

# **DROPPING THE SALT**

**Practical steps countries are taking  
to prevent chronic non-communicable diseases  
through population-wide dietary salt reduction**

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# EXECUTIVE SUMMARY

The World Health Organization has set a goal for worldwide reduction of dietary salt intake, and has called upon all countries to reduce average population intake to <5 g/day. This goal is based on strong evidence that no other single measure is as cost-effective or can achieve as much toward the prevention of hypertension and associated morbidity and mortality from cardiovascular and cerebrovascular diseases. High salt intake has also been associated with certain cancers and respiratory disease.

This paper was prepared at the request of the Public Health Agency of Canada (PHAC) as a background document for participants at the January 2009 PHAC/PAHO meeting on Mobilizing for Dietary Salt Reduction in the Americas. It begins with a brief summary of the WHO initiative and the reasons for recommending a broad-based population approach. Next, WHO's list of elements in a successful national program is expanded into an eight-step framework for planning, implementing and monitoring a national salt reduction strategy. This framework is used as the context for examination of programs in five of the most active countries (the UK, Ireland, Finland, France and Spain), in which each step is concretely illustrated using national examples.

This is followed by brief summaries of activity from countries which provided recent reports to World Action on Salt and Health, countries that responded to a 2008 EU questionnaire, countries that responded to a 2008 salt reduction initiatives questionnaire distributed through PAHO, supplemented in specific cases by other information sources as cited. These are organized alphabetically within continental groups. In the process, each country's overall approach and the roles of government, industry and advocacy groups may be assessed in the context of the WHO framework and goals.

The collective "lessons" from all these programs are examined in a section dealing with issues and challenges for nations which may seek to establish or refine their own programs. The paper concludes with a brief summary of general observations, including a comparison of voluntary and legislative approaches, a discussion on salt-specific vs. "holistic" approaches, a comment on the merits of "rewarding" industry participation and a suggestion of complementary international channels for action.

# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b>	2
<b>INTRODUCTION</b>	5
The evidence that salt reduction works	6
The rationale for a population approach	6
The case for gradual reduction	7
Cost-effectiveness	7
<b>THE WHO FRAMEWORK</b>	8
Elements of a successful national program: WHO's Three Pillars	8
Tailoring salt reduction strategies to individual countries: 8 steps to success	10
<b>MODELS AND LESSONS</b>	13
UK, Ireland and Finland: The 8 steps in action	13
France and Spain: Combination approaches	21
The role of the EU	24
Other European countries	25
Belgium: In the planning stages	25
Bulgaria: Government and industry meet	25
Cyprus: New intake recommendations	25
Czech Republic: Guidelines, but no program	26
Denmark: A program for workplaces, but no national guidelines	26
Estonia: Guidelines; industry strategy under discussion	26
Greece: Some attention to bread	26
Hungary: Focus on schools	26
Iceland: Focus on bread	26
Italy: National strategy in development	27
Latvia: Combined approach, with guidelines and plans to approach industry	27
Lithuania: Legislation may be considered	27
Luxembourg: Non-specific approach without monitoring	28
Malta: Combined approach, with guidelines	28
Netherlands: Leadership from industry	28
Norway: Need for renewal	28
Poland: Growing interest	29
Portugal: Sporadic effort, new plans under way	29
Romania: Assessing foods as a basis for new strategy	29
Serbia: Alarming three-year rise in monitored salt content will lead to action	29
Slovenia: Plan in place	30
Sweden: Emphasis on industry action	30
Switzerland: Comprehensive strategy up and running	31
World Action on Salt and Health (WASH) membership in Europe	31
Australasian countries	32
Australia: The role of advocacy	32
World Action on Salt and Health (WASH) membership in Australasia	32
Asian countries	33
Bangladesh: Salt intake may be much higher than had been thought	33
China: New labelling guidelines	33

Iran: Awareness-raising, but onus still on the consumer	33
Japan: Active advocacy as salt intake rises	33
Korea: Awakening concerns about high intake	34
Malaysia and Singapore: Action sparked by WASH	34
Nepal: Beginnings of advocacy	35
Turkey: High salt intake now a matter of record	35
World Action on Salt and Health (WASH) membership in Asia	35
African countries	35
Cameroon: Advocacy reaches out to health professionals	35
World Action on Salt and Health (WASH) membership in Africa	36
Countries in the Americas	36
Argentina: Guideline in place, legislation pending	36
Brazil: Comprehensive strategy in development; industry collaboration in place	37
Bolivia: Chief sources of salt identified	38
Canada: Comprehensive strategy in development	38
English Caribbean community: Guidelines, but no salt-specific programs	39
Chile: Strategy in development; significant advances in labelling	39
Costa Rica: Estimating intake	41
Ecuador: Focus on schools	41
Guatemala: Survey suggests salt intake very high	41
Panama: Awareness campaigns, but no concerted action on product reformulation	41
Paraguay: New policy expected in 2009	42
Uruguay: The need for a reliable estimate of intake	42
US: Still waiting for the FDA	42
World Action on Salt and Health (WASH) membership in the Americas	43
<b>ISSUES AND CHALLENGES</b>	<b>44</b>
Salt measures, food labels and consumer confusion	44
Fortification	47
Dealing with dissent	47
<b>OBSERVATIONS AND CONCLUSIONS</b>	<b>52</b>
Working with industry: Voluntary vs. legislative approaches	52
Merits of a salt-specific vs. a “holistic” approach	53
“Rewarding” industry participation with publicity	53
Complementary channels	53
<b>APPENDIX: Complementary channels – European caterers take the lead .....</b>	<b>55</b>

# INTRODUCTION

Worldwide, cardiovascular disease causes about a third of all deaths from chronic disease. It is the leading cause of death for those over 60 years of age, and ranks second for those aged 15 to 59. According to a recent analysis, high blood pressure – or hypertension – was the underlying cause in as many as 7.6 million premature deaths and 92 million disability-adjusted life years worldwide in 2001. Counter to the myth that cardiovascular disease is a problem of the affluent, some 80% of this burden is borne by low- to middle-income countries.<sup>1</sup>

It has been estimated that the vast bulk of the burden of cardiovascular disease is preventable through a single, inexpensive, cost-effective measure – primarily, through a strategy to reduce consumption of dietary salt across the population. According to the World Health Organization (WHO), this is by far the most effective approach for all countries and in all settings.<sup>2</sup>

Most people in the world consume far more salt than they need. According to the UK Scientific Advisory Committee on Nutrition, the lowest average intake of salt consistent with apparent good health in individuals or populations ranges between 1.75-2.3 g/day; populations surviving on as little as 5mg/0.2 mmol sodium per day (0.01g salt) have been reported.<sup>3</sup> Yet average intakes of 10 g/day and higher are typical in industrialized countries. Several are much higher (e.g. Turkey, with an average intake measured in 2008 at 18.04 g/day).<sup>4</sup> In Bangladesh, a 2008 study of 100 people – 50 hypertensives and 50 normotensive “controls” – found an average salt intake of 21 g/day.<sup>5</sup>

In 2003, WHO and the UN Food and Agriculture Organization (FAO) issued a joint report calling for a reduction in population salt intake to < 5 g/day. Once the Global Strategy on Diet, Physical Activity and Health (DPAS) was launched in 2004, WHO convened a major stakeholder forum and expert technical meeting (*Reducing Salt Intake in Populations*, Paris 2006) to develop specific recommendations for member nations as they take steps toward this goal.

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<sup>1</sup> Hypertension 2008 (Berlin, June 14-19), *Proceedings*. Presentation by Dr. Richard Horton, editor-in-chief of *The Lancet*. [http://www.eshonline.org/education/congresses/2008/esh/18\\_june\\_art4.php](http://www.eshonline.org/education/congresses/2008/esh/18_june_art4.php). The reference is to Lawes CMM et al. for the International Society of Hypertension (2008), Global burden of blood-pressure-related disease, 2001. *Lancet* 2008;371:1513-8.

<sup>2</sup> World Health Organization (2007) *Reducing salt intake in populations: Report of a WHO forum and technical meeting, Paris 2006*. p 3. [www.who.int/dietphysicalactivity/Salt\\_Report\\_VC\\_april07.pdf](http://www.who.int/dietphysicalactivity/Salt_Report_VC_april07.pdf).

<sup>3</sup> Scientific Advisory Committee on Nutrition (UK). (2003). *Salt and Health*. p 23.

<sup>4</sup> Turkey Salt Action Summary (2008). <http://www.worldactiononsalt.com/action/europe.htm>

<sup>5</sup> Salt consumption in hypertensive patients attending in a tertiary level cardiac hospital. [http://www.worldactiononsalt.com/awareness/world\\_salt\\_awareness\\_week\\_2008/evaluation/bangladesh\\_paper.doc](http://www.worldactiononsalt.com/awareness/world_salt_awareness_week_2008/evaluation/bangladesh_paper.doc)

## The evidence that salt reduction works

Because this paper focuses on specific examples and experiences of population-based salt reduction efforts, no attempt is made to present or evaluate the cumulative body of evidence here. Instead, it is recommended that the reader consult any one of a number of available summaries. Three sources in particular contain excellent overviews:

- He F & MacGregor G (2008). A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *J Hum Hypertens* Dec 25, 1-22. Available at <http://www.nature.com/jhh/journal/vaop/ncurrent/pdf/jhh2008144a.pdf>.
- *Salt and Health* (2003), the comprehensive report of the UK Advisory Committee on Science and Nutrition.
- *Reducing Salt Intake in Populations* (2007), the official report of the 2006 WHO Forum and Technical Meeting in Paris.

One other recent WHO publication, *Salt as a Vehicle for Fortification*, also summarizes the evidence and offers expert insight on the potential conflict between salt reduction for prevention of cardiovascular disease and iodine fortification for prevention of iodine deficiency.<sup>6</sup>

## The rationale for a population approach

Population-wide action on salt is essential for several reasons:

- Both cardiovascular disease and excessive salt intake are global problems. The vast majority of individuals are at risk for hypertension at some stage of their lives.<sup>7</sup>
- It is unreasonable to expect individuals, acting alone, to reduce their dietary salt intake to target levels. The salt content of food is not readily apparent; typically, over 75% of salt intake in industrialized countries comes from processed foods. For this reason, interventions targeting lifestyle are difficult to implement and usually have quite limited success.<sup>8</sup> Reductions in the salt content of processed and restaurant food can only be brought about by concerted multisectoral action.
- Reduction in salt intake is beneficial both for people with hypertension and those with normal blood pressure. There is every reason to expect that reduced intake early in life will help to avert the age-related rise in blood pressure which is now nearly universally seen.

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<sup>6</sup> World Health Organization (2008). *Salt as a vehicle for fortification. Report of a WHO Expert Consultation, Luxembourg, 21-22 March 2007*. [http://whqlibdoc.who.int/publications/2008/9789241596787\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241596787_eng.pdf).

<sup>7</sup> For example, the lifetime probability of developing hypertension in the USA approaches 90%. Havas, S., et al. (2007). The urgent need to reduce sodium consumption. *JAMA*, 298(12), 1439-1441.

<sup>8</sup> Appel, L. J. (2006). Salt reduction in the United States. *BMJ*, 333, p 562.

## The case for gradual reduction

The literature suggests that salt reduction strategies are more likely to be effective if they implement change in gradual stages. Because salt is an essential nutrient (albeit in small amounts), yet is relatively scarce in nature, human beings have evolved with an innate liking for the taste of salt, which prompts them to seek it out. In modern societies, this “taste” has become adapted to higher and higher salt levels, far more than is conducive to good health.

Yet individual taste adapts over a relatively short time to much less salty food. For example, the Australian Sodium in Bread study progressively lowered the sodium content of bread served to a group of hospital patients from 100% to 75% over a six-week period. Those in the intervention group were unable to detect the incremental changes.<sup>9</sup>

## Cost-effectiveness

A comprehensive meta-analysis prepared for the 2006 WHO Forum and Technical Meeting concludes that there is very strong evidence for the cost-effectiveness of national sodium reduction strategies. The investigators further collaborated with the WHO-CHOICE project to develop cost-effectiveness analyses for Australia, India and China, which may be found very useful as a model for other nations seeking to prepare analyses tailored to local populations and local currencies.<sup>10</sup> In confirmation of these findings, a 2007 study used methods from the WHO Comparative Risk Assessment project to project that 13.8 million deaths could be averted over ten years (2006-2015) by implementation of two specific interventions (tobacco control and salt intake reduction) at a cost of less than US\$0.40 per person per year in low-income and lower middle-income countries, and US\$0.50-1.00 per person per year in upper middle-income countries (as of 2005).<sup>11</sup> For the salt intervention, this study estimated that risk reversal for hypertension and cerebrovascular disease would take place within three years of achievement of reduced intake. For coronary heart disease and other cardiovascular outcomes, two-thirds of the risk reversal would be achieved within three years, and the remainder within ten years.

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<sup>9</sup> Girgis S et al. (2003). A one-quarter reduction in the salt content of bread can be made without detection. *Eur J Clin Nutr* 57(4):616-20.

<sup>10</sup> Neal B (2007). The effectiveness and costs of population interventions to reduce salt consumption.

<sup>11</sup> Asaria P et al. (2007). Chronic disease prevention: Health effects and financial costs of strategies to reduce salt intake and control tobacco use. *Lancet* 370(9604):2044-2053. [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(07\)61698-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(07)61698-5/fulltext)

# THE WHO FRAMEWORK

## Elements of a successful national program: WHO's Three Pillars<sup>12</sup>

At the 2006 Technical Meeting in Paris, global experts recommended that national programs be built around three “pillars”:

**I. Product reformulation**, through engagement of food manufacturers, distributors and providers. This step was highlighted as “particularly effective” in countries where processed foods are the major source of dietary salt – that is, most industrialized countries. The main focus is to bring about the highest possible reduction in the salt content of commercialized foods and meals. Recommended steps include:

- **Identify and monitor the foods that are the main contributors** to population salt intake.
- Increase **awareness within government** of salt levels in available foods.
- Increase **awareness among food producers** of the high salt content of their products.
- **Encourage producers to contribute** in a meaningful way to implementation of the national goal.
- **Target major food producers or trade organizations to standardize** the salt content of foods that are distributed locally and internationally. Through international organizations, countries should use their influence to push for international legislation or codes of conduct regarding food composition and distribution.
- Develop and enforce **clear monitoring mechanisms** – not only for producers of processed foods, but also caterers, restaurants and others involved in commercial meal preparation.
- Allocate a clear **budget** for the salt reduction program and employ **qualified staff** for monitoring.
- **Assist small businesses** (e.g. bakeries, restaurants, local cheese producers) to work toward salt-reduction targets. Assistance might take the form of toolkits on how to reduce salt in specific products, free information sessions, or provision of consulting services by qualified technical staff.
- Encourage public declaration of salt content through **labels on all processed food and meals**. Labelling should be clear, simple, coherent, and consistent with the key message of the accompanying consumer awareness campaign.

**II. Consumer awareness and education campaigns**, including information on the deleterious effects of salt and instruction on reading nutritional labels.

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<sup>12</sup> Except where otherwise noted, information in this section is taken from the report of the 2006 WHO Technical Meeting. See World Health Organization (2007), *Reducing salt intake in populations* [www.who.int/dietphysicalactivity/Salt\\_Report\\_VC\\_april07.pdf](http://www.who.int/dietphysicalactivity/Salt_Report_VC_april07.pdf).



- The message must be simple, clear, coherent – and **tested** beforehand, to ensure it works with the intended audience
- The **strategy to communicate the messages must be adapted to national reality**, taking into account culture, religion, dietary habits, literacy level of the population, gender issues, the food production chain, etc. The choice of the **appropriate avenues of communication** should also take into account the level of influence that different media may have within specific countries, communities and groups.
- It is necessary to **identify key groups and individuals** responsible for increasing awareness. Their roles and responsibilities must be clearly defined. And they may need special tools (e.g., training manuals for health professionals to ensure a consistent message; organization of consumer lobby groups)
- The **most vulnerable groups** of the population should be targeted: especially children, pregnant women and the elderly. Action groups should pay particular attention to **food marketing directed at children** which promotes the consumption of poor-quality high-salt foods (e.g. cereals, fast foods).
- The consumer education campaign should include **information on how to read and interpret nutritional labels**.

