Workplace cafeteria study finds no evidence that physical activity calorie-equivalent labelling changes food purchasing

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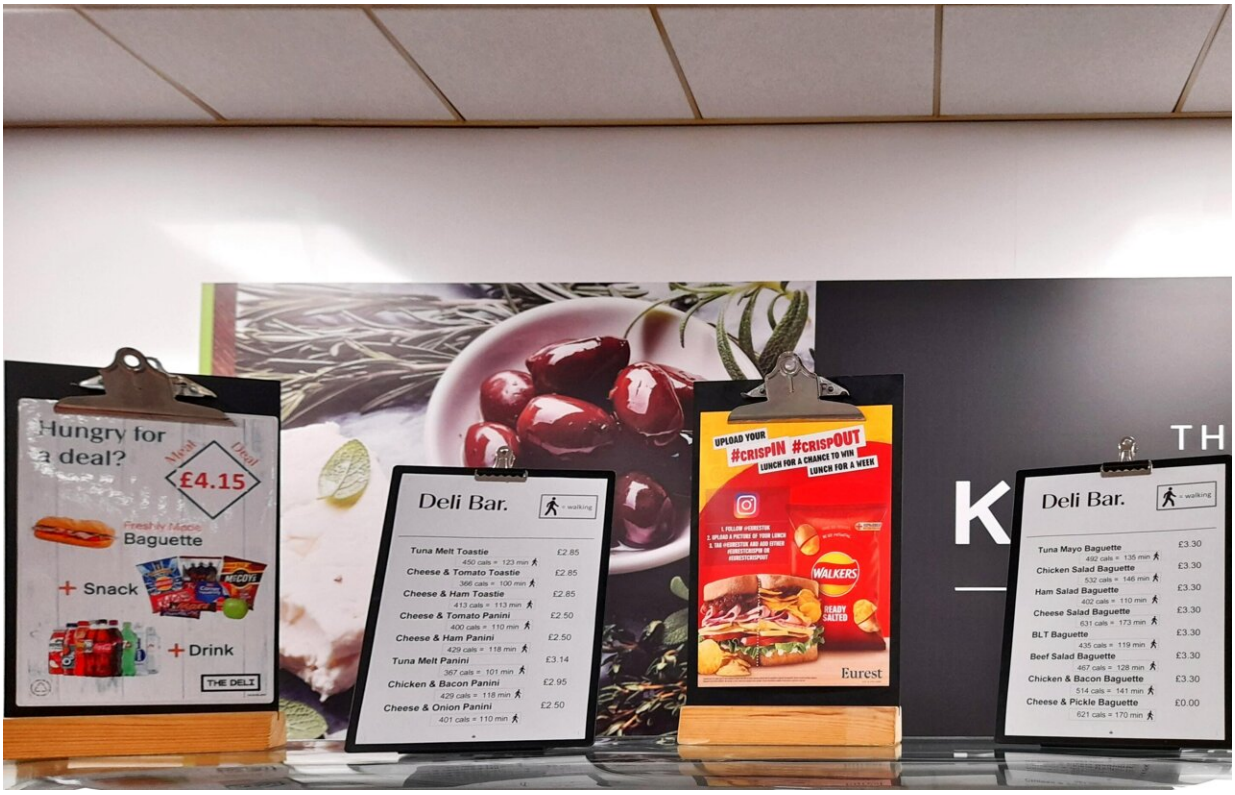

PACE labels alongside menus in a workplace cafeteria. Credit: University of Cambridge

An experiment carried out across ten workplace cafeterias found no significant change in the overall number of calories purchased when

food and drink labels showed the amount of physical activity required to burn off their calories.

More than three in five UK adults are overweight or obese, increasing their risk of diseases such as type 2 diabetes and cancer. A major factor that contributes to this is excess energy intake—in other words, eating too many calories. Measures that can help reduce energy intake could help tackle the obesity problem.

In the UK, adults eat as many as a third of their meals out of home, including in workplace cafeterias, and these meals are often much higher in calories than meals eaten at home. Since April 2022 calorie labeling is now required on food and drink served out of the home in businesses employing 250 or more people. While many people welcome this information, evidence for its effectiveness in reducing calories purchased or consumed is limited in quantity and quality. For example, two previous studies conducted by the authors in nine worksite cafeterias found no evidence for an effect of simple calorie labeling (kcal) on calories purchased.

Another option is to show the amount of exercise required to burn off these calories—so-called PACE (physical activity calorie-equivalent) labels—for example, a 1014kcal 'large battered haddock' portion would take upwards of five hours walking (278 minutes) to burn off. A recent systematic review—a type of study that brings together existing evidence—concluded that PACE labels may reduce energy selected from menus and decrease the energy consumed when compared with simple calorie labels or no labels, but only one of the 15 studies reviewed was in a 'real world' setting.

To explore whether PACE levels can make a difference in real world settings, researchers from the University of Cambridge's Behavior and Health Research Unit carried out an experiment across 10 workplace

cafeterias in England over a 12 week period in 2021. Their results are published today in *PLOS Medicine*.

The team collected baseline sales data for a period of business-as-usual for the cafeterias ahead of the experiment. During this period, most labels and menus featured only the product name and price, though some products included standardized front-of-pack nutrition labels on branded and in-house products. During the intervention period the ten cafeterias included calorie information and PACE labels alongside food and drinks items and on items including hot meals, sandwiches, cold drinks and desserts. These labels displayed the minutes of walking that would be needed to burn off the calories in the product.

The team found no evidence that including PACE labels resulted in an overall change in energy purchased from labeled items. However, there was a great deal of variability, with one cafeteria reporting a fall per transaction of 161kcal and another an increase of 69kcal, while five of the cafeterias reported no significant change.

First author Dr. James Reynolds from the School of Psychology, Aston University, who carried out the research while at Cambridge, said: "Although we found that showing the amount of exercise required to burn off calories made little difference to the number of calories purchased—and, we can assume, eaten and drunk—there was considerable variability between cafeterias. This suggests that other factors may have influenced the effectiveness of these labels, such as the type of food sold in the cafeteria or the characteristics of those using them."

The number of calories purchased from items that did not feature the PACE labels did not change and the labels made little difference to the revenue for the cafeterias—just a small increase of 3p per transaction.

Senior author Professor Dame Theresa Marteau, Director of the Behavior and Health Research Unit at the University of Cambridge, said: "This is the largest study in a real world setting to look at the impact of PACE labels on food and drink purchases, examining 250,000 transactions across 10 worksite cafeterias. The findings suggest that PACE labels, contrary to expectations, may have little or no impact on the food people buy in worksite cafeterias."

More information: Evaluation of physical activity calorie equivalent (PACE) labels' impact on energy purchased in cafeterias: a stepped-wedge randomised controlled trial, *PLoS Medicine* (2022). DOI: 10.1371/journal.pmed.1004116

Provided by University of Cambridge

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