Study Title: The impact of price promotions on purchases of confectionery and snacks: a randomised controlled trial in an experimental online supermarket study

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Chief Investigator:	Dr Carmen Piernas-Sanchez[1]
	carmen.piernas-sanchez@phc.ox.ac.uk, 01865 289284
	Nuffield Department of Primary Care Health Sciences, University of Oxford
Investigators:	Dr Rachel Pechey[1]
	Dr Lauren Bandy[1]
	Georgina Harmer[1]
	Professor Susan Jebb[1]
	[1]Nuffield Department of Primary Care Health Sciences, University of Oxford
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Chief Investigator Signature:	

Conflicts of interest

None declared.

Confidentiality Statement

This document contains confidential information that must not be disclosed to anyone other than the authorised individuals from the University of Oxford, the Investigator Team and members of the Medical Sciences Interdisciplinary Research Ethics Committee (Medical Sciences IDREC), unless authorised to do so.

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1. SYNOPSIS

Study Title	Impact of price promotions on purchases of confectionery and snacks: a randomised controlled trial in an experimental online supermarket study	
Internal ref. no.	N/A	
Study Design	Randomised controlled trial	
Study Participants	Healthy volunteers from the UK	
Planned Sample Size	500	
Planned Study Period	June – December 2021	
	Objectives	**Outcome Measures**
Primary	To investigate the effect of promotions on the total number of calories selected	Difference in the absolute energy (kcal) of the final basket between the two groups
Secondary	To investigate the effect of promotions on the nutritional content of the items selected overall, and across the individual target food categories	Difference in the absolute sugar (g, kcal, %E), salt (g), and saturated fat (g, kcal, %E) of the final basket between the two groups Difference in the absolute energy (kcal), sugar (g, kcal, %E), salt (g), and saturated fat (g, kcal, %E) between the two groups across the individual target food categories
	To explore the impact of removing promotions by socioeconomic status	Analyses of the primary and secondary outcomes specified above by gender, age group, ethnic group (White vs Non-White), BMI stratified into <30 and ≥30kg/m^2 groups, education level (lower vs. higher), and household income (lower vs. higher)
Exploratory	To investigate the acceptability of the intervention	Rating scores and open-ended answers from the follow-up questionnaire

2. ABBREVIATIONS

CI	Chief Investigator
CLARHC	Collaboration for Leadership in Applied Health Research and Care
IDREC	Interdisciplinary Research Ethics Committee
SAP	Statistical Analysis Plan
SFA	Saturated Fat
TPR	Temporary Price Reduction

3. BACKGROUND AND RATIONALE

As a nation we eat more energy, free sugars, saturated fat and salt than recommended for good health (1). These nutrients contribute to the burden of major chronic diseases, including cardiovascular disease and diabetes, principally through effects on blood cholesterol, blood pressure, insulin sensitivity or body weight (2-6). In addition, persistent inequalities in dietary intake underpin inequalities in long-term health outcomes. Despite decades of health promotion, dietary change is slow. Growing evidence suggests people need more than general knowledge about the healthfulness of foods to change behaviour (7-11).

Food purchasing is a key antecedent of food consumption and interventions to change food purchasing habits may be more impactful than interventions intended to change consumption at the moment of eating. Supermarkets account for the majority of the weekly expenditure on food and drinks, estimated to be around 87% of all UK retail grocery sales (12). Impactful, scalable and sustainable approaches within supermarkets are particularly needed in order to shift population-level intakes to be closer to the recommendations for calories, sugar, salt and saturated fat.

Previous systematic reviews of supermarket interventions have identified effective strategies to support dietary change (13-23). Evidence is generally stronger for economic (e.g. price interventions or price promotions), positioning and availability interventions. However, many of the interventions described in the literature are multi-component, and there is a challenge in attributing their effectiveness to any single strategy. In the 2020 Obesity Plan, the government in England laid out plans to introduce legislation to restrict the promotion of high fat salt sugar (HFSS) foods, by restricting volume promotions such as ‘Buy One Get One Free’. This is based on observational evidence of purchasing habits. Specific evidence of the impact of removing promotions is of interest to policymakers and could help in shaping effective but proportionate policies.