**III. Environmental changes** to make healthy choices the easiest and most affordable option for everyone, at all socioeconomic levels. **This includes elements such as pricing strategies and development of clear labelling systems.**

- **Each country should set a target for average dietary salt intake.** This could be expressed as part of the national dietary guidelines.<sup>13</sup>
- **Action to develop and refine clear, consistent consumer labelling for salt content should be a priority for all countries.**
- Labelling should be **clear, simple, culturally acceptable and easily understandable**, regardless of consumers' literacy or socioeconomic level.
- Labels should be coherent and **consistent with the consumer awareness message**.
- **Specific standards** should be developed for restaurant and other meal providers (especially those at schools and worksites) to ensure that consumers receive adequate nutritional information. These providers could be given permission to use a standard national label/sign on "healthy" menu choices; additionally, a health warning label could be placed on table salt containers.

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<sup>13</sup> It should be noted that the WHO/FAO Codex Alimentarius Commission is considering proposals to make nutritional labelling mandatory on all packaged foods, in support of DPAS. Currently, the provision for labelling is a non-mandatory guideline, adopted in 1985.

## Tailoring salt reduction strategies to individual countries: 8 steps to success

Many nations are still in the very early stages of mobilization on salt reduction. The WHO recommendations may be summarized in eight essential steps, four of which are preliminary:

### *Step 1. Organizing support to mobilize for change*

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This step will include identification and engagement of likely leaders and partners in the mobilization effort. At this stage, preparation of a national cost-benefit analysis for salt reduction would likely prove very useful. Organizing will require lobbying within governments, health professional organizations, NGOs and others with an interest in health to raise awareness about the need for change; and is likely to culminate in establishment of a committee or working group with the authority to spearhead activity. Typically, stakeholders and partners for the planning and / or implementation levels will include:

- Ministries of health (lead and coordinate policy, strategy and action)
- National food agencies; national public health agencies (alternative lead)
- Food producers and distributors
- Multinational corporations
- NGOs
- Civil society
- Media

### *Step 2. Environmental scan*

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Each nation should take the necessary measures to identify two essential items:

- ***Current levels of salt intake***

This will serve as a baseline for comparison later. Urinary sodium excretion is the “gold standard” method, involving 24-hour urine collection in a population sample. Failing this, “spot” urine collection may also be used; however, a larger sample will be required. According to a report prepared by the European Commission, monitoring through urine sodium excretion is “neither complicated nor expensive. 24-hour urine collection from around 100 people would provide sufficient statistical power to give a fairly accurate estimate” of population salt intake. If a sample of 200 people is used, it would be possible to provide sex-specific results.<sup>14</sup>
- ***Primary sources of dietary salt***

This may be established through surveys, eating records, or similar techniques. In industrialized countries, 75% or more is likely to come from processed foods. In many Asian and African

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<sup>14</sup> European Commission (2008). *Collated information on salt reduction in the EU*. p. 4.

countries, the primary source is likelier to be salt used for preservation, or contained in sauces or other condiments adding during cooking or eating.<sup>15</sup>

### ***Step 3. Setting the target (national dietary guideline on salt)***

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WHO recommends <5 g/day of salt as the universal target. However, several nations have set a higher target to begin with, with a view to further reductions later. The target set by any nation should be based upon knowledge acquired in step 2 (Environmental scan), and there should be a timeline for its achievement. The target may then be expressed as part of a new national dietary guideline.

### ***Step 4. Planning the campaign and engaging partners for implementation***

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This step depends on the results of the environmental scan: in particular, the primary sources of dietary salt for the population. If the chief sources are processed foods, an immediate plan must be made to enlist the support and cooperation of the food industry. If the chief sources are foods imported from other nations, a way must be found to influence the content of food entering the domestic market, and to ensure that a particular product is not sold with higher salt content in the domestic market than in other nations. In this way, one nation's success in negotiating with a multinational manufacturer can benefit others. Existing international channels may be used to approach multinational manufacturers/distributors; consideration may also be given to erecting regulatory barriers for foods that do not meet national criteria.

Similarly, it may be found that salt used for preservation is a major contributor to dietary salt intake in a particular country. In that case, consideration should be given to modifying such elements as transport arrangements and refrigeration capacities.<sup>16</sup>

Once Steps 1-4 are complete, WHO lists the following specific measures that have been found effective in settings around the world. These items are not meant to indicate a strict sequence, but are interconnected, with many strands of activity taking place simultaneously.

### ***Step 5. Consumer awareness campaigns***

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<sup>15</sup> World Health Organization (2007), *Reducing salt intake in populations* .p 12. [www.who.int/dietphysicalactivity/Salt\\_Report\\_VC\\_april07.pdf](http://www.who.int/dietphysicalactivity/Salt_Report_VC_april07.pdf).

<sup>16</sup> As was done with some success in Japan. See Morgan T and Harrap S (2007). Hypertension in the Asian-Pacific Region: The problem and the solution. (Report of a Joint International Society of Hypertension/Asian Pacific Society of Hypertension Workshop held in Beijing, 2007.) p. 2. [http://www.ish-world.com/Documents/Report\\_of\\_the\\_Joint\\_APSH-ISH\\_workshop\\_Beijing\\_2007.pdf](http://www.ish-world.com/Documents/Report_of_the_Joint_APSH-ISH_workshop_Beijing_2007.pdf).

***Step 6. The use of labelling to highlight the salt content of foods, and symbols/logos/text to identify low salt products***

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***Step 7. Negotiating agreements with the food industry, catering industry, food retailers and restaurants to lower the salt content of a wide range of products***

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It should be noted that the catering industry in particular has unique issues which may mean it should be considered separately in drafting requirements for labelling and provision of other pertinent consumer information.<sup>17</sup>

***Step 8. Monitoring progress, continuous revision and evaluation***

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Average population salt intake may be monitored by repeated 24-hour urine collection. Commercial food products should be sampled and analyzed on a regular basis; between analyses, self-reports may be required from producers. Finally, the effect of awareness campaigns should be evaluated by survey or other methods to measure attitude/behaviour change.

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<sup>17</sup> See, for example, the European Federation of Contract Catering Organisations [FERCO] (2006), *Position Statement on Informing Consumers in the Contract Catering Sector*. [http://www.ferco-catering.org/pdf/FERCO\\_Position\\_statement\\_on\\_labelling.pdf](http://www.ferco-catering.org/pdf/FERCO_Position_statement_on_labelling.pdf)

# MODELS AND LESSONS

## UK, Ireland and Finland: The 8 steps in action

These countries have developed, or are developing, complete salt-specific programs that embrace all eight steps.

### *Step 1. Organizing support to mobilize for change*

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#### **UK**<sup>18</sup>

- 1996: Government decides not to endorse recommendations to reduce salt intake, following opposition by the food industry. CASH (Consensus Action on Salt and Health) is established to protest this decision and to promote the benefits of population-wide salt reduction. This later leads to the establishment of WASH (World Action on Salt and Health) and its various national offshoots.<sup>19</sup>
- 2003: Scientific Advisory Committee on Nutrition publishes *Salt and Health*, recommending target of 6 g/day.  
Lead is taken by UK Food Standards Agency (FSA) and Department of Health. Partnership approach is adopted, engaging government, industry/business, consumer groups and health NGOs.  
FSA produces *Strategic Plan to 2010*.  
Department of Health produces *Choosing Health: Making Healthy Choices Easier*.  
Draft FSA salt model published, projecting how the goal can be achieved through lowering salt in specific food groups. Salt stakeholder meeting is held.
- 2004: Meetings begin with small groups of stakeholders and individual organizations.

#### **Ireland**<sup>20</sup>

- 2005: FSAI (Food Standards Authority of Ireland) publishes *Salt and Health: Review of the Scientific Evidence and Recommendations for Public Policy in Ireland*.  
FSAI takes the lead in salt reduction with the support of the Department of Health.

#### **Finland**<sup>21</sup>

- 1978: National Nutrition Council recommends lowering population salt intake

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<sup>18</sup> Except where otherwise stated, information on the UK is taken from European Commission (2008), *Collated information on salt reduction in the EU*, p. 6-10

<sup>19</sup> [www.actiononsalt.org.uk](http://www.actiononsalt.org.uk); see also [www.worldactiononsalt.com/action/europe.htm](http://www.worldactiononsalt.com/action/europe.htm).

<sup>20</sup> Except where otherwise stated, information on Ireland is taken from European Commission (2008), *Collated information on salt reduction in the EU*, p. 11-13

<sup>21</sup> Except where otherwise stated, information on Finland is taken from European Commission (2008), *Collated information on salt reduction in the EU*, p. 20-22

1979-1982: North Karelia project, featuring measures to reduce salt intake, expands into a national program. The original project was coordinated by local and national authorities with support from WHO.

## **Step 2. Environmental scan**

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### **UK**

2000: 24-hr. urine scan indicates average population dietary salt intake of 9.5 g/day. About 75% are identified as coming from processed foods, chief among which are:

- Children: White bread, cereals, potato chips ("crisps"), savoury snacks
- Adults: White bread, cereals, bacon, ham

### **Ireland**

Average population salt intake is 10 g/day at baseline, according to compiled EU figures.<sup>22</sup> However, a 2005 FSAI presentation by Dr. Wayne Anderson gives the average intake as 8.3 g/day. The mean intake was calculated from an existing consumption database, using standard values for sodium content of foods.<sup>23</sup>

### **Finland**

The traditional Finnish diet was high in salt, chiefly due to historical use of salt for preservation.

1979: 24-hour urine scan of population sample is complemented with dietary survey. Both measures continue on a regular basis.

## **Step 3. Setting the target: Goals and guidelines**

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### **UK**

FSA goal is 6 g/day by the end of 2010.

### **Ireland**

Goal: 6 g/day by 2010.

### **Finland**

Goal: 5 g/day.

## **Step 4. Planning the campaign and engaging partners for implementation**

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### **UK**

**Partners** include: Blood Pressure Association; British Heart Foundation ; Bristol PCT; CASH; Diabetes UK; Food Commission; Haringey Teaching PCT; Kent County Council Trading Standards; Manchester Food Futures Partnership; Men's Health Forum; National Children's Bureau; Netmums; National Federation of Women's Institutes; Trading Standards Institute.

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<sup>22</sup> The European Commission (2008). *Collated information on salt reduction in the EU*, p. 11.

<sup>23</sup> Anderson W (2005). *The FSAI/Food industry salt reduction partnership*. (Presentation to All-Island Health Challenge Seminar.) [http://www.fsai.ie/industry/salt/seminar\\_reduction\\_partnership.pdf](http://www.fsai.ie/industry/salt/seminar_reduction_partnership.pdf)

## Ireland

Partners include the Irish Heart Foundation and the Irish Food Safety Promotion Board (*SafeFood*), both of which actively participate in awareness campaigns (see below).

## Finland

Expands participation to the national level while retaining a strong community base, and engaging national and local health authorities, schools and NGOs.

### *Step 5. Consumer awareness campaigns*

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## UK

The UK Food Standards Agency (FSA) ran an awareness campaign from the outset, including TV advertising and posters. Meanwhile, other partners (NGOs, community organizations etc.) conducted complementary campaigns, assisted with preparation of brochures/booklets etc.

**Partner campaigns** often focused on special groups:

- British Heart Foundation – Social cooking project in three cities; “Healthy Ramadan” campaign in partnership with FSA and other NGOs targeting Muslim community, which has above-average mortality from coronary heart disease; also produces booklet in support of FSA’s TV campaign.
- Bristol PCT – Recruits and trains peer facilitators to work with black and minority ethnic communities on salt awareness, related cooking and shopping skills.
- Diabetes UK – Programs in 100 primary schools, with shopping tours for parents/caregivers.
- Food Commission – “Eat less salt” project for housing association residents/staff.
- Haringey Teaching PCT – “Salt it out” project for 400 people from black and minority ethnic communities, featuring store tours, four-week “cook & eat” program.
- Kent County Council Trading Standards – “Working Towards Less Salt” project; displays/activities in workplace.
- Manchester Food Futures Partnership – “Tasty Not Salty” project features group sessions with behavioural techniques for black and minority ethnic communities.
- National Children’s Bureau – “All Salted” project targets young parents aged 14-21 with salt reduction life skills and health program; pilots are held in two cities.

**FSA TV campaign** themes included:

2004: “Sid the Slug” campaign.

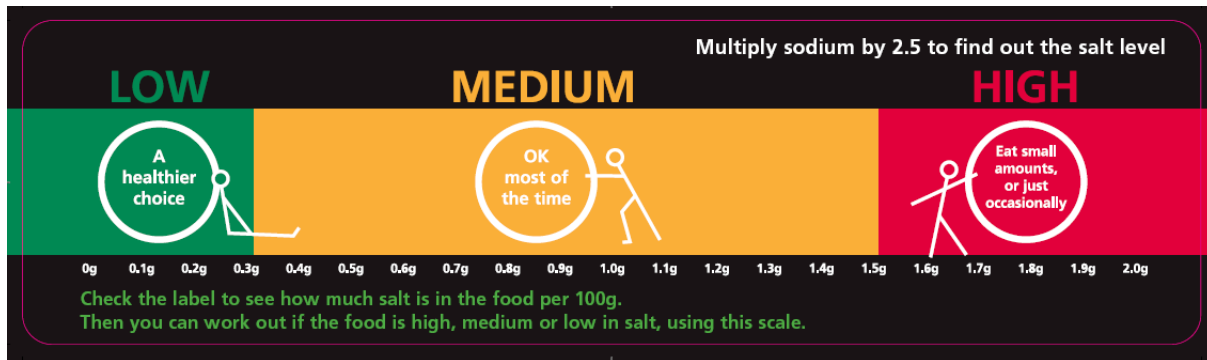
2005: “Animated packaged foods” ads; shortened / modified and continued in 2006

2007: “Full-of-it” ads: aired March – April 2007, starring well-known comedienne

Dedicated salt **website**, recipes, questions and answers, how to read labels

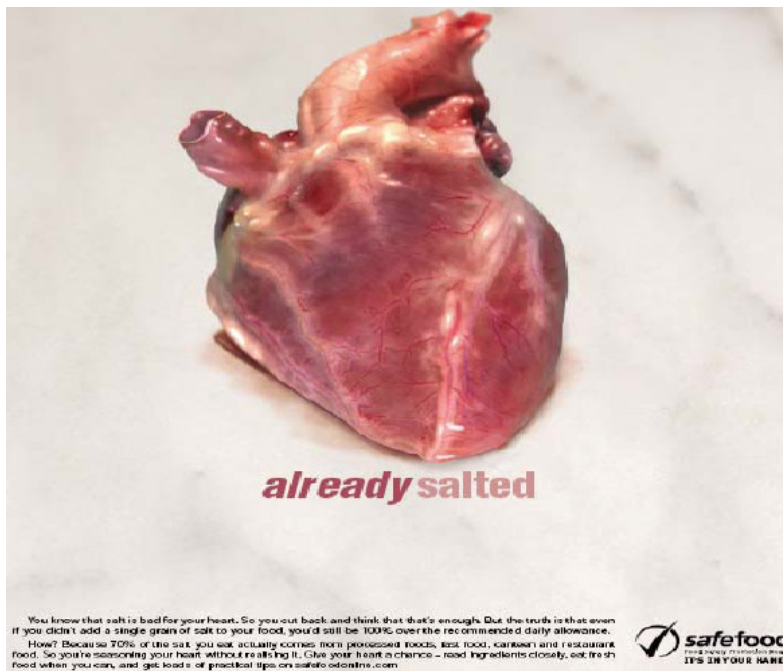
**Booklet:** “Little Book on Salt”

**Tool:** “Salt-o-Meter”: “How to look out for salt when you’re shopping.”<sup>24</sup> Note that this scheme ties in with the low-medium-high “traffic light” system, being promoted by FSA.



