

Food Stop: a population-based randomised trial assessing child and adult snack food intake in response to manipulated food quantity and snack box size

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Registration date 16/05/2017	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 29/10/2020	Condition category Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Statistical analysis plan
		<input checked="" type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Eating high-calorie snack foods can lead to obesity. The number of snack food portions and the dishware that snack foods are presented in could be changed to reduce over-consumption. This study is designed to measure the snacking behaviours of 11-12-year-old Australian children and their midlife parents. In doing so, the aim is to collect data that could be used to improve obesity interventions for the whole population. In particular, the aim is to measure how children and adults eat in response to excess snack foods and how this behaviour might be changed by different snack box sizes.

Who can participate?

Children (age range 11-12) and their midlife parents from the B-cohort of the Longitudinal Study of Australian Children (LSAC)

What does the study involve?

Each child and one parent attend an Assessment Centre moves around Australia; here they complete a circuit of 17 15-minute health assessment stations (e.g. dental, bone, heart health assessments), of which this study is one station. Upon arriving at the station, participants receive one of four pre-packaged snack boxes, randomly allocated by day of participation, so that the child and their parent receive the same type of snack box but participate separately.

1. Small number of snack food portions in a small snack box
2. Small number of snack food portions in a large snack box
3. Large number of snack food portions in a small snack box
4. Large number of snack food portions in a large snack box

Participants are told that they have a 15-minute break before their next physical health assessment. At the end of the 15-minute period, another researcher collects the participant and takes them to their next assessment. The leftover food is weighed with kitchen scales and the amount of total snack foods they have consumed is entered into a secure database.

What are the possible benefits and risks of participating?

There is no immediate benefit for participants, but the results may shape the design of future interventions to prevent childhood overeating and obesity. Participants are under no risk of mental or physical harm, and are asked to disclose any food allergies at the start of the study and those with food allergies do not participate.

Where is the study run from?

The study team is based at the Murdoch Childrens Research Institute in Melbourne, Australia. The mobile Assessment Centre moved around the following Australian cities for data collection: Melbourne, Canberra, Sydney, Brisbane, Adelaide and Perth.

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

February 2015 to January 2016

Who is funding the study?

1. Australian National Health and Medical Research Council (NHMRC) (Australia)
2. National Heart Foundation of Australia (Australia)
3. Murdoch Childrens Research Institute (Australia)

Who is this main contact?

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Contact information

Type(s)

Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

N/A

Study information

Scientific Title

Child and adult snack food intake in response to manipulated food quantity and snack box size: population-based randomised trial

Acronym

Food Stop

Study objectives

Participants will consume more snack foods when:

1. Provided with more (vs. less) snack food portions
2. The snack foods are presented in a large (vs. small) snack box

The trial will also explore:

1. Whether snack box size and number of portions interact to predict consumption
2. Whether the obtained effects are similar among 11-12-year-old children and mid-life adults (who are the child's parent)

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. The Royal Children's Hospital (RCH) Ethics Committee, 21/11/2014, ref: 33225D
2. Australian Institute of Family Studies (AIFS) Ethics Committee, 12/12/2014, ref: 14-26

Study design

Cross-sectional randomised controlled trial

Primary study design

Interventional

Secondary study design

Randomised controlled trial

Study setting(s)

Community

Study type(s)

Prevention

Participant information sheet

See additional files

Health condition(s) or problem(s) studied

Overconsumption of energy-dense snack foods

Interventions

This cross-sectional randomised controlled trial (RCT) took place within the Child Health CheckPoint (CheckPoint), nested within the established population-representative birth-cohort The Longitudinal Study of Australian Children (LSAC). CheckPoint (conducted in 2015) was a cross-sectional physical and biomarkers module that was nested between the sixth (2014) and seventh (2016) waves of LSAC for the B-cohort of children. Each child and one parent attended an Assessment Centre that moved around Australia; here they completed a circuit of 17 15-minute health assessment stations (e.g. dental, bone, heart health assessments), of which the Food Stop study was one station. Because Food Stop was only included at the larger/main centres throughout Australia, ~1300 families participated in Food Stop.

This intervention tested the effect of manipulating snack box size and number of snack box portions on the snack food intake of 11-12-year-old children and mid-life adults.

Each study child and their parent independently attended the Food Stop for a 15-minute break from the other physical health assessments that were occurring within the CheckPoint Assessment Centre.

Participants were randomly allocated to one of four experimental conditions (NB: random assignment was by day of participation, therefore the study child and their parent were assigned to the same condition, but participated separately to one another):

Condition 1 (control): Small number of snack food portions, small snack box (18.0cm x 12.0cm x 5.0cm; volume 1080cm³)

Condition 2: Small number of snack food portions, large snack box (19.5cm x 14.0cm x 56.5cm; volume 1774.5cm³)

Condition 3: Large number of snack food portions, small snack box (18.0cm x 12.0cm x 5.0cm; volume 1080cm³)

Condition 4: Large number of snack food portions, large snack box (19.5cm x 14.0cm x 56.5cm; volume 1774.5cm³)

The random assignment schedule was generated by an independent statistician by day of participation in blocks of four for each assessment centre location. Therefore, all participants who participated in Food Stop on the same day were assigned to the same condition.

