Changes in food preference and food cue responsivity after bariatric surgery

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To determine the effect of gastric bypass surgery on (alterations in) food preferences. Secondly, to assess the effect of gastric bypass surgery on the brain reward response when exposed to sight and smell of food stimuli with different sugar and…

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON40362

Source
ToetsingOnline

Brief title
Delicious

Condition

- Other condition
- Appetite and general nutritional disorders

Synonym
corpulence, morbid obesity

Health condition

morbide obesitas

Research involving
Human

Sponsors and support

Primary sponsor: Wageningen Universiteit
Source(s) of monetary or material Support: Ministerie van OC&W,NWO

Intervention

Keyword: fMRI, Food cue response, Food preference, Roux-en- Y Gastric Bypass

Outcome measures

Primary outcome

Difference in food preferences before and after gastric bypass surgery.

Difference in brain reward response to the smell and sight of food 2 weeks

before and 8-10 weeks after gastric bypass surgery.

Secondary outcome

The secondary objective is to assess fasting plasma levels of endocannabinoids

(eCB), ghrelin, leptin, adiponectin, GLP1 and insulin.

Differences in brain reward response (fMRI) after exposure to sight+smell and

after exposure to smell alone.

Study description

Background summary

People who suffer from morbid obesity (BMI > 40 kg/m2) can undergo roux-en-Y gastric bypass surgery. Following this surgery, these people lose a lot of weight. Individuals that underwent Roux-en-Y gastric bypass surgery frequently report changes in food preference. They indicate a decreased preference for highly rewarding energy dense foods. Changes in food preference might be related to alterations in central (brain) mechanisms, related to reward sensing. The smell and sight of food can be considered as anticipatory cues for the rewarding effects of food intake. Olfactory and visual cues of foods with high energy content may predict higher reward value, and may subsequently lead to a higher preference and intake of high energy dense products.

Study objective

To determine the effect of gastric bypass surgery on (alterations in) food preferences. Secondly, to assess the effect of gastric bypass surgery on the brain reward response when exposed to sight and smell of food stimuli with different sugar and fat contents.

Study design

Food preference will be measured by in a online food preference task, which will be completed from home. This task will be completed at four timepoints: two weeks before surgery and eght weeks, one year and two years after surgery.

Changes of food reward responses in the brain will be measured by using functional magnetic resonance imaging (fMRI) when exposed to sight+smell and smell alone of food stimuli with different sugar and fat contents. Measurements will be taken 2 weeks before and 8-10 weeks after gastric bypass surgery.

Intervention

During fMRI measurements participants will be exposed to combinations of pictures and odours, but also to odours alone. Pictures and odours that are used are cues for food products (e.g. french fries, cucumber) and control stimuli (e.g. flowers).

Study burden and risks

All participants will complete an online food preference task at four time points over a two-year period. This can be done at home and will take a maximum of fifteen minutes. A subset of 30 participants will visit Wageningen once for a practice session in the dummy fMRI scanner (90 min). This subset will also visit the fMRI facility in Ede (Hospital Gelderse Vallei) twice to undergo fMRI measurements (in total 2 sessions of 3 hour). 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

Scheduled for Roux-en-Y gastric bypass surgery
Age: 18-55 years
(for food cue response-part: normosmic)

Exclusion criteria

Being a vegetarian
Allergic to food products used as stimuli in the study
(for food cue response-part: not being MRI compatible, i.e. having pieces of metal in the body)

Study design

Design

Study type: Interventional
Masking: Open (masking not used)

Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	05-08-2014
Enrollment:	100
Type:	Actual

Ethics review

Approved WMO Date:	12-12-2013
Application type:	First submission
Review commission:	METC Wageningen Universiteit (Wageningen)
Approved WMO Date:	03-06-2014
Application type:	Amendment
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
ClinicalTrials.gov	NCT02068001

Register
CCMO

ID
NL45837.081.13