

# Effectiveness of a skill building and price reduction intervention for promoting healthy eating

<b>Submission date</b> 04/06/2010	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 30/06/2010	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 29/08/2017	<b>Condition category</b> Nutritional, Metabolic, Endocrine	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Diet-related diseases such as obesity, heart disease and diabetes are on the rise in Australia and internationally. Many of these diseases can be prevented by health-promoting strategies such as eating a diet high in fruits and vegetables and reducing intakes of energy-dense, nutrient-poor foods and beverages. For instance, more than 80% of Australian adults do not eat enough vegetables, and more than 40% do not eat enough fruit for good health. Despite recommendations for Australians to eat healthy nutritious food, most do not follow dietary guidelines. Currently little is known about how best to promote healthier food choices in the general population. The aim of this study is to compare the effect of a set of skill-building materials developed to help women purchase and consume a healthier diet, alone and in combination with a 20% price discount on healthier items at the supermarket.

### Who can participate?

Women aged between 18 and 60 who live in the target areas, regularly shop at Coles Supermarkets, and are a member of the FlyBuys customer loyalty program

### What does the study involve?

Participants are randomly allocated to receive either: (1) newsletters, recipes, booklets and activities to help them improve their diet; (2) price discounts on fruits, vegetables and low-calorie soft drinks and water; (3) a combination of the two; or (4) to receive the skill-building materials after the study has finished. The study runs for three months. The effectiveness of these strategies is assessed through collecting and analysing survey and supermarket sales data at three time points (before, after and 6 months after the intervention).

### What are the possible benefits and risks of participating?

The risks to taking part in this study are very small. Participation is voluntary and women can withdraw from the study at any time.

### Where is the study run from?

Deakin University (Australia)

When is the study starting and how long is it expected to run for?  
August 2011 to June 2012

Who is funding the study?  
Health and Medical Research Council (Australia)

Who is the main contact?  
Prof. Kylie Ball

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Prof Kylie Ball

**Contact details**  
221 Burwood Highway  
Burwood, Victoria  
Australia  
3125

## Additional identifiers

**EudraCT/CTIS number**

**IRAS number**

**ClinicalTrials.gov number**

**Secondary identifying numbers**  
N/A

## Study information

**Scientific Title**  
Effectiveness of a skill building and price reduction intervention for promoting healthy eating: a randomised controlled trial

**Acronym**  
SHELF: Supermarket Healthy Eating for Life study

### Study objectives

**Aim:**  
This study aims to test the effectiveness and cost-effectiveness of a skill-building intervention, a price reduction intervention, and a combined skill-building & price reduction intervention,

against a control condition, in promoting purchasing of fruits and vegetables, reducing purchasing of sugar-sweetened soft drinks, and increasing purchasing of low-joule soft drinks /water amongst women.

The study also aims to test the impact of the intervention on increasing self-efficacy for, and perceived affordability of, healthy eating, and to examine the contribution of self-efficacy, perceived barriers and perceived affordability as mediators of changes in purchasing and consumption behaviours resulting from the intervention.

The study will test to see if there is a difference in:

1. measures of fruit and vegetable purchasing or consumption,
2. purchasing or consumption of sugar-sweetened high-joule soft drinks vs. low-joule soft-drinks /water, OR of
3. the proposed mediators, self-efficacy, perceived barriers and perceived affordability of healthy eating, or
4. the costs to society, between:

H1: The skill-building intervention participants and the controls

H2: The price reduction intervention participants and the controls

H3: The combined skill-building and price reduction intervention participants and controls, both immediately post-intervention and at a six-month follow-up.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Deakin University Human Research Ethics Committee - Health Medicine Nursing and Behavioural Sciences Subcommittee, 16/03/2010, ref: HEAG-H 12/10

### **Study design**

Randomised controlled trial

### **Primary study design**

Interventional

### **Secondary study design**

Randomised controlled trial

### **Study setting(s)**

Other

### **Study type(s)**

Quality of life

### **Participant information sheet**

Not available in web format, please use contact details to request a patient information sheet

### **Health condition(s) or problem(s) studied**

Supermarket-based health promotion in the area of obesity and nutrition

### **Interventions**

Current interventions as of 09/11/2011:

A randomised controlled trial conducted with women who shop at Coles supermarkets in Melbourne.

