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### **Average greenhouse gas emissions lower for households spending less on red meat**

**Hartford, CT** - U.S. households spending less of their food budget on red meat generate lower levels of greenhouse gas emissions and have higher diet quality, according to a new study conducted by researchers at the University of Connecticut Rudd Center for Food Policy and Obesity and the Tufts University Friedman School of Nutrition Science and Policy.

Recent research estimated that greenhouse gas emissions from U.S. household food purchasing accounted for 16% of total emissions in the United States in 2013. More specifically, animal-based foods, especially red meat, have been shown to be particularly carbon intensive to produce. For that reason, previous studies have suggested that reduced demand for red meat could have positive environmental effects by driving down greenhouse gas emissions in the food system. By shifting away from red meat, US consumers may also experience improved nutritional quality and health benefits including lower risk for cancers and cardiovascular disease.

“In thinking about ways to reduce food system greenhouse gas emissions, the topic of red meat consumption comes up frequently, but most prior studies on this topic have not been conducted in the U.S., or they have only examined the question through modeling or simulation approaches,” says Rebecca Boehm, lead author of the study.

To gain insight into this relationship, researchers used item-level food purchase and acquisition data collected from a representative sample of 4,700 U.S. households. The researchers appended nutrition information to each food and calculated their greenhouse gas emissions using a life cycle assessment. Households were divided into five groups based on the food budget share spent on red meat, allowing researchers to examine the differences among these groups in food costs, nutritional quality, and greenhouse gas emissions.

“The strength of our approach is that we are looking at actual food purchase patterns across a wide variety of U.S. households,” explained Sean B. Cash, the Bergstrom Foundation Professor in Global Nutrition at the Friedman School and co-author of the study. “This allows us to observe what households are actually doing, rather than relying on assumptions about what people might do if they were to make changes to their food purchases.”

The findings, published in *Public Health Nutrition*, show substantial variation in both the share of food budgets spent on red meat and the dollar amount spent among U.S. households.

Households with the lowest red meat spending share spent on average \$1.65 on red meat per week, while households with the highest spending share spent 23 times that amount.

Lower red meat spending was associated with higher diet quality, as average Healthy Eating Index scores were five points higher for households spending the least on red meat compared to households spending the most. Households spending the least on red meat also purchased higher amounts of health promoting nutrients such as fiber and calcium. In addition, average weekly greenhouse gas emissions were lowest for households with the lowest share of spending on red meat but were the same for households in the other four groups. These results suggest that a substantial reduction in the share of red meat spending is needed to mitigate emissions.

“The key takeaway here is that lower levels of red meat spending are potentially achievable without adverse impacts on diet quality or household food budgets,” says Boehm. “Our results imply that a large reduction in red meat spending, independent of other food choice differences, results in lower emissions from household food purchasing. While this might be a great opportunity to align public health nutrition and climate change mitigation goals, future research must consider how substitutions to other animal protein foods might impact household food emissions as well.”

This research was conducted while Rebecca Boehm was at Tufts University and the University of Connecticut. She is currently an Economist with the Food and Environment Program at the Union of Concerned Scientists. Study co-authors include Michele Ver Ploeg, U.S. Department of Agriculture, and Parke Wilde and Sean Cash from the Friedman School of Nutrition Science and Policy at Tufts University.

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### **About the UConn Rudd Center for Food Policy & Obesity**

The Rudd Center for Food Policy & Obesity at the University of Connecticut is a multidisciplinary center dedicated to promoting solutions to childhood obesity, poor diet, and weight bias through research and policy.

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