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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: “Meat-Related Exposures” and Nominations to the National Toxicology Program (NTP) for the Report on Carcinogens

Dear Drs. Lunn and Rooney:

Thank you for the opportunity to submit public commentary to the Office of the Report on Carcinogens and the Office of Health Assessment and Translation regarding whether to include meat-related exposures, including the consumption of red meat, processed meat, and meat cooked at high temperatures, in future editions of the Report on Carcinogens.

The Center for Biological Diversity is a nonprofit public interest environmental organization representing 1.3 million members and supporters. The Center works through science and the law to secure a healthy future for all species.

Food and nutrition are critical factors to public health that can be modified to reduce and/or mitigate disease risks, including cancer. Currently, more than half of the meat products Americans consume is red meat, while nearly a quarter is processed meat products.ⁱ Indeed, Americans consume two to three times the global average of meat, among the highest per capita rates in the world, according to data from the Organization for Economic Cooperation and Development.ⁱⁱ

Such high meat consumption rates are incredibly problematic for the health of this country, with studies indicating that diet may contribute to as much as 35 to 60 percent of cancers.^{iiiiv} According to the National Cancer Institute, colorectal cancer rates are on the rise.^v People who consume processed meats are found to be at a significantly increased risk of developing colorectal cancer when compared with those who avoid consuming processed meat.^{vi} Further, processed meat products have additionally been determined to increase other risks for cancer, including pancreatic, stomach, bladder, and colon cancers.^{viiiviii}

In evaluating the carcinogenicity of the consumption of red meat and processed meat, the World Health Organization in 2015 determined processed meat consumption to be “carcinogenic to humans” and red meat consumption to be “probably carcinogenic.”^{ix} Processed meat was specifically classified as carcinogenic based on sufficient evidence in humans that the consumption of processed meat causes colorectal cancer. That report, which classified and reviewed the consumption of processed meats including bacon, ham and sausage, was based on data culled from more than 800 studies, all of which may be relevant to the Offices' consideration process here.^x

Similarly, the 2015-2020 Dietary Guidelines for Americans provide that (1) a lower intake of processed meat is a characteristic of healthy eating patterns; (2) there is “strong evidence” that lower intake of processed meat is associated with reduced risk of cardiovascular disease; and (3) there is “moderate evidence” that lower intake of processed meat is associated with reduced risk of obesity, type 2 diabetes, and some types of cancer.^{xi}

Importantly, in addition to these direct consumption-related concerns, the practices that go into producing red and processed meats also represent a leading threat to public health and the environment. Indeed, according to the Food and Agricultural Organization of the United Nations, the environmental impacts of these production practices are an international concern, with beef, pork and chicken production identified as massive contributors to climate change, water and air pollution and habitat loss of threatened and endangered species.^{xii}

The amount of financial, medical and governmental resources dedicated to addressing meat-related harms to the environment and public health, including the treatment of cancer, is unsustainable. Given the evidence that Americans are vulnerable to cancer from continued exposure to red meat, processed meat, and meat cooked at high temperatures, the Report on Carcinogens should list these substances as known carcinogens for the public good.

Respectfully,

Dr. Jennifer Molidor
Center for Biological Diversity

References

ⁱ Daniel CR, Cross AJ, Koebnick C, Sinha R. Trends in meat consumption in the USA. *Public Health Nutr.* 2001;14:575-583.

ⁱⁱ Organization for Economic Coordination and Development. (2016). OECD-FAO Agricultural Outlook. Meat Production. Available at: <https://data.oecd.org/agroutput/meat-consumption.htm>.

ⁱⁱⁱ World Cancer Research Fund/American Institute for Cancer Research. (2011). *Food, Nutrition, Physical Activity and the Prevention of Cancer: A Global Perspective*. Continuous Update Project. Washington, DC.

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- ^{iv} Vargas AJ, Thompson PA. Diet and nutrient factors in colorectal cancer risk. *Nutr Clin Pract.* 2012;27:613-623.
- ^v Siegel RL, Fedewa SA, Anderson WF, et al. Colorectal cancer incidence patterns in the United States, 1974-2013. *J Natl Cancer Inst.* 2017;109: doi: 10.1093/jnci/djw322.
- ^{vi} Chan DSM, Lau R, Aune D, et al. Red and processed meat and colorectal cancer incidence: meta-analysis of prospective studies. *PLoS One.* 2011;6:e20456.
- ^{vii} Wolk A. Potential health hazards of eating red meat. *J Intern Med.* 2017;281:106-122.
- ^{viii} World Cancer Research Fund/American Institute for Cancer Research. (2007). *Second Report on Food, Nutrition, Physical Activity and the Prevention of Cancer: a Global Perspective.* Washington, DC.
- ^{ix} World Health Organization. (2015). International Agency for Research on Cancer. IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans: Some N-nitroso compounds. Available at: https://www.biologicaldiversity.org/programs/population_and_sustainability/pdfs/IARC_statement_102615.pdf.
- ^x The World Health Organization report was prepared by a working group of 22 experts from 10 countries. The processed meat classification of "carcinogenic to humans" is the highest class of carcinogenic agents under the evaluation structure used in the report. The "carcinogenic to humans" group includes other known carcinogens such as cigarettes, alcohol, and asbestos. The second highest class of carcinogenic agents under this structure is the classification applied to red meat consumption, "probably carcinogenic to humans."
- ^{xi} US Department of Health and Human Services; US Department of Agriculture. 2015-2020 Dietary Guidelines for Americans. 8th ed. Washington, DC. US Dept of Health and Human Services; December 2015. Available at <http://www.health.gov/DietaryGuidelines>.
- ^{xii} Food and Agriculture Organization of the United Nations. (2006). *Livestock's long shadow: Environmental issues and options.* Available at: <http://www.fao.org/docrep/010/a0701e/a0701e00.HTM>