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

Gepubliceerd: 17-06-2016 Laatst bijgewerkt: 18-08-2022

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

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

Samenvatting

ID

NL-OMON25121

Bron
NTR

Verkorte titel
Ara2-study

Aandoening

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

Ondersteuning

Primaire sponsor: Wageningen University (WUR)
Overige ondersteuning: EU

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

blood glucose and insulin levels

Toelichting onderzoek

Achtergrond van het onderzoek

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.

Doel van het onderzoek

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

Onderzoeksopzet

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.

Onderzoeksproduct en/of interventie

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

Contactpersonen

Publiek

Wageningen UR, Afdeling Humane Voeding, Bode 62

Korrie Pol
Postbus 8129

Wageningen 6700 EV
The Netherlands

Wetenschappelijk

Wageningen UR, Afdeling Humane Voeding, Bode 62

Korrie Pol
Postbus 8129

Wageningen 6700 EV
The Netherlands

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• 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

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

• 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

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	Gerandomiseerd
Blindering:	Enkelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	24-05-2016
Aantal proefpersonen:	18
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	17-06-2016
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	NL5775
NTR-old	NTR5929
Ander register	METC-WU 15/33 : ABR: NL55974.081.15

Resultaten