### Ireland

- 2004: Irish Heart Foundation’s Irish Heart Week theme: “Time to cut down on salt”. Activities include forum with representatives of food industry, radio advertising.
- 2005: Irish Food Safety Promotion Board (*SafeFood*) : “How much salt is good for you?” campaign.
- 2006: *SafeFood*: “Already Salted – 6 weeks to change your taste buds” – a six-week campaign targeting workplaces, caterers. Various companies display information, posters, table cards, etc. The campaign features newspaper ads, giant posters (“building wraps”), leaflets, media articles and radio interviews. (Wrote one media commentator: “It’s about the heart, but it sticks in your head.”)



*Text:*  
 You know that salt is bad for your heart so you cut back and think that that’s enough. But the truth is that even if you didn’t add a single grain of salt to your food, you’d still be 100% over the recommended daily allowance.  
 How? Because 70% of the salt you eat actually comes from processed food. So you’re seasoning your heart without realising it. Give your heart a chance –read ingredients closely, eat fresh food when you can and get loads of practical tips on safefoodonline.com.

<sup>24</sup> <http://www.salt.gov.uk/static/pdf/SALTscale.pdf>



## Finland

- Broad-based consumer education projects and mass-media campaigns, delivered through NGOs and other partners rather than by government. Themes range from salt-specific to general cardiovascular health.
- Wide dissemination of comparative studies showing varying salt levels in different brands of the same product; these results always attract wide coverage in the media.
- Training programs for health professionals, home economics teachers and caterers.

## Step 6. Labelling and front-of-package symbols/logos/text

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### UK

Nutritional labelling is voluntary, but is present on about 80% of foods.<sup>25</sup> Promotional materials instruct consumers to look for the g Na/100 g.

**Traffic light labels:** Foods produced by many manufacturers and supermarkets have 'traffic light' colours on the front of the pack, a scheme promoted by the Food Standards Agency and now appearing on about 40% of processed foods in the marketplace.<sup>26</sup> Although designs vary somewhat, these show at a glance if a food is high (red), medium (amber) or low (green) in each of these: salt, sugar, fat and saturated fat.

**High (red)** = eat small amounts, or just occasionally

**Medium (amber)** = OK most of the time

**Low** = a healthier choice

### Ireland

New laws govern salt-related claims: a product can't claim "reduced salt" unless its salt content has been lowered by at least 25%. There are defined limits for claims of "low salt", "very low salt" or "salt-free".

### Finland

A "high salt" warning label must be displayed on all foods which exceed defined limits for salt content in the following categories: breads; sausages/meat products; fish products; butter; soups and sauces; ready-made meals; salt-containing spicy mixtures. Many products which would otherwise have had to display this warning have disappeared from the marketplace, while new lower-salt alternatives have appeared. Use of the term "reduced salt" requires application to the national authority.

A new mineral salt product was developed ("Pansalt") that can replace sodium; products that contain this are allowed to use the "Pansalt" logo, which is widely recognized in Finland. Since 2000, manufacturers whose products meet specified criteria can also purchase the right to display the "Better Choice" logo from the Finnish Heart Association.

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<sup>25</sup> The European Commission (2008). *Collated information on salt reduction in the EU*. p. 8.

<sup>26</sup> Kondro W (2008). News: Canada needs paradigm shift in public health nutrition. *CMAJ* 179(12). <http://www.bpassoc.org.uk/mediacentre/Bloodpressurenews/Takeawayrestaurantspromiseto lowersalt>

## ***Step 7. Negotiating agreements with the food industry (manufacturers, retailers, caterers, restaurants) to lower salt content in commercial foods***

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### **UK**

A voluntary approach was decided upon.

2003: Salt stakeholder meeting held.

2004-2005: Consultations with smaller groups and individual organizations began in 2004-2005 and are ongoing.

2006: Voluntary salt targets are published for a number of food categories of interest. By then, some 70 organizations had agreed to participate, including major retailers, manufacturers, trade associations and caterers. A system is established for regular reporting.

In addition:

- The Trading Standards Institute produced a toolkit for Trading Standards Officers to use when working with businesses to reduce salt.
- The British Meat Processors Association produced a manual for small/medium businesses on salt reduction in meats.

In the UK, industry partners are “rewarded” with regular publication of achievements by FSA and others.

While the approach to restaurants has been less successful than that to food manufacturers,<sup>27</sup> there has been some notable progress with some of the “worst offenders”. For example, six of Britain’s biggest fast-food restaurants have now committed to making their burgers, sandwiches and fries more healthy. Burger King, KFC, McDonald’s, Nando’s, Subway and Wimpy have promised to lower the salt and saturated or trans fats in their meals. All but Nando’s supply in-store nutritional information (Nando’s is available on its website). KFC and McDonalds provide information on packaging/tray liners; the others with in-store booklets. And Subway is providing free salad with all its sandwiches.<sup>28</sup>

Engagement of major caterers has been quite successful, particularly those represented by FERCO (European Federation of Contract Catering Organizations), which includes national associations of contract caterers in Belgium, Finland, France, Germany, the Netherlands, Ireland, Italy, Hungary, Portugal, Spain, Sweden and the UK.<sup>29</sup>

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<sup>27</sup> Kondro W (2008). News: Canada needs paradigm shift in public health nutrition. *CMAJ* 179(12). <http://www.bpassoc.org.uk/mediacentre/Bloodpressurenews/Takeawayrestaurantspromisetolowersalt>.

<sup>28</sup> UK Blood Pressure Association (2008). News release: Takeaway restaurants promise to lower salt. <http://www.cmaj.ca/cgi/content/full/179/12/1259>

<sup>29</sup> <http://www.ferco-catering.org/>. See *Appendix: Complementary channels: European caterers take the lead* for more information on FERCO activities.

## Ireland

FSAI began exploratory talks with the food industry before the salt initiative was launched in 2005, with a view to raising awareness and discussing the need for gradual, sustained reduction in salt levels. The main contributing foods chosen for reformulation were bread, meat/meat products, cereals, cheese, soups and sauces.

For retailers (e.g. supermarkets), the focus was on lowering salt in own-brand foods as well as stocking low-salt options. Major caterers were also involved in initial consultations prior to launch of the salt initiative. Some hospitals have also concluded agreements with manufacturers to serve low-salt bread to employees.

## Finland

The food industry was engaged at an early stage and continues work to lower salt content in its products. However, the change appears to be driven more by legislation (e.g. labelling regulations) and media attention than by voluntary agreements as in the UK and Ireland. Caterers were offered training programs in salt reduction.

### *Step 8. Monitoring progress*

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## UK

**Monitoring sodium intake:** UK-wide 24-hour urine sodium analyses were conducted in 2000, 2005/2006 and 2008.

2007: Average salt consumption down to 9.0 g/day (from 9.5 g/day in 2000).

2008: Average salt consumption has fallen to 8.6 g/day.<sup>30</sup>

**Monitoring salt levels in commercial food products:** Levels of salt in processed foods are monitored through a Processed Food Databank. The baseline analysis consists of about 1000 products bought in 2004-2005. The second sample of the same products was bought in 2007. Between samples, industry keeps FSA informed of salt levels in their products through a self-reporting framework.

2007-2008: The first review of salt targets for industry is conducted as part of a new round of consultations. The next review is scheduled for 2010. The FSA has now announced that the program will continue beyond 2012, and that salt-content targets for many food categories will be lowered still more.

**Evaluating awareness campaigns:** There has been an annual consumer attitudes survey since 2000. In addition, major advertising campaigns are evaluated for efficacy, with comparative surveys conducted before and after the campaign. E.g., the “Sid the Slug” campaign was launched in September 2004. Tracker research showed that between August 2004 and January 2005, there was:

- A 32% increase in people claiming to be making a special effort to cut down on salt

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<sup>30</sup> Food Standards Agency (UK) (2008): *News release: Salt levels continue to fall*. 22 July 2008. [www.food.gov.uk/news/newsarchive/2008/jul/sodiumrep08](http://www.food.gov.uk/news/newsarchive/2008/jul/sodiumrep08)

- A 31% increase in those who look at labelling to find out salt content
- A 27% increase in those who say that salt content would affect their decision to buy a product “all of the time”<sup>31</sup>

2006: Half of consumers report that they check nutritional labels for salt content, and 20 million more people (since the baseline survey) report that they are cutting down their salt intake. Ten times the number of people (since baseline) are aware of the salt intake target (< 6 g/day).

## Ireland

**Monitoring salt levels in commercial food products:** The Food Safety Authority of Ireland (FSAI) uses an analytical laboratory service to check foods. Initial targets have been reached, with 10%-15% reduction in salt content of white and brown breads, dry sauce mixes and dry soup mixes.<sup>32</sup> The salt reduction achievements of industry are listed on the FSAI website in “aggregated” form; individual company names appear only on an accompanying downloadable PDF file.<sup>33</sup>

**Evaluating awareness campaigns:** Awareness campaigns are evaluated for knowledge/behaviour change through consumer interviews. In the follow-up evaluation of the “Already Salted” campaign, more than half of those surveyed claim they have changed, or plan to change, their salt intake.

## Finland

**Monitoring sodium intake:** Finland has conducted four separate urinary sodium analyses: 1979 (baseline), 1982, 1987 and 2002. In addition, salt intake is calculated using regularly-updated food composition tables and the results of dietary surveys which have taken place every five years since 1982.

The calculated values for intake have been validated against urinary analyses and found reliable. The results indicate a 40% drop in average sodium intake, which has been accompanied by a 30% decline in hypertension and an 80% reduction in deaths due to stroke.<sup>34</sup>

Along with Estonia, Latvia and Lithuania, Finland is a member of the FINBALT Health Monitoring System, which collects data on health practices and lifestyles; adding salt to food at table is one of the behaviours monitored.<sup>35</sup>

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<sup>31</sup> [www.food.gov.uk/news/pressreleases/2005/feb/saltresearchpr](http://www.food.gov.uk/news/pressreleases/2005/feb/saltresearchpr)

<sup>32</sup> The European Commission (2008). *Collated information on salt reduction in the EU*.

<sup>33</sup> <http://www.fsai.ie/industry/salt/salt2.asp>

<sup>34</sup> World Health Organization (2007). *Reducing salt intake in populations*. p. 6.

<sup>35</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 33

## France and Spain: Combination approaches

These countries are addressing salt reduction as part of wider healthy diet/lifestyle programs.

### *Step 1. Organizing support to mobilize for change*

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#### **France**<sup>36</sup>

2000: French Food Safety Authority (AFSSA) recommends reducing salt intake, and conducting a feasibility study into reducing salt levels of processed foods.

2001/2: Salt Working Group formed, including scientists, consumers, physicians and industry representatives. Once an environmental scan is done and objectives are developed, the lead is turned over to an existing program, PNNS2 (the Second National Nutrition and Health Program, 2006-2010), an intergovernmental initiative coordinated by the Ministry of Health with participation from industry, consumers and local authorities.

#### **Spain**<sup>37</sup>

The lead is taken by the Ministry of Health and Consumer Affairs. Salt reduction is addressed as part of the NAOS strategy, which promotes healthy diet and physical activity for all, with emphasis on children and adolescents. The program was spurred by concern about obesity.

### *Step 2. Environmental scan*

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#### **France**

1998/1999: Individual Food Consumption Survey. From seven-day food records, average salt intake is estimated at about 9 g/day.<sup>38</sup> Main contributors are bread, meat products, soups, cheeses and ready-to-eat meals. A large proportion (22.8%) of males are classed as “heavy consumers”, with an average intake of >12 g/day.

#### **Spain**

It has been determined that the chief source of dietary sodium is bread.

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<sup>36</sup> Except where otherwise stated, information on France is taken from European Commission (2008), *Collated information on salt reduction in the EU*, p. 14-17

<sup>37</sup> Except where otherwise stated, information on Spain is taken from European Commission (2008), *Collated information on salt reduction in the EU*, p. 18-19

<sup>38</sup> World Health Organization (2007). *Reducing salt intake in populations: Report of a WHO forum and technical meeting, Paris 2006*, p. 16.

### ***Step 3. Setting the target: goals and guidelines***

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#### **France**

Goal: <8 g/day by 2010 (Public Health law, 2004): a 20% reduction over five years.

#### **Spain**

Goal: <5 g/day.

### ***Step 4. Planning the campaign and engaging partners for implementation***

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#### **France**

Food industry representatives are invited to participate in planning necessary salt reductions for PNNS2 (2<sup>nd</sup> National Nutrition and Health Program).

#### **Spain**

NAOS campaign (healthy diet and physical activity) is coordinated through Spanish Food Safety Agency and General Directorate of Public Health. Engaging industry to produce healthier foods is one objective in a much larger program; similarly, salt reductions are only a single aspect of that objective. Because bread is targeted as the presumed chief source of sodium, the coordinators pursued an agreement to reduce salt with the baking industry. Other food producers were invited to set up a plan for salt reduction in their products; the outcome is unknown.

### ***Step 5. Consumer awareness campaigns***

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#### **France**

The salt issue is handled as an integral part of the ongoing PNNS2 (2<sup>nd</sup> National Nutrition and Health Program) health promotion campaigns. However, salt intake is not the main message, and the relevant messages are largely confined to discouraging addition of salt during cooking or at the table.

#### **Spain**

Salt reduction is part of the overall campaign for healthy diet and physical activity. When salt is mentioned, the emphasis appears to be on discouraging salt use in cooking and at table.

### ***Step 6. Labelling and front-of-package symbols/logos/text***

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#### **France**

PNNS2 (2<sup>nd</sup> National Nutrition and Health Program) is developing an optional labelling system that will include pertinent nutritional information. Sodium should be included on a label when a claim (e.g. “lower salt content”) is being made. Industry is encouraged to carry the following slogan on their products: “The salt (sodium) content of this product has been carefully studied; there is no need to add salt.”

#### **Spain**

No specific initiative.

## ***Step 7. Negotiating agreements with the food industry (manufacturers, retailers, caterers, restaurants) to lower the salt content in commercial foods***

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### **France**

As part of PNNS2 (2<sup>nd</sup> National Nutrition and Health Program), food manufacturers are invited to submit detailed “charters of commitment” to the Ministry, which are then assessed by a committee of experts. Special efforts were made to reach small independent bakeries, which supply a great deal of the bread consumed in France, and to negotiate with the flour industry in order to reduce salt in bread ingredients.

### **Spain**

2005: Spanish Confederation of Bakeries agrees to lower salt from 2.2% (2005) to 1.8% within four years, with a reduction of 0.1% per year. Other food producers are approached and have also reached agreements.

2005: Agreements reached with “leading restaurant chains” on provision of healthy food, which includes measures to reduce salt consumption.<sup>39</sup>

## ***Step 8. Monitoring progress***

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### **France**

***Monitoring salt levels in commercial food products:*** A sampling of products was analyzed in 2003 and re-analyzed in 2005. The salt content of cereals, some soups, and some cheeses was found to have declined; however, bread and ready-to-eat meals had either remained the same or contained more salt than in 2003. Yet as of 2006/2007, one-third of bread bakers reported that they had reduced salt content since 2002, and a 7% reduction in the salt content of soups was reported. The cheese industry has developed a new Code of Practice regarding the use of salt, while new lower-salt meat products have been developed. Meanwhile, salt sales to the food industry have declined 15%, and to households by 5%.

