-nitroso compounds; its iron content also leads to free radical production.

Continued Exposure to Serious Risk

Despite this scientific consensus, these products are still widely consumed, particularly by children. Most parents, teachers, and school lunch administrators have no idea that hot dogs, sausages, or deli meats may present serious long-term risks.

According to the National Hot Dog & Sausage Council, more than 740 million hot dog packages were sold in 2007 (hot-dog 2008). A 2005 report from the U.S. Department of Agriculture showed that based on the most recent available figures, per capita consumption of processed pork products (lunchmeat, bacon, sausage, and smoked ham) was 31.8 pounds. Blacks consumed almost 16 percent more processed pork than whites (Davis 2005).

Evidence of risk is more than sufficient for action. In order to reduce cancer risk, the U.S. Department of Agriculture should exclude processed meats from school nutrition programs and take other steps to ensure that schools participating in federal school lunch programs do not serve such foods at school activities.

References

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