Online supermarkets offer unique opportunities to deliver and support complex nutrition interventions that can often be tested and scaled up more rapidly and feasibly using digital technology than in-store interventions. There is some evidence that baseline purchases made online tend to be healthier than purchases in physical stores, but less is known about the effectiveness of interventions delivered online to change behaviour.

The purpose of this project is to test the effectiveness of the removal of price promotions on confectionery and snacks on the energy, sugar and saturated fat content of items selected while shopping online in a representative sample of UK adults. The proposed intervention can be easily implemented, and could reach large numbers of people, meaning that if it is effective it could have a significant population impact and be very cost-effective, even if the effect size is smaller than more intensive interventions.

4. OBJECTIVES AND OUTCOME MEASURES

	Objectives	Outcome Measures
Primary	To investigate the effect of promotions on the total number of calories selected	Difference in the absolute energy (kcal) of the final basket between the two groups
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	To explore the impact of removing promotions by socioeconomic status	Analyses of the primary and secondary outcomes specified above by gender, age group, ethnic group (White vs Non-White), BMI stratified into <30 and ≥30kg/m^2 groups, education level (lower vs. higher), and household income (lower vs. higher)
Exploratory	To investigate the acceptability of the intervention	Rating scores and open-ended answers from the follow-up questionnaire

5. STUDY DESIGN

This is a randomised controlled trial with a parallel design. We will use an experimental online shopping platform to mimic the experience of online grocery shopping. Each participant will be randomised 1:1 to one of two groups and will participate in an online shopping task for about 10 minutes during which they will be exposed to a selection of products including promotions or with no promotions. We will collect and analyse data from the online platform on food selection during the task.

6. INTERVENTION

This study uses a bespoke virtual online supermarket shopping (OLS) platform, hosted by The University of Oxford, which emulates a real online supermarket for research purposes relating to food purchasing interventions (www.woodssupermarket.co.uk). The site is populated with approximately 23,000 current supermarket products drawn from foodDB (April 2019), a weekly updated database of food and drinks available for purchase in six UK online supermarkets (24).

Participants will be asked to imagine they are buying snacks for a night in with 4 friends, with a maximum limit of £10. They will be asked to select products from the following categories, which are aligned and named in the way items are presented in the store:

- Confectionery
- Biscuits and crackers
- Crisps, nuts and snacking fruit
- Cakes and tarts

The shopping task is estimated to take participants 10 minutes to complete. Participants will only be asked to complete the shopping task once. Participants will be provided with the following instructions:

"*We would like you to do some online grocery shopping on a supermarket website. This is not a real supermarket, and you will not be asked to spend your own money.*

We would like you to imagine you are buying snacks for a night in with 4 friends, up to a limit of £10. You should select products from the following categories:

- *Confectionery*
- *Biscuits and crackers*
- *Crisps, nuts and snacking fruit*
- *Cakes and tarts*

We would ask you not to select any additional items from your usual shopping list.

When doing your shopping, try to imagine you are doing your own grocery shopping and choose foods that you and your friends would eat. You should choose the things you normally buy or wouldn't mind eating.

To make sure you get your reward, please make sure you buy at least £5 worth of products within the suggested food categories"

Participants will be randomly allocated to one of the two following groups when shopping online:

1. Promotions removed: No promotions present on any of the products within the target food categories [confectionery; biscuits and crackers; crisps, nuts and snacking fruit; cakes and tarts] offered to participants when searching for products.
2. Promotions included: Participants in this group will see a version of the website which will reproduce the types and frequency of promotions that can be found in any online supermarket, for example multi-buy offers and temporary price reductions will be applied to a pre-determined percentage of food products within the target categories [confectionery; biscuits and crackers; crisps, nuts and snacking fruit; cakes and tarts]. Promotions will be applied to match the current levels and types of promotions on the website of the largest UK retailer present in a specific week, shortly before the study launch.

