Functional MRI of food evaluation and choice in normal weight and overweight subjects across the lifespan.

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Rationale: Ultimately, the decision to eat is made in the brain. To elucidate the neural processes of food evaluation and choice in normal weight and overweight subjects across the lifespan, it is of great interest to obtain neuroimaging data…

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON26000

Bron
NTR

Aandoening

Overweight and obesity

Ondersteuning

Primaire sponsor: University Medical Centre Utrecht
Overige ondersteuning: European Union Seventh Framework Programme

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Neural activation (percentage BOLD signal change) induced by the presentation of pictures of food and food choice.

Toelichting onderzoek

Achtergrond van het onderzoek

Ultimately, the decision to eat is made in the brain. To elucidate the neural processes of food evaluation and choice in normal weight and overweight subjects across the lifespan, it is of great interest to obtain neuroimaging data during these processes.

Doel van het onderzoek

Rationale:

Ultimately, the decision to eat is made in the brain. To elucidate the neural processes of food evaluation and choice in normal weight and overweight subjects across the lifespan, it is of great interest to obtain neuroimaging data during these processes.

Objective:

To assess the differences in the brain responses to food presentation and food choice and how these responses are modulated by hunger and gut signals in normal weight and overweight subjects across the lifespan.

Onderzoeksopzet

Data collection 24 months;

Data analyses 12 months.

Onderzoeksproduct en/of interventie

The study consists of two morning MRI scan session. On both days, the subjects will come in after an overnight fast of at least ten hours. During one session the subjects will be scanned after the consumption of a fixed amount of a test meal (a protein shake) per kg lean body weight, whereas during the other session the subjects will be scanned while they are fasted. Upon arrival on a study day, subjects score their appetite and thirst on a 9-point hedonic scale and answer a question on last menstruation (if applicable). Before the scan subjects execute a computerized 'liking task' (LFPQ) in which the food pictures used in the fMRI tasks are rated on their pleasantness. Additionally, subjects estimate the caloric content of each food on a 9-point hedonic scale. Furthermore, they will practice the choice task used in the scanner. Subsequently, subjects will undergo a 40-min MRI scan session consisting of several MRI scans. During the first functional MRI scan subjects will perform a food choice task in which they choose between two foods according to their preference. During a second fMRI scan subjects view images of high and low calorie foods (HCF and LCF) and non-foods (NF). In

addition subjects will perform a reward task during the third scan.

After leaving the scanner subjects again score their appetite and thirst on a 9-point hedonic scale.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Healthy (self-reported);

2. Age group 1: 8-10, group 2: 13 -17, group 3: 25-45 and group 4:65-75 at day 01 of the study;

3. Body Mass Index (BMI) adults: between 20 and 25 kg/m2 (normal weight) or 27.5 and 35 kg/m2 (overweight adults). For children and adolescents we calculated BMI ranges based on age and gender by using the growth reference data for 5-19 year olds of the World Health Organization (Butte, Garza et al. 2007). A BMI range of -
1SD to +1SD in children equals approximately a BMI of 20-25 in adults; A BMI range of 1SD+2SD/2 to +3SD in children equals approximately a BMI of 27.5-35.0 in adults (See Table 1 for BMI ranges per age (-group) and
gender);

4. Right-handed;

5. Having given their written informed consent;

6. Willing to comply with the study procedures;

7. Willing to accept use of all anonymized data, including publication, and the confidential use and storage of all data;

8. Willing to be informed about chance findings of pathology and approving of the disclosure of this information to the general physician.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Smoking;

2. Having a special diet (e.g. to lose weight, medically prescribed diet in the past 6 months, no meat etc);

3. Highly restraint eating (Van Strien et al., 1986);

4. Having a food allergy;

5. Having gained or lost >5 kg of body weight in the past 6 months;

6. Having a history of or current alcohol consumption > 28 units per week;

7. Having a history of medical or surgical events that may significantly affect the study outcome, such as metabolic or endocrine disease, or any gastro-intestinal disorder;

8. Use of medication, except aspirin/paracetamol and contraceptives;

9. Mental or physical status that is incompatible with the proper conduct of the study;

10. Not having a general practitioner;

11. Participation in any other clinical trial during this study;

12. Working at the Image Sciences Institute or the Radiology Department of the UMC Utrecht as employee or student;

13. MRI exclusion criteria:

A. Claustrophobia;

B. Having metal implants (i.e. pacemaker, metal joints, prostheses, etc.) or metal objects on the body which cannot be removed (i.e. piercing, hearing aid, brace, etc;

C. Being pregnant.

14. Task related exclusion criteria:

A. Unsuccessful satiation of the participant (i.e. hungry after liquid breakfast consumption);

B. Nausea.

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	29-10-2012
Aantal proefpersonen:	120
Type:	Werkelijke startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

Ethische beoordeling

Positief advies

Datum:	01-10-2012
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 41399
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL3512
NTR-old	NTR3644
CCMO	NL39563.041.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON41399

Resultaten

Samenvatting resultaten
PMID: 29337278 DOI: 10.1016/j.neuroimage.2018.01.012, PMID: 34245869 DOI: 10.1016/j.neuroimage.2021.118374