Functional response of the hypothalamus to glucose ingestion in patients with anorexia nervosa.

Published: 10-09-2008
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To determine whether hypothalamic response to glucose ingestion in patients with anorexia nervosa differs from that in healthy subjects.

Ethical review	Approved WMO
Status	Pending
Health condition type	Hypothalamus and pituitary gland disorders
Study type	Interventional

Summary

ID

NL-OMON32377

Source
ToetsingOnline

Brief title
Hypothalamic response to glucose ingestion in anorexia nervosa patients

Condition

- Hypothalamus and pituitary gland disorders
- Eating disorders and disturbances

Synonym
Anorexia, Anorexia Nervosa

Research involving
Human

Sponsors and support

Primary sponsor: Leids Universitair Medisch Centrum
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Anorexia-nervosa, BOLD, Hypothalamus, OGTT

Outcome measures

Primary outcome

Changes in reaction pattern of neuronal activity (as measured with fMRI) in the

hypothalamus in respons to intake of glucose in patients with anorexia nervosa

as compared to healthy controls.

Secondary outcome

n.a.

Study description

Background summary

The hypothalamus plays a central role in the regulation of energy intake, feeding behavior and lipid and glucose metabolism. Previous functional magnetic resonance imaging (fMRI) provided in vivo evidence for distinct differences in hypothalamic neuronal activity in lean and obese humans. More recently it was reported that the hypothalamic response to glucose ingestion in patients with type 2 diabetes mellitus (DM2) is almost absent as compared to healthy individuals. Considering the involvement of the hypothalamus in satiation and satiety, it can be hypothesized that hypothalamic response to energy intake may be altered in patients with eating disorders. To investigate whether hypothalamic response to ingestion of glucose is compromised in patients with extreme weight loss, fMRI of hypothalamic activity will be performed during ingestion of glucose solution in patients with anorexia nervosa.

Study objective

To determine whether hypothalamic response to glucose ingestion in patients with anorexia nervosa differs from that in healthy subjects.

Study design

Experimental, case-control studywith an intervention that consists of drinking

200 ml of glucose solution.

Intervention

During MRI scanning, participants drink 200 ml glucose solution through a plastic tube.

Study burden and risks

Candidates will be screened whether they fulfilll criteria for participation.
Subjects will visit the hospital on a single occasion that takes 1* one hours.
This visit consists of a functional MRI examination of approximately one hour.
During MRI, subjects drink 200 ml of glucose solution. Immediately preceeding the fMRI, 6 ml blood will be drawn.
The MRI imaging may result in unexpected pathological findings.

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

Patients:
Female
Anorexia nervosa diagnosed according to DSM-IV criteria.
BMI 17.5 kg/m2 or less
Age 18 - 30 years;Healthy controls:
Female
18.5 kg/m2 <= BMI <= 22 kg/m2
Age 18 - 30 years
Using oral contraceptives
Not on a weight reducing diet
No change in weight of more than 3 kg over the last 2 months

Exclusion criteria

Connected with anorexia nervosa
- Physical condition such that participating in this study is not recommended (as judged by the treating physician of Centrum Eetstoornissen Ursula).;Other
- Any genetic or somatic disease (e.g. fragile X syndrome,) affecting the brain
- Diabetes mellitus or history of diabetes mellitus in first grade relatives
- Any significant chronic disease
- Any substance abuse or addiction according to DSM-IV criteria (except smoking).;Contra-indication to MRI scanning:
- Claustrophobia
- Pacemakers and defibrillators
- Nerve stimulators
- Intracranial clips
- Intraorbital or intraocular metallic fragments
- Cochlear implants
- Ferromagnetic implants

Study design

Design

Study type:	Interventional
Intervention model:	Other

Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-09-2008
Enrollment:	20
Type:	Anticipated

Ethics review

Approved WMO

Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)

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	NL23624.058.08