7. PARTICIPANT IDENTIFICATION AND RECRUITMENT

7.1. Study Participants

Eligible participants will be UK adults who are responsible for a substantial proportion of their household grocery shopping, able to read and understand the instructions provided and able to provide online consent to take part in the study. Participants will be required to have access to a computer and the internet.

People who are following a vegan, gluten-free, dairy-free or sugar-free diet will not be eligible to participate to minimise the risk of unbalancing the groups with people choosing from a restricted selection of products.

7.2. Inclusion Criteria

- UK adults, aged ≥18 years.
- Able to speak and read English.
- Willing and able to give informed consent for participation in the study.
- Having access to a computer and Internet.

7.3. Exclusion Criteria

The participant may not enter the study if ANY of the following apply:

- They are following a dairy-free or sugar-free diet.

8. STUDY PROCEDURES

8.1. Recruitment

Participants will be recruited from the volunteer panel Prolific Academic (https://www.prolific.co).

8.2. Screening and Eligibility Assessment

Panel members will be sent an email introducing the study and including a link to the participant information sheet. Panel members who are interested in taking part in the study will be asked to click on a web-link from the email, which will take them to the study registration website (on Qualtrics). At this registration website, they will be asked screening questions indicating their responsibility for shopping, if they have any dietary restriction, if they regularly buy products from the target categories for their household, and to confirm their age and country of residence. They will also be able to re-read the detailed participant information before consenting to participate.

8.3. Informed Consent

After reading the detailed participant information sheet and answering screening questions to confirm they meet the inclusion/exclusion criteria; and if they are happy to proceed, participants will be asked to give consent electronically to take part in the study.

Written electronic versions of the Participant Information and Informed Consent will be presented to the participants detailing no less than: the exact nature of the study, what it will involve for the participant and the implications and constraints of the protocol. It will be clearly stated that the participant is free to withdraw from the study at any time for any reason and with no obligation to give the reason for withdrawal. The participant will be allowed as much time as wished to consider the information. Electronic Informed Consent will then be obtained by means of clicking on a tick box.

8.4. Randomisation

Randomisation will be performed by the survey platform Qualtrics via computerised random number generation on a 1:1 basis with random block sizes and participants will be directed to a website that introduces an online shopping task. Allocation concealment is achieved, as participants are recruited from independent research panels and are being directed by automatic randomisation in the survey platform. Details of the intervention are described in Section 6.

8.5. Blinding

Investigators will be blinded to intervention allocation and will not be able to manipulate any study parameter following the initial study set up, as all study procedures are taking part in the online platform. The outcome assessment is blinded, as it happens automatically in the online platform. The statistician who will analyse the data will be blinded to intervention allocation. Participants will only be aware of the trial arm that they are exposed to and will be unaware of the other trial arm.

8.6. Baseline Assessments

Following consent and completion of the shopping task, participants will complete a baseline questionnaire on demographic, shopping, and health data (Appendix B).

8.7. Follow-up

Participants will complete a short post-intervention survey (Appendix B) about the acceptability of the intervention in the online shopping task and their usual shopping behaviours.

8.8. Discontinuation/Withdrawal of Participants from Study

Each participant has the right to withdraw from the study at any time. Participants will not be replaced as we will recruit sufficient sample size to allow for non-completion rate. Withdrawal from the study, based on the pre-defined completion criteria (section 9.2), will result in exclusion of the data for that participant from analysis.

8.9. Definition of End of Study

The end of study is the completion of the baseline questionnaire and post-intervention survey following the shopping task.

