



July 26, 2017

Dr. Ruth Lunn
Director, Office of Report on Carcinogens, NTP
National Institute for Environmental Health Sciences
P.O. Box 12233 Mail Drop K2-14
Research Triangle Park, NC 27709

Dr. Andrew A. Rooney
Office of Health Assessment and Translation, NTP
National Institute for Environmental Health Sciences
P.O. Box 12233 Mail Drop K2-04
Research Triangle Park, NC 27709

Re: Nomination of Meat-Related Exposures to the National Toxicology Program for the Report on Carcinogens

Dear Dr. Lunn and Dr. Rooney,

The American Cancer Society is pleased to offer comments related to the inclusion of meat-related exposures in the Report on Carcinogens (RoC) prepared by the National Toxicology Program (NTP). As the nationwide, community-based voluntary health organization dedicated to eliminating cancer as a major health problem, the American Cancer Society supports the inclusion of meat-related exposures in the RoC.

The American Cancer Society (ACS), the World Cancer Research Fund (WCRF), and the World Health Organization's International Agency for Research on Cancer (IARC) reviewed the evidence on the link between processed meat, red meat and cancer risk, and concluded that consumption of processed and red meat is associated with an increased risk of colorectal cancer.

American Cancer Society Guidelines on Nutrition and Physical Activity

According to the American Cancer Society Guidelines on Nutrition and Physical Activity for both cancer prevention¹ and survivorship,² a healthy eating pattern that is associated with reduced cancer risk includes:

- Choosing foods and beverages in amounts that help to achieve and maintain a healthy weight;
- *Limiting consumption of processed meat and red meat (emphasis added);*
- Eating at least 2.5 cups of vegetables and fruits each day; and

¹ Kushi LH, Doyle C, McCullough M, et al. American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention: Reducing the Risk of Cancer With Healthy Food Choices and Physical Activity. *CA Cancer J Clin* 2012; 62: 30-67

² Rock CL, Doyle C, Demark-Wahnefried W, et al. Nutrition and Physical Activity Guidelines for Cancer Survivors. *CA Cancer J Clin* 2012; 62: 242-274.

- Choosing whole grains instead of refined grain products.

The American Cancer Society guideline recommending limited consumption of red meats and processed meats is based on epidemiologic evidence indicating positive associations of red and/or processed meat consumption with risk of colorectal cancer.³

Furthermore, research shows that people who follow the majority of the diet, physical activity, weight, and alcohol recommendations in the ACS Guidelines are less likely to die of cancer,^{4, 5} cardiovascular disease, or any cause compared with people who follow very few, if any, of the ACS Guidelines.⁶

World Cancer Research Fund (WCRF) Continuous Update Project

The evidence that diets high in red meat and processed meat are associated with increased risk of colorectal cancer is considered convincing by the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR), whose Continuous Update Project is the world's most comprehensive resource of scientific literature on food, nutrition, physical activity, and cancer.^{7, 8} The most recent WCRF report for colorectal cancer was published in 2011 and shows a dose-response relationship between red and/or processed meat intake and colorectal cancer risk. Specifically, a meta-analysis of prospective studies showed a 17% increased risk of colorectal cancer for each 100 grams of red meat, and a 18% increased risk for each 50 grams of processed meat consumed per day.⁹ The evidence for cancers of the esophagus, stomach, lung, and pancreas is considered limited and suggestive.¹⁰ The risk of colorectal cancer associated with processed meat intake appears to be somewhat greater than that for an equivalent amount of red meat, but current research indicates that consumption of both should be limited.¹¹

International Agency for Research on Cancer (IARC) Classifications

In October, 2015, the International Agency for Research on Cancer (IARC) convened a group of scientists from 10 countries to evaluate the carcinogenicity of the consumption of red meat and processed meat. The IARC Working Group considered more than 800 epidemiologic studies that investigated associations of more than a dozen types of cancer with the consumption of red meat or processed meat in many countries and populations with diverse diets.¹²

³ Kushi, 2012.

