

# Drivers of eating behaviour during chronic overconsumption

<b>Submission date</b> 14/09/2010	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 27/01/2011	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 15/03/2013	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Prof John Blundell

**Contact details**  
Institute of Psychological Sciences  
University of Leeds  
Leeds  
United Kingdom  
LS2 9JT

## Additional identifiers

**Protocol serial number**  
BB/G530141/1

## Study information

**Scientific Title**  
Drivers of eating behaviour during chronic overconsumption: role of food hedonics (liking and wanting) and peptide biomarkers on satiation and satiety

**Study objectives**

The aim of this study follows on from the findings of our previous BBSRC grant (BBS/B/05079: The impact of physical activity on appetite control). Participants are involved in two concurrent sub-studies. Study 1, looks at changes at energy balance over the duration of the intervention. Study 2 looks at the kinetics of gut peptides after consumption of breakfast. During the exercise intervention in study 1, a proportion of participants are expected to show compensatory increases in energy intake which will offset the energy deficit. This relative overconsumption is safe because it does not result in significant weight gain, but does confer other health benefits such as increased fitness, lowered blood pressure, resting heart rate and reduced waist circumference (a marker of visceral fat).

The principal objective of the study is to characterise and compare those participants who lose the amount of weight predicted by their exercise expenditure (based on measured changes in their fat and lean mass) with those participants who do not lose the amount of weight predicted.

The outcomes of the study will yield important information about the processes that underpin eating behaviour during a prolonged elevation in food intake (relative overconsumption) in response to an increase in energy expenditure from exercise.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

UK National Health Service Research Ethics Committee Leeds (West) approved on the 20th January 2009 (ref: 09/H1307/7)

### **Study design**

Single centre medium term (12-week) experimental controlled study

### **Primary study design**

Interventional

### **Study type(s)**

Other

### **Health condition(s) or problem(s) studied**

Overweight, obesity

### **Interventions**

Supervised exercise to expend 500 kcal 5 times/week for 12 weeks. Assessments at week 0, week 6 and week 12. No exercise overweight/obese and lean comparators.

### **Intervention Type**

Other

### **Phase**

Not Applicable

### **Primary outcome(s)**

**Study 1:**

Change in energy balance from week 0 to week 12 measured by the product of the energy cost of a unit change in fat mass by the observed change in fat mass and summing it with the product of the energy cost of a unit change in lean mass by the observed change in lean mass.

**Study 2:**

Rise and fall in concentration of gut peptides assayed from the participants blood samples in the four hour period following consumption of breakfast.

**Key secondary outcome(s)****Study 1:**

- 1.1. Cardiovascular fitness at week 12 will be measured by VO2 maximal test of aerobic capacity
- 1.2. Resting heart rate and Blood pressure at week 12 will be measured by an integrated digital blood pressure and heart rate monitor with inflatable cuff
- 1.3. Resting metabolic rate at week 12 will be measured by Gas Exchange Measurement
- 1.4. Substrate oxidation at week 12 will be measured by indirect calorimetry
- 1.5. Eating behaviour at week 12 will be measured by intake of test meals designed to vary in macronutrient composition (20:65:15 and 35:50:15, % carbohydrate:fat:protein) and quantitative ratings of hunger and satiety by questionnaire

**Study 2:**

Quantitative ratings of hunger and satiety by questionnaire.

**Completion date**

29/10/2015

## Eligibility

**Key inclusion criteria**

1. 18 - 55 years old
2. Sedentary lifestyle (no leisure-time physical activity in previous 6 months)
3. Body Mass Index (BMI) between 27 - 38 kg/m<sup>2</sup> or 18 - 23 kg/m<sup>2</sup> (lean control)
4. Signed consent given
5. No objection from participant's GP

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Inability to fully comply with intervention or study procedures
2. Insufficient English language skills to complete all questionnaires
3. Pre-existing injuries or conditions that could be aggravated by regular physical activity
4. Medication that could influence accumulation or expenditure of energy
5. Cardiac problems (arrhythmia, Congestive heart disease)
6. Uncontrolled hypertension
7. Genetic syndromes associated with obesity
8. Presence of untreated hypothyroidism
9. Recent body weight change ( $\pm 2$  kg in previous 3 months)
10. Currently following weight loss regime
11. Food allergies or aversions

**Date of first enrolment**

28/01/2008

**Date of final enrolment**

29/10/2015

## Locations

**Countries of recruitment**

United Kingdom

England

**Study participating centre**

Institute of Psychological Sciences

Leeds

United Kingdom

LS2 9JT

## Sponsor information

**Organisation**

University of Leeds (UK)

**ROR**

<https://ror.org/024mrx33>

## Funder(s)

**Funder type**

Research council

**Funder Name**

Biotechnology and Biological Sciences Research Council (BBSRC) (UK) - (ref: BB/G530141/1)

**Alternative Name(s)**

UKRI - Biotechnology And Biological Sciences Research Council, Agricultural and Food Research Council, Biotechnology & Biological Sciences Research Council, BBSRC, BBSRC UK, AFRC

**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****Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	08/06/2011		Yes	No
<a href="#">Results article</a>	results	01/02/2012		Yes	No
<a href="#">Results article</a>	results	01/01/2013		Yes	No