9. STATISTICS AND ANALYSIS

9.1. The Number of Participants

There are no previously reported standard deviations of the mean difference from similar trials (e.g. where a one-off shop is done) to guide the estimation of the effect size and standard deviation, and, thus, the calculation of the sample size. However, the study by Brimblecombe *et al*. (25) implemented a complex intervention within real supermarkets in Australia where promotions on high sugar products were removed, including confectionery and sugary drinks. This study found a total reduction of -22% in sales (g/MJ) in confectionery, a difference of -4.5% (SD 15) compared to control; and a reduction of -8% in sugar-sweetened soft drinks, a difference of -13% compared to control.

A total sample of 500 participants (250 in each group) would be needed to detect a minimum effect size of -4.5% in total kcal from the target categories, with 90% power, 5% alpha and 10% attrition.

9.2. Analysis of Outcome Measures

Completion of the task will be defined as spending at least £5 on products from the target categories.

Primary Analysis

Linear regression models will compare the total energy (kcal) purchased in the two groups. Any baseline variables (e.g. demographic characteristics) which appear to have been imbalanced between groups will be adjusted in the model.

Secondary Analysis

Linear regression models will compare the (i) total sugar (g, kcal, %E), (ii) total salt (g, kcal, %E) and (iii) total SFA (g, kcal, %E) purchased in the two groups.

Secondary analyses will also compare differences in total energy (kcal), total sugar (g, kcal, %E), total salt (g, kcal, %E) and total SFA (g, kcal, %E) across the individual target categories.

We will also conduct secondary analyses of the primary and secondary outcomes specified above by gender, age group, ethnic group (White vs Non-White), BMI stratified into <30 and ≥30kg/m^2 groups, education level (lower vs. higher), and household income (lower vs. higher) provided we have sufficient numbers within each subgroup (n≥30).

Descriptive analysis

The exploratory outcome measures will be discussed descriptively.

A Statistical Analysis Plan will be finalised before conducting the statistical analysis.

10. DATA MANAGEMENT

10.1. Access to Data

Direct access will be granted to authorised representatives from the University of Oxford for monitoring and/or audit of the study to ensure compliance with regulations.

10.2. Data Handling and Record Keeping

All study data will be captured in a password protected secure database. The participants will be identified by a unique study specific number and/or code in any database. Personal data will not be collected in this study. Research data and records will be retained for at least three years after publication or public release of the work of the research and reviewed thereafter.

11. QUALITY CONTROL AND QUALITY ASSURANCE PROCEDURES

The study will be conducted in accordance with the current approved protocol, relevant regulations and standard operating procedures.

12. ETHICAL AND REGULATORY CONSIDERATIONS

12.1. Declaration of Helsinki

The Investigator will ensure that this study is conducted in accordance with the principles of the Declaration of Helsinki.

12.2. Approvals

The protocol, informed consent form, participant information sheet and any proposed advertising material will be submitted to the ethical committee for approval.

The Investigator will submit and, where necessary, obtain approval from the above parties for all substantial amendments to the original approved documents.

12.3. Participant Confidentiality

All data collected by participants will be anonymous. The participants will be identified only a participant ID number on all study documents and any electronic database. All documents will be stored securely requiring password-protected access and will be only accessible by study staff and authorised personnel.

Privacy and confidentiality of data is particularly hard to manage in Internet-based research because as researchers we are not in control of online communication networks, leading to the risk of third-party interceptions. We will encourage the use of a secure link at the consent stage. Participants will be informed that we will not collect their IP addresses. As the data will be anonymised, it does not constitute personal data and the duties and obligations of the Data Protection Act do not apply. The research agencies will only share with the researchers a participant ID and no personal data.

12.4. Expenses and Benefits

Participants will be rewarded with £25p for the screening survey and £1.5 for completing the shopping task and survey.

12.5. Other Ethical Considerations

Internet based research issues

a) Authentication

The research agency who will recruit participants uses a number of mechanisms to authenticate responders such as checking for duplicate respondents by evaluating variables such as email address, matches across several demographic data, and device-related data through use of digital fingerprint technology.

b) Participant rights

Participants will be free to withdraw themselves and their data at any point in the research. During the shopping task, clicking on a clearly displayed “exit here” button will lead participants to a quick debrief page that will give them the option to confirm that they do not wish their data to be retained for the study purposes. Participants will be clearly informed before giving consent that anonymity makes withdrawal following completion of the study difficult.

