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# Nudging customers towards healthier food and beverage purchases in an online supermarket

**Submission date**
21/05/2021

**Recruitment status**
No longer recruiting

**Registration date**
26/05/2021

**Overall study status**
Completed

**Last Edited**
24/01/2022

**Condition category**
Nutritional, Metabolic, Endocrine

[_] Prospectively registered
[_] Protocol
[X] Statistical analysis plan
[X] Results
[_] Individual participant data

## Plain English summary of protocol

Background and study aims
Unhealthy dietary patterns contribute to the development of obesity and cardiometabolic diseases such as heart disease and diabetes. Dietary patterns are, in turn, driven by several factors that range beyond individual choices. One of these factors concerns the food environment, in which supermarkets serve as key providers of foods and beverages. They therefore provide the opportunity to promote healthy dietary patterns among the population, not only through what is on offer but also how these products are presented and advertised. Health-promoting supermarket environments could be created using healthy food nudging. Healthy food nudges actively promote healthy product choices among customers without removing the unhealthy options. The aim of this study is to evaluate the effectiveness of single and combined nudging strategies in an online supermarket on the total percentage of healthy purchases, and whether the nudging strategies had different effects across food groups, and if there were differences in revenue following the nudging strategies.

Who can participate?
All customers of the participating online supermarket chain.

What does the study involve?
Customers visiting the online supermarket are randomly allocated to:
1. No intervention (regular online supermarket)
2. Addition of information nudges (symbols on healthy products)
3. Addition of availability nudges (unhealthy-to-healthy product swaps and healthy check-out suggestions)
4. Addition of information and availability nudges combined
For the 5-week study period sales data are collected from all customers placing a delivery order in the online supermarket.

What are the possible benefits and risks of participating?
The study does not involve direct benefits or risks for the participants.

Where is the study run from?
Amsterdam UMC, VU University (Netherlands)

When is the study starting and how long is it expected to run for?
June 2020 to October 2020

Who is funding the study?
1. Dutch Heart Foundation (Netherlands)
2. Netherlands Organization for Health Research and Development (Netherlands)

Who is the main contact?
Josine Stuber
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# Contact information

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Scientific

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# Additional identifiers

### Protocol serial number

2020.536

# Study information

### Scientific Title
Nudging customers towards healthier food and beverage purchases in a real-life online supermarket: a multi-arm randomized controlled trial

### Study objectives
Implementation of nudging strategies in an online supermarket result in an overall higher percentage of healthy products purchased, and online nudging strategies have differential effects across food groups. Moreover, online nudging strategies do not result in differences in total retailer revenue.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Approved 29/09/2020, the medical ethics review board of VU University Medical Center Amsterdam (Medisch Ethische Toetsingscommissie VUmc, De Boelelaan 1109, kamer 08A-08, Postbus 7057, 1081 HV Amsterdam; +31 (0)20 444 5585; metc@vumc.nl) reviewed the study protocol and deemed the Medical Research Involving Human Subjects Act (WMO) as not applicable, ref: 2020.536

### Primary study design
Interventional

### Study design
Multi-arm parallel-group individually randomized controlled trial

### Study type(s)
Prevention

### Health condition(s) or problem(s) studied
Promoting healthier food and beverage purchases among the general population

### Interventions
Randomization is concealed as supermarket employees conduct the randomization and allocation of customers to one of the trial arms in a software system name Blueconic (Blueconic. Customer data platform. Boston, USA. 2020). The system is set to randomize and allocate the customers in equal distribution percentages of 25% across all four trial arms.

Two types of online nudges on healthy products are used, consisting of information nudges and availability nudges. The information nudge highlighted specific product information of healthy products via the use of labels highlighting a product’s tastiness, convenience, or popularity. The availability nudge increases the number of placements of healthy products, via unhealthy-to-healthy product swaps and healthy check-out suggestions.

Customers visiting the online supermarket are randomly assigned to:
Arm 1: no intervention (regular online supermarket)

Arm 2: addition of information nudges (symbols on healthy products)
Arm 3: addition of availability nudges (unhealthy-to-healthy product swaps and healthy check-out suggestions)
Arm 4: addition of information and availability nudges combined

The trial was implemented in the online supermarket of a Dutch supermarket chain for five consecutive weeks between mid-August until mid-September 2020. During this period, sales data were collected from all customers placing a delivery order in the online supermarket.

### Intervention Type
Behavioural

### Primary outcome(s)
The total percentage of healthy purchases per individual shop measured using customer sales data based on the total weight of products purchased during the 5-week study period.

### Key secondary outcome(s)
Secondary outcome measure:
Total percentage of healthy purchases within 19 food groups per individual shop measured using customer sales data based on the total weight of products purchased during the 5-week study period

Tertiary outcome measure:
Total retailer revenue measured using customer sales data based on the total amount of Euros spent during the 5-week study period

### Completion date
01/10/2020

## Eligibility

### Key inclusion criteria
All customers placing a delivery order (i.e., shops) in a real-life online supermarket between mid-August until mid-September 2020

### Participant type(s)
All

### Healthy volunteers allowed
No

### Age group
Adult

### Sex
All

### Total final enrolment
15045

### Key exclusion criteria
Shops reflecting an average household grocery shopping pattern are included in the analysis. Therefore, all business-related customers, and customers who purchased >90% of products in their shop from alcohol, other foods, and snacks, are excluded from the analysis.

### Date of first enrolment
15/08/2020

### Date of final enrolment
15/09/2020

## Locations

### Countries of recruitment
Netherlands

### Study participating centre
**Amsterdam UMC, VU University**
De Boelelaan 1089a
Amsterdam
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## Sponsor information

### Organisation
VU University Medical Center

### ROR
https://ror.org/00q6h8f30

## Funder(s)

### Funder type
Charity

### Funder Name
Hartstichting (CVON2016-04)

### Alternative Name(s)
Heart Foundation

### Funding Body Type
Private sector organisation

### Funding Body Subtype
Trusts, charities, foundations (both public and private)

### Location
Netherlands

### Funder Name
ZonMw (CVON2016-04)

### Alternative Name(s)
Netherlands Organisation for Health Research and Development

### Funding Body Type
Private sector organisation

### Funding Body Subtype
Other non-profit organizations

### Location
Netherlands

## Results and Publications

### Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are not expected to be made available due to confidentiality agreements with the collaboration supermarket chain.

### IPD sharing plan summary
Not expected to be made available

### Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | | 17/01/2022 | 24/01/2022 | Yes | No |
| Statistical Analysis Plan | | | 01/06/2021 | No | No |