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Proximity of healthy and unhealthy snack foods and consumption

Submission date
11/01/2017

Recruitment status
No longer recruiting

Registration date
12/01/2017

Overall study status
Completed

Last Edited
29/10/2018

Condition category
Nutritional, Metabolic, Endocrine

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims:
People from disadvantaged communities tend to eat fewer fruits and vegetables and more high-calorie foods; they also benefit less from programs that teach people how to actively change their behaviour. Cognitive resources (a set of mental processes involved in planning and regulating thoughts and behaviour) are reduced by years spent living in poverty in childhood. Therefore, an alternative method that does not rely on cognitive resources is needed to improve intake of fruit and vegetables and reduce intake of high-calorie foods in disadvantaged communities. Making changes to the environment, such as placing food further away, is thought to change people's behaviour unconsciously, as people generally eat more of a food when it is placed within reach. There is a need for higher quality studies of this food distance effect, specifically focusing on whether this effect occurs for healthy and unhealthy food options when they are provided at the same time at different distances. The research team previously conducted two studies which looked only at the placement of an unhealthy food option. This study will improve on the methods of the earlier studies however, by providing participants with two food options, one healthy and unhealthy, which is more similar to a real-world food environment where people actively make choices between options. The aim of this study is to assess whether placing unhealthy food further away discourages consumption of that food when a healthy food option is also available either at the same distance or closer.

Who can participate?
Healthy adults who live in Cambridge and surrounding areas.

What does the study involve?
Participants are randomly allocated into one of four groups. In each group, the participants are provided with two bowls of snack food placed at varying distances either near at 20cm or far at 70cm relative to one another during a 10 minute "relaxation break". In the first group, the healthy food is placed near and the unhealthy food far, in the second group, the unhealthy food is near and the healthy food far. In the third group both foods are placed near while in the fourth group both foods are placed far from the participant. All participants are asked to memorise a string of digits to induce cognitive load at the beginning of the session, which they will recall at the end. Participants also complete the Stroop task (a task which involves reading the names of colours which are written in a different colour) before memorising number and after the

relaxation break to measure cognitive resources. At the end of the session, they complete questionnaires about hunger, liking for the snacks and other measures related to the food.

What are the possible benefits and risks of participating?
There are no direct benefits for participants; however the study will help to provide information about ways of influencing food choice and diet that can be applied to further research. There are no risks of participating in the study.

Where is the study run from?
The Behaviour and Health Research Unit, University of Cambridge (UK)

When is the study starting and how long is it expected to run for?
October 2016 to June 2017

Who is funding the study?
1. Medical Research Council (UK)
2. NIHR Senior Investigator Award (UK)
3. Department of Health Policy Research Programme (UK)

Who is the main contact?
Professor Theresa Marteau

Contact information

Type(s)
Scientific

Contact name
Prof Theresa Marteau

Contact details
University of Cambridge
Institute of Public Health
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Cambridge
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Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title
The effect of proximity on consumption of healthy and unhealthy food: an experimental study in a general population with low cognitive resource

Study objectives

1. A higher proportion of participants will take each food when it is proximal compared to when it is distal
2. The proportions of participants taking each food will be equivalent at each given distance for both healthy and unhealthy food
3. A higher proportion of participants will take a near healthier food when an unhealthier food is far compared to when the unhealthier food is at the same distance

Ethics approval required
Old ethics approval format

Ethics approval(s)
Cambridge Psychology Research Ethics Committee, 19/12/2016, ref: PRE.2016.088

Study design
Between-subjects design

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Unhealthy diet

Interventions
Participants are told they will be taking part in a relaxation and memory study so that the snack foods can be placed without making participants aware that the study is assessing eating behaviour (knowing this may affect whether they eat in the study). Participants are fully debriefed at the end of the session. Participants are randomly allocated to one of four conditions where food is provided during a 10 minute relaxation break.

1. Healthy food proximal, unhealthy food distal
2. Unhealthy food proximal, healthy food distal
3. Both foods proximal
4. Both foods distal

Two food bowls are placed at the same time varying at two different distances from the participant's position. When a bowl is proximal, it is placed 20cm from the right hand of the participant and when the bowl is distal, it is placed 70cm from the right hand of the participant.

Chocolate M&Ms (without peanuts) are provided as the unhealthy snack option and fruit is provided as the healthy snack option.

All participants are asked to memorise a set of digits before the relaxation break to induce cognitive load, which they will recall at the end of the session. The Stroop task is completed before the relaxation break to record baseline cognitive resource, and after the break to check the cognitive load manipulation.

Intervention Type
Behavioural

Primary outcome(s)
Proportion of participants taking any of either snack food, measured as any difference in bowl weight from before to after the participant is exposed to the snacks.

Key secondary outcome(s))
1. Mean amount of each snack food consumed is measured as the difference in bowl weight from before to after the participant is exposed to the snacks
2. Executive function, measured using the Stroop task (Stroop, 1935) before exposure to the snack food
3. Ratings of perceived effort to obtain the snacks and salience of the snacks, collected using a questionnaire following exposure to the snack food
4. The proximity effect is measured by the difference in intake of the snacks at each given distance after the relaxation break. This difference in intake is compared before and after excluding participants who move the bowl.

Completion date
30/06/2017

Eligibility

Key inclusion criteria
1. Adults aged over 18 years
2. Cambridgeshire and surrounding areas

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
Any allergies or intolerance to food relevant to the study.

Date of first enrolment
18/01/2017

Date of final enrolment
30/03/2017

Locations

Countries of recruitment
United Kingdom

Study participating centre
The Behaviour and Health Research Unit
University of Cambridge
Institute of Public Health
Forvie Site
Robinson Way
Cambridge
United Kingdom
CB2 OSR

Sponsor information

Organisation
University of Cambridge

ROR
https://ror.org/013meh722

Funder(s)

Funder type
Research council

Funder Name
Medical Research Council

Alternative Name(s)
Medical Research Council (United Kingdom), UK Medical Research Council, MRC

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Funder Name
NIHR Senior Investigator Award

Funder Name
Department of Health Policy Research Programme

Results and Publications

Individual participant data (IPD) sharing plan
The current data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/02/2019		Yes	No
Basic results		24/08/2018	24/08/2018	No	No
Participant information sheet		12/01/2017	12/01/2017	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes