Investigating oral processing in relation to taste and texture of (semi-)liquid foods

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The primary objective of this study is to identify specific oral processing movements and/or patterns that occur during consumption of (semi-)liquid foods, with respect to taste and texture related properties (e.g. taste intensity and viscosity),...

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

Summary

ID

NL-OMON35715

Source
ToetsingOnline

Brief title
Chew it!

Condition

- Other condition

Synonym
obesity, overweight

Health condition

overgewicht en obesitas

Research involving
Human

Sponsors and support

Primary sponsor: TI Food and Nutrition
Source(s) of monetary or material Support: Top Institute Food & Nutrition

Intervention

Keyword: chewing behaviour, fat content, fat perception, oral processing, sugar content, taste perception, viscosity

Outcome measures

Primary outcome

Tongue and jaw movements will be measured by means of articulography (EMA);

sensors will be placed on the face and on the tongue to monitor spatial and

temporal movement.

Secondary outcome

Electromyography (EMG) will assess muscle contraction and muscle force needed

to process the foods. Moreover, the subject will be videotaped during the

tasting sessions in order to synchronize the measurements in time. Last,

sensory attributes will be rated by the subjects.

Study description

Background summary

Currently several fat-reduction and sugar-reduction strategies are used to decrease the energy density of foods, some are accepted by the consumer and some are not. We hypothesize that the successful strategies have specific effects on foods that are able to mimic fat- and sugar related sensations. However, no data is available on specific oral processing movements or patterns that are used to perceive taste and texture of products. Knowledge of these movements/patterns might bring the development of fat-reducing and sugar-reducing strategies to a higher level.

Study objective

The primary objective of this study is to identify specific oral processing movements and/or patterns that occur during consumption of (semi-)liquid foods, with respect to taste and texture related properties (e.g. taste intensity and viscosity), and the sensory perception thereof (e.g. rated taste intensity and thickness).

Study design

The experiment is observational. Within the sessions we make within person comparisons between products and rated attributes. Each subject will participate in three sessions spaced one week apart. The first session will include measurement of spontaneous eating behaviour. The second session is set up to evoke a broad range of oral movements. The third session is specifically focussed on fat perception and involves measurements while subjects are rating fat specific attributes. The last session is preceded by a short training in which subjects are trained to recognize and rate fat-related attributes.

Study burden and risks

The study is non-therapeutic to the participant. The risk associated with participation is low.The invasiveness can be considered as low. All three measurement sessions will last about 2-2.5 hours. In total the study will take about 10 hours within 4 weeks.

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

- Adults: 18-50 years
- Normal weight: BMI 18.5 - 25.0 kg/m2
- Apparently healthy (self-reported by the participant)
- Successful screening session including the EMA measurement (see section 6.3.1 of the protocol)

Exclusion criteria

- Regular smoker > 1 cigarette per day)
- Aversion or dislike for the foods under study (score<3 on a 5-point scale)
- Current participation in other experiments
- Having followed an energy-restricted diet during the last 2 months
- Hypersensitivity (allergy and/or intolerance) for food products under study
- Use of anticoagulants
- Hypersensitivity for latex
- Experienced discomfort or difficulties with swallowing or chewing
- Wearing a pace maker
- Wearing braces, that limit oral movements
- Mouth/tongue piercings

Study design

Design

Study type: Observational invasive

Masking:	Open (masking not used)
Control:	Uncontrolled

Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	06-02-2012
Enrollment:	30
Type:	Actual

Ethics review

Approved WMO

Date:	20-12-2011
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

ID: 25079
Source: Nationaal Trial Register
Title:

In other registers

Register	ID
CCMO	NL38196.081.11
OMON	NL-OMON25079