The effect of L-arabinose on glycaemic and insulinemic response in a liquid and a solid product.

No registrations found.

Ethical review	Positive opinion
Status	Recruitment stopped
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON25121

Source
NTR

Brief title
Ara2-study

Health condition

eating behaviour, overweight, obesity, nutritional disorders en metabolic diseases (incl. diabetes)

Sponsors and support

Primary sponsor: Wageningen University (WUR)
Source(s) of monetary or material Support: EU

Intervention

Outcome measures

Primary outcome

blood glucose and insulin levels

Secondary outcome

appetite feelings, GLP-1 levels, ad libitum food intake, acceptability of the products, L-arabinose levels, excretion of L-arabinose

Study description

Background summary

L-arabinose is a pentose which is naturally present in plants. L-arabinose can act as a sugar substitute in many foods, among which drinks and cereal clusters.

The main objective is to determine and compare the effect of partly substituting sucrose by L-arabinose in a sucrose solution and in a cereal cluster on glycaemic responses and insulinemic responses in healthy humans. Secondary objectives are: To determine and compare the effect of partly substituting sucrose by L-arabinose in a sucrose solution and in a cereal cluster on: 1) the absorption and excretion of L-arabinose. 2) plasma GLP-1 concentration. 3) subsequent ad libitum energy intake. 4) appetite feelings. 5) the acceptability of the treatments as measured by gastro-intestinal comfort.

The study is a randomized within blocks, cross-over study. The liquids treatment is open labelled, for the cereal clusters the study is double-blind. All subjects will receive six interventions in an order randomized within solutions and cereal clusters. The food products will be consumed in fasting state as a breakfast. All control products contain 50g available carbohydrates. In the drinks, one treatment 30% (i.e. 15g) of the sucrose will be replaced by L-arabinose, the other treatment 15g L-arabinose without sucrose will be added to water; in the cereal clusters 10% and 15% sucrose will be replaced by L-arabinose.

Eighteen healthy adults between 18-35y old will be included.
The food products will be consumed in fasting state as a breakfast. All control products contain 50g available carbohydrates.

Study objective

Consumption of foods containing L-arabinose will improve glycaemic and insulinemic response.

Study design

Every subject will visit the research site 8 times:

1: For an information meeting;

2: For a screening meeting;

3: 6 test sessions

A. Blood collection and appetite feelings by VAS questionnaire: baseline, 15, 30, 45, 60, 90, 120, 180 minutes after start of the treatment;

B. Ad libitum test meal at 190 minutes after start of the treatment;

C. Gastro-intestinal comfort at baseline, 3, 6 and 9 hours after start of the treatment.

Intervention

1) Sugar drink; 2) L-arabinose and Sugar drink; 3) L-arabinose drink; 4) Sugar clusters; 5) L-arabinose clusters low dose; 6) L-arabinose clusters high dose

Contacts

Public
Wageningen UR, Afdeling Humane Voeding, Bode 62

Korrie Pol
Postbus 8129

Wageningen 6700 EV
The Netherlands
Scientific
Wageningen UR, Afdeling Humane Voeding, Bode 62

Korrie Pol
Postbus 8129

Wageningen 6700 EV
The Netherlands

Eligibility criteria

Inclusion criteria

• 18-35 Years old while signing the informed consent

• Good Dutch speaking, writing, understanding

• Healthy: as judged by the subject

• Stable body weight, i.e. no reported weight loss or weight gain of > 5 kg in the two months prior to the screening session

• Normal fasting glucose concentration <6.1 mmol/L, measured by finger prick

• Normal hemoglobine (Hb) concentration >8.5 mmol/L for men and >7.5 mmol/L for females, measured by finger prick

Exclusion criteria

• Women being pregnant or lactating

• Allergy, intolerance or oversensitivity for food products

• Having reported gastro-intestinal problems

• Having a history of medical or surgical events that may affect the study outcome

• Medical drug use (except for contraceptives) that may affect the study outcome

• Current antibiotics usage or in the two months prior to the screening session

• Not willing to eat or drink the test products

• Use of dietary supplements that may affect the study outcome

• Currently using a slimming or medically prescribed diet or having used one in the two months prior to the screening session

• Excessive alcohol consumption (>21 glasses/week on average)

• Planning to change physical activity pattern during the study period

• Having blood vessels that are too difficult for inserting a cannula, as judged by the study nurse

• Recent blood donation (<1 month prior to Day 1 of the study)

• Planning to donate blood as a blood donor during the study

• Not having a general practitioner

• Being an employee or student doing a thesis or internship of Wageningen University, department of Human Nutrition

• Current participation in other research

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)
Control:	Placebo

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	24-05-2016
Enrollment:	18
Type:	Actual

Ethics review

Positive opinion

Date:	17-06-2016
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	NL5775
NTR-old	NTR5929
Other	METC-WU 15/33 : ABR: NL55974.081.15

Study results