The short-term effect of glucose and sacharose ingestion on cognitive performance and mood in elderly subjects

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The main objective of the current study is to determine the short-term effects of a glucose drink and a sacharose drink on memory, attention and mood in elderly men women.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Disturbances in thinking and perception
Study type	Interventional

Summary

ID

NL-OMON36126

Source
ToetsingOnline

Brief title
Sweet Thoughts

Condition

- Disturbances in thinking and perception

Synonym
cognitive performance, mental health

Research involving
Human

Sponsors and support

Primary sponsor: De Suikerstichting Nederland
Source(s) of monetary or material Support: De Suikerstichting Nederland

Intervention

Keyword: Cognitive Performance, Glucose, Mood, Sacharose

Outcome measures

Primary outcome

The primary outcome will be the difference in memory after the glucose drink and the sacharose drink versus the placebo drink. Different sensitive memory tests will be used.

Secondary outcome

Next to the effect of glucose and sacharose on memory, the effect on attention will be measured by performing a high-demanding attention task. Furthermore, mood will be assessed by the POMS-questionnaire. Blood glucose response will be determined, even as blood levels of insulin.

Study description

Background summary

Glucose is the main metabolic fuel for the brain and as such plays a role in the modulation of cognitive processes. Several studies already showed an enhancing effect of glucose drinks on memory, however not all results are consistent. Research towards the effect of sacharose, the daily intake of glucose, on memory is scarce. Furthermore, the effect of both glucose and sacharose on attention is not clear up till now. Also mood seems to be influenced by the intake of glucose drinks. By investigating the effect of glucose and sacharose on memory, attention and mood we will contribute to a better understaning of cognitive functioning.

Study objective

The main objective of the current study is to determine the short-term effects of a glucose drink and a sacharose drink on memory, attention and mood in elderly men women.

Study design

A counterbalanced, repeated-measures study design will be used, in which subjects will be exposed to three different test conditions in a counterbalanced order. Test sessions will have at least one week in between to minimize learning effects. Before consuming the test drink, participants will fill in a questionnaire about mood. Furthermore, a venapunction will be carried out on the first test day. Blood glucose levels will be measured at five time points (t=0, 15, 30, 45, 90). Fifteen minutes after consuming the test drink a cognitive test battery will be performed.

Intervention

Three different test drinks will be consumed at three different time moments; a glucose drink (50 g), a sacharose drink (100 g) and a saccharine drink (23,7 mg) serving as the placebo. All drinks contain 240 ml of water and will have the same taste and appearence by adding 10 ml of lemon juice.

Study burden and risks

Participants will visit the university three times for approximately 2.5 hours after an overnight fast. During the first visit, blood samples will be collected by a venapunction, which may cause a small hematoma. Furthermore, blood glucose levels will be measured on five timepoints by using a finger prick. Participants will conduct several cognitive performance tests, which may be experienced as difficult.

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

Elderly women and men >= 70 years
Memory complaints
Able to understand and perform study procedure

Exclusion criteria

• Type I or type II diabetes (fasted blood glucose level >= 7,0 mmol)
• Parkinson disease
• MMSE < 25 (to exclude cognitively impaired subjects)
• CES-D score > 16 (to exclude depressive subjects)
• Pharmacological antidepressiva or medication for dementia
• Liver disease

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Placebo

Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	01-09-2011
Enrollment:	42
Type:	Actual

Ethics review

Approved WMO

Date:	16-08-2011
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	NL36813.081.11