Neuroimaging of childhood obesity: a case control study

Published: 16-08-2010
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To demonstrate differences in neuronal structure and neuronal function in brain regions that control eating behaviour between obese and normal weight adolescents.

Ethical review	Approved WMO
Status	Recruiting
Health condition type	Appetite and general nutritional disorders
Study type	Observational non invasive

Summary

ID

NL-OMON39380

Source
ToetsingOnline

Brief title
Neuroimaging of childhood obesity

Condition

- Appetite and general nutritional disorders

Synonym
adiposity, corpulence

Research involving
Human

Sponsors and support

Primary sponsor: Leids Universitair Medisch Centrum
Source(s) of monetary or material Support: Danone Research

Intervention

Keyword: (f)MRI, Childhood obesity, Eating behaviour

Outcome measures

Primary outcome

1. Structural MRI of brain areas involved in eating behaviour

2. Functional MRI resting state

3. Functional MRI passive visual stimulus, emotional inhibition and backward

masked stimulus

Secondary outcome

Not applicable

Study description

Background summary

The prevalence of overweight and obesity among children is alarming high. Childhood obesity is associated with serious health risks. Obesity is the result of a disturbed balance between energy intake and expenditure. The brain is the central regulator of energy balance. Brain areas that play crucial roles in eating behaviour are the hypothalamus, the mesolimbic dopamine system and the prefrontal cortex. Several imaging studies have revealed the complexity of the human brain mechanisms related to eating behaviour. The exact neuropathophysiological mechanisms underlying obesity are unclear. This (functional) magnetic resonance imaging ((f)MRI) study might be helpful to disentangle these mechanisms underlying childhood obesity, a predictor of adult obesity. In addition, these results might offer the opportunity to develop novel therapeutic targets.

Study objective

To demonstrate differences in neuronal structure and neuronal function in brain regions that control eating behaviour between obese and normal weight adolescents.

Study design

Case-control study

Study burden and risks

After comprehensive explanation (written and oral) to participants, (f)MRI scanning will be no burden and acceptable to these adolescents as described in the notice *Toetsingskader niet-therapeutisch MRI-onderzoek bij minderjarige en wilsonbekwame proefpersonen* from The Central Committee on Research Involving Human Subjects (CCMO, 2004) (www.ccmo.nl).

Contacts

Public
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333 ZA
NL
Scientific
Leids Universitair Medisch Centrum

Albinusdreef 2
Leiden 2333 ZA
NL

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Adolescents (16-17 years)

Inclusion criteria

Obesity (cases) and normal-weight (controls) BMI conform cut-off points according to Cole (2000)

12-16 years old
Caucasian origin

Exclusion criteria

Obesity due to medical cause (excluding using standard protocol)
Unremovable metal devices
Weight-loss intervention program during study participation

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-12-2010
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO Date:	16-08-2010
Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)
Approved WMO Date:	04-10-2011

Application type:	Amendment
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)
Approved WMO Date:	05-06-2013
Application type:	Amendment
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)
Approved WMO Date:	20-11-2013
Application type:	Amendment
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	NL31540.058.10