⁴ Thomson CA, McCullough ML, Wertheim BC, et al. Nutrition and Physical Activity Cancer Prevention Guidelines, Cancer Risk, and Mortality in the Women's Health Initiative. *Cancer Prev Res (Phila)*. 2014; 7(1):42-53.

⁵ Kabat GC, Matthews CE, Kamensky V, et al. Adherence to cancer prevention guidelines and cancer incidence, cancer mortality, and total mortality: a prospective cohort study. *Am J Clin Nutr*, 2015;101(3):558-569.

⁶ McCullough ML, Patel AV, Kushi LH, et al. Following cancer prevention guidelines reduces risk of cancer, cardiovascular disease, and all-cause mortality. *Cancer Epidemiol Biomarkers Prev*. 2011;20(6):1089-1097.

⁷ World Cancer Research Fund (WCRF) and American Institute for Cancer Research (AICR). *Food, Nutrition, and the Prevention of Cancer: A Global Perspective*. Washington, DC: AICR, 2007.

⁸ WCRF and AICR. *Colorectal Cancer 2011 Continuous Update Project Report*. 2011. Available at http://www.dietandcancerreport.org/cancer_resource_center/downloads/cu/Colorectal-Cancer-2011-Report.pdf.

⁹ WCRF/AICR, 2011.

¹⁰ WCRF/AICR, 2007.

¹¹ WCRF/AICR, 2011.

¹² Bouvard V, Loomis D, Guyton KZ, et al. Carcinogenicity of consumption of red and processed meat. *Lancet Oncol*. 2015;16: 1599-1600

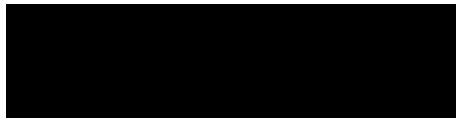
After thoroughly reviewing the literature, the Working Group classified processed meat (defined as meat that has been transformed through salting, curing, fermentation, smoking, or other processes to enhance flavor or improve preservation) as carcinogenic to humans (Group 1), based on sufficient evidence in humans that the consumption of processed meat causes colorectal cancer.

In addition, the consumption of red meat (defined as all types of mammalian muscle meat, such as beef, veal, pork, lamb, mutton, horse, and goat) was classified as probably carcinogenic to humans (Group 2A), based on limited evidence that the consumption of red meat causes cancer in humans and strong mechanistic evidence supporting a carcinogenic effect. This association was observed mainly for colorectal cancer, but associations were also seen for pancreatic cancer and prostate cancer.¹³

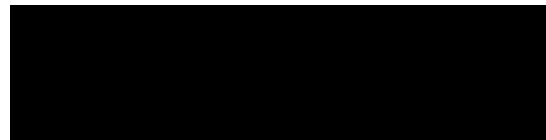
Conclusion

The evidence linking the consumption of processed meat and red meat to increased colorectal cancer risk is considered consistent and convincing by the top cancer research organizations in the world. Because colorectal cancer is the third most common cancer, and a leading cause of cancer death in the US¹⁴ (an estimated 135,000 cases of colorectal cancer will be diagnosed, and more than 50,000 will die from the disease in the US in 2017¹⁵), the adverse effects of red and processed meat consumption on colorectal cancer risk has important public health implications. Inclusion of a review of meat-related exposures in the Report on Carcinogens is imperative to provide Americans with the information they need when making dietary choices that can impact their health.

Sincerely,



Richard C. Wender, MD
Chief Cancer Control Officer
American Cancer Society



Otis W. Brawley, MD, MACP
Chief Medical Officer
American Cancer Society

¹³ Bouvard, 2015.

¹⁴ Siegel RL, Miller KD, and Jemal A. (2017), Cancer statistics, 2017. CA: A Cancer Journal for Clinicians, 67: 7–30. doi:10.3322/caac.21387

¹⁵ Siegel, 2017.