1. Control:

No treatment. Participants will complete the assessments only, until the intervention and three month follow-up are complete, at which point they will be offered the skill building intervention materials. The control group will receive small compensations (e.g. shopping bags, vouchers).

2. Intervention:

The intervention will be delivered over a 3 month period and will incorporate a range of modes of delivery and intervention strategies (both behavioural and environmental). See below for further details:

2.1. Skill-building arm: Participants in this intervention condition will be provided with materials and resources through printed newsletters. Tailored (based on whether the participants have children aged 12 years and below living at home) newsletters will be sent every week for the first month, and then once a fortnight for the rest of the three-month intervention, as well as an online forum/email support. Elements of the intervention to be provided through print and internet media will include:

2.1.1. Awareness-raising - will focus on raising awareness of the health- and weight-related benefits of consuming a healthy diet, particularly recommended intakes and suggestions for how to increase fruits and vegetables and substitute water or lower-joule soft drinks for their sugar-sweetened higher-joule counterparts. The range of food and beverage options available and their relative costs compared with other less healthful foods will be highlighted.

2.1.2. Skill-building - to foster behavioural skills in budgeting; meal planning; and meal preparation strategies including provision of shopping lists linked to simple recipes. This is aimed at increasing the theoretical mediators, self-efficacy and perceived affordability.

2.1.3. Goal-setting - this is a key behaviour change activity identified as a common element of successful previous dietary interventions. e.g. women will be encouraged to increase their and their families' vegetable consumption to meet the guidelines of five serves/day.

2.1.4. Overcoming barriers - tips will be provided on overcoming commonly-reported barriers to increased fruit and vegetable consumption and replacing sugar-sweetened soft drinks.

A key focus of the skill-building intervention will be on convenience and addressing perceived time barriers to healthy eating.

2.2 Price-reduction arm: Price discounts equivalent to 20% will be applied electronically at the supermarket checkout on all eligible healthier options (fruits and vegetables, including fresh, tinned and frozen, and diet- or low-calorie soft drinks or water) purchased by study participants. The discount of healthier options will be applied when the participants FlyBuys card is scanned at the checkout. Participants will be provided with a list of all items for which price discounts apply at the start of the intervention, and a reminder list mid-intervention.

2.3. Combined arm: Participants in this group will receive both the skill-building intervention and the price reductions. This arm will not involve interaction testing but rather is important for establishing the effectiveness of the two approaches in combination against the control group.

As of 30/06/2010:

A randomised controlled trial conducted with women who shop at Coles supermarkets in Melbourne.

## 1. Control:

No treatment. Participants will complete the assessments only, until the intervention and 6-month follow-up are complete, at which point they will be offered the skill building intervention materials. The control group will receive small compensations (eg. Shopping bags, vouchers).

## 2. Intervention:

The intervention will be delivered over a 6 month period and will incorporate a range of modes of delivery and intervention strategies (both behavioural and environmental). See below for further details:

**2.1. Skill-building arm:** Participants in this intervention condition will be provided with materials and resources through printed newsletters. Tailored (based on whether the participants have children living at home or not) newsletters will be sent every two weeks for the first two months, and then once a month for the rest of the six-month intervention, as well as an online forum/email support. Elements of the intervention to be provided through print and internet media will include:

**2.1.1. Awareness-raising** - will focus on raising awareness of the health- and weight-related benefits of consuming a healthy diet, particularly recommended intakes and suggestions for how to increase fruits and vegetables and substitute water or lower-joule soft drinks for their sugar-sweetened higher-joule counterparts. The range of food and beverage options available and their relative costs compared with other less healthful foods will be highlighted.

**2.1.2. Skill-building** - to foster behavioural skills in budgeting; meal planning; and meal preparation strategies including provision of shopping lists linked to simple recipes. This is aimed at increasing the theoretical mediators, self-efficacy and perceived affordability.

**2.1.3. Goal-setting** - this is a key behaviour change activity identified as a common element of successful previous dietary interventions. e.g. women will be encouraged to increase their and their families' vegetable consumption to meet the guidelines of five serves/day.

**2.1.4. Overcoming barriers** - tips will be provided on overcoming commonly-reported barriers to increased fruit and vegetable consumption and replacing sugar-sweetened soft drinks.

