Influences of macronutrient-related ambient odours exposure on (congruent) appetite and actual food intake

Gepubliceerd: 20-05-2019 Laatst bijgewerkt: 15-05-2024

Primary hypothesis: We hypothesize that congruent appetite and food intake will be higher after exposure of macronutrient-related odours compared to low-calorie odour. Secondary hypothesis: We hypothesize that specific macronutrient preference will...

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON22413

Bron Nationaal Trial Register

Verkorte titel STER study

Aandoening

Not applicale

Ondersteuning

Primaire sponsor: Division of Human Nutrition and Health. Wageningen University. **Overige ondersteuning:** Division of Human Nutrition and Health. Wageningen University.

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Toelichting onderzoek

Achtergrond van het onderzoek

Sensory food cues in our surroundings, such as odours, could trigger unconscious decisions that may lead to (over)eating. Therefore, it is crucial to better understand the effect of food odours on behavioural responses. It is suggested that exposure of a food odour cue could enhance appetite for food products with similar properties: sensory-specific appetite (SSA). SSA infers that we are able to detect nutritional information (macronutrients) about our food, via smell. However, there appears to be a gap between self-reported and actual behaviour. Differences in intensity, type of exposure, and awareness could impact the different results. Therefore, we aim to conduct a series of experiments to disentangle the impact of these factors in order to have a better understanding on the role of food odours on eating behaviour. This knowledge will shed new light on how food odours could steer people towards healthier food choices.

The objective of this study is to determine the influence of unaware and passively smell of macronutrient-related odours on appetite and actual food intake.

A total of 34 healthy, normal-weight (BMI: 18.5 - 25 kg/m2) and unrestrained Dutch females between 18-35 years old will take part on a counter-balanced cross-over intervention study. Subjects will take part in an information meeting and four test sessions. In each test session, they will be exposed to one of the four conditions (odours representing food high in carbohydrates, protein and fat, low in calories as a control condition) and tested for behavioural measures.

Subjects will be kept naïve to the primary goal to avoid influences of cognitive factors on the study outcomes. The cover story is to investigate the role of hunger and satiety on abilities of logic reasoning. On the last visit, they will be informed about the real objectives.

Doel van het onderzoek

Primary hypothesis: We hypothesize that congruent appetite and food intake will be higher after exposure of macronutrient-related odours compared to low-calorie odour. Secondary hypothesis: We hypothesize that specific macronutrient preference will increase after the exposure of congruent macronutrient-related odour compared to incongruent odours. Also, specific savoury taste preference will increase congruently after the exposure of protein (savoury taste) compared to the rest of the odours (neutral taste). A possible positive correlation is expected between self-reported macronutrient preference and actual macronutrient intake.

Onderzoeksopzet

5 time points: 1 information and screening session and 4 test sessions.

Onderzoeksproduct en/of interventie

Non-consciously detectable and mild ambient odour exposure. Odours will be selected to represent foods differing in macronutrient composition- high in protein, carbohydrate, and fat- and low-calorie category as control condition.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• Dutch.

- Healthy and normal body weight (BMI: 18.5 25 kg/m2).
- Females between 18 35 years old.

• Normal sense of smell, scoring \geq 12 on the Sniffin' Sticks 16 items odour identification test 34.

Normal sense of taste and colour blindness will be assessed during the screening session. However, the goal of these tasks are to distract the attention from the odour identification test. Therefore, these tasks are not considered as inclusion criteria for the real aim of the study. They are included in the participants information files (E1/E2, E3, F1-PIF) in order to be consistent with our alternative goal.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

• Restrained eaters, assess by DEBQ by restraint score > 3.4 32. We are interested in normal eating behaviour; subjects have to eat ad libitum, without self-restriction.

• Smokers. Smoking could affect olfactory function.

• Any food restriction such as vegetarian, vegan, etc. Due to the variety of odours and food products involved in this study (e.g. products high in carbohydrates: bread, corn, pasta; high in protein are mainly from animal sources; high in fat: avocado, bacon, etc.).

• Any allergy, intolerance or oversensitivity to food used in this study (food that resemble the used odours and food that will be used in the ad libitum lunch).

• Dislike of food products used in the study (Liking <40 mm VAS). Liking could affect the appetite or willingness to eat the food products.

• Use of medication other than paracetamol and hormonal contraceptives.

• Pregnant/have the intention to become pregnant during the experiment/are currently breastfeeding. Hormonal status could affect olfactory function.

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

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

• Participation in other medical studies.

• Participation in the previous part of the study (part A- STER study 1).

Onderzoeksopzet

Opzet

Туре:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	N.v.t. / onbekend
Deelname	
Nederland	Werving gestont
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(verwachte) startdatum:	02-09-2019
Aantal proefpersonen:	34
Type:	Werkelijke startdatum

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Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nog niet bepaald

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Positief advies Datum: Soort:

20-05-2019 Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 48398 Bron: ToetsingOnline Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL7742
ССМО	NL69840.081.19
OMON	NL-OMON48398

Resultaten

Samenvatting resultaten

The results of this study will be published in a high-impact international research journal with a focus on sensory science and nutrition.