

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

<b>Submission date</b> 06/05/2016	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 06/05/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
<b>Last Edited</b> 01/12/2017	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Individual participant data

## 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  
Institute of Public Health  
Forvie Site  
Cambridge  
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## Additional identifiers

**EudraCT/CTIS number**

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**

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

**Secondary study design**

2 x 2 mixed factorial design

**Study setting(s)**

Other

**Study type(s)**

Other

**Participant information sheet**

Please see additional files

**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 measure**

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.

### **Secondary outcome measures**

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

### **Overall study start date**

18/09/2015

### **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

### **Age group**

Adult

### **Lower age limit**

18 Years

### **Sex**

Both

**Target number of participants**

230

**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

Forvie Site

Robinson Way

Cambridge

United Kingdom

CB2 0SR

## **Sponsor information**

**Organisation**

University of Cambridge

**Sponsor details**

Trinity Lane

Cambridge

England

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CB2 1TN

**Sponsor type**

University/education

**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

## Publication and dissemination plan

Planned publication of the main study results in a high-impact factor journal.

## Intention to publish date

31/12/2017

## 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?
<a href="#">Participant information sheet</a>			09/05/2016	No	Yes
<a href="#">Results article</a>	results	01/02/2018		Yes	No