Food Reformulation
- How to make it happen

Dr Elizabeth Dunford
ILSI “Mind the Gap”, March 2015
Health Benefits of Improving the Food Supply

- Poor diet major contributor to chronic disease worldwide

- Current food supply has excess levels of total fat, saturated fat, sugar and salt in large serves of energy-dense foods

- Driving epidemics of obesity, high blood pressure, diabetes and dyslipidaemia, leading to ↑ heart attacks, stroke and cancer

“Even small changes in key constituents of the food supply have the potential to produce enormous health gains”
How do we improve population diet?

- Get individuals to make healthier choices
- Change the environment that people live in (so they can’t help but make healthier choices)
The importance of monitoring the healthiness of “branded” products
### Typical Australian daily food intake

- By switching to different brands of processed foods, **5g of salt** can be removed from the daily diet.

<table>
<thead>
<tr>
<th></th>
<th>Amount of salt in initial choice</th>
<th>Amount using lower salt options</th>
<th>Salt saved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakfast</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kellogg's</td>
<td>0.50 g</td>
<td>Kellogg's Just Right Barley &amp; Berry</td>
<td>0.05 g</td>
</tr>
<tr>
<td>Special K Forest Berries 45g</td>
<td></td>
<td>Flavour 45g</td>
<td></td>
</tr>
<tr>
<td><strong>Total breakfast</strong></td>
<td>0.50 g</td>
<td><strong>Total breakfast</strong></td>
<td>0.05 g</td>
</tr>
<tr>
<td><strong>Snack</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arnott's Sao Biscuit 25g</td>
<td>0.50 g</td>
<td>Ryvita Multigrain Wholegrain Rye</td>
<td>0.20 g</td>
</tr>
<tr>
<td>Coles Crunchy Peanut Butter 20g</td>
<td>0.30 g</td>
<td>Crunchy Peanut Butter No Added Salt 20g</td>
<td>0.06 g</td>
</tr>
<tr>
<td><strong>Total snack</strong></td>
<td>0.80 g</td>
<td><strong>Total snack</strong></td>
<td>0.26 g</td>
</tr>
<tr>
<td><strong>Lunch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wattle Valley Soft Wholegrain Wraps 43g</td>
<td>0.90 g</td>
<td>Freedom Foods Norganic Multigrain Wraps 43g</td>
<td>0.30 g</td>
</tr>
<tr>
<td>Primo Premium Shaved Leg Ham 50g</td>
<td>1.50 g</td>
<td>Don Shaved Light Leg Ham 50g</td>
<td>0.95 g</td>
</tr>
<tr>
<td>Bega Super Cheese Slices 21g</td>
<td>0.80 g</td>
<td>Kraft Liveactive Light Cheese Slices 21 g</td>
<td>0.85 g</td>
</tr>
<tr>
<td>Spring Gully Foods Green Tomato Pickle 20g</td>
<td>0.15 g</td>
<td>Beerenberg Green Tomato Pickle 20g</td>
<td>0.05 g</td>
</tr>
<tr>
<td><strong>Total lunch</strong></td>
<td>3.35 g</td>
<td><strong>Total Lunch</strong></td>
<td>1.95 g</td>
</tr>
<tr>
<td><strong>Snack</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coles Fruit Filled Bar (Apple &amp; Cinnamon) 38g</td>
<td>0.30 g</td>
<td>Weight Watchers Raspberry Pie Bar 38g</td>
<td>0.10 g</td>
</tr>
<tr>
<td><strong>Total snack</strong></td>
<td>0.30 g</td>
<td><strong>Total snack</strong></td>
<td>0.10 g</td>
</tr>
<tr>
<td><strong>Dinner</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pastabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean Cuisine Ravioli Beef with Caramalised Onion and Red Wine in Cracked Black Pepper 350g</td>
<td>3.75 g</td>
<td><strong>Total dinner</strong></td>
<td>1.40 g</td>
</tr>
<tr>
<td><strong>Total dinner</strong></td>
<td>3.75 g</td>
<td><strong>Total dinner</strong></td>
<td>1.40 g</td>
</tr>
<tr>
<td><strong>Total salt</strong></td>
<td>8.7 g</td>
<td><strong>Total salt</strong></td>
<td>3.8 g</td>
</tr>
</tbody>
</table>
Global Food Monitoring Group

Aim
To bring together data on nutrient information (or lack thereof) for processed foods that can be used to drive national and international improvements in the food supply

Status
• 31 countries involved (2/3 are LMICs)
• >250,000 individual branded food items
Opportunity: harnessing smartphone technology for data collection

- iPhone or Android app downloaded
- App used to scan product barcode in-store
- App used to take a photo of the front of package
- App used to take a photo of the product’s nutrition info
Photos of food products uploaded and nutrition information entered into the FMG database

Photos uploaded from smartphone

Photos stored in Amazon cloud

Photos downloaded to central data entry system, data entered by team in India
The George Institute’s Food and Beverage Information Content Management System (FBI CMS)
Product data entered
## Branded food products currently in database