Nevertheless, WASH reports that, despite these efforts, “no significant change in the salt content of processed foods and salt labelling has been observed by the food industry [in France], except for a few limited actions. Bakery is the only sector that has undertaken real action to reduce the salt content of bread in some French regions. Unfortunately, there is no strong lobbying from physicians and scientists to promote actions. The two main consumer associations (Union Fédérale des Consommateurs and Institut National de la Consommation) try to keep the subject alive but there is very little response from the government who are still very much influenced by the food industry.”<sup>40</sup>

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<sup>39</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 37

<sup>40</sup> <http://www.worldactiononsalt.com/action/europe.htm>

As of May 2008, it appears that the lower-salt movement may be gaining momentum after significant publicity surrounding the defamation case brought against WASH member Pierre Meneton, who had publicly blamed salt producers and agribusiness for spreading misinformation; he has now been cleared of all charges.<sup>41</sup>

## Spain

While initiatives in the NAOS program (healthy diet and physical activity) will be monitored and evaluated, there appears to be no specific provision for monitoring salt content in processed foods or salt intake among consumers.

## The role of the EU

As of 2008, the EU has developed its Framework for National Salt Initiatives<sup>42</sup>, designed to work toward the WHO goal of an average 5 g/day salt intake. It contains the same basic steps as the 8-step framework outlined above, with the exception of labelling; a consistent labelling scheme is under development at the EU level.<sup>43</sup> As in the 8-step framework, the strands of activity are simultaneous and interconnected:

- **National decision to act** on salt (analogous to Step 1)
- **Take stock** of available data and resources (Steps 1, 2)
- Determine additional data needs (Step 2)
- **Benchmarks, major food categories** (Step 3). While the specific salt targets chosen will likely vary by nation, the EU has set an across-the-board benchmark of a 16% reduction in salt content in four years, compared to the 2008 baseline. Sub-categories may have different benchmarks set individually. The reduction will be gradual (4% per year) to allow for consumer adaptation. Each member state is asked to choose at least five food groups (out of 12 suggested categories) for priority attention. At the EU level, priority will be given to breads, meat products, cheeses and ready-to-eat meals.
- Develop actions to **raise public awareness** (Step 5). Timeframe: by 2009.
- Develop **reformulation** actions with **industry/caterers** (Steps 7, 8). For the sake of efficiency, the European Commission itself will initiate negotiations with multinational corporations.

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<sup>41</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>42</sup> The European Commission (2008). *EU Framework for National Salt Initiatives*.

<sup>43</sup> Currently, nutritional labelling is voluntary in the EU, unless the product label or advertising contains specific nutritional claims. Although labelling is harmonized, there are two classes of labels. "Group 1" labels specify only energy value together with amounts of protein, carbohydrate and fat, while "Group 2" includes additional information on sugar, saturated fat, dietary fibre and sodium. A Group 2 label is mandatory only if a specific claim is made referring to a Group 2 ingredient. A thorough revision of the whole labelling system is under consideration. Source: <http://europa.eu/scadplus/leg/en/lvb/l21092.htm>.



- **Monitor and evaluate** actions and reformulation (Step 9). A monitoring approach should be in place by the end of 2008; the first progress /monitoring report is due by the end of 2009.

Options include:

- **Self-reporting by industry** of salt content in various foods / categories
- **Monitoring salt content of foods**
- **Monitoring intake** by dietary records and/or urine sodium analysis
- **Monitoring consumer awareness** of the salt issue and tracking behaviour change

The Framework also notes that in dealing with the food industry, every effort should be made to:

- Concentrate on products with **the largest market share**, in order to maximize impact
- Reduce salt in products at **all price levels**, in order to make low-salt alternatives easily available to everyone.

## Other European countries

The Finland and the UK have been at the forefront of salt reduction activity in Europe. With the launch of the EU Framework, many other countries are now beginning or expanding their own efforts. Only a few have declared they have no salt-specific plans at all. The following gives a brief summary of those countries who submitted recent reports to WASH, and/or those who gave relevant information in the European Commission's 2008 questionnaire "Implementing the White Paper":

### Belgium: In the planning stages

Belgium instituted a National Health and Food Plan in 2006, which includes recommendations on limiting salt intake. The national Public Health Institute also conducts regular food surveys, the last being in 2005; the next is scheduled for 2009. However, no measurement of salt intake has been attempted. As of 2008, multi-stakeholder meetings are planned to begin development of a national salt reduction strategy.<sup>44</sup>

### Bulgaria: Government and industry meet

Guidelines recommend limiting salt intake to reach the ultimate goal of <5 g/day. To this end, meetings have begun between government and industry representatives.<sup>45</sup>

### Cyprus: New intake recommendations

As of January 2008, Cyprus had just published its salt intake recommendations. No plans had yet been made for implementation.<sup>46</sup>

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<sup>44</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 28

<sup>45</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 29

<sup>46</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 29

**Czech Republic: Guidelines, but no program**

There are dietary guidelines regarding salt intake, and dietary exposure to salt is estimated from regular surveys. However, no specific salt reduction campaign exists.<sup>47</sup>

**Denmark: A program for workplaces, but no national guidelines**

Salt intake is included in a general population survey conducted every four years; however, it is unclear how this is measured. The fact that most dietary salt comes from processed foods is given as a reason for the omission of salt from national dietary guidelines. A new initiative is being developed for healthy workplace meals, one objective of which will be to limit salt consumption.<sup>48</sup>

**Estonia: Guidelines; industry strategy under discussion**

National dietary guidelines include recommendations for salt intake. There is no regular monitoring of salt intake, although estimates exist for meals served in some institutions (seniors' homes, kindergartens). A 2002 law sets upper limits for salt content in meals served in schools and pre-schools, and a 2003 labelling regulation requires display of sodium chloride (not total sodium) content in ten product categories. The possibilities for collaboration with the food industry are under discussion.<sup>49</sup> Estonia is a member of the FINBALT Health Monitoring System, which collects data on health practices and lifestyles; adding salt to food at table is one of the behaviours monitored.<sup>50</sup>

**Greece: Some attention to bread**

Some effort to lower salt content in bread has been reported; however, there appear to be no other activities.<sup>51</sup>

**Hungary: Focus on schools**

Sporadic efforts at consultation between nutrition activists and the food industry have been less than successful. In 2005, government issued recommendations applicable to salt in school meals, and this remains the current focus.<sup>52</sup>

**Iceland: Focus on bread**

Salt intake was last estimated from a national dietary survey conducted in 2002; a new survey will take place in 2008/2009. The Public Health Institute and the Federation of Iceland Industries are currently

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<sup>47</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 29

<sup>48</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 29

<sup>49</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 29

<sup>50</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 33

<sup>51</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 31

<sup>52</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 32

engaged in a study of salt content in bread products produced by the 13 largest bakeries. The results will be compared with salt levels in bread in other countries.<sup>53</sup>

### **Italy: National strategy in development**

A government Working Group has been appointed to develop and implement a salt reduction strategy, with an ultimate target of a 20% reduction in average intake. Agreement has been reached with the bakery industry to reduce salt in bread by 10% each year. Plans are under way to update intake estimates, and to develop a monitoring and evaluation system.<sup>54</sup>

As part of Sardinia's effort to reach the EU salt reduction target of 16% in 4 years, a 2008 campaign involved distribution of an illustrated booklet about reducing salt intake to every household in Sardinia, which was posted with the regular electricity bill. Reported results of the campaign indicate that over 20% of rural and over 29% of urban people reduced their salt intake.<sup>55</sup> It is also reported that there has been a decline of average blood pressure in Sardinia over three years (systolic declining from 129 to 125 mmHg [ $p=0.5$ ] and diastolic from 83 to 80 mmHg [ $p=0.004$ ]).<sup>56</sup>

### **Latvia: Combination approach, with guidelines and plans to approach industry**

There is no labelling requirement for salt content. Dietary guidelines for adolescents and adults call for limiting salt intake and for an upper limit of 3 g/day for persons over 60 years of age. Further, regulations stipulate that any food served in educational institutions, including pre-schools and vocational schools, must not exceed a limit of 1.25 g salt per 100 g. The government has a Healthy Nutrition 2003-2013 Action Plan; however, it is a general healthy diet/lifestyle program with no specific salt component. Nevertheless, there are plans to engage industry in a program of self-regulation for salt reduction in processed foods. Latvia is also a member of the FINBALT Health Monitoring System, which collects data on health practices and lifestyles; adding salt to food at table is one of the behaviours monitored.<sup>57</sup>

### **Lithuania: Legislation may be considered**

Dietary guidelines do exist, and include recommendations to limit salt intake; this recommendation is also included in ongoing health promotion. The government does undertake monitoring of food consumption, with calculation of salt intake. Laboratory testing for salt content is "occasionally" done as part of the regular food inspection process. The possibility of legislation to limit the salt content of processed food is under investigation. Lithuania is also a member of the FINBALT Health Monitoring

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<sup>53</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 38

<sup>54</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 32

<sup>55</sup> It is not known how this was measured.

<sup>56</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>57</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 33

System, which collects data on health practices and lifestyles; adding salt to food at table is one of the behaviours monitored.<sup>58</sup>

#### **Luxembourg: Non-specific approach without monitoring**

As part of a national healthy nutrition and physical activity program launched in 2006, all awareness campaigns contain a message regarding the importance of limiting salt intake, with mention of the WHO target of 5 g/day. However, there is currently no salt-specific program; nor is there existing data on average salt intake, or any plans to measure or monitor it in future.<sup>59</sup>

#### **Malta: Combination approach, with guidelines**

National dietary guidelines call for salt intake below 5-8 g/day. This recommendation is publicized as part of regular health promotional campaigns for healthy nutrition. Key messages emphasize salt added during cooking or at table; however, people are also advised to read labels carefully and avoid foods with high sodium content.<sup>60</sup>

#### **Netherlands: Leadership from industry**

The Federation of the Dutch Food and Grocery Industry (FNLI) has established a task force on salt in foods to address the use of salt by the food industry. Objectives include a 10%-15% reduction in salt content of the full spectrum of products by 2010, while enhancing consumer acceptability of lower-salt products. The task force will collect data and provide annual progress reports, while RIVM (the National Institute for Public Health and the Environment) will assess overall success through repeated 24-hour urine collections and analyses. FNLI hosted a symposium on salt reduction in foods in March 2008 in collaboration with the Netherlands' Network of Food Experts (NVVL).<sup>61</sup>

Meanwhile, the government is preparing a specific policy on salt as part of its new nutrition policy document. Awareness campaigns connected with this will be conducted as part of the general Good Nutrition project.<sup>62</sup>

#### **Norway: Need for renewal**

Norwegian health authorities have advised reductions in dietary salt intake since the early 1980s. As of 2005, their recommendation was a gradual reduction to 5 grams/day, with an upper limit of 1.25 g/day for children under 2 years of age. However, there is currently no regulation specifying how much salt can be used in commercial foods or requiring labelling of foods for salt content, and various initiatives of the 1980s and 1990s to lower salt – including conferences hosted by the National Nutrition Council, and

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<sup>58</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 34

<sup>59</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 34

<sup>60</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 35

<sup>61</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>62</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 35

local agreements between food control authorities and food producers monitored by repeated product analyses – have not been continued into the new century. The National Nutrition Council continues to take a leading role in advocacy. Reduction of salt intake is one goal of the Norwegian Action Plan on Nutrition 2007-2011.<sup>63</sup>

#### **Poland: Growing interest**

Spearheaded by publicity surrounding a 2007 statement by the Polish Society of Hypertension on the need to reduce salt in commercial foods, interest in and support for salt reduction is reportedly growing in Poland. Activities will be planned for Salt Awareness Week.<sup>64</sup>

There is a national prevention program for healthy diet and physical activity, which recognizes the importance of salt reduction and also of engaging the food industry. However, direct action has been left to the National Food and Nutrition Institute, which has been very active on the salt issue. Collaboration has already begun with bread producers, and consumer reaction to lower-salt bread has been favourable. The Institute also conducts public awareness campaigns regarding the importance of salt intake reduction.<sup>65</sup>

#### **Portugal: Sporadic effort, new plans under way**

While there has been some effort, including awareness campaigns and attempts to engage the bread industry in salt reduction, it has been sporadic. Major challenges include the difficulty of reaching a host of small food producers, and development of an appropriate monitoring system. However, a Working Group on salt was convened in 2007, and activities are being planned for 2008-2009.<sup>66</sup>

#### **Romania: Assessing foods as a basis for new strategy**

The government is approaching salt reduction through two main activities: (a) conducting public awareness campaigns on the need to reduce salt intake, and (b) assessing the current salt content of major food groups, including dairy and meat products. Once evaluation of salt content is complete, a strategy for reduction will be developed.<sup>67</sup>

#### **Serbia: Alarming three-year rise in monitored salt content will lead to action**

Over a three-year period (2005-2007) the Institute of Public Health of the northern Serbian province of Vojvodina investigated salt content in ready-to-eat food offered for retail sale in Novi Sad, the country's second-largest city (after Belgrade). Also under investigation were samples of daily meals served in kindergartens, student restaurants and enterprise/institutional cafeterias. Partners included the Novi

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<sup>63</sup> <http://www.worldactiononsalt.com/action/europe.htm>; also European Commission (2008), *Collated information on salt reduction in the EU*, p. 39

<sup>64</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>65</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 35

<sup>66</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 36

<sup>67</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 36

Sad Assembly and local health authorities. The results were startling: average salt content in kindergarten meals had risen from 1.8 g in 2005 to 8.1 g in 2007; in student restaurants, it had gone up from 8.1 g in 2005 to 13.1 in 2007. Employees' cafeterias showed a similar rising trend: from 3.8 g in 2005 to 5.1 g in 2007.

Serbia has no legislation requiring labels to display salt content. A paper on this project is being prepared for publication, and a report will be submitted to the Ministry of Agriculture, who would bear responsibility for labelling. Meanwhile, the local health authorities and kindergarten administrations are attempting to negotiate with suppliers to reduce the salt content in their foods.

### **Slovenia: Plan in place**

Slovenia has prepared a draft Action Plan for salt reduction, following WHO recommendations. Dietary guidelines contain salt recommendations, which vary by age group. Positive action on product reformulation within the food industry is foreseen in the near future. While there has been no population-wide urine analysis for calculation of average salt intake, such a project is planned. Meanwhile, intake is estimated from several sources, including annual household budget surveys, research projects on population samples, and self-reports on salt added at table from CINDI and Slovene public opinion surveys. In addition, there is national research data on the salt content of bread and meat products.

### **Sweden: Emphasis on industry action**

The National Food Administration is collaborating with the food industry, including major restaurants and caterers, in a five-year (2007-2011) program to reduce salt in processed foods and meals eaten outside the home. Dietary guidelines for food provided in schools, pre-schools and workplaces emphasize the importance of salt reduction. However, no public awareness campaign is planned until there has been real progress in reducing salt levels in processed/catered food.<sup>68</sup> There has been no measurement of population sodium intake; however, there have been surveys on consumer habits regarding the use of table salt.

The "Keyhole Mark", a "healthy-food" labelling system developed by the Swedish food industry (Svenska Livsmedelsverket [SLV]) was designed to promote low-fat, high-fibre products. In 2006, it was extended to take salt levels into account following a study showing that men aged between 18-20 years had very high salt excretion levels. However, opposition from meat and fish producers has resulted in an exemption; the new system does not currently apply to their products.

World Salt Awareness Week was marked with a news release in conjunction with an EU food conference. A national Salt Symposium was being planned for late 2008.<sup>69</sup>

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<sup>68</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 39

<sup>69</sup> <http://www.worldactiononsalt.com/action/europe.htm>

### **Switzerland: Comprehensive strategy up and running**

The Swiss Salt Strategy was launched in 2007. Partners include the Federal Office of Public Health, NGOs including the Swiss Heart Foundation and the Swiss Medical Association, and the food industry.

