Monitoring the nutritional composition of foods to improve the global food supply

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Health benefits of improving the food supply

- 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
Processed foods are major contributors to dietary salt, sugar, saturated fat and energy intakes both in developed and increasingly in developing countries.

Some multinational food companies have started to reformulate a number of products, however a monitoring system is key to targeting reformulation strategies and to monitoring progress.
The importance of branded food composition data
Example – same brand in same country

Sodium per serve: 155mg

Sodium per serve: 55mg

65% less salt!
Example – same product in different countries

**Product higher in salt**

**USA:** Sodium per 100g: 900mg

**Product lower in salt**

**Australia:** Sodium per 100g: 620mg

35% less salt!
Example – white bread – different brands, same country

Sodium per 100g: 600mg

Sodium per 100g: 400mg

35% less salt!

Brand higher in salt

Brand lower in salt
Typical Australian daily food intake

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

**Design**
- Collect nutrient information for processed food products in each country (direct from manufacturer, through analysis or from product labels)
- Enter data into a central system
- Compare information by:
  - product and/or brand
  - category
  - manufacturer
  - country
  - over time

Established in January 2010
Countries involved in the Global Food Monitoring Group

- Argentina
- Australia
- Bangladesh
- Barbados
- Brazil
- Canada
- Chile
- China
- Costa Rica
- Cuba
- Ecuador
- Fiji
- France
- Guam
- Guatemala
- India
- Malaysia
- Mexico
- Mongolia
- New Zealand
- Panama
- Peru
- Singapore
- Solomon Islands
- South Africa
- Spain
- The Netherlands
- Tonga
- UK

countries in The Americas
What has been done so far?
International collaborative project to compare and monitor the nutritional composition of processed foods

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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.¹ 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.
Protocol for collecting data on processed foods for Latin American countries

FIC-Argentina have developed a guidance document for Latin American countries in Spanish to undertake data collection in line with the global protocol

Process for data collection

- iPhone 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 iPhone
- Photos stored in Amazon cloud
- Photos downloaded to central data entry system, data entered by team in India
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>60,000+</td>
</tr>
<tr>
<td>New Zealand</td>
<td>12,829</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>5,079</td>
</tr>
<tr>
<td>Argentina</td>
<td>2,405</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>8,500 (+120,000 Brandbank)</td>
</tr>
<tr>
<td>Fiji</td>
<td>1,500</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>126,670 (+120,000 Brandbank)</strong></td>
</tr>
</tbody>
</table>
Building capacity in Latin America to collect food composition data:

Training seminar held at the Latin American Nutrition Congress
Havana, Cuba - 14 November 2012

Training items covered:
• Data collection using smartphone technology in the supermarket
• Uploading and management of photos
• Creation of food categorisation system appropriate to each country
• Data entry, checking and analysis

Attended by 33 participants from 15 Latin American countries
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.
Regional Comparisons
Example – Pacific Islands

<table>
<thead>
<tr>
<th>Category</th>
<th>Tonga</th>
<th>Australia</th>
<th>Solomon Islands</th>
<th>Fiji</th>
<th>Mongolia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy sauce</td>
<td>3054</td>
<td>6585</td>
<td>4017</td>
<td>5900</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(880-7203)</td>
<td>(5665-8420)</td>
<td>(1180-7190)</td>
<td>(5400-6800)</td>
<td>-</td>
</tr>
<tr>
<td>Tomato sauce</td>
<td>855</td>
<td>989</td>
<td>1004</td>
<td>835</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(505-1118)</td>
<td>(20-1350)</td>
<td>(890-1118)</td>
<td>(490-1200)</td>
<td>-</td>
</tr>
<tr>
<td>Instant noodles</td>
<td>365</td>
<td>399</td>
<td>-</td>
<td>342</td>
<td>1586</td>
</tr>
<tr>
<td></td>
<td>(235-900)</td>
<td>(190-1380)</td>
<td></td>
<td>(240-462)</td>
<td>(1117-2140)</td>
</tr>
<tr>
<td>Canned meat</td>
<td>795</td>
<td>621</td>
<td>595</td>
<td>615</td>
<td>937</td>
</tr>
<tr>
<td></td>
<td>(625-1070)</td>
<td>(220-1179)</td>
<td>(530-630)</td>
<td>(550-645)</td>
<td>(542-1411)</td>
</tr>
<tr>
<td>Canned tuna</td>
<td>-</td>
<td>384</td>
<td>415</td>
<td>405</td>
<td>479</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(60-1032)</td>
<td></td>
<td>(224-564)</td>
<td>(257-558)</td>
</tr>
<tr>
<td>Sanitarium</td>
<td>680</td>
<td>780</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Skippy Cornflakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanitarium</td>
<td>285</td>
<td>290</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Weet-Bix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We compared similar foods in different countries in one region.
Changes in the sodium content of bread in Australia and New Zealand

