Binging on processed foods; do processed foods trick our brain into overeating?

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The objective of the study is to determine the difference in brain responses after consumption of processed and unprocessed food between healthy lean subjects with a *normal* eating pattern with that of Binge Eating Disorder (BED) patients, who are...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Appetite and general nutritional disorders
Study type	Observational non invasive

Summary

ID

NL-OMON55035

Source
ToetsingOnline

Brief title
Binging on processed foods

Condition

- Appetite and general nutritional disorders
- Eating disorders and disturbances

Synonym
Binge Eating Disorder

Research involving
Human

Sponsors and support

Primary sponsor: Leids Universitair Medisch Centrum
Source(s) of monetary or material Support: NWO

Intervention

Keyword: Binge eating disorder, Brain responses, Overeating, Processed foods

Outcome measures

Primary outcome

We will compare the response of the brain to a commercially available candy bar (processed) with a mix of peanuts and dried dates (unprocessed) matched for total calories, carbohydrates, fat, and protein content. Differences in brain responses between processed and unprocessed food as measured with functional Magnetic resonance imaging (fMRI) will be the main study parameters.

Secondary outcome

Visual Analogue Scale (VAS) scores for the level of hunger, thirst and satiety before and after ingestion of the food stimuli.

Questionnaire scores for normal eating habits

Questionnaire scores for normal physical activity habits

Weight

Height

Fat percentage

BMI

Study description

Background summary

Processed foods are foods that are produced industrially from substances derived from foods, often with many additives, but with little *whole original food* ingredients. These types of food tend to be high in calories, (saturated) fat, sugar, and salt, while being nutrient-poor compared to unprocessed foods.

Not surprisingly, increased consumption of processed foods raises our daily calorie intake, as in addition to the higher calorie content, processed foods are also associated with a relatively short period of satiation, this is seen as an important cause of overweight an obesity. Even though most people are aware that processed foods are unhealthy, over 50% of our modern diet consists of these foods. The importance of the (subconscious) regulatory role of the brain in directing this eating behavior is increasingly recognized.

Study objective

The objective of the study is to determine the difference in brain responses after consumption of processed and unprocessed food between healthy lean subjects with a *normal* eating pattern with that of Binge Eating Disorder (BED) patients, who are prone to overeating processed foods. We hypothesize that the brain responds much stronger to processed food in BED, whereas much smaller differences are expected after consuming unprocessed food.

Study design

Cross-over trail study design with two study visits with a patient and a control group.

Study burden and risks

The study will consist of two visits to the LUMC (1-2 weeks between visits). For each visit participants will undergo one MRI scan, the duration of this visit will be 1.5 hour excluding travel time (one hour for the MRI scan plus instructions and preparations and questionnaires). The potential risks are limited. The risks of MRI are minimal (risk of everyday life), because there are no consequences to the health of the participant. The potential risk of the food intervention are limited as these are commercially available products and participants with food allergies will not be included in the study. The questionnaires used during the study are also of a low burden nature.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

Control subjects:
* Aged >18
* BMI >18,5 and <25
BED patients:
* Aged 18>
* A primary diagnosis of BED according to DSM*IV criteria or subthreshold BED (an average of one binge eating episode a week)
* BMI >30

Exclusion criteria

* Age <18
* BMI not >18,5 and <25 for control subjects and BMI <30 for BED patients
* Diabetes
* Any know food allergy or intolerance
* Renal or hepatic disease
* Use of medication known to affect glucose (for example prednisone) or lipid metabolism
* A current history of self*induced vomiting, misuse of laxatives, diuretics, enemas, diet pills or other weight controlling medications, fasting, or excessive exercise within the last 24 weeks;
* A comorbid diagnosis of psychotic disorder, self*damaging behaviors or mental deficiency

* Pregnancy
* Any contra-indication to MRI scanning

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	21-01-2021
Enrollment:	30
Type:	Actual

Ethics review

Approved WMO Date:	07-12-2020
Application type:	First submission
Review commission:	METC Leiden-Den Haag-Delft (Leiden) metc-ldd@lumc.nl

Approved WMO Date:	26-02-2021
Application type:	Amendment
Review commission:	METC Leiden-Den Haag-Delft (Leiden) metc-ldd@lumc.nl

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

ID: 29485
Source: Nationaal Trial Register
Title:

In other registers

Register	ID
CCMO	NL74714.058.20
Other	NL8851 Netherlands Trial Register
OMON	NL-OMON29485

Study results

Date completed:	07-06-2021
Actual enrolment:	23