Yale Study

Gepubliceerd: 10-07-2017 Laatst bijgewerkt: 13-12-2022

the correspondence between orosensation of sweetness and post-oral sensation of calories influences resting energy expenditure, cerebral blood flow and gastric emptying, and more specifically that the “not sweet enough” beverage, that contains more...

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

Samenvatting

ID

NL-OMON20726

Bron
Nationaal Trial Register

Aandoening

regular physiology

Ondersteuning

Primaire sponsor: Wageningen University
Overige ondersteuning: EU F7

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Treatment induced changes from baseline:
• Change in resting energy expenditure in kcal/day
• Change in gastric emptying rate in mm3/min
• Change in cerebral blood flow in mL/100 g·min

Toelichting onderzoek

Achtergrond van het onderzoek

The aim of this study is to test the hypothesis that orosensation influences carbohydrate metabolism (as measured by resting energy expenditure (REE)) and regional cerebral blood flow (CBF) by regulating gastric emptying (GE). Preliminary data from another laboratory show that when the sweetness of a flavored beverage is too strong or too weak for a given carbohydrate load (i.e. "mismatched"), REE and GE are decreased compared to isocaloric beverages where sweetness and calories are appropriately "matched".

The objective of the study is to test the hypothesis that the correspondence between orosensation of sweetness and postoral sensation of calories influences REE, CBF and GE.

The study design is a 2x2 factorial within participants double blind design, with the factors sweetness and calories (sweet and high caloric, low sweet and low caloric, sweet and low caloric (mismatched), and low sweet and high caloric (mismatched))

The study population consists of 15 healthy, normal weight (BMI 18.525 kg/m2), volunteers, between the age of 18 and 35y. Calories are manipulated with nonsweet polymer maltodextrin content at two levels: 75 and 150 kcal. Sweetness is

manipulated with sucralose at 2 levels: equivalent to sweetness of a 75 kcal or 150 kcal beverage sweetened with sucrose. This yields four combinations. The drinks also have a commercial flavoring.
Primary study parameters/outcome of the study:

1. Change in resting energy expenditure in kcal/day

2. Change in gastric emptying rate in mm3/min

3. Change in cerebral blood flow in mL/100 g·min

Doel van het onderzoek

the correspondence between orosensation of sweetness and post-oral sensation of calories influences resting energy expenditure, cerebral blood flow and gastric emptying, and more specifically that the “not sweet enough” beverage, that contains more calories than expected based on the sweetness, leads to a decreased REE, regional CBF in the food reward network and rate of GE compared to the isocaloric “appropriately sweet” beverage.

Onderzoeksopzet

baseline and 0 - 35 minutes of data collection

Onderzoeksproduct en/of interventie

sucralose sweetened beverages containing maltodextrin

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• Right handed

• Age 18 – 35yr

• BMI 18.5 - 25 kg/m2

• Being healthy (self-reported)

• Having given written informed consent (see E2)

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

• Drug use or medical conditions which may interfere with normal functioning of the digestive tract

• Drug use or medical conditions which may interfere with normal functioning of the circulatory system

• Drug use or medical conditions which may lead to unreliable fMRI results (including, but not limited to neurological conditions)

• Food allergy to or unwillingness to consume maltodextrin, sucralose of food flavourings

• Reported unexplained weight loss or weight gain of > 5 kg in the month prior to pre-study screening

• Personnel of Wageningen University, department of Human Nutrition

• Current participation in other research from the Division of Human Nutrition

Please see form F1 for full exclusion questionnaire

• Having a contra-indication to MRI scanning (including, but not limited to):

 Pacemakers and defibrillators

 Intraorbital or intraocular metallic fragments

 Ferromagnetic implants

 Claustrofobia

Onderzoeksopzet

Opzet

Type: Interventie onderzoek

Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	01-05-2017
Aantal proefpersonen:	15
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	10-07-2017
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL6155
NTR-old	NTR6583
Ander register	METC WUR : METC-nr 16/31

Resultaten