Activity of brown adipose tissue and thyroid hormones

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON23019

Source Nationaal Trial Register

Brief title BATman-study

Health condition

Overgewicht, Obesity, Brown adipose tissue, Bruin vet

Sponsors and support

Primary sponsor: Academic Medical Center (AMC), Amsterdam **Source(s) of monetary or material Support:** AMC Foundation

Intervention

Outcome measures

Primary outcome

After TRH administration, compared to saline administration;

- Degree of BAT activity
- Skin temperature
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- Blood pressure and heart rate
- Serum thyroid hormones and noradrenaline and normetanephrine

Secondary outcome

The association between BAT acitvity and changes in skin temperature, blood pressure, heart rate, and blood parameters.

Study description

Background summary

Brown adipose tissue (BAT) is a classic site of non-shivering thermogenesis in most mammals. BAT thermogenesis is controlled via both neuroendocrine and autonomic pathways, and requires both sympathetic stimulation, and hormonal stimulation via thyroid hormone. We hypothesize that brown adipose tissue activity increases after administration of TRH.

Study objective

Human brown adipose tissue activity will increase after administration of Thyrotropin-Releasing Hormone (TRH).

Study design

The two scans will be separated by at least 7 days and a maximum of 3 weeks.

Intervention

Two 18F-FDG PET-CT scans per patient will be performed of the neck and shoulders to visualize BAT activity. One scan will be performed following intravenous administration of TRH, while the other will be performed following intravenous administration of a saline solution (placebo). During the scans, temperature, heart rate and blood pressure will be monitored continuously. Blood samples for analysis of thyroid hormones will be taken at 7 time points.

Contacts

Public Academisch Medisch Centrum, Dept. of Endocrinology

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Eligibility criteria

Inclusion criteria

- Male sex
- Age between 30 and 40 years old
- BMI range 19 to 25 kg/m2

Exclusion criteria

- Treated or untreated hypo- or hyperthyroidism
- Renal dysfunction (eGFR >60)
- Use of any medication known to affect thyroid hormone metabolism or the autonomic nervous system
- Any cardiovascular disease
- Recent stay of >2 weeks in the tropics within the last 6 weeks
- The desire to father a child within 1 month

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo

Recruitment

NL	
Recruitment status:	Recruiting
Start date (anticipated):	01-04-2014
Enrollment:	15
Туре:	Anticipated

Ethics review

Positive opinion	
Date:	03-11-2015
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 41582 Bron: ToetsingOnline Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register NTR-new **ID** NL4993

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Register

NTR-old CCMO OMON ID NTR5512 NL45656.018.13 NL-OMON41582

Study results

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