Acute effects of capsaicin on energy expenditure, fat oxidation and satiety in negative energy balance

Published: 16-05-2011
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To investigate the acute effects of capsaicin on energy expenditure, substrate oxidation, appetite profile and ad libitum energy intake during negative energy balance.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Metabolism disorders NEC
Study type	Interventional

Summary

ID

NL-OMON36708

Source
ToetsingOnline

Brief title
Acute effects of capsaicin

Condition

- Metabolism disorders NEC

Synonym
obesity, severe overweight

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Maastricht
Source(s) of monetary or material Support: McCormick

Intervention

Keyword: Capsaicin, Energy expenditure, Fat oxidation, Satiety

Outcome measures

Primary outcome

Energy expenditure, substrate oxidation, appetite profile and ad libitum energy

intake.

Secondary outcome

n.v.t.

Study description

Background summary

Red pepper might prevent reduction of energy expenditure and elevation of hunger as a result of energy intake restriction.

Study objective

To investigate the acute effects of capsaicin on energy expenditure, substrate oxidation, appetite profile and ad libitum energy intake during negative energy balance.

Study design

The study will be conducted in a crossover design with four randomly sequenced conditions. Energy expenditure and substrate oxidation will be continuously monitored for 36h. Appetite profile will be measured hourly. Ad libitum energy intake will be measured during the last meal.

Intervention

Subjects will stay for each of the four conditions in a respiration chamber for 36h, twice receiving an energy-balanced (100 En%) diet and twice an energy-restricted (75 En%) diet, both with and without added capsaicin (100%control, 75%control, 100%CAPS, 75%CAPS).

Study burden and risks

The study does not include any major risk for the subjects. Anthropometric and body composition measurements, performed during the screening, will not be invasive for the subjects. Deuterium dilution has been shown to be a safe method for determining total body water. Furthermore, the registration of oxygen consumption and carbon dioxide production in the respiration chamber will be performed during an unconscious process. The air in the chamber is continuously regulated.
Urine sampling will be done in urine bottles added with diluted HCl, which might pose a risk for the subjects. However, subjects will be carefully instructed how to handle the bottles to reduce these risks.
Additionally, there are no risks for the subject in consuming any of the provided meals, because people with certain food allergies are excluded for participation and all meals are composed of regular food items available in normal Dutch supermarkets. The addition of capsaicin to the meals will not form any health risk. Capsaicin is a natural product, which is safe in the given dose that will not exceed the maximum recommended daily dose.
This study does not have any benefits for the subjects themselves, but will give possible new knowledge for the treatment of obesity.

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

Healthy, age 18-50 y, BMI 20-30 kg/m2, non-smoking, weight stable, dietary unrestraint

Exclusion criteria

Smoking, use of medication, more than moderate alcohol and/or caffeine consumption

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Masking:	Double blinded (masking used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	27-05-2011
Enrollment:	16
Type:	Actual

Ethics review

Approved WMO

Date:	16-05-2011
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

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	NL35339.068.11