The acute effects of the nutrition method "Breinspijs" (Brainfood) on cognitive functioning - a pilot intervention study

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The primary objective of this study is to investigate the acute effects of a Breinspijs meal on the cognitive domains attention, processing speed, working memory and episodic memory. Secondary objectives are the effects of a Breinspijs meal on...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON44226

Source
ToetsingOnline

Brief title
"Brainfood"

Condition

- Other condition

Synonym
cognitive functioning

Health condition

optimaal cognitief functioneren

Research involving
Human

Sponsors and support

Primary sponsor: Wageningen Universiteit
Source(s) of monetary or material Support: Afdeling Humane Voeding van Wageningen University & Research en de maaltijden door CookCook! catering

Intervention

Keyword: acute effects, cognitive functioning, meal, nutrition

Outcome measures

Primary outcome

The primary study parameter is the difference in performance on attention, processing speed, episodic memory and working memory, measured with a battery of sensitive cognitive tests.

Secondary outcome

Secondary study parameters are the difference in arousal and the difference in response of salivary cortisol levels. Additional measures include feelings of fatigue, hunger, satiety, and mood and general variables that are relevant to characterize the participants and may be affecting the outcome.

Study description

Background summary

The influence of nutrition on cognitive functioning on the short- and long-term has been acknowledged in many studies. However, little attention has been paid to the acute effects of nutrition on cognitive functioning, which may be of interest in working and learning situations. Furthermore, the majority of studies investigated the effect of single nutrients, which are not representative of everyday eating behaviour. Only a few studies looked at the effect of whole meals, which may yield larger, synergistic effects (Mahoney, Taylor, & Kanarek, 2005). However, most studies that were performed on meals and cognitive performance are conducted in elderly or children, research in adults is largely lacking (Adolphsen et al., 2016). In addition to that, the

limited amount of studies that has been performed investigated the effects of breakfast or lunch. Only one study investigated the effect of an evening meal, but this was compared to consumption of no evening meal (Smith, Maben, & Brockman, 1994). We hypothesize that young adult participants will have a better cognitive functioning on selected cognitive domains after consumption of an evening meal targeted to optimize cognitive functioning as compared to a control meal. We will include the additional parameters arousal and salivary cortisol levels, which may play a role in this relation.

Study objective

The primary objective of this study is to investigate the acute effects of a Breinspijs meal on the cognitive domains attention, processing speed, working memory and episodic memory. Secondary objectives are the effects of a Breinspijs meal on arousal and salivary cortisol levels and to relate these to the effects on the four cognitive domains.

Study design

Counterbalanced, randomized, cross-over design with two conditions.

Intervention

Breinspijs meal and a control meal.

Study burden and risks

Each participant will attend two test sessions that each last 2 hours. A test session comprises consumption of a Breinspijs meal or a control meal, collection of two salivary samples, filling out several short questionnaires and performing cognitive tests. The meals consist of regular meal ingredients and have a regular portion size. The risks and burden involved in participating in this study are minimal.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- Male
- Aged 18-40 years
- Dutch nationality

Exclusion criteria

- Regular smoker: someone who currently smokes one or more manufactured or hand rolled tobacco cigarettes, cigars or tobacco-pipes per day.
- Diagnosis of adrenal gland disorder: Addison Disease, Cushing's Syndrome, congenital adrenal hyperplasia, primary hyperaldosteronism, pheochromocytoma, adrenal gland carcinoma.
- Diagnosis of a sleep disorder: insomnia, parasomnia, hypersomnia, sleep-related breathing disorder, circadian rhythm sleep disorder, sleep-related movement disorders (Hirotsu, Tufik, & Andersen, 2015).
- Diagnosis of a psychiatric disorder.
- Oral health problems: diseases, inflammation, lesions.
- Allergic, intolerant or hypersensitive to lactose, egg, nuts, wheat, fish, and/or gluten.
- Unwilling to consume meat, fish, dairy products and/or any of the other ingredients in the BreinspijsTM or control meal.
- Reported slimming in the last 2 months.
- Use of drugs in the week before participation and during the study.
- Extensive small or big appetite.
- Employees at the Division of Human Nutrition of Wageningen University & Research.

- Performing a thesis or internship at the Division of Human Nutrition of Wageningen University & Research.
- Current participation in other scientific research with the exception of EetMeetWeet!.

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	03-10-2017
Enrollment:	25
Type:	Actual

Ethics review

Approved WMO

Date:	03-10-2017
Application type:	First submission
Review commission:	METC Wageningen Universiteit (Wageningen)

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
CCMO	NL62653.081.17