

## Abstract

# Do Promotions of Healthier and More Sustainable Foods Increase Sales? Findings from Three Natural Experiments in UK Supermarkets <sup>†</sup>

Madison Luick <sup>1</sup>, Lauren Bandy <sup>1</sup>, Carmen Piernas <sup>1,2,\*</sup> , Susan A. Jebb <sup>1</sup> and Rachel Pechey <sup>1</sup>

<sup>1</sup> Nuffield Department of Primary Care Health Sciences, Radcliffe Observatory Quarter, University of Oxford, Oxford OX1 2JD, UK

<sup>2</sup> Department of Biochemistry and Molecular Biology II, Institute of Nutrition and Food Technology, Center for Biomedical Research (CIBM), University of Granada, 18012 Granada, Spain

\* Correspondence: carmenpiernas@ugr.es

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**Abstract:** Background and objectives: Dietary changes are necessary to improve population health and meet environmental sustainability targets. The present study aimed to analyse the impact of in-store promotional activities implemented in major UK supermarkets on purchases of healthier and more sustainable foods. Methods: Three natural experiments examined the impact of promotional activities on (a) no-added-sugar (NAS) plant-based milk (in 200 stores over 3 weeks), (b) products targeted during a ‘Veganuary’ event (in 96 stores over 4 weeks), and (c) seasonal fruit (in 100 non-randomised intervention and 100 matched control stores over 16 weeks). Data were provided on store-level product sales, in units sold and monetary value (GBP), aggregated weekly. The predominant socioeconomic position (SEP) of the store population was provided by the retailer. The primary analyses used interrupted time series and multivariable hierarchical mixed-effects models. Results: Sales of both promotion-targeted and overall NAS plant-based milks during the promotional period increased (targeted food: +126 units, 95% CI: 105, 148; overall: +307 units, 95% CI: 264, 349). The increase was greater in stores with predominately low SEP shoppers. During Veganuary, sales increased for plant-based foods on promotion (+60 units, 95% CI: 37, 84), but not for the sales of plant-based foods overall (dairy alternatives: –1131 units, 95% CI: –5821, 3559; meat alternatives: 1403 units, 95% CI: –749, 3554). There was no evidence of a change in the weekly sales of promoted seasonal fruit products (assessed via ratio change in units sold: 0.01, 95% CI: 0.00–0.01), and overall fruit category sales slightly decreased in intervention stores relative to the control (ratio change in units sold: –0.01, 95% CI: –0.01, –0.00). None of the promotional activities resulted in the continued purchase of promoted products after the intervention period was over. Conclusion: Promotional activity (including prominent positioning and price promotions) related to healthier or more sustainable food products can have a short-term impact on what food consumers purchase. But interventions are short-lived and effects on behaviour are not sustained, suggesting these have limited value in the long-term goal to achieve healthier and more sustainable purchasing patterns. Keywords: sustainable diet; promotions; supermarkets; purchases



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**Keywords:** supermarket; promotions; food

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**Data Availability Statement:** This research was conducted according to a framework collaboration agreement between the University of Oxford and the food retailers. Access to the study dataset by external researchers is not permitted as this is defined as confidential information in the agreement. Access to the study data by external researchers will require the expressed written consent of the retailer.

**Conflicts of Interest:** The authors declare no conflict of interest.

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