

Influence of macronutrient-related odours exposure on (congruent) appetite and actual food intake.

Cover story (for information brochure): Influence of odour exposure on alertness.

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The primary objectives of the current study are to determine the influence of aware and actively smelled macronutrient-related odours on appetite, and actual food intake, in normal weight and unrestrained individuals. The secondary objectives of the...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON45783

Source

ToetsingOnline

Brief title

STER study

Condition

- Other condition

Synonym

eating behavior; olfaction

Health condition

eetgedrag

Research involving

Human

Sponsors and support

Primary sponsor: Wageningen Universiteit

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Eating behaviour, Smell

Outcome measures

Primary outcome

The main study parameters are: change in specific appetite for foods congruent vs incongruent with the exposed odour (difference between pre and post odour exposure), and food intake (for congruent vs incongruent foods).

Secondary outcome

Secondary parameters are: food/macronutrient preference (relative preference score), and correlation between self-reported macronutrient preference and actual macronutrient intake.

Study description

Background summary

Living in an obesogenic environment, we are surrounded by food odour cues that trigger these unconscious decisions and induce us to (over)eat. Olfaction plays an important role in eating behaviour by detecting foods, attracting our attention, and triggering our appetite. However, the effect of food odours on subsequent behavioural responses remains unclear.

Olfaction may play a role in appetite and meal initiation. Some studies have suggested that food odors increases appetite for foods with similar properties, sensory-specific appetite, and may generalize across foods within certain categories as taste and energy-density.

On the other hand, contradictory findings have been reported between the

influence of odours on appetite versus actual food choice and intake. Differences in intensity, type of exposure (explicit or implicit), and awareness of the odour cue could be responsible for the lack of consistency in these findings.

Therefore, we propose a series of behavioural studies to extend the knowledge in the (macronutrient signalling) function of odours and its impact on appetite and actual food intake. We aim to disentangle the differential effects of intensity, exposure method (explicit and implicit), and awareness of the cue: Aware and actively smelling of odours (part A); unaware (implicit) smelling of odours (part B); unaware and passively smelling by means of ambient odours (part C).

In the present protocol only part A will be explained in further detail. The knowledge gained from Part A will be used to establish the proper methods for part B and C.

Study objective

The primary objectives of the current study are to determine the influence of aware and actively smelled macronutrient-related odours on appetite, and actual food intake, in normal weight and unrestrained individuals.

The secondary objectives of the current study is to determine the influence of aware and actively smelled macronutrient-related odours on food preferences. Also, we will determine the correlation between self-reported macronutrient preference and actual macronutrient intake.

Study design

The current study is a counter-balanced cross-over intervention study. Subjects will take part in an information meeting and five test sessions. In each test session, subjects will be exposed to one of the five conditions (odour representing food high in carbohydrates, protein and fat, low in calories, and a no-odour) and tested for behavioural measures. In each test session, subjects will be asked to rate their general and specific appetite, to perform a computer-based task on food preferences (MTPRT) and an alertness task (PVT). Participants will be provided with lunch to covertly measure ad libitum food intake.

Intervention

In each test session, participants will be exposed to one of the five conditions (odour representing food high in carbohydrates, protein and fat, low in calories, and a no-odour) for a few minutes.

Study burden and risks

This study is non-therapeutic. The risk associated with participation is

negligible. The burden can be considered as low. The study includes five site visits in a non-satiated state and an information meeting (approx. total duration of 6 hours). All odours and food products are considered safe to use/consume and commercially available.

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

Dutch women.

Healthy and normal body weight (BMI: 18.5 - 25 kg/m²).

Between 18 * 35 years old.

Normal sense of smell.

Normal sense of taste.

Exclusion criteria

Restrained eaters.

Habitual smokers.

Incorrect identification or association of the odours that will be used in the study.

Any food restriction such as vegetarian, vegan, etc.

Any allergy, intolerance or oversensitivity to food odours used in this study.

Dislike of food odours and products used in the study (Liking <40 mm VAS).

Use of medication other than paracetamol and hormonal contraceptives.

Pregnant/have the intention to become pregnant during the experiment/are currently breastfeeding.

Reported weight loss or weight gain of more than 5 kg or following a special diet in the two months prior to the study.

Staff member of the Division of Human Nutrition and Health at Wageningen University, or currently performing a MSc thesis at the Division.

Participation in other medical studies.

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	01-10-2018
Enrollment:	32
Type:	Actual

Ethics review

Approved WMO

Date: 06-09-2018
Application type: First submission
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
CCMO	NL66580.081.18