

Learning to make healthy choices can counter the effects of large portions

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People are often told that eating everything in moderation can help them lose weight, but it is better to choose healthier foods than to try to eat less, according to Penn State researchers.

In a recent study, [researchers](#) measured how much participants ate when given meals that varied in portion size. Despite about one-third of participants having been trained in different strategies to manage [food](#) portions during a previous year-long weight loss trial, all participants ate more as portion sizes grew. Although the trained participants ate the same amount as the others, they tended to choose [healthier foods](#) and ended up consuming fewer calories overall.

"The results show that choosing healthy, lower-calorie-dense foods was more effective and more sustainable than just trying to resist large portions of higher calorie options," said Faris Zuraikat, graduate student. "If you choose high-calorie-dense foods but restrict the amount that you're eating, portions will be too small, and you're likely to get hungry."

Previous research has shown the power of the "portion size effect," which is the tendency for people to eat more when larger portions are served and can result in people consuming more calories than they intended.

The researchers designed an intervention to help people counteract this effect, in which participants were taught strategies to control food portions and eat healthier. Zuraikat said he and the other researchers wanted to see if this training was effective in helping people control portions.

"We gathered a group of subjects who had extensive training on portion-control strategies to see if their response to increasing portion size of foods served at a meal differed from untrained individuals," Zuraikat said. "We were also interested in whether those untrained individuals with overweight and obesity or normal weight differed in their response."

The researchers recruited three groups of women to participate in the

study: 34 controls with overweight, 29 controls with normal weight, and 39 who had previously completed a one-year weight loss trial emphasizing portion-control strategies. All participants visited the lab once a week for four weeks. During each visit, the researchers provided the same foods but increased the portion size of the foods in a randomized order across weeks.

Each meal consisted of foods with higher calorie density, like garlic bread, and lower calorie density, like salad. Foods were weighed before and after the meal to determine how much was eaten, and [calorie intake](#) was determined from these measures.

The researchers found that when they were given larger [portions](#), participants in all three groups ate more. For example, when the portion size was increased 75 percent, the average amount consumed went up 27 percent.

However, the participants who received training consumed fewer calories overall than those who did not. Even though the participants in all three groups ate similar amounts of food, the participants who received training chose foods lower in calorie density.

"All the groups were served the same meals, but their food choices differed. The participants who went through the training consumed more of the lower calorie-dense foods and less of the higher calorie-dense foods than the untrained controls," Zuraikat said. "Consequently, trained [participants](#)' calorie intake was less than that of the control groups, whose intake didn't differ by weight status."

The researchers say the study—published in the journal *Appetite*—illustrates the strength of the [portion-size](#) effect while also suggesting easier, more sustainable strategies for managing calorie intake.

"The study supports the idea that eating less of the higher-calorie-dense foods and more of the nutritious, lower-calorie-dense foods can help to manage hunger while consuming fewer calories," said Barbara Rolls, professor and the Helen A. Guthrie Chair of Nutritional Sciences, Penn State. "You still have a full plate, but you're changing the proportions of the different types of foods."

More information: Faris M. Zuraikat et al, Comparing the portion size effect in women with and without extended training in portion control: A follow-up to the Portion-Control Strategies Trial, *Appetite* (2018). [DOI: 10.1016/j.appet.2018.01.012](https://doi.org/10.1016/j.appet.2018.01.012)

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