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)


Abstract:
Background: Several fast food companies have made commitments to reduce the levels of salt in the foods they serve, but technical issues are often cited as a barrier to achieving substantial reductions. Our objective was to examine the reported salt levels for products offered by leading multinational fast food chains.

Methods: Data on salt content for products served by six fast food chains operating in Australia, Canada, France, New Zealand, the United Kingdom and the United States were collected by survey in April 2010. Mean salt contents (and their ranges) were calculated and compared within and between countries and companies.

Results: We saw substantial variation in the mean salt content for different categories of products. For example, the salads we included in our survey contained 0.5 g of salt per 100g, whereas the chicken products we included contained 1.6 g. We also saw variability between countries: chicken products from the UK contained 1.1 g of salt per 100g, whereas chicken products from the US contained 1.8 g. Furthermore, the mean salt content of food categories varied between companies and between the same products in different countries (e.g., McDonald’s Chicken McNuggets contain 0.6 g of salt per 100g in the UK, but 1.6 g of salt per 100g in the US).

Conclusion: The salt content of fast foods varies substantially, not only by type of food, but by company and country in which the food is produced. Although the reasons for this variation are not clear, the marked differences in salt content of very similar products suggest that technical reasons are not a primary explanation. In the right regulatory environment, it is likely that fast food companies could substantially reduce the salt in their products, translating to large gains for population health.
FoodSwitch

- The FoodSwitch app means that for the first time shoppers can:
  - Scan the barcode of a product to know how healthy it is
  - Switch for healthier food choices
  - Share information about healthier food choices with friends
Harnessing the power of crowd-sourcing to collect data

- Originally FoodSwitch Australia was launched with 17,000 products
- When products do not appear in the database, users are asked to help by taking three photographs – one of the front of the product, one of the nutrition information and one of 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 >50,000 products
FoodSwitch – new filters added

- SaltSwitch
  November 2012

- GlutenSwitch
  May 2013

FoodSwitch
Making healthier choices for you and your family

SaltSwitch
Preferred for people with, or being treated for, high blood pressure

GlutenSwitch
Helps identify gluten free products, however not an alternate to careful review of product label
Countries developing FoodSwitch

New Zealand
- Data for 8,000 products collected, entered and categorised
- Application launched for iPhone and Android in August 2013
- An additional 5,000 products sent in by users in first 2 weeks

UK
- Data entry for 8,000 products complete
- UK-specific food categorisation system developed
- Brandbank data for 200,000+ foods obtained
- Launch date January 2014

China
- Data collection underway
- Launch date June 2014

India
- Data for 8,000 foods complete
- Launch date planned for November 2013

USA, Canada, Argentina and Costa Rica
- In planning phase
Future plans and opportunities

- Build capacity in LMICs to monitor the nutritional composition of processed and fast foods
  - Partnership work with PAHO in Washington DC
  - Training of LMICs to utilise smartphone data collection technology
- Use Global Branded Food Database to examine differences in the nutritional content of processed foods in both high and low income countries
  - Identify collaborative projects
    - Meeting of the Food Monitoring Group at the International Congress of Nutrition in September 2013
  - Support countries in the adaptation of the FoodSwitch smartphone application
  - Data collection planned for South Africa and USA in 2014
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