

Climate and food: The environmental impact of beef consumption

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Cutting one's consumption of beef can make a big environmental impact.
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Dietary choices can significantly affect both personal health and the environment, particularly due to the carbon footprint of different foods. Research from the [Celia Scott Weatherhead School of Public Health and Tropical Medicine](#), led by [Diego Rose](#),

PhD, highlights beef as a primary contributor to greenhouse gas emissions and health concerns.

Beef production accounts for a significant portion of the U.S.'s carbon emissions—8-10 times more than chicken and up to 50 times more than beans. Methane produced by cattle digestion is particularly harmful, as it traps more heat than carbon dioxide, accelerating climate change.

“We’d hit one [food] that was like, 10 times more or 100 times more than anything else,” said Rose. “And invariably, that was beef.”

“You don’t have to give (beef) up entirely, but cutting back or making substitutions can make a significant impact.”

Diego Rose, PhD

The study found that 12% of Americans consume nearly half of the country's beef, posing a double threat to both health—due to beef’s high saturated fat content—and the environment. Rose emphasizes that reducing beef consumption, even slightly, could make a notable difference. By switching from beef to chicken or plant-based milk, individuals could cut their carbon footprint from food by 35%, while improving diet quality by 4-10%.

“If we could get the top meat eaters down to even just average consumption, we’d save a lot in terms of greenhouse gas emissions,” said Rose. “So much so that it could actually make a small dent in our original commitment to the Paris Accord.”

Rose also points to younger generations as a source of optimism, noting that people under 29 are the least likely to consume large amounts of beef. “There’s hope in the younger generation,” he said. “They’re interested in how diet impacts the environment, and what they can do about it.”

Rose continues his work on the intersection of nutrition and sustainability, advocating for federal updates to nutrition data to support research. He recently published a commentary, [“Augmenting the National Nutrition Data System to Promote Diet Sustainability Analyses,”](#) published in the June 2024 issue of *Current Developments in Nutrition* on what the federal government can do to invest in updated data to improve diet sustainability research further. His commentary emphasized the importance of shifting public awareness toward more sustainable

food choices.

“If you’re trying to reduce your carbon footprint, eat less beef,” Rose advises. “You don’t have to give it up entirely, but cutting back or making substitutions can make a significant impact.”