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>80,000+</td>
</tr>
<tr>
<td>New Zealand</td>
<td>16,429</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>5,079</td>
</tr>
<tr>
<td>Argentina</td>
<td>5,400</td>
</tr>
<tr>
<td>Canada</td>
<td>16,500+</td>
</tr>
<tr>
<td>China</td>
<td>11,157</td>
</tr>
<tr>
<td>India</td>
<td>8,700</td>
</tr>
<tr>
<td>UK</td>
<td>90,000+</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4,000</td>
</tr>
<tr>
<td>USA</td>
<td>18,000+</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>250,000+</strong></td>
</tr>
</tbody>
</table>
International collaborative project to compare and monitor the nutritional composition of processed foods

Overall goal and objectives

The overall goal of this project is to collate nutrient composition data for processed foods in different countries with the objective of improving the nutritional composition of the world’s processed food supply. Information about product composition will be collected in a standardized format in a number of countries and compared. A particular focus of the project will be supporting the participation of low- and middle-income countries. The primary outcome measures to be assessed will be energy content, saturated fat, total sugar, sodium, and serving size, in line with the World Health Organization’s global strategy on diet, physical activity, and health. There will be three main objectives:

1. compare mean levels and ranges of the primary outcome measures in each food category between countries;
2. compare mean levels and ranges of primary outcome measures for food categories between companies. Comparisons for this objective will be restricted to companies manufacturing comparable product lines;
3. track changes over time in mean levels and ranges of the primary outcome measures in food categories by country and company.
UK and Australia comparison

Global branded food database was used to compare sodium levels in UK and Australia

In India, information on food labels was used to examine the presence of labelling.

The figure shows the proportion of products from major food companies meeting local (grey) and CODEX (black) requirements for nutrition labelling.

**Publication:** Dunford EK, Guggilla RK, Ratneswaran A, Maulik PK, Webster JL, Neal BC. The adherence of packaged food products in Hyderabad, India with national and international nutritional labelling guidelines. *In press*
Changes in the sodium content of bread in Australia and New Zealand

Changes in the sodium content of bread 2007–2010

Comparison of sodium content of fast food products in 6 countries

Sodium per 100g
- 3 fold variation in fries
- 4 fold variation in chicken nuggets
- 5 fold variation in salads

Sodium per serve
- Marked variation, reflecting non-standard serving sizes between countries
- >100-fold variation in salads
- 25-fold variation in pizzas

Results by country
- Breakfast in US highest in sodium (1061mg)
- Burgers in Australia (1180mg)
- Chicken products in France (994mg)
- Sandwiches in Canada (790mg and 1292mg)

The importance of advocacy
The importance of advocacy
- Harnessing the power of the media

Research released showing that 94% of pizzas sold in Australia were dangerously overloaded with salt and just 3 slices of pizza can contain the entire daily salt intake for an adult (4g/day).

Both Domino’s pizzas and Yum! Restaurants (Pizza Hut) contacted The George Institute to discuss salt reduction strategies as a result of this release with both subsequently making public commitments to salt reduction.
The importance of advocacy - Influencing the policy agenda

Changes in the sodium content of leading Australian fast-food products between 2009 and 2012

The burden of ill health attributable to obesity, type 2 diabetes and other diet-related health risks is increasing in both developed and developing countries.\(^1\) Fast foods, which are convenient, quick and cheap, are generally nutrient-poor and eaten in large portions that can contribute significantly to energy, fat, sugar and sodium intake.\(^2\) Links between fast-food consumption and a range of chronic diseases have been made,\(^3\) with excess dietary sodium causing high blood pressure\(^4\) and a range of vascular diseases.\(^5,6\) Although there is no current definitive estimate of population dietary salt intake in Australia, it is widely accepted that average consumption is

Abstract

**Objective:** To define the changes in sodium levels of Australian fast foods between 2009 and 2012 overall, in major food subcategories and by company.

**Design:** A comparison of mean sodium content was made across 4 years using \(t\) tests and mixed models.

**Setting:** Nutrient content data for fast-food menu items collected from company websites of six large Australian fast-food chains.

**Main outcome measures:** Mean sodium values in mg/100 g and mg/serve.

**Results:** There were between 302 and 381 products identified each year. Overall, the mean sodium content of fast-food products decreased between 2009 and 2012 by 43 mg/100 g (95% CI, −66 to −20 mg/100 g), from 514 mg/100 g in 2009 to 471 mg/100 g in 2012. Mean sodium content per serving was not significantly different at 654 mg in 2009 and 605 mg in 2012 (−49 mg; 95% CI, −108 to +10 mg), reflecting wide variation in the serving sizes of items offered each year. There was a small decline in sodium content over the 4 years across most food categories and food companies.

