



# **Mobilizing for dietary salt reduction in the Americas**

# **MEETING REPORT**

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## CONTENTS

Acronyms	3
Executive Summary	4
OPENING	8
MEETING CONTEXT AND OBJECTIVES	8
BACKGROUND PAPER: HIGHLIGHTS	9
SALT: FROM EVIDENCE TO IMPLEMENTATION IN THE UK	112
PANEL: COUNTRIES INFLUENCED BY THE UK	18
Canada	18
Australia	21
Argentina	223
Discussion	25
PANEL: EPIDEMIOLOGY AND IMPACT OF CHRONIC DISEASES RELATED TO SALT	26
North America	26
South America	29
Discussion	34
RESPONSES TO SODIUM QUESTIONNAIRE – COUNTRIES IN THE AMERICAS	335
PANEL: SPECIFIC MECHANISMS AND EXPERIENCES	37
Government initiatives	37
Canada: Food labeling; National Working Group on sodium	37
Chile: National Task Force for the reduction of salt consumption	40
Food industry initiatives	42
Argentina: Compañía de Alimentos Fargo	42
US: Grocery Manufacturers Association	43
Civil society initiatives: The World Hypertension League	46
Discussion	46
REPORT: US INSTITUTE OF MEDICINE MEETS ON SALT REDUCTION, 13 JANUARY 2009	49
MODERATOR'S SUMMARY OF DAY 1	50
INTRODUCTION TO DAY 2	51
GROUP DISCUSSION SUMMARY: GOVERNMENTS/PUBLIC AGENCIES	51
GROUP DISCUSSION SUMMARY: CIVIL SOCIETY	53
Discussion	54
TOWARD A COLLABORATIVE ACTION PLAN	55
CLOSING REMARKS / NEXT STEPS	55
Discussion	56
Participants	59

## ACRONYMS

AWASH	Australian division – World Action on Salt and Health
CARMEN	<i>Conjunto de Acciones para la Reducción Multifactorial de Enfermedades No transmisibles</i>
CDC	Centers for Disease Control and Prevention
CNCD	Chronic non-communicable disease
INTA	Institute of Nutrition and Food Technology
MERCOSUR	Southern Common Market. Full members are Brazil, Argentina, Uruguay, and Paraguay; associate members include Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela.
NGO	Non-governmental organization
PAHO	Pan American Health Organization
PHAC	Public Health Agency of Canada
PROPIA	<i>Programa de Prevencion del Infarto en Argentina</i>
UK	United Kingdom
USA	United States of America
WASH	World Action on Salt and Health
WHL	World Hypertension League
WHO	World Health Organization
WHOCC	World Health Organization Collaborating Centre

## EXECUTIVE SUMMARY

On 13-14 January 2009, PAHO and the WHO Collaborating Centre on Chronic Non-communicable Disease Policy in PHAC co-hosted a meeting in Miami, Florida with the following objectives:

- To describe existing salt reduction policies in CARMEN countries as well as in other WHO regions and countries around the world;
- In collaboration with CARMEN participants and with input from international experts, to formulate next steps for population-level dietary salt reduction in the Americas. Steps that are appropriate to national governments, the food industry and civil society at the regional, sub-regional and country levels will be identified.

Participants included: 15 representatives from nine CARMEN countries, and experts in salt reduction from PAHO, US CDC, the UK, Australia, WHO Geneva, Inter American Heart Foundation, World Hypertension League, Health Canada and PHAC. PAHO also invited three representatives of the food industry for the first day of presentations (US Grocery Manufacturers' Association, Kellogg's and Fargo from Argentina).

### Background

Central and Latin America and the Caribbean are in a state of epidemiological transition fuelled by rising standards of living. The profile of population health is evolving from one characterized by high mortality and infectious diseases to one in which overall mortality rates are lower and non-communicable diseases cause the majority of deaths and constitute the greatest share of the disease burden. Health systems, both public health and health care components, are in a parallel transition, shifting orientations towards the rising rates of CNCD (chronic non-communicable diseases) and to the risk factors and behaviors associated with them.