13. FINANCE AND INSURANCE

13.1. Funding

The study is funded by the National Institute for Health Research (NIHR) Applied Research Collaborations (ARC Oxford).

13.2. Insurance

This is a simple online task and we cannot foresee any unintended or adverse effects due to participation. The University of Oxford maintains Public Liability and Professional Liability insurance that will operate in this respect.

14. PUBLICATION POLICY

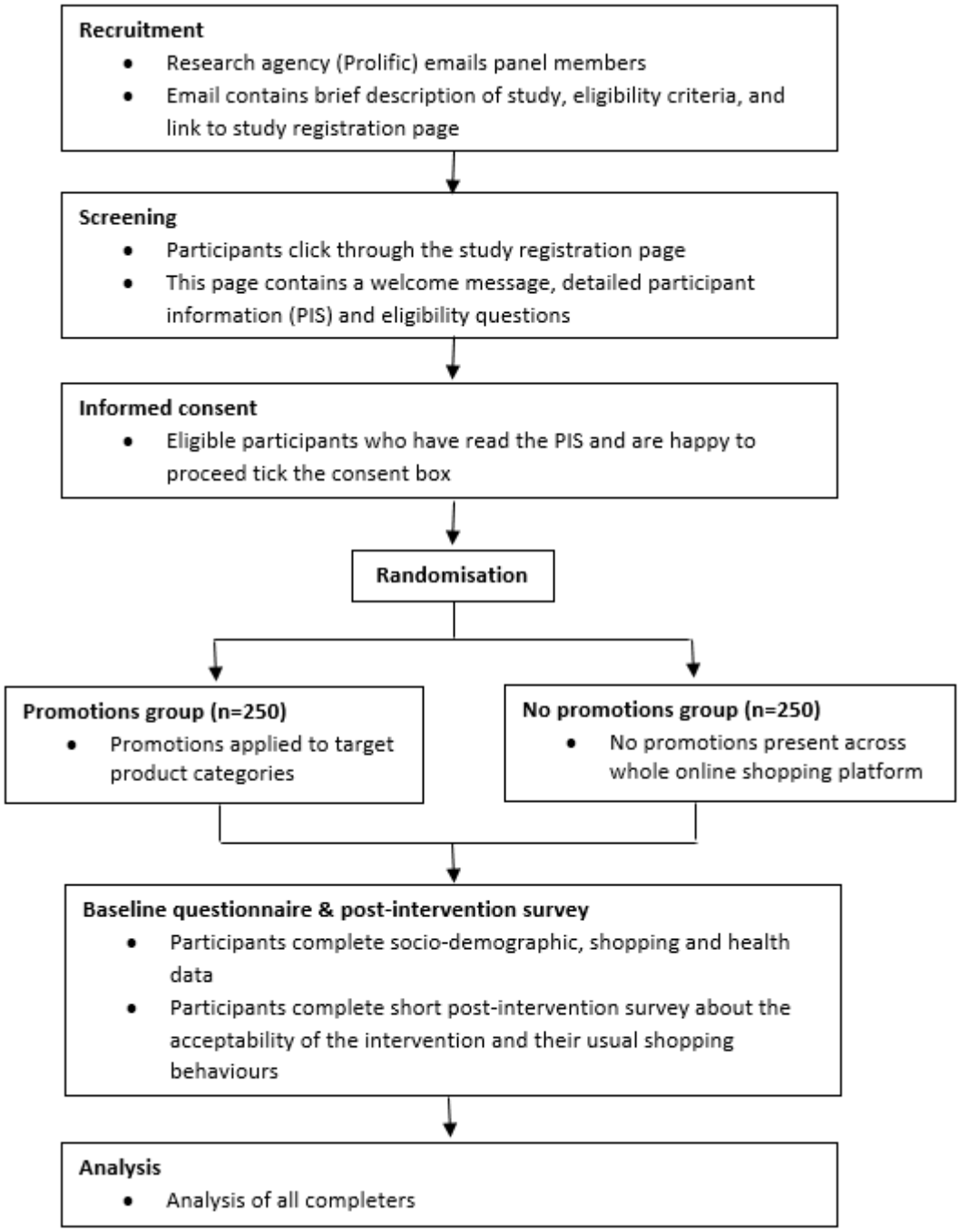
The Investigators will be involved in reviewing drafts of the manuscripts, abstracts, press releases and any other publications arising from the study. Authors will acknowledge that the study was funded by the NIHR Oxford ARC. Authorship will be determined in accordance with the ICMJE guidelines and other contributors will be acknowledged. As we will not store the participants' contact details, we will not be able to disseminate the results directly to study participants. We will follow our dissemination plan to engage with public health agencies, the industry, the media, and the public.

