

Could a low-carbon diet help you live longer?

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A simulation by researchers at the Tulane School of Public Health and Tropical Medicine using a comprehensive diet-mortality model provides evidence that diets with a higher environmental footprint have a greater risk of mortality compared to more environmentally friendly diets.

According to corresponding author Dr. Diego Rose, professor of nutrition at the school, the study sought to answer whether diets with a greater environmental impact were less healthy. Previous research had not provided a clear answer. But examination of data from the National Health and Nutrition Examination Survey (2005-10) showed that a simulated switch from the highest carbon footprint diet to the lowest would decrease deaths in a given year from cardiovascular disease and cancer by about 2%. And, most of the deaths averted would be from reductions in cardiovascular disease.

[The study can be found here.](#)

“[The paper] simulates the mortality change that might occur if everyone shifted from a diet like those in the top quintile (20%) of carbon footprint diets to those in the bottom quintile,” Rose said. “If this happened on a national level, there would be a lot fewer deaths (~24,000) in a given year.”

Human food systems contribute roughly a third of greenhouse gases worldwide. The greenhouse gases in the production of beef are 8-10 times higher than that of chicken and approximately 20 times of some vegetable protein foods, like beans.

The simulations for the study used the Preventable Risk Integrated Model (PRIME), an epidemiological modelling software that bases diet-mortality relationships on published meta-analyses of randomized controlled trials and prospective cohort studies.

Studies of this nature may prove to be important in guiding public policy and advocacy into the future. Dietary guidance at present rarely incorporates sustainability information but could do so going forward to reinforce health messaging.

“Our previous work showed that lower carbon footprint diets were healthier,” Rose said. “But there are many ways to assess the healthiness of the diet. ... Our results here further support the case that low carbon footprint diets are indeed healthier.”

Lead-author of the study was Dr. Benjamin Pollock (PhD EPID '17), who is now a consultant with the Mayo Clinic. Other co-authors include Amelia Willits-Smith (PhD SHPS '22), Dr. Lydia Bazzano, professor of epidemiology, and Dr. Martin Heller, an environmental scientist at AgResilience Consulting.