Objectives include improved public awareness, better data on salt intake, a stepwise reduction of salt content in processed foods, and improved international collaboration. There have been several studies on salt intake in Switzerland; white and whole-wheat bread have been identified as chief contributors. It is expected that an upcoming National Nutrition Survey will yield more detailed data.<sup>70</sup>

### **World Salt Awareness Week/World Hypertension Day**

In addition to those mentioned above, the following European countries held special activities to mark World Salt Awareness Week (sponsored by World Action on Salt and Health) and/or World Hypertension Day:

**Croatia** marked World Salt Awareness week 2008 with a conference featuring experts, food industry representatives and consumers, together with a radio interview.<sup>71</sup>

**Georgia** hosted a conference, published posters and guides, and conducted educational sessions in schools on topics related to nutrition, salt and hypertension. There was considerable media coverage of these events. Financial support was received from McDonalds and from Nikora (a manufacturer of school meals). In addition, a pilot study on hypertension and its risk factors among children aged 11-16 years was undertaken.<sup>72</sup>

**Slovakia:** The Slovak League against Hypertension held a press conference with experts, NGOs and food industry representatives, described initiatives elsewhere in Europe, distributed relevant information about salt, and urged action on labelling for sodium content. It was proposed that urine sodium analyses be made a part of regular preventive medical examinations.<sup>73</sup>

### **World Action on Salt and Health (WASH) membership in Europe<sup>74</sup>**

Besides the countries listed above (except Norway, which currently has no member listed), WASH has members in the following countries: Austria, Azerbaijan, Germany, Monaco, and Ukraine.

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<sup>70</sup> European Commission (2008), *Collated information on salt reduction in the EU*, p. 38

<sup>71</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>72</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>73</sup> <http://www.worldactiononsalt.com/action/europe.htm>

<sup>74</sup> [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls)

## **Australasian countries**

### **Australia: The role of advocacy**

While the Australian government has not yet taken concerted action on salt reduction, it is under increasingly strong pressure to do so from a well-organized advocacy group: AWASH, the Australian version of the UK's CASH and a division of WASH. It is currently supported by the George Institute for International Health and the National Health and Research Council of Australia.

AWASH is a strong supporter of the UK voluntary approach to population-wide salt reduction. Its members are well-informed and well-placed to spark change, including not only specialists in salt and hypertension but also consumer organizations and representatives of major food producers (e.g. Unilever Australasia, Heinz Australia, Monster Muesli).<sup>75</sup>

AWASH launched its national "Drop the Salt!" campaign in May 2007, with a goal of reducing average population salt intake to < 6 g/day over five years, coupled with a drop of 25% in the salt content of processed foods. It has successfully engaged many industry partners, established a database to monitor sodium content in foods, and is considering setting individual targets for key food categories.<sup>76</sup> While the group also works to raise public awareness and conducts annual consumer polls, it is clear that government involvement is a key target if real population-level change is to be achieved. AWASH is laying the groundwork for that involvement and placing strategic emphasis on the economic argument in order to make its voice heard in the right places ("Cardiovascular disease [is]...the most expensive disease in Australia").

### **World Action on Salt and Health (WASH) membership in Australasia<sup>77</sup>**

Besides Australia, WASH also has members in New Zealand.

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<sup>75</sup> AWASH: Australian Division of World Action on Salt and Health (2008). *Strategic Review 2007-2008*. [http://www.awash.org.au/documents/AWASH-Strategic-Review-2007\\_08.pdf](http://www.awash.org.au/documents/AWASH-Strategic-Review-2007_08.pdf)

<sup>76</sup> Companies that are actively reducing salt in their product offerings in Australia include Coles Supermarkets (house brand foods), McDonalds Australia (which achieved an average reduction of 32% in salt content through recipe changes), Kellogg, the multinational Compass Group of contract catering firms, Smiths Snackfoods Company, Lowan Whole Foods and the Sanitarium Health Food Company. [http://www.awash.org.au/drop\\_thefoodindustry.html](http://www.awash.org.au/drop_thefoodindustry.html)

<sup>77</sup> [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls)



## Asian countries

### **Bangladesh: Salt intake may be much higher than had been thought**

It has long been believed that salt intake in Bangladesh is significantly higher than in Western countries; however, a 2004 estimate of an average 15 g/day was based only on data from salt production and sales. One 2008 study compared 50 hypertensive patients being treated at a tertiary care hospital and 50 normotensive patients; using spot urine analysis, the entire study group of 100 people was found to have a very high average sodium intake of 21 g/day.<sup>78</sup> In collaboration with WHO, the Hypertension Committee of the National Heart Foundation organized a round table meeting on salt and hypertension in 2007; participants developed a proposal on salt reduction for submission to government.<sup>79</sup>

### **China: New labelling guidelines**

New voluntary guidelines for nutrition labelling on packaged foods were introduced in 2008, requiring levels of sodium per 100g, per 100ml or per serving, as well as labelling nutrient content as a percentage of the nutrient reference value. This is a major step for China, which was undertaken with the support of WASH.

Local action to reduce salt consumption include a 2007 campaign by the Beijing Municipal Health Bureau, which distributed five million blue plastic teaspoons to city households as an illustration of allowable daily salt consumption.<sup>80</sup>

### **Iran: Awareness-raising, but onus still on the consumer**

Isfahan, one of Iran's largest cities, hosted a week of educational and awareness-raising activities for health professionals, people with hypertension and the general public to mark World Hypertension Day in May 2008. The need to reduce salt intake was one of two key messages. It is unknown what emphasis, if any, was placed on the role of "hidden salt" in commercial foods.<sup>81</sup>

### **Japan: Active advocacy as salt intake rises**

According to 2008 data, average salt intake in Japan has risen to 11 g/day from 10.7 g/day. The lead in salt reduction is being taken by the Japanese Hypertension Society, which has established a working group on salt, published new guidelines calling for a reduction in salt intake from 7 g/day to <6 g/day,

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<sup>78</sup> Salt consumption in hypertensive patients attending in a tertiary level cardiac hospital.  
[http://www.worldactiononsalt.com/awareness/world\\_salt\\_awareness\\_week\\_2008/evaluation/bangladesh\\_paper.doc](http://www.worldactiononsalt.com/awareness/world_salt_awareness_week_2008/evaluation/bangladesh_paper.doc)

<sup>79</sup> Bangladesh: Round table meeting on salt and hypertension.  
[http://www.worldactiononsalt.com/awareness/world\\_salt\\_awareness\\_week\\_2008/evaluation/bangladesh\\_review.doc](http://www.worldactiononsalt.com/awareness/world_salt_awareness_week_2008/evaluation/bangladesh_review.doc)

<sup>80</sup> WASH (World Action on Salt and Health) (2008), *China Salt Action Summary*.  
<http://www.worldactiononsalt.com/action/asia.htm>.

<sup>81</sup> <http://www.worldactiononsalt.com/action/asia.htm>.

published relevant booklets including low-salt recipes, and approached the government to make nutritional labelling, including salt content, mandatory. The Ministry of Health has declined to do so, while expressing its intention to encourage voluntary labelling for salt content.<sup>82</sup>

It was reported in 2007 that in northern Japan, a reduction in blood pressure and in stroke mortality had been achieved following an educational campaign on salt coupled with community-based changes such as better road transport and more refrigeration.<sup>83</sup>

#### **Korea: Awakening concerns about high intake**

A 2007 government report indicates that the average Korean salt intake is 13.5 g/day, higher than Japan's and approaching three times the WHO recommended intake. The report sparked a warning from a Korean Food and Drug Administration spokesperson regarding the dangers of eating "fast food, spicy food and fatty food."<sup>84</sup>

#### **Malaysia and Singapore: Action sparked by WASH<sup>85</sup>**

Although a 1996 survey showed that 30% of the adult population in Malaysia has hypertension, nutritional labelling is not mandatory and no dietary survey on salt intake has been done. However, fears are rising based on perceived national dietary habits, such as the frequent use of high-salt sauces in cooking. Further, one study showed that 73% of Malaysian adolescents have at least one daily meal at fast-food "hawker centres", where offerings are typically very high in salt.

In Singapore, just under 40% of the adult population has high blood pressure. Population dietary habits are very similar to that of Malaysia, featuring many of the same sauces; moreover, more than two-thirds of Singaporeans eat at hawker centres at least twice a week.

World Action on Salt and Health (WASH) has approached both the Malaysian and Singaporean Ministers of Health with a briefing paper pointing out the need for a reduction in salt intake; these meetings resulted in formulation of draft plans for implementation in each country.

Action is now beginning in both countries to implement some aspects of these plans. Malaysia's latest report to WASH<sup>86</sup> indicates that government is encouraging manufacturers to lower salt content in their products, and considering a "healthy-choice" labelling scheme to identify foods with acceptable levels of sugar, salt and fat.

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<sup>82</sup> <http://www.worldactiononsalt.com/action/asia.htm>.

<sup>83</sup> Morgan T and Harrap S (2007). Hypertension in the Asian-Pacific Region: The problem and the solution. (Report of a Joint International Society of Hypertension/Asian Pacific Society of Hypertension Workshop held in Beijing, 2007.) [http://www.ish-world.com/Documents/Report\\_of\\_the\\_Joint\\_APSH-ISH\\_workshop\\_Beijing\\_2007.pdf](http://www.ish-world.com/Documents/Report_of_the_Joint_APSH-ISH_workshop_Beijing_2007.pdf).

<sup>84</sup> <http://www.worldactiononsalt.com/action/asia.htm>.

<sup>85</sup> <http://www.worldactiononsalt.com/action/asia.htm>.

<sup>86</sup> Unfortunately, the report is undated.

### **Nepal: Beginnings of advocacy**

As of 2008, the Nepal Hypertension Society is sponsoring a series of research seminars to begin mobilizing support for salt reduction.<sup>87</sup>

### **Turkey: High salt intake now a matter of record**

The 14-city SaltURK study, using interviews, blood pressure measurement and 24-hour urine collection, has shown that as of 2008, Turkey has an average daily salt intake of 18.04 g/day -- higher than the US, the UK, Japan or China. Men had higher average intake than women (19.31 g/day compared to 16.83 g/day). Intake was positively correlated with obesity and inversely correlated with education level (high school and university graduates consumed more salt than people with lower educational achievement). People with hypertension who were aware of their condition consumed less salt than normotensives, and much less than hypertensives who were unaware of their condition.

### **World Action on Salt and Health (WASH) membership in Asia<sup>88</sup>**

Besides the countries listed above, WASH has members in the following Asian countries: Bahrain, Guam, India, Israel, Lebanon, Pakistan, Russia, Sri Lanka, Taiwan and Thailand.<sup>89</sup>

## **African countries**

According to a presentation made at the 2006 WHO Forum in Paris, only two African countries – Nigeria and South Africa – have dietary guidelines for salt intake.<sup>90</sup>

### **Cameroon: Advocacy reaches out to health professionals**

With support from the government, the Cameroon Heart Foundation held its third Heart Awareness Week in 2008 featuring public conferences and involving some 250 physicians. Key messages included the role of salt as the major risk factor for hypertension in Africa.<sup>91</sup>

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<sup>87</sup> WASH Newsletter (September 2008), p. 4.

<http://www.worldactiononsalt.com/publications/docs/septembernewsletter08.pdf>.

<sup>88</sup> [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls)

<sup>89</sup> For a current list of WASH members, see [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls). Note that the WASH file erroneously lists “Nairobi”, “Hong Kong” and “Northern Ireland” as separate countries; for purposes of this paper, these entries have been counted under Kenya, China and the UK respectively, yielding a current total of 76 countries with members in WASH.

<sup>90</sup> World Health Organization (2007). *Reducing salt intake in populations*, p 15. (Presentation by Prof. FP Capuccio: Overview and evaluation of national policies, dietary recommendations and programmes around the world aimed at reducing salt intake in the population.)

<sup>91</sup> World Action on Salt and Health (2008), *WASH Newsletter*, September 2008, pp 2-3.

## **World Action on Salt and Health (WASH) membership in Africa<sup>92</sup>**

One indication of rising interest in salt reduction in Africa is the fact that WASH currently has active participants from 17 African countries: Angola, Botswana, Cameroon, Democratic Republic of Congo, Dubai, Egypt, Ethiopia, Gabon, Ghana, Kenya, Malawi, Nigeria, Rwanda, Saudi Arabia, Sierra Leone, South Africa, and United Arab Emirates.

## **Countries in the Americas<sup>93</sup>**

### **Argentina: Guideline in place, legislation pending**

There is a national recommendation for salt intake (< 6 g/day), and legislation which would take definite steps to regulate sodium content in commercial foods is awaiting final approval.

Meanwhile, there are estimates of average population intake from several sources. These include the National Survey on Nutrition and Health (ENNyS) which surveyed salt consumption in 2005 among certain subpopulations (children under 5 years of age, women aged 10-49 years, and pregnant women). There have also been estimates based upon salt sales and distribution, as well as local studies which measured salt intake by 7-8 hour urine collection, analysis and extrapolation to 24 hours. The ENNyS survey found a salt consumption from processed food alone of 3.1 g/day in women aged 10-49 years; while the study based on salt sales/distribution estimated an average 9 g/day from salt added during cooking or meals alone. On this basis, the Argentine Association of Dietitians and Nutritionist-Dietitians have estimated total average salt consumption at 12.5 g/day.

Domestic bakery products have long been suspected as a chief source of dietary salt in Argentina. When a research study confirmed that the provision of lower-sodium bread could reduce urinary sodium excretion in a group of volunteers, a collaborative effort was launched between the Ministry of Health (Buenos Aires) and the Chamber of Industrial Bakers, Pastry Cooks and Related Professionals (CIPPA), with assistance from the National Institute of Industrial Technology, to lower the salt in baked goods. CIPPA has now taken responsibility for training and technology development for the salt reduction initiative as a whole. The Health and Disease Control Program in the Ministry of Health (VIGI+A) and the Argentine Federation of Bread and Flour Industries collaborate in monitoring the salt content of baked goods.

In addition, the PROPIA program<sup>94</sup> at the National University of La Plata has established six demonstration areas for cardiovascular disease prevention, which are ready to develop and test a variety of sodium reduction interventions.

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<sup>92</sup> [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls)

<sup>93</sup> Information in this section for all countries other than Canada and the US is taken from responses to a 2008 questionnaire on salt reduction initiatives distributed through PAHO.

### **Brazil: Comprehensive strategy in development; industry collaboration in place**

The national food guide recommends that salt intake not exceed 5 g/day. Average salt intake levels were most recently estimated through the regular Survey of Family Budgets (POF) in 2003. The result indicated average intake at 9.6 g/day, exclusive of food eaten outside the home. The next POF (2008/2009) will be able to report food consumption through daily diaries for all individuals over 10 years of age in various regions of the country, among different strata and income groups of the population. This is a collaborative initiative between the Ministry of Health and the Brazilian Institute of Geography and Statistics.

Nutritional labelling is mandatory in Brazil. Besides labelling and formulation of dietary guidelines, Brazil is involved in several activities related to salt reduction including:

- Planned research to determine the nutrient content – including salt – of selected processed foods, including meat and dairy products, bakery goods, ready-to-eat meals and snack foods. Foods were selected by cross-referencing commercial foods available in supermarkets with those “most consumed” according to the 2003 POF results. Agreement of the nutritional label on each food with the analysis results will also be assessed. The monitoring of sodium, sugars, saturated fats and trans fats is the responsibility of the National Health Surveillance Agency (ANVISA), which plans to establish a database with nutritional profiles of foods together with a network of laboratories with the capacity to analyze nutrient content. ANVISA will also develop proposed strategies for industry food processing practices.
- Planned monitoring program for reductions in salt, sugar and fat content achieved in collaboration with industry. Monitoring will be conducted by ANVISA and by the laboratory of the National Institute of Quality Control in Health.
- Establishment in December 2007 of a Technical Group for collaboration between the health ministry and the food industry, with representatives of consumers, the Department of Agriculture and others to be added in the coming months. While this group was formed to work on issues related to the supply of healthy, high-quality food in general, it is also a vehicle to discuss and negotiate product reformulation and reduction in salt, sugars and saturated and trans fats. A final report from this group is due in 2009.
- Proposed regulation of advertising aimed at children for foods with high sugar, fat and salt content. The regulation includes a requirement for warning labels, restrictions on the use of cartoon characters and other characters which primarily appeal to children, and prohibition of advertising in public and private schools. This proposal has been under development since 2006, involving a working group that includes the Ministries of Health, Agriculture and Justice, representatives of the Brazilian Congress, universities, health professional organizations, consumer protection NGOs, scientific societies, the food industry, advertising agencies and the

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<sup>94</sup> Program for Infarct Prevention in Argentina

National Council for Self-Regulation in Advertising. The regulatory proposal is now being evaluated by civil society; following open discussion in a public forum, it will be submitted for final validation.