Cardiovascular disease and hypertension are rising at varying rates across the region. It has been found in other middle- and high-income regions that effective treatment of only four conditions – hypertension, obesity, type 2 diabetes and dyslipidemia – could substantially decrease the burden of chronic diseases. Adequate treatment of high blood pressure alone would yield an estimated 30% reduction in deaths from stroke and 20% fewer deaths from ischemic heart disease, for an overall 19% reduction in cardiovascular mortality. Even greater benefits could be expected from prevention of hypertension through population-based salt reduction.

### Status of salt reduction efforts

For most countries in Central and Latin America and the Caribbean, several factors contribute to high dietary salt consumption. Prominent among these is the rarity of well-established food regulatory agencies, which exist only in Brazil, Chile, Costa Rica and Mexico. This means that key elements such as nutritional labeling, nutrient analysis and monitoring are uncommon in the region – elements that have been proven elsewhere to be effective in influencing the food industry to remove or reduce harmful ingredients like trans fats and salt. For countries with small agricultural bases, countries that are net importers of food products supplied by multinationals or sub-regional food processors, the lack of regulatory capacity combined with restrictive trade policies amounts to little domestic control over processed food content or quality. At the same time, small local food enterprises are common in the region and their food products are equally uncontrolled.

Where dietary guidelines exist, they do not always have quantitative limits for sodium; where such limits do exist, they generally call for an average consumption of 2300mg/day. It is now generally accepted that the recommended average consumption should be significantly lower (1500 mg/day). In some countries in the region, iodine deficiency remains an issue. Salt is seen as the main vehicle for delivery of iodine, and the amount of iodine added is based on high salt intake levels (>10g/day).

NGOs in the region tend to be small, underfunded, medically oriented and inexperienced in population-based action. Typically, they focus on service provision rather than the advocacy and industry “watchdog” roles which have proven essential elsewhere in rallying public opinion and influencing markets on issues like tobacco and trans fats.

### **The way forward**

There is an urgent need for data pertinent to Central and Latin America and the Caribbean. In particular, the following must be elucidated:

- Epidemiological profiles of chronic diseases affected by nutrition
- National and regional dietary patterns

National and regional patterns of food supply, distribution and consumption, with special attention to impacts on salt intake.

The issue of salt fortification with iodine and fluoride also requires reconsideration in light of the several alternative vehicles available.

### **National actions**

While data, especially baselines of measured salt intake, are certainly needed to make the case for salt reduction to national policymakers and to the public, action need not await application of “gold standard” intake assessment methods or even epidemiological profiles. Nor does action need to wait for the regulatory capacity of a country to grow. While a certain amount of food quality control is necessary and certainly useful, nations with limited resources need not feel they must make major investments in analytic capacity before beginning salt reduction. Many countries in the region have already made formal public commitments of the “right to health” of their populations. Countries can take advantage of the strong global momentum toward salt reduction, by joining international organizations such as WASH and establishing national task forces to promote the issue and to set targets for lower salt intake. They can choose from and adapt a host of tactics and models proven successful elsewhere to raise awareness among the media and consumers, and to mobilize the scientific community and health professionals.

While the food industry tends to favour a “holistic” approach to improving nutritional quality, targeting salt is warranted from a public health perspective because intake is largely outside the control of the consumer. Countries in the PAHO region can take advantage of local and international experiences to engage domestic food industries to reduce salt usage. For example, both Argentina and Chile have had much success in dealing with small bakeries. These small enterprises will require considerable support to conduct food testing or to meet labeling requirements, especially if they have been exempt until now. A start may be made by supplying them with tables of nutrient composition and educating them in their use. It may also be helpful to develop a timetable for gradual lowering of salt content in harmony with existing product reformulation schedules. Salt reduction across full product lines is strongly

recommended, rather than production of special “low-salt” products which are typically rejected by consumers.

