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Do the sensory characteristics of high protein drinks increase their satiating efficiency?

Submission date
13/05/2011

Recruitment status
No longer recruiting

Registration date
18/05/2011

Overall study status
Completed

Last Edited
27/06/2012

Condition category
Nutritional, Metabolic, Endocrine

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

Plain English summary of protocol

Background and study aims?
Worldwide, more and more people are putting on weight, and there is an urgent need to try and understand what leads to over-consumption so we can help provide better health advice and promote the development of new products that can help people control their weight. One intriguing finding is that when people drink a drink which has a high energy content, they dont feel full and eat less afterwards. In contrast, if they have the same energy as a bowl of soup, they are able to adjust the amount they eat later quite accurately. The aim of this study is to try and find out why this is.

Who can participate?
As this study is not aiming to help specific patient groups, potential participants are normal members of the public who are healthy. As the study does require people to eat foods and drinks, you should not take part if you are diabetic, are taking prescription medications, smoke more than 5 cigarettes a day or have a diagnosed eating problem.

What does the study involve?
If you took part, you would come to our test centre on 7 different days. Day 1 would be a screening and familiarization day, and the subsequent 6 days would be the test sessions. On each of these days you would be required to eat nothing and to drink only water from 11pm on the previous night, and would first come for a simple breakfast between 8am and 10am. You would then come back 3 hours later and would be asked to consume a test drink (in the form of a fruit-juice/yoghurt drink) and then 30 minutes later would be served a lunch of pasta followed by ice-cream.

What are the possible benefits and risks of participating?
As the study involves eating foods and drinks made from regular ingredients, the only risks are to people who suffer from diabetes to who have an allergy to any of the ingredients. We will screen all volunteers and if you have diabetes or food allergies you would not be allowed to participate.

Where is the study run from?
University of Sussex.

When does the study taking place?
The study took place between March 2010 and August 2010.

Who is funding the project?
The project is funded by the UK Biotechnology and Biological Sciences Research Council (BBSRC).

Who is the main contact?
Professor Martin Yeomans
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
MYDRINC2010.1

Study information

Scientific Title

Acronym
SATED

Study objectives
Disguised energy consumed in a novel drink will be more efficient in generating satiety when the drink has sensory characteristics that generate satiety relevant expectations. [Satiety Augmentation Through Expectation Delivery (SATED)]

Ethics approval required
Old ethics approval format

Ethics approval(s)
University of Sussex Research Governance Committee on 22 January 2010 Ref: MY0110appro

Study design
Observational non randomised.

Primary study design
Observational

Study type(s)
Quality of life

Health condition(s) or problem(s) studied
Treatment of obesity and improved general nutrition.

Interventions
1. The six interventions are novel drinks formulated especially for the study, (low calorie, 78kcal, high calorie 279kcal)
2. All low energy (LE) drinks comprised of a combination of low-fat fromage frais and fruit juice with added flavourings and colours (78kcal)
3. The additional 201kcal in the high energy (HE) versions was achieved by adding maltodextrin (Cargill: 35g) and whey protein isolate (Myprotein, UK: 25g)
4. These drinks constituted the two low sensory versions
5. Sensory quality was adjusted by addition of a non-nutritive thickening agent (tara gum) and satiety-relevant flavours (vanilla and caramel) at two levels to generate medium and high sensory versions of both LE and HE drinks

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
1. Intake (kcal) at a test lunch consumed 30 minutes after consumption of each test drink
2. The rated experience of appetite before, during and after consumption of each test drink and test meal measured using Visual Analogue Scales
3. Measures will be for hunger and fullness

Key secondary outcome(s))
1. Evaluations using Visual Analogue Scales of the perceived sensory characteristics of each drink (pleasant, filling, sweet, creamy)
2. Specific awareness of drink energy content obtained through a structured debriefing after the final test session

Completion date
25/06/2010

Eligibility

Key inclusion criteria
1. Healthy adults aged 18-55
2. BMI in the range 18-29.9

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
55 years

Sex
All

Key exclusion criteria
1. Diagnosed diabetes
2. Current prescription medication other than oral contraceptives
3. Current or previous diagnosis of any eating disorder
4. Smoking more than 5 cigarettes per day
5. Restrained eating, defined as a score of 8 or more on the Three Factor Eating Questionnaire restraint scale (Stunkard and Messick, 1985)
6. Allergy or aversion to any of the following:

Date of first enrolment
10/02/2010

Date of final enrolment
25/06/2010

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
School of Psychology
Brighton
United Kingdom
BN1 9QH

Sponsor information

Organisation
University of Sussex (UK)

ROR
https://ror.org/00ayhx656

Funder(s)

Funder type
Research council

Funder Name
UK Biotechnology and Biological Sciences Research Council (BBSRC) Diet and Health Research Industry Club (DRINC) grant number BB/H004645/1

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/12/2011		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes