The Chewing study: The effects of chewing duration on blood glucose levels

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The goal of this study is to gain insight into the mechanisms underlying the relation between consumption speed and satiation. This study related chewing duration (short/long) for standard lunches to blood glucose levels in 3 post-lunch hours. Also...

Ethical review	Approved WMO
Status	Pending
Health condition type	Other condition
Study type	Interventional

Summary

ID

NL-OMON50095

Source
ToetsingOnline

Brief title
The Chewing study

Condition

- Other condition

Synonym
healthy food choice

Health condition

gezonde voedselkeuze

Research involving
Human

Sponsors and support

Primary sponsor: Wageningen UR; Stichting DLO
Source(s) of monetary or material Support: Kennisbasis gelden;ministerie van LNV

Intervention

Keyword: blood glucose, chewing, fiber, food

Outcome measures

Primary outcome

Primaire study parameter is bloodglucose levels during the 3-hours following a

test lunch consumed following a long/short chewing protocol. Blood glucose

parameters are: time-to-peak, maximum value and area under the curve.

Secondary outcome

Secondary study parameters are salivary amylase and particle sizes of the food

boli at the moment of swallowing.

Study description

Background summary

Previous studies demonstrated that food consumed at a slower pace was more satiating that the same food consumed at a faster pace. Whereas these results are robust, there is relatively little insight into the underlying mechanisms of this finding. As a result, this finding has so far not been used for the development of more satiating and healthier foods.

Study objective

The goal of this study is to gain insight into the mechanisms underlying the relation between consumption speed and satiation. This study related chewing duration (short/long) for standard lunches to blood glucose levels in 3 post-lunch hours. Also, the possible mediating roles of particle size in the food boli at the moment of swallowing, and salivary amylase will be investigated.

Study design

The study consists of an 8-day trail in which subjects consume two test lunches following a fast- or short chewing protocol. The testlunches consists of starch-based foods with varying fiber contents. The order of chewing conditions is randomized. Before each lunch, two samples of food boli will be collected for analysis of salivary amylase and particle size.

Intervention

Test subjects will consume two testlunches (rice and chickenpeas) in duplicate following a short and long chewing protocol.

Study burden and risks

The study is non-therapeutic to the participants. The risk associated with participation is negligible and compared to other studies the burden can be considered low.

Contacts

Public
Wageningen UR; Stichting DLO

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Scientific
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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

* Apparently healthy men and women (based on questionnaire, self-reported)
* Aged between 18 * 55 yrs
* BMI between 18.5 and 30

Exclusion criteria

Participants will be excluded if:
* Employed by the FHCR group of Wageningen Food & Biobased Research.
* BMI > 30.0 en < 18.5
* Diagnosed with Diabetes mellitus type 1 or 2
* Under treatment for neurological or psychiatric complaints, including eating disorders
* History of gastro-intestinal surgery or having (serious) gastro-intestinal complaints
* Use of medication/supplements that may influence the study results, such as medicines known to interfere with glucose homeostasis. This will be judged by our medical doctor
* Following a diet or gained/lost >=5kg weight in the previous month.
* Coeliac disease or gluten intolerance
* Skin allergy, eczema or known sensitivity for plasters
* use of drugs
* Current smokers
* Using > 14 glasses of alcohol/week
* Having food allergies
* Participation in another clinical trial at the same time
* Gastric emptying disorder.
* Problems with chewing and/or swallowing

Study design

Design

Study type:	Interventional
Intervention model:	Crossover
Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Basic science

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-10-2020
Enrollment:	26
Type:	Anticipated

Ethics review

Approved WMO

Date:	01-10-2020
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	NL74340.081.20