Modulation of oral food processing behaviour by aromas

Published: 19-06-2007
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To determine whether aromas affect food intake behaviour.

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

Summary

ID

NL-OMON31267

Source
ToetsingOnline

Brief title
Modulation of oral behaviour

Condition

- Appetite and general nutritional disorders

Synonym
nvt

Research involving
Human

Sponsors and support

Primary sponsor: Wageningen Center for Food Sciences
Source(s) of monetary or material Support: Zoals in alle WCFS onderzoek: 50% industrie en 50% overheid

Intervention

Keyword: Olfactometry, Oral food processing behaviour, Perception, Vibromyography (VMG)

Outcome measures

Primary outcome

The degree of oral processing, specific movements during this processing, the duration of this processing, and the time between consecutive bites is measured by the 10 VMG sensors. The bite size is measured by a scale that is connected to a computer.

Secondary outcome

N/A

Study description

Background summary

Oral food processing has received relatively little attention in relationship to obesitas. Recent results demonstrated possible relationships between bite size, the degree of oral processing, and the food*s satiating properties. Oral food processing behaviour is partly affected by food properties, such as the food*s structure, and partly by food sensations. Food aromas are important determinants of food sensations and can be varied independently using olfactometry. In the proposed study, the effects of aromas in various concentrations on food intake behaviour will be investigated. Food intake behaviour encompasses bite size, intra- and interbite interval, and oral processing behaviour.

Study objective

To determine whether aromas affect food intake behaviour.

Study design

Subjects will take repeated bites of kwark. During each bite, an aroma is presented retro-nasally in one of three concentrations.
The food will be presented in the subject*s mouth using a peristaltic pump. The subject can start the pump via a push on a button. The pump stops when the button is released by the subject. The amount of pumped food is measured by a balance linked to a computer. The subject starts to process the food when the

pump is stopped, dissociating food intake behaviour from food processing behaviour resulting in increased measurement precision.

Ten VMG sensors will be attached: forehead (sensor 1), left and right temporalis (sensor 2 and 3), left and right masseter (sensor 4 and 5), left and right modiolus (sensor 6 and 7), chin (sensor 8), floor of the mouth (sensor 9), and thyroid (sensor 10). The VMG sensors provide information regarding the amount of oral processing, specific movements, and the processing duration. The aromas will be presented retro-nasally using an olfactometer. Presentation takes place when the subject starts to process the food.

Study burden and risks

The intervention is non-therapeutic. The risk associated with participation is negligible and the burden can be considered as minimal. Subjects will attend the test site two times, during which they have to fill several questionnaires and have to consume the products through a tube. Stimulus presentation is regulated by a pump that is controlled by the subject. Sensors to measure oral movements are attached to the subjects* head. Finally, an olfactometer tube is inserted into the subject*s nose to present aromas retro-nasally. Insertion of the tube by a medical doctor is common practise in olfactory research, but can be irritating.

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

- Age: 18-50 year
- Willingness to comply with the procedure of inserting a retro-nasal olfactometer tube in the back of the nose
- Willingness to comply with the procedure of putting VMG sensors on the face
- Normal sense of smell (self-reported)

Exclusion criteria

- Allergic to dairy foods
- Disturbed sense of smell

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	29-10-2007
Enrollment:	10

Type: Actual

Ethics review

Approved WMO
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	NL16918.081.07