- An agreement for technical cooperation between the Ministry of Health and the Brazilian Association of Food Industries. This was signed with a view to collaboration on implementing the National Plan for Healthy Living, ensuring food quality and security, assuring optimal food distribution, cooperating on specific public health initiatives and promoting a stepwise strategy to improve the nutritional content of processed foods with reductions in salt, sugars and fats.

### **Bolivia: Chief sources of salt identified**

There is no national dietary guideline for salt consumption. Measurements of salt content in meals provided in hospitals, day-care centers and other community facilities indicate that salt intake in these settings ranges between 5 and 10 g/day. Surveys have identified soups, snack foods, condiments and meat products as among the chief sources of dietary sodium. Programs on healthy nutrition that include attention to salt intake currently exist for specific groups and are part of the activities undertaken by social clubs, for example, the Project Clubs for people with diabetes and senior citizens.

### **Canada: Comprehensive strategy in development<sup>95</sup>**

At the federal level, the Public Health Agency of Canada and Health Canada both support action on salt reduction. In 2007, Canada's Food Guide was revised to include advice on reading and interpreting the relevant information on nutritional labels.

As of 2008, a Health Canada expert Working Group on Dietary Sodium Reduction has been actively working to develop and oversee the implementation of a Canadian salt-reduction strategy.<sup>96</sup> The group includes representatives of food manufacturers, distributors and the food-service industry as well as government, the scientific and health-professional community, health-focused NGOs, and consumer advocacy groups. However, a major problem remains in that a significant proportion of the processed food consumed in Canada is manufactured in the US, where there is no similar program.

The Sodium Working Group includes Dr. Norm Campbell, who in 2006 was awarded the first Canadian Chair in Hypertension Prevention and Control by a consortium including including the Canadian Hypertension Society, the Canadian Institutes of Health Research (CIHR), Canada's Research-based Pharmaceutical companies (Rx&D), the pharmaceutical company sanofi-aventis, and Blood Pressure Canada (BPC). A reduction in salt content of processed foods is a major priority within this initiative.

A National Sodium Policy was developed in 2007 by a similar coalition of Canadian health NGOs and health professional associations, which called for immediate reductions in the salt content of processed/packaged foods. Major partners in that coalition included the Canadian Stroke Network,

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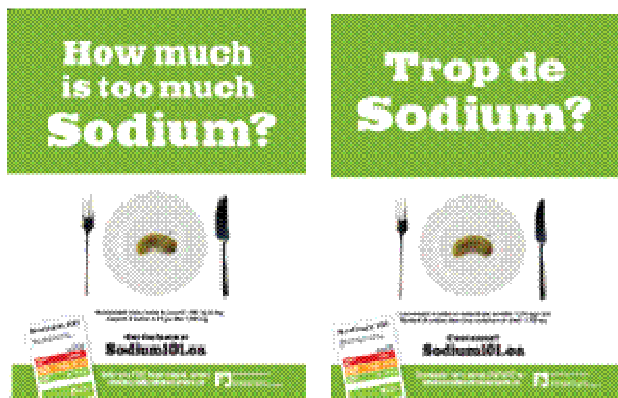
<sup>95</sup> <http://www.worldactiononsalt.com/action/america.htm>

<sup>96</sup> Health Canada website: <http://www.hc-sc.gc.ca/fn-an/nutrition/sodium/sodium-memb-list-eng.php>

Blood Pressure Canada, the Heart and Stroke Foundation, the Canadian Medical Association and the Canadian Hypertension Education Program.

Pending development and implementation of the new Canadian strategy, consumer awareness-raising on the salt issue largely remains the province of health-focused NGOs.

The Canadian Stroke Network—one of Canada’s Networks of Centres of Excellence – launched a new “Sodium 101” website in 2008 dedicated to promoting salt reduction among consumers. Besides pertinent information and links, it offers a variety of tools such as



shopping guides and “reminder” fridge magnets. So far, the site has attracted more than 10,000 “hits” from consumers. The Canadian Stroke Network also partnered with two other Networks of Centres of Excellence – the Canadian Obesity Network and the Advanced Foods and Materials Network – to award the first national ‘Salt Lick’ Award in 2008 for “the saltiest kid’s meal”, and received extensive coverage in newspapers, on TV and on the radio.<sup>97</sup>

#### **English Caribbean community: Guidelines, but no salt-specific program<sup>98</sup>**

Recommendations on salt intake are included in the food-based dietary guidelines of several countries (Bahamas, Dominica, Grenada, Guyana, St. Lucia, and St. Vincent and the Grenadines). These countries have specific qualitative recommendations to use “reduced” or “moderate” salt in cooking and at table, and to limit consumption of salty foods and seasonings. At least four other countries are currently developing food-based dietary guidelines.

Sodium content is frequently listed on food labels, although this is not mandatory. Nutritional education programs encourage reading of food labels.

The Caribbean Food and Nutrition Institute (CFNI) is the PAHO center for nutrition which serves several countries in the Caribbean: Anguilla, Antigua and Barbuda, the Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Turks and Caicos Islands. In the 1990s, mortality due to cardiovascular disease in the Caribbean ranged from 152 to 741 per 100,000.

A mean sodium excretion of 131.5 mEq/day was estimated for the Caribbean based on a study by the Tropical Metabolism Research Unit (TMRU) in 1814 women and 1345 men in peri-urban areas in three

<sup>97</sup> The “winner” was the “Chubby Junior” meal from A&W Restaurants.  
<http://www.canadianstrokenetwork.ca/eng/news/downloads/releases/release.jan292008.e.pdf>

<sup>98</sup> Information in this section was provided by the CFNI.

Caribbean countries (Jamaica, St. Lucia and Barbados), which had average levels of 143.6, 145.9 and 115.3 mEq/day respectively.<sup>99</sup> These levels were intermediate between those in populations of West African descent in Africa and in the United States, and exceeded the WHO-recommended intake of less than 2 grams (87 mEq) of sodium daily. A drop of 33% in current Caribbean intake would be required to meet the recommendations.

To determine the level of reduction possible, the TMRU conducted a randomized trial with a community-based sample of 56 adults in Jamaica. It was found that a 70 mEq reduction in sodium intake resulted in a decrease of 5 mmHg in systolic blood pressure.<sup>100</sup> It was suggested that a similar reduction applied on a population level would halve the number of persons requiring treatment for hypertension, while preventing 20% of deaths due to stroke and 9% of deaths due to ischemic heart disease.

### **Chile: Strategy in development; significant advances in labelling**

Dietary guidelines call for an average intake of < 5 g/day of salt, with specific modified limits for children under 2 and adolescents. While no national survey has been done to estimate current intake, the second National Health Survey (ENS 2009) is now being validated and will include measurements of urinary sodium excretion. The first National Survey of Food Consumption will also take place in 2009.

A Sodium Working Group was formed in late 2008, led by the Ministry of Health with representation from the food industry, scientists and NGOs. The group's goal is development of proposals to the Commission for Health Regulation of Food (RSA) for gradual but significant reduction in salt intake throughout the population.

Nutritional labelling has been mandatory since 2006. Labelling regulations include sodium, with requirements to display its source: i.e., salt added during processing, sodium present in one or more additives, or sodium naturally present in the food itself. A food may be labelled "sodium-free" if it contains less than 5 mg per serving, "very low sodium" (< 35 mg/serving) or "low in sodium" (< 140 mg/serving). Labelling the salt content of marinated meats, which was done on a voluntary basis, will soon become mandatory. In addition, a bill (now in first reading) has been introduced which would require warning labels on high-sodium products, redesign of packaging to make nutritional information more visible, and a ban on sales of foods high in sodium, sugar, fats and/or calories in schools.

The sodium content of selected foods – for example, bread and certain processed foods – is determined by analysis. The government is actively supporting an initiative to reduce the salt content of bakery products, in collaboration with the Federation of Bakers of Chile. Meanwhile, voluntary initiatives by industry include development of a salt product with reduced sodium, and reformulation of certain products using this or a similar low-sodium alternative.

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<sup>99</sup> Cooper R et al. (1997). The prevalence of hypertension in seven populations of West African origin. *Am J Public Health* 87(2):160-8.

<sup>100</sup> Forrester T et al. (2005). A randomized trial on sodium reduction in two developing countries. *J Hum Hypertens* 19: 55–60.



Both the Cardiovascular Health Program and the National Strategy against Obesity include training and education on sodium reduction.

### **Costa Rica: Estimating intake**

A food consumption survey was done in 2008. The results, which will be available in 2009, will permit an updated calculation of population salt intake, previously (2001) estimated at 7 g/day. However, neither the 2008 nor the 2001 surveys included assessment of foods eaten outside the home. A national guideline calls for salt consumption of < 5 g/day. There has as yet been no research to determine the chief sources of dietary sodium; nor has the sodium content of processed and prepared foods been analyzed. Salt reduction is included in the dietary guidelines, but only for hypertensives.

A nutritional labelling regulation for packaged foods has been in place since 2004, and a proposal for Central American labelling regulation is now in negotiation within the framework of the Central American Customs Union. Both these regulations are based on the WHO/FAO Codex Alimentarius.

On their own initiative, some food manufacturers are using salt substitutes in their products and promoting these to consumers.

### **Ecuador: Focus on schools**

Current estimated average salt intake is 10 g/day. While there have been no population-wide surveys, a national salt consumption survey has been conducted in schools (grades 2-7).

### **Guatemala: Survey suggests salt intake very high**

A 1995 survey estimated salt use from consumer purchases of salt, with an average result of 19 g/day (15 g/day for those between the 5<sup>th</sup> and 95<sup>th</sup> percentile). This result does not include salt in processed/packaged food, or food eaten outside the home. No specific programs addressing salt reduction exist; nor are there studies on major sources of sodium in the diet.

### **Panama: Awareness campaigns, but no concerted action on product reformulation**

Dietary guidelines promote “moderate” salt use, without specifying an amount. Guidelines for older adults recommend moderate salt intake and avoidance of additional salt at the table. Guidelines for hypertensives list foods to avoid and prohibit addition of salt at the table.

Panama has not assessed average salt intake. Public awareness on sodium is addressed within a national program for prevention of chronic diseases related to nutrition; in that context, widely distributed educational pamphlets are advising people to reduce intake of fats, sodium and sugar, and to increase fibre and levels of physical activity. Specific research on the consumption of sodium and salt is promoted at the School of Nutrition and among other disciplines at the University of Panama. Supportive food industry initiatives include a weight-loss competition to promote “healthy” menu choices; one supermarket chain features a special section devoted to low-salt products, besides offering low-calorie and low-sodium choices in its cafeterias.

### **Paraguay: New policy expected in 2009**

Activity to date has been limited to awareness campaigns for consumers and health professionals about the dangers of excessive salt consumption, as part of chronic disease programs aimed at people with hypertension and diabetes. As of 2009, a new initiative on Quality of Life and Health will address population-wide salt reduction. Measures will include formation of a national Working Group; a food consumption survey to identify the chief sources of dietary sodium; and estimation of average sodium intake through urine analysis in a population sample. The results will be used as the basis for development of an overall salt reduction strategy.

### **Uruguay: The need for a reliable estimate of intake**

The government has implemented a major awareness/education campaign to promote the national food-based dietary guidelines, among which is a guideline for salt consumption (< 5 g/day). Estimates of population salt intake, based on data from the 2005 National Survey of Income and Expenditure of Households, indicate an average consumption of 5 g/day. There is a separate national initiative addressing prevention and management of cardiovascular disease that includes reducing salt intake. Meanwhile, consideration is being given to formation of a Working Group for salt reduction.

### **US: Still waiting for the FDA**

Despite consistent medical advice since the 1980s to reduce salt intake to 5-6 g/day, and repeated calls for a population-wide strategy from agencies including the National Heart, Lung and Blood Institute (NHLBI – one of the government’s own National Institutes of Health), the US government so far continues to resist taking any concerted action.<sup>101</sup>

The NHLBI resolution was taken in January 2000 following a thorough review of evidence. The Center for Science in the Public Interest (CSPI), a leading nutrition advocacy group, brought its own pressure to bear. The hopes of both these agencies centred around a legislative approach – specifically, action by the Food and Drug Administration (FDA) to rescind its classification of salt as “GRAS” (“generally recognized as safe”). The GRAS classification means that there is no legal limit to the amount of salt that manufacturers can add to foods. At one point in 2005, the CSPI actually brought a lawsuit against the FDA.<sup>102</sup> When no action resulted, the American Medical Association (AMA) in 2006 made a formal call for Americans to reduce dietary sodium intake by half within ten years, and added its considerable voice to the call to withdraw salt’s GRAS status.<sup>103</sup> The AMA also offered to collaborate with the FDA, the NHLBI, the American Heart Association, and “other interested partners” in a campaign to raise awareness among consumers.

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<sup>101</sup> <http://www.worldactiononsalt.com/action/america.htm>; Appel LJ (2006), Salt reduction in the United States. *BMJ* 333:561-562

<sup>102</sup> [http://www.cspinet.org/new/pdf/salt\\_lawsuit.pdf](http://www.cspinet.org/new/pdf/salt_lawsuit.pdf)

<sup>103</sup> Havas S et al. (2007). The urgent need to reduce sodium consumption. *JAMA* 298:12(1439-1441); American Medical Association (2007). Report 10 of the Council on Science and the Public Health. <http://www.ama-assn.org/ama/pub/category/16413.html>

Apparently in response to this cumulative pressure, the FDA scheduled a public hearing in late 2007 to consider revising the GRAS classification of salt; it later extended the deadline for submissions from interested parties to August 2008. WASH was among those agencies which contributed documents for consideration. No decision has yet been announced.

Meanwhile, the Center for Science In the Public Interest announced in December 2008 the results of its latest product survey, indicating that the average sodium content in packaged and restaurant foods has remained “essentially the same” since 2005 – with some notable exceptions. Some 109 products of the 528 surveyed had increased their sodium content by 5% or more since 2005; 29 products had more than 30% more sodium. On the other hand, sodium in 114 products declined by 5% or more, and 18 by 30% or more.<sup>104</sup>

**World Action on Salt and Health (WASH) membership in the Americas<sup>105</sup>**

Besides those countries listed above, WASH has also has members in Barbados, Cuba, Dutch West Indies, Jamaica, Mexico and Venezuela.

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<sup>104</sup> Center for Science in the Public Interest (2008). News Release, December 2008: Industry not lowering sodium in processed foods, despite public health concerns. <http://www.cspinet.org/>

<sup>105</sup> [http://www.worldactiononsalt.com/home/docs/wash\\_members.xls](http://www.worldactiononsalt.com/home/docs/wash_members.xls)

# ISSUES AND CHALLENGES

## Salt measures, food labels and consumer confusion

The term "salt" is used variously in the literature to mean sodium (chemical symbol: Na) and/or "common" or "table salt" (sodium chloride, or NaCl). In scientific usage, dietary salt is measured in millimoles (mmol) of Na. One gram of NaCl contains 17.1 mmol, or 393.4 mg, of Na.<sup>106</sup> WHO defines "dietary salt intake" as total Na intake from all sources, including NaCl, MSG (monosodium glutamate) or any other sodium-containing preservatives / additives.

Most countries in the world do not have consistent nutritional labelling systems. Because most dietary salt is "hidden" in processed / packaged foods, it is impossible for consumers in these countries to know how much salt they are eating.

Even in countries which do have labelling systems, confusion remains. Labels in Canada and the US, the EU and Australia refer to sodium rather than salt. However, governments often specify national intake targets as grams per day of salt (NaCl + MSG and/or other dietary sodium sources), which is the convention followed in this paper.