15. REFERENCES

1. England PH. National Diet and Nutrition Survey: Results from years 7 and 8 (combined) 2018.
2. Te Morenga LA, Howatson AJ, Jones RM, Mann J. Dietary sugars and cardiometabolic risk: systematic review and meta-analyses of randomized controlled trials of the effects on blood pressure and lipids. The American journal of clinical nutrition. 2014;100(1):65-79.
3. NICE. NICE Guidelines: Overweight and Obese Adults – lifestyle weight management. . http://guidanceniceorguk/PHG/67 2013.
4. (NICE) NIoHaCE. Prevention of Cardiovascular disease. 2010.
5. Mozaffarian D, Micha R, Wallace S. Effects on coronary heart disease of increasing polyunsaturated fat in place of saturated fat: a systematic review and meta-analysis of randomized controlled trials. PLoS Med. 2010;7(3):e1000252.
6. He FJ, Pombo-Rodrigues S, MacGregor GA. Salt reduction in England from 2003 to 2011: its relationship to blood pressure, stroke and ischaemic heart disease mortality. BMJ open. 2014;4(4):e004549.
7. Atkins L, Michie S. Designing interventions to change eating behaviours. Proceedings of the Nutrition Society. 2015;74(02):164-70.
8. Broekhuizen K, Kroeze W, van Poppel MN, Oenema A, Brug J. A systematic review of randomized controlled trials on the effectiveness of computer-tailored physical activity and dietary behavior promotion programs: an update. Ann Behav Med. 2012;44(2):259-86.
9. Michie S, Abraham C, Whittington C, McAteer J, Gupta S. Effective techniques in healthy eating and physical activity interventions: a meta-regression. Health Psychol. 2009;28(6):690-701.
10. Teasdale N, Elhussein A, Butcher F, Piernas C, Cowburn G, Hartmann-Boyce J, et al. Systematic review and meta-analysis of remotely delivered interventions using self-monitoring or tailored feedback to change dietary behavior. Am J Clin Nutr. 2018;107(2):247-56.
11. Celis-Morales C, Livingstone KM, Petermann-Rocha F, Navas-Carretero S, San-Cristobal R, O'Donovan CB, et al. Frequent nutritional feedback, personalized advice, and behavioral changes: findings from the European Food4Me internet-based RCT. American Journal of Preventive Medicine. 2019.
12. Department for Environment Food and Rural Affairs. Food Statistics Pocketbook 2014. London; 2015 2015.
13. Adam A, Jensen JD. What is the effectiveness of obesity related interventions at retail grocery stores and supermarkets? -a systematic review. BMC Public Health. 2016;16(1):1247-.
14. Bianchi F, Garnett E, Dorsel C, Aveyard P, Jebb SA. Restructuring physical micro-environments to reduce the demand for meat: a systematic review and qualitative comparative analysis. The Lancet Planetary Health. 2018;2(9):e384-e97.
15. Bucher T, Collins C, Rollo ME, McCaffrey TA, De Vlieger N, Van der Bend D, et al. Nudging consumers towards healthier choices: a systematic review of positional influences on food choice. Br J Nutr. 2016;115(12):2252-63.
16. Cameron AJ, Charlton E, Ngan WW, Sacks G. A Systematic Review of the Effectiveness of Supermarket-Based Interventions Involving Product, Promotion, or Place on the Healthiness of Consumer Purchases. Current Nutrition Reports. 2016;5(3):129-38.
17. Hollands GJ, Carter P, Anwer S, King SE, Jebb SA, Ogilvie D, et al. Altering the availability or proximity of food, alcohol, and tobacco products to change their selection and consumption. Cochrane Database of Systematic Reviews. 2019(9).
18. Shaw SC, Ntani G, Baird J, Vogel CA. A systematic review of the influences of food store product placement on dietary-related outcomes. Nutrition Reviews. 2020.
19. Bennett R, Zorbas C, Huse O, Peeters A, Cameron AJ, Sacks G, et al. Prevalence of healthy and unhealthy food and beverage price promotions and their potential influence on shopper purchasing behaviour: A systematic review of the literature. 2020;21(1):e12948.
20. Escaron AL, Meinen AM, Nitzke SA, Martinez-Donate AP. Supermarket and grocery store-based interventions to promote healthful food choices and eating practices: a systematic review. Prev Chronic Dis. 2013;10:E50.

