

Promoting vegetables consumption through Norwegian kindergartens

Submission date 03/06/2016	Recruitment status No longer recruiting	☐ Prospectively registered
		☐ Protocol
Registration date 21/06/2016	Overall study status Completed	☐ Statistical analysis plan
		☒ Results
Last Edited 10/07/2023	Condition category Nutritional, Metabolic, Endocrine	☐ Individual participant data

Plain English summary of protocol

Background and study aims

There is an increase in overweight/obesity and lifestyle diseases such as cancer, cardiovascular diseases and diabetes type 2. Increasing vegetable intake in children could help to prevent these diseases in later life. It has been found however, that neither children nor adults eat vegetables in accordance with the Norwegian dietary guidelines for the general population. Kindergartens are important health promoting arenas, especially in Norway since more than 90 % of 3-5 year-olds attend kindergarten. The aim of this study is to design, conduct and evaluate a program aiming to increase the vegetable intake of 3-5 year old through improving the availability of vegetables and practices around serving these vegetables in the kindergartens and homes.

Who can participate?

Public and private kindergartens in the counties of Vestfold and Buskerud (Norway), all children attending who were born in 2010 or 2011 and their parents.

What does the study involve?

Kindergartens are randomly allocated to one of two groups. In the first group, Kindergarten staff attend an "inspirational day", which involves practical kitchen training and how to involve children, as well as information about how to encourage children to eat and taste vegetables. At the end of the day, staff receive material to take back to the kindergarten and the parents to help them make the changes that are needed. The material consists of aprons, booklets, mixers, posters, brochures. All written material and additional information is also made available through a website, and both staff and parents could become members of a Facebook group. The main messages are that children should eat approximately 180 grams of vegetables a day and so should be offered vegetables 3-4 times per day and the vegetables offered should vary over the week/month. Those in the second group continue as normal for the duration of the study. Participants in both groups are followed up after one and two years in order to find out if the children's vegetable intake has changed.

What are the possible benefits and risks of participating?

The kindergartens and parents who takepart in the program benefit from having access to information about nutrition, as well as receiving material resources and social support to promote vegetable intake of the children. The main risk is that vegetable intake is just replacing

the fruit intake and thus there are no additional health benefits through an increased intake of vegetables. An additional risk is if the staff or parents do not acquire the skills to apply the good practices, but instead forces the children to taste/eat vegetables, which could cause distress to the children.

Where is the study run from?

The study is run from the Department of Nutrition at the University of Oslo and takes place in nursery schools in Vestfold and Buskerud (Norway)

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

December 2013 to November 2017

Who is funding the study?

1. Norwegian Research Council (Norway)
2. Throne Holst Nutrition Research Foundation (Norway)
3. Norwegian Fruit and Vegetable Information Bureau (Norway)

Who is the main contact?

Professor Nanna Lien

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Contact information

Type(s)

Scientific

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Additional identifiers

Protocol serial number

228452

Study information

Scientific Title

Promoting vegetable consumption among 3-5 year olds through an intervention targeting the kindergarten and home environments

Acronym

The BRA-study

Study objectives

An intervention targeting the availability, accessibility, role modelling and encouragement to taste/eat vegetables in kindergarten and home will lead to an increased intake (frequency, variation and amount) of vegetables among 3-5 year olds.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Norwegian Centre for Research Data, 13/11/2014, ref: 40383

Study design

Unblinded cluster randomized controlled trial

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Healthy eating

Interventions

Kindergartens are randomly allocated to one of two groups by an independent statistician using a method and software script to ensure an even distribution of public and private kindergarten as well as children in the intervention and control groups.

Control group: Kindergartens continue as usual for the duration of the study. They are offered the revised intervention material after the trial.

Intervention group: The intervention consists of an inspirational day offered to staff in the Kindergarten (Sept 2015). The day consists of a practical session in the kitchen focusing on skills and involvement of children, and a theoretical session on how to change availability, accessibility, role modelling and encouragement to taste/eat vegetables. At the end of the day, staff receive material to take back to the kindergarten and the parents to help them implement the changes needed. The material consists of aprons, booklets, mixers, posters, brochures. All written material and additional information is also made available through a website, and both staff and parents could become members of a Facebook group. Follow-up activities for both staff and parents are sent out by e-mail or post to the kindergarten in November (2015) and February (2016).

The first follow-up (one year) activities consists of a registration of 3 days of vegetables served in the kindergarten/at home, as well as ideas for taste games and information and recipes with different types of cabbage. Kindergartens/parents returning their 3 day registration take part in a drawing for gift cards. The second follow-up (two years) focuses on spring vegetables with recipes and information about how to grow them for the kindergarten staff, and activities for

parents to do with their children targeting availability, accessibility, role modelling or encouragement of vegetable intake at home.

Intervention Type

Behavioural

Primary outcome(s)

1. Frequency and variation of vegetable intake in children is measured by internet-based questionnaires completed by parents at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)
2. Amount of vegetables consumed by children is measured using an internet-based 24 hour recall where parents report the amounts of vegetables that the child ate the day before at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)
3. Vegetable intake during the day in the kindergarten in a sub-sample of children is measured through observations by trained project workers on the same day as the 24 hour recall at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)

Key secondary outcome(s)

1. Availability of vegetables in the kindergarten is measured by a questionnaire (frequency and variation) and a weighed 1-week diary at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)
2. Practices of kindergarten staff related to the offering of vegetables to the children in the kindergarten is measured using a questionnaire designed for the purpose of this study at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)
3. Practices of parents related to the offering of vegetables to the children at home is measured using an internet-based questionnaire designed for the purpose of this study at baseline (Spring 2015), year 1 (Spring 2016) and year 2 (Spring 2017)

Completion date

30/11/2017

Eligibility

Key inclusion criteria

Kindergartens:

Public or private kindergartens with at least 10 children attending who were born in 2010 or 2011

Children:

Born in 2010 or 2011

Parents:

1. Able to read and write Norwegian
2. Have internet access

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Child

Sex

All

Total final enrolment

1266

Key exclusion criteria

Kindergartens

Family based

Children:

Those older or younger than those born in 2010/2011

Parents

1. Insufficient skills in Norwegian

2. Without internet access

Date of first enrolment

01/12/2014

Date of final enrolment

01/03/2015

Locations**Countries of recruitment**

Norway

Study participating centre

Department of Nutrition, University of Oslo

P.O.Box 1046

Oslo

Norway

0316

Sponsor information**Organisation**

University of Oslo

ROR

<https://ror.org/01xtthb56>

Funder(s)

Funder type

Government

Funder Name

Research Council of Norway (Norges Forskningsråd)

Alternative Name(s)

Forskningsrådet, Norwegian Research Council, Research Council of Norway, The Research Council of Norway

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

Norway

Funder Name

Throne Holst Nutrition Research Foundation

Funder Name

The Norwegian Fruit and Vegetable Information Bureau

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	13/08/2019	15/08/2019	Yes	No
Results article	results	14/01/2020	16/01/2020	Yes	No

Results article	01/04/2020	31/03/2021	Yes	No
Other publications	31/05/2021	10/07/2023	Yes	No