Still, information available to the public often uses other measures. For example, while WHO refers to g/day of salt, a recent news release from Statistics Canada described Canadian consumption only in mg/day of sodium.<sup>107</sup> Labels currently specify sodium content in milligrams (mg) or grams (g), as follows:<sup>108</sup>

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<sup>106</sup> World Health Organization. (2007). *Reducing salt intake in populations: Report of a WHO forum and technical meeting, Paris 2006*, p. 4.

<sup>107</sup> <http://www.statcan.ca/Daily/English/070410/d070410a.htm>

<sup>108</sup> *Salt Matters* (a website of the Menzies Research Institute, University of Tasmania). Sections on Australian labels, European labels, US/Canadian labels: <http://www.saltmatters.org/site/>.

**Canada/US:**  
mg per serving;  
% daily value

**Nutrition Facts**

Serving Size 3 cookies (34g/1.2 oz)  
Servings Per Container About 5

Amount Per Serving	
<b>Calories</b> 180	Calories from Fat 90
% Daily Value*	
<b>Total Fat</b> 10g	<b>15%</b>
Saturated Fat 3.5g	<b>18%</b>
Polyunsaturated Fat 1g	
Monounsaturated Fat 5g	
<b>Cholesterol</b> 10mg	<b>3%</b>
<b>Sodium</b> 80mg	<b>3%</b>
<b>Total Carbohydrate</b> 21g	<b>7%</b>
Dietary Fiber 1g	<b>4%</b>
Sugars 11g	
<b>Protein</b> 2g	

**Nutrition Facts**

Serving Size: 1 piece (11g)  
Servings Per Container: about 20

Amount Per Serving	
<b>Calories</b> 40	Calories from Fat 0
% Daily Value*	
<b>Total Fat</b> 0g	<b>0%</b>
Saturated Fat 0g	<b>0%</b>
<b>Cholesterol</b> 0mg	<b>0%</b>
<b>Sodium</b> 30mg	<b>1%</b>
<b>Total Carbohydrate</b> 9g	<b>3%</b>
Dietary Fiber 2g	<b>8%</b>
Sugars 0g	
<b>Protein</b> 1g	

**Europe:**  
grams per 100 g;  
grams per serving

In the UK, manufacturers may opt instead to use the “traffic light” front-of-package label indicating low, medium or high sodium content.

**INGREDIENTS**

Wheat Flour, Rye Flour, Water, Wheat Bran, Vegetable Fat, Sugar (Sucrose), Salt, Bakers Yeast. pH-controlling agents: Vinegar, Sour Dough.

**STORAGE INSTRUCTIONS**

Store in a dry, dark place.  
For 'Best Before End' see side of pack.

**NUTRITION INFORMATION**

Typical Analysis	Per 100g	Per slice (8.4g)
Energy	1527kJ (365kcal)	128kJ (30kcal)
Protein	11.4g	1.0g
Carbohydrate	65.0g	5.4g
(of which sugars)	2.6g	0.2g
Fat	6.0g	0.6g
(of which saturates)	1.0g	trace
Dietary Fibre	7.5g	0.6g
Sodium	0.7g	trace

18 slices per box.

**Australia:**  
mg per serving;  
mg per 100 g

**NUTRITION INFORMATION**

Servings per package: 3  
Serving size: 150 g

	Quantity per serving	Quantity per 100 g
Energy	608 kJ	405 kJ
Protein	4.2 g	2.8 g
Fat, total	7.4 g	4.9 g
– saturated	4.5 g	3.0 g
Carbohydrate, total	18.6 g	12.4 g
– sugars	18.6 g	12.4 g
Sodium	90 mg	60 mg
Calcium	300 mg (38%)*	200 mg

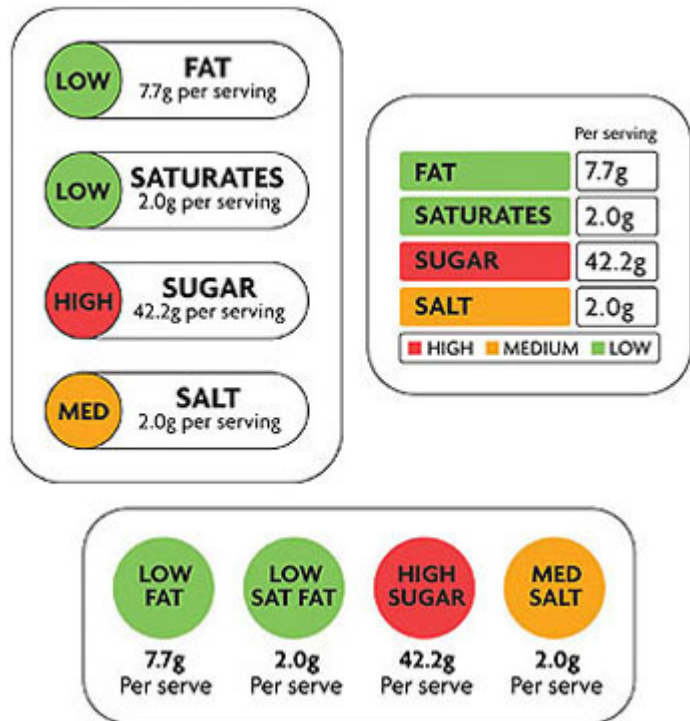
\* Percentage of recommended dietary intake

Ingredients: Whole milk, concentrated skim milk sugar, strawberries (9%), gelatine, culture, thickener (1442).

These differing usages are an obvious source of confusion, especially when consumers are exposed to more than one labelling system (e.g. on imported foods).

Some authorities try to make things less confusing by referring to a target of “a teaspoon of salt per day” (about 6 g NaCl).<sup>109</sup> This approximation may be easy for consumers to visualize, but is not helpful in estimating the amount of “hidden salt” in processed foods, which is usually the chief source of dietary sodium.

The UK’s voluntary front-of-pack “Traffic Light” labelling system (see picture at right) has tried to sort out some of the confusion by showing at a glance whether a particular food is high, low, or medium in levels of important factors such as fats, saturated fats, sugars and salt. Manufacturers are free to vary the size and various design elements of the system, as well as to add or omit one or more elements (e.g. total calories). The system was developed and refined with extensive consumer testing.<sup>110</sup>



Several other systems exist, including Sweden’s “Keyhole Mark”, the Australian National Heart Foundation “Tick” accreditation, and Canada’s Heart and Stroke Foundation “Health Check” symbol. All are designed to make healthier choices stand out on supermarket shelves, but none have the UK scheme’s flexibility or its ability to instantly convey information on several individual ingredients at once.

Meanwhile, a novel scheme – the NuVal nutritional scoring system – will be introduced in some 5000 US supermarkets in 2009. NuVal uses the “ONQI” algorithm, which weights individual ingredients, the prevalence of diseases linked to those ingredients, and the strength of the link, to come up with a single number between 1 and 100 expressing the “relative healthiness” of foods. Currently, it is planned to post the NuVal score not on food packages, but on store shelves, next to the price tag. No studies of consumer reaction have yet been undertaken.<sup>111</sup>

<sup>109</sup> See, for example, the 2007 Beijing campaign to reduce salt consumption, which distributed blue plastic teaspoons as a concrete illustration of allowable daily salt intake. WASH (World Action on Salt and Health) (2008), *China Salt Action Summary*. <http://www.worldactiononsalt.com/action/asia.htm>.

<sup>110</sup> UK Food Standards Agency website. <http://www.food.gov.uk/foodlabelling/signposting/signpostlabelresearch/>

<sup>111</sup> News: Forget pie, try pi (2008). *CMAJ* 179(12):1261.

## Fortification

For many years, the iodization of salt has been recommended by public health authorities for the prevention of iodine deficiency disease, which is a threat in many parts of the world. Salt was chosen as a vehicle because it is a near-universal staple of consumption, and because the addition of iodine does not affect its taste, texture or appearance. The success of iodization has led to proposals to include other additives in table salt: e.g. fluoride (for prevention of dental caries) and diethylcarbamazine (to prevent lymphatic filariasis).<sup>112</sup>

The global campaign to reduce dietary salt intake may require rethinking of the reliance on salt for delivery of iodine and other potentially beneficial additives. At the very least, the additive levels in table salt will require adjustment, since they are based on estimates of average salt intake.<sup>113</sup> For the moment, at least, WHO maintains its earlier recommendation for the use of iodized salt, while cautioning planners of salt-reduction programs to be aware of the potential for conflicting public health messages.

## Dealing with dissent

In the US, calls for a reduction in population dietary salt intake in the interest of public health have been met with “immediate and hostile” response from industry and others. The Salt Institute, an international trade organization of salt producers, was foremost in opposition, and has now garnered the support of the US Chamber of Commerce in the fight against salt reduction proposals.<sup>114</sup>

The existence of dissent was also evident in a 2007 canvass of key informants by the Canadian Public Health Association. Seven of 11 respondents agreed that a population-wide salt reduction program would be worthwhile. Four -- including a representative of the Salt Institute -- disagreed.<sup>115</sup>

Planners of salt initiatives are very likely to encounter dissent at some stage. They, and the public they serve, will need to be armed with some countering facts. The most common arguments are outlined below.

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<sup>112</sup> Marthaler T & Petersen P (2005). Salt fluoridation – an alternative in automatic prevention of dental caries. *International Dental Journal* 55:351-358; Lammie P et al. (2007). Unfulfilled potential: Using diethylcarbamazine-fortified salt to eliminate lymphatic filariasis. *Bulletin of the World Health Organization* 85(7):501-568; World Health Organization (2008). *Salt as a vehicle for fortification. Report of a WHO Expert Consultation, Luxembourg, 21-22 March 2007*. [http://whqlibdoc.who.int/publications/2008/9789241596787\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241596787_eng.pdf).

<sup>113</sup> Currently, the amount of added iodine is based on a 1996 estimate of an average salt intake of 10 g/day. See WHO (2007), *Reducing salt intake in populations*, p. 46.

<sup>114</sup> Appel, L. J. (2006). Salt reduction in the United States. *BMJ*, 333, p 561.okl

<sup>115</sup> Canadian Public Health Association. (2007). *Public advocacy, policy frameworks: Consumption of salt*. Final project report.

## CHALLENGE

There is a lack of clear evidence from randomized controlled trials that salt reduction initiatives lead to significant decline in mortality.

Systematic reviews such as Hooper et al. (2002)<sup>118</sup> show that advice to reduce dietary salt levels achieves only a modest drop in blood pressure, which is not maintained over time. Further, reduction in blood pressure cannot be reliably correlated with reduction in sodium intake.

## RESPONSE

It is unreasonable to expect policymakers to rely solely on evidence from clinical trials that use ultimate outcomes (such as stroke and mortality) rather than intermediate outcomes (such as blood pressure).<sup>116</sup> Such trials would have to be massive in size, would take years, and would be prohibitively expensive. There is already strong and sufficient evidence that hypertension can be prevented through public health interventions to reduce dietary sodium, and there is every reason to expect that doing so will have a favourable effect on mortality from cardiovascular diseases.<sup>117</sup>

In fact, this is a strong argument in favour of a population approach. The failure to maintain lower blood pressure over time, despite advice, reflects the fact that individuals have little control over their own sodium intake: most salt in the diet is not added during cooking or at the table, but at the manufacture/processing stage. Hence, a population-based approach which can engage industry is essential.<sup>119</sup>

A subsequent meta-analysis by He and MacGregor (2004)<sup>120</sup> notes that the Hooper review, by including several very short-term studies which typically achieved minimal reductions in salt intake, is based upon an inappropriate body of work to inform a long-term salt reduction strategy affecting whole populations. A focus on longer-term studies demonstrates that a modest reduction in salt intake over a period of four weeks or more does have a significant effect on blood pressure in both normotensive and hypertensive individuals. Further, a dose-response relationship is evident: within a range of 3-12 g/day, the lower the intake achieved, the lower the blood pressure.

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<sup>116</sup> Appel, L. J. (2006). Salt reduction in the United States. *BMJ*, 333, p 561.

<sup>117</sup> Canadian Hypertension Education Program. *2008 Recommendations*. <http://hypertension.ca/chep/recommendations/recommendations-overview/>; World Health Organization (2007) *Reducing salt intake in populations: Report of a WHO forum and technical meeting, Paris 2006*, p. 4.

<sup>118</sup> Hooper L, Bartlett C, Davey Smith G, Ebrahim S (2002). Systematic review of long term effects of advice to reduce dietary salt in adults. *BMJ* 325(7365):628.

<sup>119</sup> Scientific Advisory Committee on Nutrition (UK). (2003). *Salt and Health*. P. 38.

<sup>120</sup> He, F., & MacGregor, G. (2004). Effect of longer-term modest salt reduction on blood pressure. *Cochrane Database Syst Rev* (3), CD004937.



## CHALLENGE

Consumers prefer salty foods and will resist change.

It is very costly for industry to make the necessary changes to reduce salt in food products. The financial impact will be greater still if consumers turn away from low-salt products.

## RESPONSE

It is well-established that people adapt quite quickly to changing salt levels in food; once familiar with the taste of lower-salt foods, they typically perceive salty foods as unpleasant. Both the CINDI dietary guide and the report of expert discussion at the 2006 WHO Technical Meeting, among many other sources, make special note of this tendency to adapt.<sup>121</sup> See also the results of the Australian Sodium in Bread study, which found that participants were unable to detect incremental reductions in sodium content;<sup>122</sup> and a 2008 follow-up project to the China Salt Substitute Study, which found that gradual salt substitution did not appreciably affect taste or acceptability of foods.<sup>123</sup>

Voluntary action is usually more palatable for industry than is legislation, which remains an option. A reputation for providing “healthier” food is desirable in the marketplace. Conversely, it is unlikely that A&W takes pride in its status as winner of the first annual “Salt Lick” award for the highest sodium content in a children’s meal in Canada.<sup>124</sup> In the UK, many manufacturers such as Heinz and Birdseye have embraced change quite successfully; similarly, Kellogg’s, Heinz, Macdonalds restaurants and many others are cooperating with salt reduction in Australia.<sup>125</sup> While many of these same companies continue to market their higher-salt foods in other countries, such as the US, this is surely attributable not to “consumer taste” but, more likely, to lack of government leadership and a concerted program. Meanwhile, multinational contract catering organizations such as the Compass Group are leading the way in their sector, at least in Europe.<sup>126</sup>

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<sup>121</sup> World Health Organization. (2007). *Reducing salt intake in populations: Report of a WHO forum and technical meeting, Paris 2006*, p. 46; CINDI (Countrywide Integrated Non-communicable Disease Intervention) Dietary Guide, available at <http://www.panalimentos.org/planut/downloads/CINDI%20dietguide.pdf>.

<sup>122</sup> Girgis S et al. (2003). A one-quarter reduction in the salt content of bread can be made without detection. *Eur J Clin Nutr* 57(4):616-20.

<sup>123</sup> Li N et al. (2008). The effects of a reduced-sodium, high-potassium salt substitute on food taste and acceptability in rural northern China. *Br J Nutr* 19:1-6; CSSS Collaborative Group (2007). Salt substitution: A low-cost strategy for blood pressure control among rural Chinese. *J Hypertens* 25(10):2011-8.

<sup>124</sup> Canadian Stroke Network, Canadian Obesity Network, Advanced Foods and Materials Network (2008). *Canada’s “Salt Lick Award” goes to A&W “Chubby Junior” Meal*. News release, January 29, 2008.

<sup>125</sup> WASH (World Action on Salt and Health) (2008), *UK Salt Action Summary*. <http://www.worldactiononsalt.com/action/europe.htm>; AWASH (Australian Division of World Action on Salt and Health) (2008). *Strategic Review, 2007-2008*. [http://www.awash.org.au/documents/AWASH-Strategic-Review-2007\\_08.pdf](http://www.awash.org.au/documents/AWASH-Strategic-Review-2007_08.pdf).