21. Gittelsohn J, Trude ACB, Kim H. Pricing Strategies to Encourage Availability, Purchase, and Consumption of Healthy Foods and Beverages: A Systematic Review. Prev Chronic Dis. 2017;14:E107.
22. Karpyn A, McCallops K, Wolgast H, Glanz K. Improving Consumption and Purchases of Healthier Foods in Retail Environments: A Systematic Review. Int J Environ Res Public Health. 2020;17(20).
23. Hartmann-Boyce J, Bianchi F, Piernas C, Payne Riches S, Frie K, Nourse R, et al. Grocery store interventions to change food purchasing behaviors: a systematic review of randomized controlled trials. The American journal of clinical nutrition. 2018;107(6):1004-16.
24. Harrington RA, Adhikari V, Rayner M, Scarborough P. Nutrient composition databases in the age of big data: foodDB, a comprehensive, real-time database infrastructure. BMJ open. 2019;9(6):e026652.
25. Brimblecombe J, McMahon E, Ferguson M, De Silva K, Peeters A, Miles E, et al. Effect of restricted retail merchandising of discretionary food and beverages on population diet: a pragmatic randomised controlled trial. Lancet Planet Health. 2020;4(10):e463-e73.

16. APPENDIX A: STUDY FLOW CHART



17. APPENDIX B: SCHEDULE OF STUDY PROCEDURES

RECRUITMENT TEXT

The content of the recruitment text will be consistent with other emails sent to panel members but will contain the following text:

Survey topic: Health, Survey length: 10 minutes, Reward: £ xxx

Hi [Name],

We have a new survey available for you. By qualifying and completing this task, you will receive £xxx.

This study is being carried out by the University of Oxford. The study aims to investigate ways of helping people make healthier choices when they shop in an online supermarket. The purpose of this study is to explore how people shop for confectionery and snacks in an online supermarket. It will involve completing an online shopping study which should take no more than 10 minutes.

Before undertaking the task, you will be asked to read some detailed participant information, to confirm you are eligible, and confirm your consent to participate.

For further information and to take part go to [link to survey page (PIS and consent) and shopping website].

SCREENING QUESTIONS (Pre-shopping)

1. Age
   - Under 18 years old
   - 18 years old or over

2. Do you currently reside in the UK?
   - Yes
   - No

3. Are you fluent in English?
   - Yes
   - No

4. Do you have any dietary restrictions?
   - Vegan
   - Gluten-free
   - Sugar-free
   - Dairy/lactose-free
   - None
   - Rather not say

5. Are you the main (or shared) grocery shopper for the food that your household eats?

- Yes
- No

BASELINE MEASURES (Socio-demographic, shopping and health measures)

1. Demographic characteristics
   - Gender
     - Male
     - Female
     - Other
     - Prefer not to say
   - Age (years)
     - Free text (range of 18-99)
     - Prefer not to say
   - Ethnicity (UK Census simplified)
     - White
     - Black
     - Asian
     - Mixed
     - Other
     - Prefer not to say
   - Weight and height (in units chosen by participant).

