Warning labels on restaurant menus reduce likelihood consumers order high-sugar foods, study finds

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Sample of warning labels used in the study. Credit: UC Davis researchers

Added-sugar warning labels reduced the likelihood that consumers would order items containing high amounts of added sugar in an online experiment led by University of California, Davis researchers. Menu labels can help inform consumers about the surprisingly high amount of added sugar in even the smallest sizes of soda or in unexpected items like salad dressings and sauces.

In a randomized controlled trial, researchers found that warning labels reduced by 2.2% the probability of ordering a high-added-sugar item. However, only 21% of the consumers exposed to the added-sugar warning labels noticed them. Among those who noticed the labels, there was a reduction of 4.9 grams of added sugar ordered, compared to the control group.

"Given the frequency of restaurant food consumption, these modest effects could lead to meaningful changes in sugar intake at the population level, and the labels should motivate restaurants to reduce the added-sugar content of their menus," said Jennifer Falbe, a researcher in the Department of Human Ecology and lead author. Notably, it is estimated that 21% of calories consumed in the United States come from restaurants.

However, given that most participants did not notice the added-sugar labels, Falbe added, "our findings also indicate that menu labels should be designed for higher visibility."

First look at behavioral outcomes

The study, published online this week in the *American Journal of*

Preventive Medicine, looked at people's behavior as they simulated ordering from menus for fast-food and full-service chain restaurants. Co-authors include researchers from other universities and the Center for Science in the Public Interest.

Falbe said this study is the first to test a restaurant menu added-sugar warning label on behavioral outcomes. In the study, consumers selected menu items they would want to order for dinner from online menus that included common foods like hamburgers, salads, French fries, beverages (with sugar and sugar-free), sodas, cookies, sundaes and smoothies.

More than 15,000 participants were recruited to match the U.S. population in terms of age, gender, race and ethnicity, and education. Half of them were randomized to select from online menus with added-sugar warning labels while the other half selected from menus without added-sugar labels (the control group). In the intervention group, warning labels had been added to items containing over 50% of the recommended daily limit for added sugar. Researchers were able to record all participants' behavior as they simulated ordering dinner from those menus in 2021.

Major findings include:

- Added-sugar warning labels reduced the likelihood that consumers would order an item high in added sugar.
- The warning labels helped consumers understand whether menu items were high in added sugar.
- A large majority (72%) of consumers in the study indicated that they supported a law requiring chain restaurants to post these warning labels on their menus.

Falbe and colleagues had conducted previous studies on developing such warning labels, including one that designed added-sugar menu labels

based on the design of existing sodium warning labels present on menus in New York and Philadelphia.

While the United States Food and Drug Administration requires large chain restaurants to make some nutrition information available in restaurants, there is currently no requirement for added sugar to be publicly disclosed for restaurant foods, researchers said.

"This gap in information leaves consumers in the dark about how much added sugar is contained in the foods and drinks that they consume," said DeAnna Nara, a senior policy associate at Center for Science in the Public Interest and co-author. "We know that chain restaurants serve up foods and beverages packed with added sugars and are especially hard places for consumers to navigate and make healthy choices for themselves and their families, especially those managing chronic diseases."

"Warning icons provide easily interpretable information to consumers and equip them with the information they need to make informed decisions," said Nara. "They also have the potential to encourage restaurants to rethink their recipes, spurring reformulation to cut back on added sugars."

Co-authors of the study include researchers from UC Davis, Harvard T.H. Chan School of Public Health, Perelman School of Medicine at the University of Pennsylvania, Center for Science in the Public Interest in Washington D.C., and the University of North Carolina at Chapel Hill.

More information: Jennifer Falbe et al, Online RCT of Icon Added-Sugar Warning Labels for Restaurant Menus, *American Journal of Preventive Medicine* (2023). DOI: 10.1016/j.amepre.2023.02.007

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