# Changes in food preference and food cue responsivity after bariatric surgery

Published: 12-12-2013 Last updated: 24-04-2024

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 reviewApproved WMOStatusRecruitingHealth condition typeOther conditionStudy typeInterventional

## **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**

#### **Public**

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## **Scientific**

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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

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Register

ID

CCMO

NL45837.081.13