A key focus of the skill-building intervention will be on convenience and addressing perceived time barriers to healthy eating.

**2.2. Price-reduction arm:** Price discounts equivalent to 12.5% will be applied electronically at the supermarket checkout on all healthier options (fruits and vegetables, including fresh, tinned and frozen, and diet- or low-calorie soft drinks or water) purchased by study participants. Price discount of healthier options will be applied through discount cards (either flagged to FlyBuy cards, or via a discount card made specifically for the study) at checkout. Participants will be provided with a list of all items for which price reductions apply at the start of the intervention (via a wallet card and/or fridge magnet), and a reminder list mid-intervention.

**2.3. Combined arm:** Participants in this group will receive both the skill-building intervention and the price reductions. This arm will not involve interaction testing but rather is important for establishing the effectiveness of the two approaches in combination against the control group.

## Intervention Type

Behavioural

## Primary outcome measure

Current primary outcome measures as of 09/11/2011:

Data on demographic characteristics, key study outcomes and mediators will be collected pre- and immediately post-intervention, and at 6-month follow-up.

## 1. Demographics:

### 1.1. Age

### 1.2. Family structure (marital/cohabitation status, number and ages of dependent children, other household members)

### 1.3. Education level

### 1.4. Participants' own income will be assessed

2. Outcome measures: The primary outcomes of this intervention are purchasing and consumption of fruits, vegetables, and low-joule (carbonated) soft drinks/water vs. sugar-sweetened high-joule soft (carbonated) drinks. Data on purchasing of fruits, vegetables, high-joule sugar-sweetened soft drinks, low-joule soft drinks and water, and total grocery shopping expenditure, will be gathered using a combination of electronic sales data, obtained through linkage with store loyalty cards (Fly-Buys); and self-report data (to assess consumption and complement the electronic food purchasing data). Established Food Frequency and dietary recall survey measures of fruit, vegetable and low-joule vs. sugar-sweetened soft drink purchasing and consumption at the individual participants level will be used. These measures will also be used to assess purchasing and consumption of key non-core (high-energy, nutrient poor foods) and core foods at each intervention point, in order to assess potential unintended intervention consequences (such as increased purchasing of other less health-promoting foods). Measures of daily equivalent quantities (adjusted for household members/composition) and serves consumed will be calculated.

Previous primary outcome measures from update on 30/06/10:

Data on demographic characteristics, key study outcomes and mediators will be collected pre- and immediately post-intervention, and at 6-month follow-up.

## 1. Demographics:

### 1.1. Age

### 1.2. Family structure (marital/cohabitation status, number and ages of dependent children, other household members)

### 1.3. Education level

### 1.4. Own and household income will be assessed

2. Outcome measures: The primary outcomes of this intervention are purchasing and consumption of fruits, vegetables, and sugar-sweetened high-joule soft (carbonated) drinks vs. low-joule (carbonated) soft drinks/water. Data on purchasing of fruits, vegetables, high-joule sugar-sweetened soft drinks, low-joule soft drinks and water, and total grocery shopping expenditure, will be gathered using a combination of electronic sales data, obtained through store loyalty cards (Fly-Buys and/ or a study card); and self-report data (to assess consumption and complement the electronic food purchasing data). Established Food Frequency and dietary recall survey measures of fruit, vegetable and low-joule vs. sugar-sweetened soft drink purchasing and consumption at both the individual and household level will be used. These measures will also be used to assess purchasing and consumption of key non-core (high-energy, nutrient poor foods) and core foods at each intervention point, in order to assess potential unintended intervention consequences (such as increased purchasing of other less health-promoting foods). Measures of daily equivalent quantities (adjusted for household members /composition) and serves consumed will be calculated.

## **Secondary outcome measures**

As of 25/07/11:

### 1. Mediator measures:

Self-efficacy, perceived barriers and perceived affordability will be assessed via validated self-report surveys.

### 2. Process evaluation outcomes:

We will assess subjective perceptions of the intervention components that may be useful in predicting outcomes at the completion of the intervention.

3. Economic evaluation:

A cost consequences analysis will be conducted from a societal perspective comparing incremental costs and outcomes in each of the three intervention arms to the control arm at 9 months. Intervention resource use and costs will be prospectively recorded via project team records and Coles data, supported by interviews with the project team. Household cost impact will be determined through external (Coles) data on food purchasing combined with participant self-report data on non-Coles and Coles-non-FlyBuys food purchasing over the course of the intervention and follow-up period.