2. Household income (total household income before tax)

   - Below £15.5K
   - Between £15.5K up to and including £25K
   - Between £25K and £39K
   - £40K or above

3. Household size – "How many people live at your house, including you?

4. Highest educational level) - "What is the highest education qualification you have achieved?" (categories based on UK census categories)

- None
- Up to 4 GCSE's (Including 1-4 O Levels/CSE/GCSEs (any grades), Foundation Diploma, NVQ level 1, Foundation GNVQ or equivalents)
- 5 or more GCSE's or 1 A-level (Including 5+ GCSEs (Grades A*-C),1 A Level/ 2-3 AS Levels, NVQ level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First/General Diploma, RSA Diploma, Apprenticeship or equivalents)
- 2 or more A-levels (Including 2+ A Levels, 4+ AS Levels, NVQ Level 3, Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, RSA Advanced Diploma or equivalents)
- Bachelor's degree (Including BA, BSc, NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher level or equivalents)

- Post-Graduate degree or qualification (Including Higher Degrees e.g. MA, PhD, PGCE, Professional qualifications e.g. teaching, nursing, accountancy or equivalents)

5. Regular shopping

"On average, how much do you spend on supermarket shopping per week?" (answer in £)

6. Online shopping experience

"How often, on average over the past year, have you shopped online for food or groceries to be delivered to you (e.g. Tesco.com, Ocado.com, mysupermarket.co.uk)?"

- Never or not in the last year
- 1-3 times in the last year
- 4-11 times in the last year
- 1-3 per month
- Once per week or more often.

POST-SHOPPING TASK PARTICIPANT SURVEY

1. "Did you see any promotions in the online supermarket you used in the shopping task today?"

    - "Yes/No/Don't know"

1A. "Do you usually buy products on promotion when you do your usual shopping?"

- Strongly agree
- Somewhat agree
- Indifferent
- Somewhat disagree
- Strongly disagree

1B. "Out of the two promotional strategies, product price reductions (e.g. save £1, reduced to 99p) or multi-buy offers (e.g. 3 for 2, buy-one-get-one-free), which is more likely to influence what you buy?"

- Price reductions
- Multi-buy offers

2. "When making a choice of foods or drinks to buy, what are the top 3 things that affect your decision?"

- Price
- Appearance
- Taste (preference)
- Habits
- Healthiness
- Convenience (to prepare or to consume)
- Special offers
- Organic
- Special diet e.g. gluten free, nut free
- Other (e.g. animal welfare, locally produced, packaging)

3. "The UK government is considering a policy to ban all promotions on high fat salt sugar products in supermarkets (both in-stores and online). To what extent would you support or oppose this policy?

   - Strongly support
   - Support
   - Somewhat support
   - Neither support nor oppose
   - Somewhat oppose
   - Oppose
   - Strongly oppose

3A. "For what reason did you give this answer?"

[FREE TEXT ANSWER]

4. "Is there anything else you'd like to tell us about your experience with this shopping task today?" (Please do NOT include your name here).

[FREE TEXT ANSWER]

18. APPENDIX C: AMENDMENT HISTORY

Amendment No.	Protocol Version No.	Date issued	Author(s) of changes	Details of Changes made
1.0	2.0	24/09/2021	Carmen Piernas	-Added Lauren Bandy to the study team - Clarified secondary outcomes in the boxes in pages 4 and 7 - Removed fizzy drinks from the target categories - Changed £15 to £10 as the maximum amount of money to be spent in the shopping experiment - Clarified the estimated payment to be received (25p for screening survey and £1.5 from Prolific recruitment)