

The effect of fruit and fruit juice on plasma total antioxidant capacity

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The aim of the present study is to compare the effect of consumption of a fruit beverage on plasma antioxidant capacity with that of the consumption of fruit.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Coronary artery disorders
Study type	Interventional

Summary

ID

NL-OMON31287

Source

ToetsingOnline

Brief title

Effect of fruit and fruit juice on total antioxidant capacity

Condition

- Coronary artery disorders
- Vitamin related disorders

Synonym

not applicable

Research involving

Human

Sponsors and support

Primary sponsor: Universiteit Maastricht

Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: antioxidant, fruit, fruit juice

Outcome measures

Primary outcome

Total antioxidant capacity (TEAC) and oxygen radical absorbance capacity (ORAC) of plasma.

Secondary outcome

niet van toepassing

Study description

Background summary

The positive health effect of fruit and vegetables has been attributed to its antioxidant content. Several intervention studies have shown that the consumption of fruit and vegetables is able to increase the total antioxidant capacity of plasma. The chronic intake of dietary antioxidants from fruit and vegetables decreases oxidative damage to key structures in the body, including lipids, proteins, and DNA.

Public campaigns have been launched to increase the consumption of fruits and vegetables. In the Netherlands, the aim of the public campaign is to increase the consumption to 2 pieces of fruit (* 200 gram) and 200 gram vegetables per day in adults. Unfortunately, the average consumption of fruits and vegetables is much lower. Beverages containing fruit and vegetables have been developed to increase this intake. It is not yet clear if the consumption of these beverages have comparable beneficial health effects as the consumption of fruit and vegetables.

Study objective

The aim of the present study is to compare the effect of consumption of a fruit beverage on plasma antioxidant capacity with that of the consumption of fruit.

Study design

Cross-over, randomised design. Wash-out period of one week.

Intervention

Consumption of fruit juice, apples and a salad of mixed fruit.

Study burden and risks

Each volunteer will participate in the study on three separate occasions (each test will take approximately 6 and a half hour). Blood will be drawn at different time points via a catheter (in total 75 ml per testday). Participants are asked to consume a standardised meal the evening before each of the three testdays. Volunteers are instructed not to consume any antioxidant supplements or beverages containing high amounts of antioxidants or antioxidant rich food for 3 days before each of the three trials. Subjects are asked to record their food intake for 3 days before each of the three trials.

There are no risks involved in the participation of the study apart from the limited risk associated with blood sampling. The fruit beverage is commercially available and is consumed in an amount that is considered to be safe. The consumption of apples and the salad of mixed fruit is safe. The fruit beverage and the fruits are consumed once at the beginning of the testday.

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

age between 18 and 65

body mass index between 20 and 25

healthy males

Exclusion criteria

Use of any medication

Smoking

Consumption of 3 or more glasses of alcohol per day

Donation of more than 500 ml blood (<6 months prior to the start of the study)

vegetarian lifestyle

men involved in top sport

Women are not included because of the possible influence of the menstrual cycle on antioxidant parameters

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status: Recruitment stopped

Start date (anticipated):	09-01-2008
Enrollment:	24
Type:	Actual

Ethics review

Approved WMO	
Date:	10-09-2007
Application type:	First submission
Review commission:	METC academisch ziekenhuis Maastricht/Universiteit Maastricht, METC azM/UM (Maastricht)

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	NL17722.068.07