

How we can reduce food waste and promote healthy eating

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In a recent journal article, University of Illinois researchers Brenna Ellison (left) and Melissa Pflugh Prescott discuss ways to reduce food waste while promoting healthy nutrition. Credit: College of ACES, University of Illinois.

Food waste and obesity are major problems in developed countries. They

are both caused by an overabundance of food, but strategies to reduce one can inadvertently increase the other. A broader perspective can help identify ways to limit food waste while also promoting healthy nutrition, two University of Illinois researchers suggest.

"You can reduce food waste by obtaining less or eating more. Our concern was that if people are reducing waste by eating more, what does that mean for nutrition? And how do we think about these tradeoffs in a way that promotes both good nutrition outcomes and good food waste outcomes? Public policies have generally focused on either obesity or food waste, but rarely considered them together, says Brenna Ellison, associate professor in the Department of Agricultural and Consumer Economics (ACE) at U of I.

Ellison and Melissa Pflugh Prescott, assistant professor in the Department of Food Science and Human Nutrition (FSHN) at U of I, discuss a systems approach to addressing food waste and nutrition in a new paper, published in *Journal of Nutrition Education and Behavior*.

Food waste refers to the loss of edible food that is not consumed for various reasons. It occurs at all levels of the supply chain, from farm to transportation, processing, retail, food service, and consumer levels.

Food waste is often calculated by weight or by calories, Ellison explains. If you calculate by weight, [dairy products](#), vegetables, grain products, and fruit account for the majority of food loss. But when converted to calories, added fats and oils, grain products, and added sugars and sweeteners are the top categories for food waste. Encouraging increased consumption of those foods could have negative health consequences, she notes.

In their paper, Ellison and Prescott provide strategies for reducing food waste in a variety of settings, including [food service](#), retail, schools, and

homes.

Some restaurants and university dining halls that offer buffet-style dining have tried to limit food waste by imposing fines or offering incentives to ensure people finish the food they select. While such strategies may limit waste, they encourage overeating, the researchers say. They suggest instead using behavioral cues such as smaller plates and scoops that nudge people to select less food.

School meals are important means to improve public health and introduce children to new, healthy foods. However, plate waste is a persistent problem in school lunch settings. Schools can use salad bars to encourage students to try new items, but that causes pre-plate waste because some items are not selected. COVID-19 modifications pose additional challenges to safe strategies for food recovery, but there are still viable options, Prescott states.

"For example, schools can take items like whole apples or unopened cartons of milk and recycle them. They can reuse them in future meals, making sure they are following food safety protocols. Or they can donate them to food pantries and other nonprofit organizations, or create backpack programs where they can send some of those items home with students who may be struggling with food insecurity. There are certainly ways to do this safely," she says.

The researchers note that households are responsible for some of the costliest food waste, because they are at the end of the supply chain. Consumers throw away food for various reasons, such as food safety concerns, desire to eat fresh food, and poor food management.

Choosing more processed food could reduce waste but is not desirable from a health perspective. Learning strategies for better meal planning and using a list for grocery shopping are better ways to accomplish both

waste reduction and improved nutrition goals, Ellison says.

"We know that even if you try to plan meals, it can be hard to follow through. It's important to be realistic about planning. For example, if you know that you're likely to order take out one or two nights a week, then plan for that. Don't buy food you won't need," she notes.

The researchers also suggest ways to encourage good nutrition through small changes. "If you have young kids, you can try frozen vegetables. You can take a little bit out at a time and do some testing with your children; you won't have a whole package that might go to waste," Ellison says.

Better cooking skills are also important, Prescott states.

"Cooking is a win-win in terms of promoting health and reducing food waste. There is evidence that links cooking and improved diet quality. And people who cook might over time become more skilled at repurposing leftovers, and being more creative with foods that are about to go to waste," she says. "Freezing leftovers for future meals is also a helpful strategy, if you have freezer space."

Prescott notes that some of these strategies may be difficult for families that lack adequate equipment for cooking, storing, and freezing. She and Ellison are working to develop a cooking education curriculum primarily addressing the challenges facing low-income households who may have limited resources available.

The two researchers are also planning a study on school nutrition aiming to identify behavioral nudges to increase fruit and vegetable consumption while reducing [waste](#), and a project focusing on safety issues of [food](#) recovery in schools.

Illinois Extension provides information and resources for families wanting to learn more about nutrition and wellness.

The paper, "Examining [nutrition](#) and [food waste](#) trade-offs using an obesity prevention context," is published in *Journal of Nutrition Education and Behavior*.

More information: Brenna Ellison et al, Examining Nutrition and Food Waste Trade-offs Using an Obesity Prevention Context, *Journal of Nutrition Education and Behavior* (2021). [DOI: 10.1016/j.jneb.2020.11.005](#)

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