Protein status and food reward.

Gepubliceerd: 14-02-2012 Laatst bijgewerkt: 07-12-2022

The protein status of an individual effects food preferences and intake. If the protein status is low, products high in protein will elicit greater reward.

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

Samenvatting

ID

NL-OMON22221

Bron
NTR

Verkorte titel
ProBrain

Aandoening

Eating behaviour

Ondersteuning

Primaire sponsor: Wageningen University, Department of Human Nutrition
Overige ondersteuning: Technologiestichting STW (Stichting Technische Wetenschappen)

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The primary objective of this study is to assess the effect of a low protein status on reward response when exposed to sight and smell of food stimuli high and low in protein compared with a high protein status.

Toelichting onderzoek

Achtergrond van het onderzoek

Rationale:

Protein is an indispensable component within the human diet. It has been posed that protein intake is tightly regulated in the human body. In a previous study we showed that following a protein deficit, food intake and food preferences changed to restore adequate protein status.

Objective:

The primary objective of this study is to assess the effect of a low protein status on reward response when exposed to sight and smell of food stimuli high and low in protein compared with a high protein status.

Study design:

The study will consist of a 16-day fully controlled dietary intervention that will involve consumption of individualized, isoenergetic menus providing either 0.5 g protein/kg BW/day (low protein diet), or 2.0 g protein/kg BW/day (high protein diet), using a randomized crossover design. The diets will be followed by a 1-day ad libitum-phase, where protein (g) and energy (kJ) intake will be measured. Changes of reward responses in the brain will be measured by using functional magnetic resonance imaging (fMRI) when exposed to sight and smell of high and low protein food stimuli. Food preference will be measured by subjective ratings.

Study population:

The study population will consist of 24 apparently healthy, unrestrained female volunteers between the age of 18 and 35 with a normal weight.

Main study parameters/endpoints:

Our main outcome measurement is the change in brain reward response to sight and smell of high and low protein food stimuli after the low protein and high protein diets.

Doel van het onderzoek

The protein status of an individual effects food preferences and intake. If the protein status is low, products high in protein will elicit greater reward.

Onderzoeksopzet

Every participant will visit the laboratory every day during the intervention periods.

Onderzoeksproduct en/of interventie

Two 16-day fully controlled intervention periods differing in dietary protein intake. These interventions involve consumption of individualized, iso-energetic menus providing either 0.5 g protein/kg bodyweight/day (low protein diet) or 2.0 g protein/kg bodyweight/day (high protein diet).

Contactpersonen

Publiek

Wageningen University
Division of Human Nutrition
PO Box 8129
S. Griffioen-Roose
Agrotechnion r.4004
Bomenweg 4
Wageningen 6700 HD
The Netherlands
+31 (0)317 485897

Wetenschappelijk

Wageningen University
Division of Human Nutrition
PO Box 8129
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Agrotechnion r.4004
Bomenweg 4
Wageningen 6700 HD
The Netherlands
+31 (0)317 485897

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Age: 18-35 years;

2. BMI: 18.5 – 25.0 kg/m2;

3. Healthy (as judged by the participant).

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Restraint eating (men: score > 2.25; women: score > 2.80) (17);

2. Lack of appetite;

3. Having difficulties with swallowing/eating;

4. Usage of an energy restricted diet during the last two months;

5. Weight loss or weight gain of 5 kg or more during the last two months;

6. Stomach or bowel diseases;

7. Kidney disorders;

8. Diabetes, thyroid disease, other endocrine disorders;

9. Having a history of neurological disorders;

10. Having taste or smell disorders;

11. Usage of daily medication other than birth control pills;

12. Pregnant or lactating;

13. Smoking more than one cigarette a day;

14. Being a vegetarian;

15. Being allergic/intolerant for products under study;

16. Working at the division of human nutrition (WUR);

17. Having participated in ‘ProTime’, or current participation in other research from the division of Human Nutrition (WUR);

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

A. Claustrophobia;

B. Epilepsy or a family history of epilepsy;

C. Serious physical or mental illnesses;

D. Pacemakers and defibrillators;

E. Intraorbital or intraocular metallic fragments;

F. Ferromagnetic implants;

G. Presence of any other metal object e.g. in the mouth;

H. Being lefthanded.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	07-03-2012
Aantal proefpersonen:	24

Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	14-02-2012
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	NL3144
NTR-old	NTR3288
Ander register	MEC Wageningen / ABR : 12/02 / NL39292.081.11;
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A