Upon arriving at the Food Stop, participants were provided with one of these pre-packaged snack boxes and told that they had a 15-minute break before their next physical health assessment. At any stage, there could be a minimum of one participant and a maximum of four participants together at Food Stop. At the end of the 15-minute period, another researcher collected the participant and took them to their next assessment.

At the end of each assessment day, another researcher (not from Food Stop) collected the snack boxes and recorded whether each snack food item had been unopened, partially or fully eaten. Food scales/balance (BSK500BSS) were used to weigh leftover items and were sensitive to the nearest 1 gram. This remaining weight (grams) of partially eaten items was recorded so that we could calculate total grams and kilojoules consumed as:

Item grams consumed = unopened item grams – item gram remaining

Total grams consumed = sum of all item grams consumed

Item kilojoules consumed = (item grams consumed / unopened item grams) x item total kilojoules

Total kilojoules consumed = sum of all item kilojoules consumed

The previously calculated 'item grams' and 'total grams' were then used to calculate the nutrients per item and in total. On the back of the item packaging, each item had listed its total number of kilojoules (kj), protein (g), total fat (g), saturated fat (g), carbohydrate (g), sugar (g) and sodium (mg). These listed values were multiplied by the proportion of the item consumed by participants (e.g. item sugar = (grams of item consumed/total grams of unopened item) x total grams of sugar listed for the unopened item). Once this calculation was completed for all food items, the items were summed to generate total values (e.g. total sugar consumed).

Intervention Type

Other

Primary outcome measure

Grams and kilojoules of snack foods consumed during a standardised 15-minute period, measured by weighing leftover items using food scales/balance (BSK500BSS)

Secondary outcome measures

Total sugar (g), fat (g), saturated fat (g), protein (g), carbohydrate (g), and sodium (mg) consumed during a standardised 15-minute period, measured by weighing leftover items using food scales/balance (BSK500BSS)

Overall study start date

01/12/2014

Completion date

23/01/2016

Eligibility**Key inclusion criteria**

Food Stop was part of the Child Health CheckPoint (CheckPoint), which was nested within the Birth-cohort (B-cohort) of the Longitudinal Study of Australian Children (LSAC). LSAC is the only nationally-representative children's longitudinal study in Australia. The study involves biennial data collection waves from two cohorts (B- and K-cohorts) of population-representative children and their parents. The CheckPoint study only recruited those children (age range 11-12) and their midlife parents from LSAC's B-cohort who agreed to be contacted by the CheckPoint team (n=3513). Of the 3513 families that were invited to participate in CheckPoint, 1874 child-parent dyads took part in CheckPoint throughout Australia.

Participant type(s)

All

Age group

Mixed

Sex

Both

Target number of participants

1300

Total final enrolment

1874

Key exclusion criteria

If the participant had a food allergy they did not participate in Food Stop

Date of first enrolment

01/12/2014

Date of final enrolment

23/01/2016

Locations**Countries of recruitment**

Australia

Study participating centre

CheckPoint Melbourne Assessment Centre

Australia

3207

Study participating centre

CheckPoint Queanbeyan/Canberra Assessment Centre

Australia

2620

Study participating centre

CheckPoint Sydney Assessment Centre

Australia

2006

Study participating centre

CheckPoint Brisbane Assessment Centre

Australia

4101

Study participating centre

CheckPoint Adelaide Assessment Centre
Australia
5000

Study participating centre
CheckPoint Perth Assessment Centre
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6150

Sponsor information

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Sponsor type
Research organisation

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ROR
<https://ror.org/048fyec77>

Funder(s)

Funder type
Research council

Funder Name
National Health and Medical Research Council (1041352, 1109355)

Alternative Name(s)
NHMRC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

Australia

Funder Name

National Heart Foundation of Australia (100660)

Alternative Name(s)

Heart Foundation

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

Australia

Funder Name

Murdoch Childrens Research Institute

Results and Publications

Publication and dissemination plan

During late 2017, the trialists plan to publish two papers in high-impact peer-reviewed journals. These papers will focus on the primary results of the RCT (i.e. main and interaction effects of snack box size and number of portions on the grams and kilojoules consumed by participants) and on the concordance of child-parent snack food consumption.

Intention to publish date

31/07/2019

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be stored in a publically available repository and will be available for use from December 2017 (repository name: Longitudinal Study of Australian Children; <http://growingupinaustralia.gov.au/data/dataaccess.html>).

IPD sharing plan summary

Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet		28/04/2017	16/05/2017	No	Yes
Results article	results	01/10/2019	28/01/2020	Yes	No
Results article	results	04/07/2019	29/10/2020	Yes	No