Protein status and food reward.

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON22221

Source
NTR

Brief title
ProBrain

Health condition

Eating behaviour

Sponsors and support

Primary sponsor: Wageningen University, Department of Human Nutrition
Source(s) of monetary or material Support: Technologiestichting STW (Stichting Technische Wetenschappen)

Intervention

Outcome measures

Primary outcome

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.

Secondary outcome

1. To assess the effect of a low protein status on different aspects of food reward: the explicit liking, the explicit wanting, the implicit wanting and a forced food choice of high and low protein food using the computerized Leeds Food Preference Questionnaire (LFPQ) compared with a high protein status;

2. To assess the effect of a low protein status on protein and energy intake compared with a high protein status.

Study description

Background summary

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.

Study objective

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.

Study design

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

Intervention

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).

Contacts

Public
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
Scientific
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

Eligibility criteria

Inclusion criteria

1. Age: 18-35 years;

2. BMI: 18.5 – 25.0 kg/m2;

3. Healthy (as judged by the participant).

Exclusion criteria

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.

Study design

Design

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

Recruitment

NL
Recruitment status: Recruiting

Start date (anticipated):	07-03-2012
Enrollment:	24
Type:	Anticipated

Ethics review

Positive opinion

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

Study results

Summary results

N/A