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Impact of food distance and self-control on snack food intake

Submission date	Recruitment status	[_] Prospectively registered
06/05/2016	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
06/05/2016	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
01/12/2017	Nutritional, Metabolic, Endocrine	

Plain English summary of protocol

Background and study aims:
Dietary studies which aim to teach people to change their behaviour towards food may not work as well for people from disadvantaged communities. This may be explained by individual variation in cognitive resource – a set of mental processes involved in planning and regulating thoughts and behaviour. Years spent having to go without in early childhood has been found to have a negative effect on cognitive resource. In addition to this, cognitive resource can become exhausted through the day from daily tasks and financial stresses. People from disadvantaged backgrounds, who tend to have lower cognitive resource, tend to consume more unhealthy food meaning that this group is in greater need of a dietary intervention. A different type of programme may be needed to help those with lower cognitive resource to change their diets. 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, regardless of the type of food. Studies looking into this do not generally test whether variation in cognitive resource has an impact on the effectiveness of the food distance effect. The aim of this study is to find out whether the effect of food distance is influenced by cognitive resource.

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

What does the study involve?
Participants are randomly allocated into four groups. In each group, the participants have a bowl of snack food placed near (20cm away) or far (70cm away) from them half way through the study during a 10 minute "relaxation break". In the first group, participants are given a high cognitive load (something to concentrate on) by being shown a string of digits to memorise after the "relaxation break" in which food is placed close to them. In the second group, participants are given a high cognitive load before the "relaxation break" in which food is placed close to them. In the third group, participants are given a high cognitive load (something to concentrate on) by being shown a string of digits to memorise after the "relaxation break" in which food is placed far from them. In the fourth group, participants are given a high cognitive load before the "relaxation break" in which food is placed far from them. After the 10 minute break, the weight of the snack bowls is weighed to find out how much the participants from each group have

eaten and the number of participants who ate the snacks from each group is recorded. Participants are also asked to complete a test of their mental reaction time (Stroop Task) at the start and end of each half of the study to measure their cognitive resource.

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 eating behaviour 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?
September 2015 to September 2017

Who is funding the study?
1. Medical Research Council (UK)

Who is the main contact?
Professor Theresa Marteau

Contact information

Type(s)
Scientific

Contact name
Prof Theresa Marteau

Contact details
University of Cambridge
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Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title
Impact on the proximity effect of manipulating cognitive resource: An experimental study in a general population

Study objectives

High cognitive load does not reduce the effect of food proximity: when a snack is placed near to (as opposed to far from) someone, they are as likely to take it when under conditions of high as when under conditions of low cognitive load.

This study aims to build on from an earlier study (ISRCTN46995850: Impact of food distance on snack food intake):
1. By providing a further test of the food distance effect with a general population sample
2. By testing whether cognitive resource affects the food distance effect (and being statistically powered to do so)
3. Providing a stronger test of the food distance effect by influencing peoples' cognitive resource

Ethics approval required
Old ethics approval format

Ethics approval(s)
Cambridge Psychology Research Ethics Committee, 20/04/2016, ref: Pre.2016.028

Study design
Interventional single-centre 2 x 2 mixed factorial 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 food 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 into four groups who are provided with snack foods placed either near or far or receive a cognitive load either in the first or second half of the study session:
1. Proximal snack and no followed by high cognitive load
2. Proximal snack and high followed by no cognitive load
3. Distal snack and no followed by high cognitive load
4. Distal snack and high followed by no cognitive load

Participants receiving cognitive load will memorise a digit string before being exposed to the snack food. Participants are exposed to the snack food during two 10 minute "relaxation" breaks. Before the snack food is brought into the room, participants complete the Stroop task to measure baseline cognitive resource. After the snacks are removed from the room, participants repeat the Stroop task to assess the effect of load on cognitive resource before recalling the digit string.

Intervention Type

Behavioural

Primary outcome(s)
Whether participants take the snack food is measured as any difference in bowl weight from before to after the participant is exposed to the snacks.

Key secondary outcome(s))
1. The mean amount of snack food consumed is measured as the difference in bowl weight from before to after the participant is exposed to the snacks
2. Cognitive resource is measured through Stroop task performance from baseline to post-intervention and between each half of the session as a manipulation check

Completion date
18/09/2017

Eligibility

Key inclusion criteria
1. Adults aged over 18 years
2. In the Cambridge area and surrounding areas (Stevenage, Peterborough)

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.

Date of first enrolment
03/05/2016

Date of final enrolment
29/07/2016

Locations

Countries of recruitment
United Kingdom

Study participating centre
The Behaviour and Health Research Unit
University of Cambridge
Institute of Public Health
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Robinson Way
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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

Results and Publications

Individual participant data (IPD) sharing plan

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	01/02/2018		Yes	No
Participant information sheet			09/05/2016	No	Yes
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes