How we evaluate our food: Mapping brain regions involved in evaluating calories, taste intensity and pleasantness.

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The primary objective of this study is to assess how selective attention to different food characteristics (calories, taste intensity and pleasantness) affects brain responses during tasting. Secondary objectives are to assess (1) whether taste...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON42737

Source
ToetsingOnline

Brief title
Axon

Condition

- Other condition

Synonym
eating behaviour

Health condition

eetgedrag

Research involving

Human

Sponsors and support

Primary sponsor: Wageningen Universiteit
Source(s) of monetary or material Support: EFRO (FOCOM project)

Intervention

Keyword: fMRI, instructions, taste

Outcome measures

Primary outcome

The main study parameter/endpoint is brain activation during tasting.

Secondary outcome

The secondary parameter/endpoint is ad libitum food intake.

Study description

Background summary

How our brains respond to a mouthful of food depends on the attention we pay to it*s different characteristics. In fMRI taste research, instructions accompanying a taste are often very unspecific. This allows participants to focus their attention on various aspects of the food which makes it difficult to pinpoint very precisely what the associated brain activation reflects.

Study objective

The primary objective of this study is to assess how selective attention to different food characteristics (calories, taste intensity and pleasantness) affects brain responses during tasting.

Secondary objectives are to assess (1) whether taste activation during selective attention to calories, taste intensity or pleasantness best predicts food intake, (2) to assess whether taste activation during selective attention is the same for different taste qualities and (3) to assess whether taste activation during selective attention is modulated by personality characteristics.

Study design

On the study day participants engage in a taste fMRI task in which they are instructed to alternately pay attention to the calories (C), taste intensity (T) and pleasantness (P) of a savory, a sweet and a neutral drink. At the end of the session (outside the scanner) participants will be asked to consume as much as they want from the sweet drink (ad libitum).

Intervention

Participants are instructed to pay attention to either the calories, taste intensity or pleasantness of a sweet, a savory and a neutral stimulus and accordingly taste these stimuli.

Study burden and risks

The study will consist of a screening session (approx. 60 min), a training session (approx. 60 min) and a scan session (approx. 90 min). Participants will visit the university once for the screening session. After this, participants complete the training session in a dummy scanner (Restaurant of the Future, Wageningen). For the fMRI scan session, participants will visit the MRI facility in Hospital Gelderse Vallei (Ede). During the fMRI scan, subjects will be exposed to visual cues/instructions and taste small amounts of the stimuli. After that, they will consume a product ad libitum. In addition, participants will complete several questionnaires and perform sensory ratings of the three test stimuli. The study is non-therapeutic to the participants. The risk associated with participation is negligible.

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

-Gender: female
-Age: 18-35 year
-BMI: 18.5 - 25.0 kg/m2
-Healthy (as judged by the participant)
-Being right handed

Exclusion criteria

-Restraint eating (women: score > 2.80)
-Lack of appetite
-Having difficulties with tasting, smelling, swallowing or eating
-Usage of an energy restricted diet during the last two months (preceding the screening session)
-Weight loss or weight gain of 5 kg or more during two months (preceding the screening session)
-Stomach or bowel diseases
-Diabetes, thyroid disease, kidney disease and other chronical disorders
-Having epilepsy or other neurological disorders
-Having claustrophobia, schizophrenia or another mental illness
-Usage of daily medication other than oral contraceptives, paracetamol or H1-antihistaminergic drugs
-Pregnancy during the last 6 months, having the intention to become pregnant or lactating
-Smoking on average more than one cigarette/cigar a day
-Being allergic/intolerant for products under study
-Disliking the beverages under study
-Working or doing an internship/thesis at the Department of Human Nutrition (WUR)
-Current participation in other (medical) research (except the EetMeetWeet study)

-Having a history of or current alcohol consumption of on average more than 21 units per week
-Having a contra-indication to MRI scanning
-Having objections against being informed about incidental findings of pathology and against the general physician being informed about incidental findings of pathology
-Presence of non-removable piercings
-Presence of tattoos with iron pigments

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	24-06-2015
Enrollment:	26
Type:	Actual

Ethics review

Approved WMO

Date:	26-05-2015
Application type:	First submission
Review commission:	METC Wageningen Universiteit (Wageningen)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

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

No registrations found.

In other registers

Register	ID
CCMO	NL52691.081.15