<sup>126</sup> FERCO (European Federation of Contract Catering Organisations) (2008). *Healthy Eating for a Better Life*. <http://www.ferco-catering.org/pdf/contract-catering-fights-against-obesity.pdf>.

## CHALLENGE

It is unreasonable to single out salt. Any problems due to excessive salt intake should be addressed as part of a holistic healthy diet/lifestyle approach.

A population approach is wrong since individuals and subpopulations have different responses to changing sodium levels. For some, change to a low-sodium diet may even be dangerous.

## RESPONSE

Given the importance of various elements of diet to health, it is perhaps not unreasonable to assume that a combined approach would be best. This would allow expansion of existing health promotion programs, rather than the creation of new ones. In fact, several countries and agencies do take this approach. For example, both Spain and France address salt reduction as part of wider health promotion programs. The European Federation of Contract Caterers has achieved a great deal while treating salt reduction as part of its anti-obesity initiative. Even WHO addresses salt reduction as part of DPAS (Global Strategy on Diet, Physical Activity and Health).

However, WHO does commit dedicated resources to its salt-reduction program, and for good reason. It has been shown in clinical trials that a holistic “healthy-diet” approach is less successful at reducing average salt intake than is a salt-specific approach.<sup>127</sup> And there are several additional reasons to treat salt separately:

- Most other elements of a holistic diet/lifestyle approach rely on individual behaviour. This is much less true of salt reduction, which depends heavily on concerted action in collaboration with industry.
- In terms of cardiovascular disease prevention, salt reduction is probably the most productive single change that can be made. It has been called more relevant to the whole population than tobacco cessation; easier for the individual than increasing exercise and consuming more fruits and vegetables; and more clearly needed than reducing cholesterol.<sup>128</sup>

The issue of variable “salt sensitivity” among individuals and groups is sometimes raised, based selectively on one or more studies. However, the literature offers no consensus on this issue; many studies are flawed, and results often conflict.<sup>129</sup> It is true that in some subpopulations (women, older people, people of African descent, people with hypertension, diabetes or chronic renal disease) blood pressure tends to vary more readily in response to declining sodium intake. It is also true that climate plays a role: individuals in hot countries need more salt than those in temperate or cold climates, and

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<sup>127</sup> Appel, L. J. (2006). Salt reduction in the United States. *BMJ*, 333, p 562.

<sup>128</sup> Canadian Public Health Association. (2007). *Public advocacy, policy frameworks: Consumption of salt*. Final project report, p 7.

<sup>129</sup> Scientific Advisory Committee on Nutrition (UK). (2003). *Salt and Health*, pp 24-28.

## CHALLENGE

## RESPONSE

this should be taken into account in setting national targets. However, the average salt intake in hot regions is still far in excess of need. The WHO target of < 5 g/day has been set in accordance with expert consensus to be both safe and achievable, for both adults and children, regardless of setting. For some groups (e.g. those at high risk), even lower targets may be desirable.<sup>130</sup>

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<sup>130</sup> See, for example, He, J et al. (2009). Gender difference in blood pressure responses to dietary sodium interference in the GenSalt study. *J Hypertension* 27(1):48-54; Scientific Advisory Committee on Nutrition (UK). (2003). *Salt and Health*; He, F and MacGregor G (2006), Importance of salt in determining blood pressure in children: meta-analysis of controlled trials. *Hypertension* 48(5):861-869; Cutler JA and Roccella EJ (2006), Salt reduction for preventing hypertension and cardiovascular disease: A population approach should include children. *Hypertension* 48:818.

# OBSERVATIONS AND CONCLUSIONS

## Working with industry: Voluntary vs. legislative approaches

The UK Food Standards Agency is an independent organization, which does not answer to the Ministry of Health and has no real authority to enforce change. Yet, relying only on the power of publicity, collaboration and “moral suasion”, it has become a world leader in salt reduction. In 2008, Consensus Action on Salt and Health (CASH) hailed the latest UK results as “...the most important news we have heard about health and eating for a long time. Since the start of the salt reduction policy, salt intake has fallen in adults in the UK [by approximately 10%]. This represents a massive 19,700 tonnes of salt per year that has been removed from the UK diet... Studies clearly suggest that each 1 g/day reduction in the average salt intake would prevent at a minimum approximately 7,000 stroke and heart attack deaths a year in the UK...”

There is good reason, therefore, that the Sodium Working Group in Canada is carefully considering the UK model and that the US Center for Science in the Public Interest is citing the UK system as an example in its submission to FDA public hearings on salt.

However, legislation clearly has a place, and may be a more important tool in some countries than in others. Finland, for example – also a world leader, and the pioneer in population-wide salt reduction – relies much more heavily on regulation than does the UK. A significant part of Finland’s success may be attributed to its decision to institute punitive “high-salt” labelling:

A “high salt content” must be labeled, if the salt content is more than 1.3% in bread, 1.8% in sausages, 1.4% in cheese, 2.0% in butter, and 1.7% in breakfast cereals or crisp bread. **This warning label has been very effective and has led to a markedly reduced average salt content of most of the important food categories.**<sup>131</sup> For example, the average salt content in breads has been lowered by approximately 20% from approximately 1.5% to about 1.2%. In sausages the average decrease in salt content was approximately 10%.<sup>132</sup>

It was noted in Finland that many products disappeared from the market rather than be forced to carry the “high-salt” label; their market share was taken by competing or newer products. As of 2008, the Finnish National Public Health Institute has concluded that even stricter legislation is necessary, with mandatory nutritional labelling and limits for salt content.

In the US, there appears to be little emphasis, even by advocates, on the possibilities for a UK-style collaborative approach. All potential action seems to hinge on a decision by the FDA to rescind the

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<sup>131</sup> Emphasis added.

<sup>132</sup> WASH website: <http://www.worldactiononsalt.com/action/europe.htm>

“generally recognized as safe” classification of salt, which would allow the government to set upper limits for sodium content in foods. To what extent it would be willing to do so remains uncertain.

### **Merits of a salt-specific vs. a “holistic” approach**

Salt reduction strategies in the UK, Ireland and Finland have adopted a salt-specific approach, which reflect attention to all eight steps outlined earlier in this paper. In France and Spain, the approach has been to include salt reduction as part of a combined healthy diet / healthy lifestyle approach. While there may be many reasons for choosing a holistic approach – including making the most of existing resources and programs – a review of this material strongly suggests that when the combined approach is chosen, some steps are very likely to be missing. Key messages of the campaigns in Spain and France tend to emphasize the dangers of salt added during cooking or at table, rather than addressing the dangers of “hidden salt” in processed foods. Moreover, systematic monitoring of population salt intake and of salt levels in commercial foods is apt to receive less attention than in countries which have adopted the salt-specific approach.

### **“Rewarding” industry participation with publicity**

In Ireland, the Food Safety Authority (FSAI) website lists industry achievements without referring to specific companies (e.g. “x bakeries lowered salt in bread by x amount”). By contrast, the UK’s FSA takes care to “reward” industry partners by free publicity of their achievements. Commercial logos are freely carried on consumer materials prepared by the FSA.

These differences in national approach may stem from the status of the lead agency, together with government policy applicable to public-private partnerships: in Ireland, the FSAI is funded by the Ministry of Health and Children, while the FSA in the UK is independent.

In Finland, the “carrot” is combined with a “stick”: there have been repeated surveys comparing salt content among different brands of the same product, and these receive considerable media attention.

It would seem that, unless there is good reason to do otherwise, the power of publicity can be an extremely useful tool in a national salt reduction strategy. Even where policy prohibits direct action by the lead agency, action may be possible through other means or other partners.

### **Complementary channels**

As a guide and support for national action on salt reduction, the value of a centralized regional entity such as the EU Framework is clear. However, once national interest has been aroused, there are several

additional international channels which should not be overlooked in the effort to leverage change and to further spread the word about salt. These include:

- **International health professional organizations** – e.g. the International Society of Hypertension
- **International trade organizations** – e.g. FERCO (European Federation of Contract Catering Organizations).  
FERCO has served as a vital information exchange for salt reduction initiatives among its members, many of whom (e.g. the Compass Group, Sodexo) have interests in many other parts of the world. FERCO has also engaged the support of the European Federation of Trade Unions in its healthy-nutrition campaign, and is considering initiating talks with major food suppliers regarding salt reduction. Examples of FERCO activities and achievements appears in the Appendix to this document.
- **Advocacy groups** – e.g. World Action on Salt and Health.  
WASH membership is global, with representatives in more than 70 countries. Through WASH, members can not only share information and experiences, but also heighten local activity by forming national or regional sub-organizations (e.g. CASH in the UK, AWASH in Australia). Besides information, the WASH website contains several freely available resources that can be borrowed or adapted for use in any country.<sup>133</sup>

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<sup>133</sup> <http://www.worldactiononsalt.com/home/resources.htm>

# APPENDIX

## Complementary channels: European caterers take the lead<sup>134</sup>

FERCO is the European Federation of Contract Catering Organisations. Its twelve members are the national associations representing contract caterers:

- **Belgium** – Union Belge du Catering (UBC)
- **Finland** – Finnish Hospitality Association (MARA) – [www.mara.fi](http://www.mara.fi)
- **France** – Syndicat National de la Restauration Collective (SNRC) – [www.snrc.fr](http://www.snrc.fr)
- **Germany** – Verband der Internationalen Caterer in Deutschland (VIC)
- **The Netherlands** – Vereniging Nederlandse Cateringorganisaties (VENECA) – [www.veneca.nl](http://www.veneca.nl)
- **Ireland** – Association of the Irish Contract Caterers (AICC)
- **Italy** – Associazione Nazionale delle Aziende di Ristorazione Collettiva e servizi (ANGEM) – [www.angem.it](http://www.angem.it)
- **Hungary** – Magyar Vendéglátó Szövetség (MVSZ) – [www.mvsz.org](http://www.mvsz.org)
- **Portugal** – Associação de Restauração e Similares de Portugal (ARESP) – [www.aresp.pt](http://www.aresp.pt)
- **Spain** – Federación Española de Asociaciones Dedicadas a la Restauración Social (FEADRS) – [www.feadrs.com](http://www.feadrs.com)
- **Sweden** – Sveriges Hotell & Restaurang Företagare (SHR) – [www.shr.se](http://www.shr.se)
- **United Kingdom** – British Hospitality Association (BHA) – [www.bha-online.org.uk](http://www.bha-online.org.uk)

FERCO members include three multinational firms: **The Compass Group**, **Sodexo** (formerly **Sodexo**) and the **Elior Group** (which owns **Avenance**). Elior operates within Europe; Sodexo is worldwide, while Compass is concentrated in Europe and North America, but also has operations elsewhere.<sup>135</sup>

Since FERCO joined the European Platform for Action on Diet, Physical Activity and Health in 2005, its members have developed a host of salt-specific initiatives, albeit under the broad umbrella of fighting obesity. Members are committed to following national guidelines, as well as those established by FERCO. In 2006, FERCO engaged the support of the European Federation of Trade Unions (Food, Agriculture and Tourism sectors) within the EU Social Dialogue; in 2007, the two organizations signed a joint statement on the role of contract catering in ensuring healthy nutrition and overall health. In 2008, FERCO announced its intention to consider convening a workshop involving contract caterers and food manufacturers to discuss possible joint action on salt reduction.<sup>136</sup>

The following is a brief summary of FERCO members' activities in Europe:

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<sup>134</sup> Except where otherwise noted, information in this section is taken from FERCO(undated). *Healthy Eating for a Better Life: Contract catering fights against obesity*. <http://www.ferco-catering.org/pdf/contract-catering-fights-against-obesity.pdf>

<sup>135</sup> <http://www.compass-group.com/brandsservices/services.htm>; [http://www.sodexo.com/group\\_en/the-group/sodexo-worldwide/sodexo-worldwide.asp](http://www.sodexo.com/group_en/the-group/sodexo-worldwide/sodexo-worldwide.asp); [www.avenance.com](http://www.avenance.com).

<sup>136</sup> [http://www.ferco-catering.org/pdf/FERCO\\_2008\\_commitments.pdf](http://www.ferco-catering.org/pdf/FERCO_2008_commitments.pdf)

## **Belgium**

In Belgium, *Sodexo* became the first operator in the food service sector to be awarded the Ministry of Health's new PNNS-B logo (Plan national nutrition et santé). A Charte Santé (health charter) has been implemented in more than 1,200 units operated by Sodexo Belgium.

## **France**

Since 2002, *Sodexo France* has been a partner in the *Santal* programme developed by PSA Peugeot Citroën in Rennes. *Santal*'s objectives are to improve employees' health, as well as their working and living conditions. *Santal* combines information programmes, individual coaching and a healthier food offer. The introduction of the programme has resulted in increases of 11% consumption of fish, 12% of vegetables and 10% of fruit. The satisfaction rate of the employees dining in the two *Sodexo*-operated restaurants increased by 10 and 11 points.

## **Germany**

*The Compass Group (Eurest)* has based its nutritional guidelines on those provided by the German Association for Nutrition. This includes varied foods, small helpings, plenty of vegetables and fruit, offering milk and dairy products, and using small amounts of fat, sugar and salt.

## **Hungary**

*Compass* is introducing its Balanced Choices initiative in all EU Member States. For example, *Eurest Hungary* is the first company in the country to introduce a food offer supporting health choices. The company worked together with dieticians and experts from the National Institute for Health Development to put together a selection of well-balanced recipes with simple physical activities to promote a healthier lifestyle. It also conducted a survey that determined consumers prefer menus with low carbohydrate, low fat and high fibre content. The survey showed that customers were concerned about the guarantee of nutritional content in the food offer. To meet this demand, chefs select recipes from a central database and monthly random checks on meals are made by an external expert. Communication materials – posters, information cards and brochures – are being used by frontline teams. Piloted in public and private sector workplaces, Balanced Choices will be introduced in 25% of Hungarian work places during 2007.

## **Italy**

*Sodexo Italy* is focusing on serving well balanced meals to school aged children. There is a four-week rotation and two seasonal variations. *Sodexo's* Education Department has developed a range of 354 recipes that follow national nutritional guidelines concerning cooking methods and the reduced use of fats, added sugar and salt.

## **Netherlands**

*Elior Nederland*, part of *Avenance*, developed five key values, one of which is "taking responsibility in catering". The company is following guidelines for healthy nutrition that are reflected in staff training manuals. It is also developing a strategy for healthy and nutritious food in the education sector.

*Albron*, *The Netherlands*, has adopted "Good Food, Happy People" as its company mission. *Albron* food statements are communicated at the company 1,200 locations, which serve 500,000 guests daily. The three food groups are clearly indicated by using name cards with a green "smiley" for preferred products, for which guests receive a 25% "health discount". *Albron* is also partner of the "Kids in



Balance” program that aims to prevent the development of early health problems in children aged 8-12 years.

*Mondial Catering* in the Netherlands is coding its healthy food options with a green logo. Recipes have been revised and cooking workshops have been organized across the Netherlands for staff. Information is being provided to consumers through flyers and a special software programme.

### **Portugal**

In Portugal, contract catering companies have distributed CD-ROMs to primary school teachers containing information about healthy eating and a healthier lifestyle.

### **Sweden**

In Sweden, *Fazer Amica*, a Finnish company that is Volvo’s primary contract caterer, is participating in Sweden’s largest initiative involving 65,000 people. Organized by Volvo and the Gothenburg region, the objective of the “Lifestyle in the West” program is to foster a healthier lifestyle through a number of projects using health coaches.

### **UK**

In the UK, *Sodexo* is promoting a “whole school” approach, to ensure all parties work towards educating young people about nutrition. An annual survey is held on school meals and lifestyle that gives the company up-to-date information to ensure menu items are appropriate for school children.

In the UK, *Compass* works with suppliers and manufacturers to improve the nutritional content of products. This has resulted in a 25% to 50% reduction in the salt content of the soups served and a baked bean that meets the specification of a 25% reduction in salt and sugar content.