

Texture and oral exposure in learned satiation.

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON27476

Source

Nationaal Trial Register

Brief title

FRESH-study

Health condition

Eating behaviour, regulation of energy intake, learned satiation.
Eetgedrag, regulatie van energie-inname.

Sponsors and support

Primary sponsor: TI Food & Nutrition

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Source(s) of monetary or material Support: TI Food & Nutrition

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Intervention

Outcome measures

Primary outcome

Ad libitum yogurt intake.

Secondary outcome

Consumption time.

Study description

Background summary

Rationale:

Recently, we observed that semi-solid foods are more satiating than liquid foods due to differences in sensory exposure. People learn to adjust their intake of novel foods after repeated exposure by linking the sensory cues to the metabolic consequences of these foods. A longer orosensory stimulation, generated by changes in oral processing time and texture, may facilitate the learned association. It is hypothesised that a high orosensory exposure to a food enhances this learning process.

Objective:

To assess whether oral sensory exposure has a modifying role in the learning process of anticipated satiation and whether this learning will result in compensatory behaviour (i.e. adjusted ad libitum intake of food).

Study population:

The study population consist of 120 apparently healthy, normal weight, unrestrained, young adults (18-30 years).

Study design:

A parallel intervention study with three groups. In the conditioning period (five days a week for 4 weeks), subjects will be offered 10 times in random order a low energy and a high energy variant of (1) a liquid yogurt, consumed with a straw; (2) a liquid yogurt, consumed with a spoon; or (3) a solid yogurt, consumed with a spoon. In each group different energy-flavour combinations of the yogurt will be offered; either low energy with flavour A and high energy yogurt with flavour B, or high energy with flavour A and low energy yogurt with flavour B. Additionally, oral processing time will be assessed before and after the conditioning period, as well as the effect of orosensory exposure to the products on satiety.

Test foods:

The liquid yogurts will have a viscosity comparable to milk; the solid products will have a viscosity comparable to commercially available 'greek yogurt'. Of both viscosities a low and a high energy variant will be produced; the low energy density yogurt will contain about 50 kcal/100g; the high energy density yogurt will contain 150 kcal/100g. The acceptance of the novel flavours and oral processing time will be tested in a pilot study. All test foods are food grade and microbiological safe and will be produced by Royal Friesland Foods.

Study outcomes:

The primary outcome is anticipated satiation, measured by the ad libitum intake of the test products during the conditioning period. Change in oral processing time after repeated exposure to a product is the secondary outcome. The tertiary outcome is satiety, measured by the energy intake of a test meal after a fixed pre-load of the test food.

We keep the participants naïve to the primary outcome to avoid cognitive factors coming into play since ad libitum intake of the product is easily influenced by the participant. After the end of the study subjects will be debriefed about the actual study objective and will fill in a debriefing questionnaire.

Nature and extent of the burden and risks associated with participation, benefit and group relatedness:

The study is non-therapeutic to the participant. The risk associated with participation is negligible. No invasive measurements are present. Compared to other studies in the field of satiation, the burden is considered as medium.

Study objective

A higher orosensory exposure will lead to earlier sensory satiety, resulting in a lower intake of the test food; and in a better learning of energy content, resulting in intake adjustments for energy.

Study design

Two preload-test meal test experiments at baseline; followed by 20 ad libitum yogurt breakfasts; and four preload test meal as end measurement. All breakfasts take place on weekdays.

Intervention

Yogurt breakfast, alternately low- and high-energy-dense yogurts.

Yogurt is consumed across three groups:

1. A liquid yogurt, consumed with a straw;
2. A liquid yogurt, consumed with a spoon;

3. A solid yogurt, consumed with a spoon.

Contacts

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Eligibility criteria

Inclusion criteria

1. Young-adults: 18 "C30 years;
2. Normal weight: BMI 18.5 "C 25.0 kg/m²;
3. Healthy (judged by the participant);
4. Eats regularly breakfast (ġ5 times a week);
5. Liking for yogurt products (assessed in screening questionnaire with a 9-point hedonic scale; subjects have to like or have a neutral attitude (score ġ5) towards yogurt and ġ®kwarkġ (solid yogurt)).

Exclusion criteria

1. Restraint eating (men: score >2.25; women: score >2.79). Restraint eating may be defined

as the cognitive awareness of food intake regulation (26). As food intake in subjects with high restraint eating is less likely to be regulated by physiological processes we exclude highly restraint subjects;

2. Lack of appetite for any (unknown) reason;
3. Using an energy restricted diet during the last 2 months;
4. Weight loss or weight gain of more than 5 kg during the last 2 months;
6. Stomach or bowel diseases;
7. Diabetes, thyroid disease, or any other endocrine disorder;
8. Hypersensitivity (allergy and/or intolerance) for dairy products;
9. Working °C or performing MSc-thesis - at the division of Human Nutrition of Wageningen University;
10. Dieticians of the Hogeschool van Arnhem en Nijmegen (HAN).

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	N/A , unknown

Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	21-10-2008
Enrollment:	120
Type:	Actual

Ethics review

Positive opinion

Date: 11-06-2009

Application type: First submission

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
NTR-new	NL1743
NTR-old	NTR1853
Other	: 5921
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Study results

Summary results

N/A