The effect of 'Nutrition' and 'Exercise and Sport' on AGEs in the skin of the forearm of Dutch primary school children aged 9-12 years as compared to standard education

Gepubliceerd: 09-03-2017 Laatst bijgewerkt: 18-08-2022

Ethische beoordeling	Niet van toepassing
Status	Anders
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON26688

Bron
NTR

Aandoening

Advanced Glycation Endproducts (AGE) value

Ondersteuning

Primaire sponsor: FrieslandCampina
Overige ondersteuning: FrieslandCampina

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

AGE-value related to physical activity and carbohydrate consumption

Toelichting onderzoek

Achtergrond van het onderzoek

This study proposal aims to observe the effect of the theme certificates ‘Nutrition’ and ‘Exercise and Sport’ on the level of Advanced Glycation Endproducts (AGEs) in the skin of children aged 9 – 12 years when compared to regular education(no certificate). AGEs can be formed inside the body, when a sugar links to an amino group. AGEs also enter the body with food products. When someone consumes food products with a lot of added sugar, that person will have an increased production and accumulation of AGEs in the body. The amount of AGEs in a food product mainly depends on the preparation of the food product. When a food product is baked, fried or grilled, it contains more AGEs compared to the boiled, steamed or cooked version of the same food product. AGEs activate Receptors for AGEs (RAGE), which results in signaling mechanisms that cause cell stress, and contribute to cellular dysfunction, which leads to damaged target organs and complications. Exercise has been shown to diminish concentrations of circulating AGEs. AGEs are slowly transformed and broken down and changes in AGEs most probably will not be seen within a three month lifestyle change. It has been demonstrated that aerobic exercise improves insulin resistance in children, adolescents and adults, which may explain reduced levels of AGEs. The amount of AGEs can be measured by use of spectrophotometry. A recent portable advanced spectrophotometer called the AGE Reader has been developed that measures AGEs accumulated in the skin. In this study, the AGEs in the skin of the forearm will be measured. Besides, a questionnaire will be used to collect information about diet and exercise habits, anthropometric measurements will be done, and a cognitive test will be administered. Three primary schools are needed: one with the theme certificate ‘Nutrition’, one with the theme certificate ‘Exercise and Sport’ and one school without a theme certificate and serves as a control group. Each school has to supply 21 children for a reliable result according to the power analysis. The expectation is that the children who attend a primary school with one of the theme certificates, have a lower score on the AGE Reader when compared to the control school. The children of the primary school with the theme certificate ‘Exercise and Sport’ will probably score even better than the children from the school with the theme certificate ‘Nutrition’.

Onderzoeksopzet

3 measurements on 3 different schools

Onderzoeksproduct en/of interventie

The AGE-value of children on a school with a lot of physical activity lessons will be compared with the AGE-value of children on a school with normal physical activity.

Contactpersonen

Publiek

Anne Schaafsma
[default]
The Netherlands

Wetenschappelijk

Anne Schaafsma
[default]
The Netherlands

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Dutch primary school children [9-12y] from 3 different primary schools: one primary school with the theme certificate 'Nutrition', one primary school with theme certificate 'Exercise and Sport' and one primary school without a certificate

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

The AGE-Reader is not able to measure dark skin, only caucasian and asiatic skin types. Children with a dark skin, will be measured, but the results wil not be processed in this study.

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm

Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Anders
(Verwachte) startdatum:	17-03-2017
Aantal proefpersonen:	21
Type:	Onbekend

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

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	NL5971
NTR-old	NTR6345
CCMO	NL60622.099.17

Resultaten