As of 30/06/11:

1. Mediator measures:

Self-efficacy, perceived barriers and perceived affordability will be assessed via validated self-report surveys.

2. Process evaluation outcomes:

We will assess subjective perceptions of the intervention components that may be useful in predicting outcomes at the completion of the intervention.

3. Economic evaluation:

A cost consequences analysis will be conducted from a societal perspective comparing incremental costs and outcomes in each of the three intervention arms to the control arm at 12 months. Intervention resource use and costs will be prospectively recorded via project team records and Coles data, supported by interviews with the project team and Coles representatives. Household cost impact will be determined through external (Coles) data on food purchasing combined with household self-report data on non-Coles and Coles-non-Flybuys food purchasing over the course of the intervention and follow-up period.

**Overall study start date**

16/03/2010

**Completion date**

16/03/2013

## **Eligibility**

**Key inclusion criteria**

Current inclusion criteria as of 09/11/2011:

1. Female
2. The main household shopper
3. Aged between 18 and 60 years
4. Live in one of the selected high socio-economic and low socio-economic areas and shop regularly at one of the participating Coles supermarkets
5. A FlyBuys (Coles store loyalty card) member OR willing to sign up to FlyBuys
6. Able to give written informed consent to participate in the study
7. Willing to give information about income and dietary and mediator behaviours at three time points (baseline, post-intervention and six-month follow-up)
8. Willing to have purchase data collected and analysed
9. Able to speak, read and write in English

Previous inclusion criteria from update on 25/07/2011:

4. Shop regularly at one of the participating Coles supermarkets, selected from one high socio-

economic and one low socio-economic area

10. Live, and regularly shop at Coles Supermarkets, in one of two areas that will be selected based on area level socioeconomic index data (one advantaged and one disadvantaged area)

Previous inclusion criteria from time of registration:

1. Female
2. The main household shopper
3. Aged between 18 and 45 years
4. Shop regularly at one of the participating Coles supermarkets, selected from one high socio-economic and one low socio-economic area
5. A FlyBuys (Coles store loyalty card) member OR willing to sign up to FlyBuys
6. Planning to continue to shop with Coles regularly over the next 12 months
7. Able to give written informed consent to participate in the study
8. Willing to give information about income and dietary and mediator behaviours at three time points (baseline, post-intervention and six-month follow-up)
9. Have an equivalised household income below AUS\$----- or above AUS\$----- (to be confirmed)
10. Willing to have purchase data collected and analysed
11. Able to speak, read and write in English

### **Participant type(s)**

Patient

### **Age group**

Adult

### **Lower age limit**

18 Years

### **Sex**

Female

### **Target number of participants**

670 women are expected to participate in this project across all sites. This will incorporate 160 in each of the 4 intervention/control groups and 30 in the pilot study group

### **Key exclusion criteria**

Does not meet inclusion criteria

### **Date of first enrolment**

16/03/2010

### **Date of final enrolment**

16/03/2013

## **Locations**

### **Countries of recruitment**

Australia



**Study participating centre**  
221 Burwood Highway  
Victoria  
Australia  
3125

## Sponsor information

### Organisation

National Health and Medical Research Council (NHMRC) (Australia)

### Sponsor details

GPO Box 9848  
Canberra ACT  
Australia  
2601

### Sponsor type

Research council

### ROR

<https://ror.org/011kf5r70>

## Funder(s)

### Funder type

Research council

### Funder Name

National Health and Medical Research Council

### Alternative Name(s)

NHMRC

### Funding Body Type

Government organisation

### Funding Body Subtype

National government

### Location

Australia

# Results and Publications

## Publication and dissemination plan

Not provided at time of registration

## Intention to publish date

## Individual participant data (IPD) sharing plan

## IPD sharing plan summary

Not provided at time of registration

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol article</a>	protocol	22/09/2011		Yes	No
<a href="#">Results article</a>	results	01/05/2015		Yes	No
<a href="#">Results article</a>	results	24/02/2016		Yes	No
<a href="#">Results article</a>	results	01/06/2016		Yes	No
<a href="#">Results article</a>	results	25/08/2017		Yes	No