**Conclusions:** The observed reduction in the sodium content of fast foods during the 4-year study period is encouraging. However, the reductions are small, and fast-food companies should be encouraged to make further and larger reductions since many products still contain high levels of sodium.
The importance of advocacy
- Influencing the policy agenda

- Food and Health Dialogue established
- Kilojoule labelling in NSW
- Government support for monitoring of fast food products
## Food and Health Dialogue priorities for voluntary sodium reduction

<table>
<thead>
<tr>
<th>Food category</th>
<th>Type of target</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breads</td>
<td>Max</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Breakfast cereals</td>
<td>%</td>
<td>2010-2013</td>
</tr>
<tr>
<td>Processed meats</td>
<td>Max</td>
<td>2011-2013</td>
</tr>
<tr>
<td>Simmer sauces</td>
<td>%</td>
<td>2011-2014</td>
</tr>
<tr>
<td>Soups</td>
<td>Max, Average</td>
<td>2011-2014</td>
</tr>
<tr>
<td>Savoury pies</td>
<td>%</td>
<td>2012-2014</td>
</tr>
<tr>
<td>PCES (snacks)</td>
<td>Average</td>
<td>2012-2015</td>
</tr>
<tr>
<td>Savoury crackers</td>
<td>Max, %</td>
<td>2012-2015</td>
</tr>
<tr>
<td>Cheese</td>
<td>Max, %</td>
<td>2013-2017</td>
</tr>
</tbody>
</table>
An evaluation of the effects of the first 3 Food and Health Dialogue targets
Empowering the consumer
FoodSwitch

- Poor diet major contributor to chronic disease worldwide
- Current food supply has excess levels of nutrients total fat, saturated fat, sugar and salt in large serves of energy-dense foods.
- Driving global epidemics of obesity, high blood pressure, diabetes and dyslipidaemia, leading to ↑ heart attacks, stroke and cancer
Why FoodSwitch?

• Poor diet major contributor to chronic disease worldwide
• Current food supply has excess levels of nutrients total fat, saturated fat, sugar and salt in large serves of energy-dense foods.
• Driving global epidemics of obesity, high blood pressure, diabetes and dyslipidaemia, leading to ↑ heart attacks, stroke and cancer

• 65% of Australians own a smartphone
• 76% use their phones to get recommendations for health and other lifestyle-related factors
The real power behind FoodSwitch: crowd-sourcing of data

- Originally FoodSwitch Australia was launched with ~17,000 products (SKUs)
- When products do not appear in the database, users are asked to help by taking 3 photographs – the front of the product, the nutrition information and the ingredients list – and send them to us.
- In this way the database can be constantly updated and new products entered.
- **26,000 photos** sent in by FoodSwitch users in the first 2 days, and a minimum of **200 photos** are sent in every day currently
  - Database now includes >80,000 products
Post-launch development

- **SaltSwitch**
  November 2012

- **GlutenSwitch**
  May 2013
Post-launch development

- **FatSwitch**
- **SugarSwitch**
- **EnergySwitch**
Other Countries

FoodSwitch NZ
Launched Aug 2013

FoodSwitch UK
Launched Feb 2014

- Launch plans:
  - China (2015)
  - India (2015)
  - USA (2015/16)
  - South Africa (2016)
  - Canada (2016)
  - Switzerland (2016)
  - Luxembourg (2016)
FoodSwitch recognition and outcomes

Aussie FoodSwitch app announced as top 100 global innovative solutions
13 June 2013

Australia’s most popular food-scanning app, FoodSwitch, has been recognised as one of the world’s top 100 innovative initiatives, selected from entries spanning more than 79 countries.

At the International 2013 Sustainability Awards event in London, FoodSwitch was acknowledged for its efforts to help Australians make healthier food choices and reduce their risk of heart attack and stroke.

The app, developed by Bupa and The George Institute for Global Health, uses the best available science and evidence to provide consumers with detailed information about the food they buy, including the content of a wide range of chemicals, nutrients, and allergens.

More than 500,000 downloads

Food app takes top honours at eyeforpharma Awards
By Izzy Gladstone on Mar 31, 2014

‘FoodSwitch’ mobile app from The George Institute voted the ‘Most Valuable HPC or Healthcare Initiative’

In a unanimous decision by a panel of industry experts, ‘FoodSwitch’, an innovative mobile app created by The George Institute and Senior Director, Bruce Neal, won the ‘Most Valuable HPC or Healthcare Initiative’ category at the eyeforpharma Awards on 18th March in Barcelona.

FoodSwitch allows everyday shoppers and diners look up food

More than 700,000 photos of missing items sent in by users
The HSR system was developed through a collaborative process involving public health and consumer organisations, industry and government representatives.

On June 27 2014 the government agreed that the HSR system should be implemented voluntarily over the next 5 years with a review of the progress of implementation after 2 years.
While we wait for the industry to adopt stars........
Health Star Rating mode

Healthier choices can be shown in expanded view
New FoodSwitch website

www.foodswitch.com.au
But what does this add up to?

- How do we know whether there have been actual reductions in adverse nutrient levels in foods?
- How do we know whether this has translated into healthier food purchases?
Do food labels influence food purchases?
- Food Label Trial

- Randomised trial with 2000 participants
- The aim is to find out which type of label is best at helping people make healthier food and drink choices
- Participants scan items they purchase and send in till receipts form grocery shops
- Results will evaluate whether different label formats influenced foods purchased
Participants are randomised to one of 5 trial arms
Summary

- Individual behaviour change is NOT the solution
- One single approach is NOT the solution

- Improving the food environment is crucial
- Advocacy is crucial
Thank you!

Contact details
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