

Menu calorie labeling may reduce deaths from cardiovascular disease in England, modeling study suggests

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The current policy of mandatory calorie labeling in large food businesses

in England could potentially prevent approximately 730 deaths from cardiovascular disease (CVD) between 2022 and 2041—and if the policy were extended to all English food businesses, could potentially prevent around 9,200 CVD deaths over the same time period, suggests first modeled estimation of the impact of the policy published in *The Lancet Public Health*.

In April 2022, as part of a national [obesity](#) strategy, the government implemented mandatory calorie labeling in out-of-home businesses in England with 250 or more employees that serve [food](#). Similar legislation is being considered in Wales and Scotland and has been introduced in other countries, including the U.S. in 2019 and parts of Australia.

Previous studies from countries including the UK, U.S. and Canada suggest that menu calorie labeling leads to people ordering meals with approximately 47 fewer kcal and to businesses reducing the average calorie content of their meals by 15 kcal. This study is the first to [model](#) the impact of menu calorie labeling on obesity and deaths from cardiovascular disease in England and how the effect varies for different socioeconomic groups.

"Over one in four adults in England are currently living with obesity, with trends suggesting this is set to increase. Our research estimates that the current calorie labeling legislation will prevent hundreds of deaths from cardiovascular disease over the next 20 years; however a much larger impact is possible if the government were more ambitious in their aims to tackle the obesity epidemic in England and extended the [policy](#) to all out-of-home food businesses," says Prof. Martin O'Flaherty, Professor in Epidemiology, University of Liverpool.

The authors modeled the estimated effect on obesity rates and cardiovascular disease deaths from 2022 to 2041 of the implementation of mandatory menu calorie labeling in England for two scenarios:

- The actual policy deployment plan in England where only large out-of-home food businesses with 250 or more employees are mandated to have calorie information (this type of business makes up 18% of outlets).
- The deployment of menu calorie labeling in every out-of-home food business in England.

These two scenarios were compared with a baseline scenario of if no policy was implemented.

Without any menu calorie labeling policy, the model estimates that cardiovascular disease trends will result in approximately 830,000 deaths by 2041 (within a range of 600,000–1,200,000). However, the current policy is estimated to prevent around 730 of these deaths (within a range of 430–1,300) and if the policy were extended to all out-of-home food businesses in England then about 9,200 deaths could be prevented (within a range of 5,500–16,000), almost 13 times more than the current policy.

The baseline scenario assumed the obesity prevalence in England in 2041 would be 27%. The model estimated that the current policy would reduce obesity prevalence by 0.31 (within a range of 0.10–0.35) percentage points in the next 20 years, but full implementation of the policy would reduce obesity prevalence by 2.65 percentage points (within a range of 1.97–3.24).

The model suggests that menu calorie labeling does not widen inequalities in obesity prevalence or cardiovascular disease mortality between different socioeconomic groups, based on existing evidence of equivalent policy effects across socioeconomic groups.

"Previous studies have suggested that calorie labeling on menus has a double effect—it allows customers to make informed decisions and

choose options with fewer calories while also encouraging companies to reduce the calories in their food. The large out-of-home food businesses represent a small portion of all out-of-home food businesses in England, and as more than half of them already provided calorie information on their menus before the introduction of this legislation in 2022, the policy in its current form only impacts a small proportion of all out-of-home food businesses in England," says Dr. Zoe Colombet, Lecturer in Epidemiology and Public Health, University of Liverpool.

She continues, "Our results suggest expanding calorie labeling on menus to all English out-of-home food businesses could play an important part in future government strategies to support people in making healthier choices to tackle obesity. However, one policy alone cannot solve England's obesity crisis. We encourage the government to continue with and strengthen the England obesity strategy with a wide range of policies, such as calorie labeling, tackling junk food marketing, and the soft drinks industry levy, which will both reduce obesity and narrow the shocking health inequalities gap in our society,"

The authors caution that their study contains some limitations, including that the data on calorie reductions associated with the policy within the model was taken from US studies, which may not be transferable to the English population. They also highlight that the study only modeled adult obesity, so is unable to examine the impact on childhood obesity. Notably, modeling studies include a number of assumptions that can influence the findings; in this case, for instance, the authors assumed the amounts of energy consumed would not differ by size of [business](#), and assumed no major changes to BMI prevalence over the next 20 years.

Additionally, there are several other areas of policy impact that this study did not investigate.

"Our study only looks at the impact of the policy on obesity prevalence

and [cardiovascular disease](#) in adults. There may be other benefits that can be difficult to quantify, such as increasing consumer's knowledge and giving them the opportunity to make informed choices when eating out. Policymakers must consider multiple factors when making decisions and future research is required about the cost-effectiveness of the policy, the impact on consumers and businesses, as well as the potential unintended negative consequences such as those on eating disorders," says Prof. Eric Robinson, Professor of Psychology, University of Liverpool.

Writing in a Linked Comment, Dr. David D. Kim, The University of Chicago, who was not involved in the study, said, "Evidence acquired from conventional study designs is sometimes insufficient to inform policy decisions. They tend to focus on short-term health outcomes (e.g., changes in weight or biomarkers), might not represent a diverse population, and are unlikely to evaluate all policy-relevant options. Simulation modeling can help fill this evidence gap by informing multiple relevant processes, testing a multitude of plausible scenarios that would be impractical and infeasible in trials, quantifying the magnitude of intended and unintended consequences, and having the option to adjust and refine designs before a trial or actual implementation testing in the real world."

More information: Effect of calorie labelling in the out-of-home food sector on adult obesity prevalence, cardiovascular mortality, and social inequalities in England: a modelling study, *The Lancet Public Health* (2024). [DOI: 10.1016/S2468-2667\(23\)00326-2](https://doi.org/10.1016/S2468-2667(23)00326-2)

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