Regulation to control the salt content of prepared foods, as has been proposed in Chile and Argentina, is one option to deliver the health benefits of reduced salt intake equitably across the population. However, the value of the voluntary approach in dealing with the food industry has been convincingly demonstrated in the UK. A major advantage of the voluntary approach is that it can begin immediately, with engagement of key industries. Publicity, both favourable and otherwise, is a very powerful tool when used with the voluntary approach.

To reach general populations while rationalizing resources, countries can harmonize the message on salt with existing healthy-eating and healthy-living programs, including campaigns against obesity, infant and child nutrition programs and initiatives that promote fruit and vegetable consumption.

The need for multisectoral action is most evident in countries largely dependent on food imports. Government trade departments are therefore crucial players in the region and need to be engaged through existing regional political and trade forums.

Countries can take advantage of various upcoming regional events to to learn, to share experiences and to expand their support network. In the fall of 2009, Brazil will host an event promoting the consumption of fruits and vegetables which will involve a number of ministries and may be a particularly valuable venue to raise awareness on salt. Other opportunities include the March 2009 meeting of health and education policy makers in the Caribbean; the June 2009 meeting of the International Hypertension Society in Puerto Rico; and the November 2009 meeting of the Latin American Nutrition Society in Santiago, Chile.

The following commitments and plans were stated:

- **Mexico:** The national food agency in Mexico should be in a position to provide some baseline information in a short time, and possibly also a locally-relevant study of the potential benefits of salt reduction on mortality such as was presented for Canada.
- **Argentina:** With its new chronic disease division within the ministry of health and its experience in collaborating with industry and civil society partners to eliminate trans fats, Argentina is well poised for action on salt. Efforts are under way to facilitate the establishment of a Working Group on salt sometime this year.
- **Costa Rica:** In Costa Rica, relevant documents including the report of this meeting will be shared with a wide variety of groups and institutions, including NGOs and the consumers’ association. In addition, data from the national nutritional survey will be re-examined to glean as much information as possible on salt consumption patterns, with identification of some of the chief sodium contributors for laboratory analysis.
- **Brazil:** The health ministry in Brazil has a subgroup that has taken responsibility for work related to salt reduction. Immediate action will be taken to collate existing evidence and to identify and engage NGO partners, including the consumers’ association and the health professional associations.
- **Ecuador:** The health ministry will contact the Cardiology Society to collaborate on salt reduction and to work on identifying essential partners from industry and civil society.

- **English Caribbean:** There is an extra step to perform before action can be taken: each country has to be informed about the plans being made. The Caribbean Food and Nutrition Institute will take the responsibility of providing information and assistance for mobilization to its member countries. PAHO will also contact the Director of CFNI to discuss next steps for the sub-region.
- **Paraguay:** Paraguay has been working on several related issues such as nutritional labeling and the sugar content in processed foods, making this a fortuitous time for action on salt.

### **Actions by PAHO**

PAHO will establish a regional task force with a defined term (e.g., two years) and a mandate to develop the evidence base for salt reduction, and to develop cost/benefit projections for review by national governments. Since many countries in the region lack solid data on salt intake and diet, it may be possible to stimulate interest among universities and research institutes to conduct the necessary studies.

The PAHO task force will produce a report with proposed targets for the region for presentation to the Directing Council of PAHO, together with a detailed plan for the campaign.

The task force will also work to engage national governments, all major food agencies and the various professional and food institutions to which they relate. The task force report will be shared with relevant stakeholders, with a view to engaging all major regional players.

Existing global momentum for salt reduction provides a strong advantage for countries in the region and for PAHO. The food industry is already poised for action in most of the world; it is certain that action will begin even while country capacities are relatively low. PAHO will encourage large transnational companies to make commitments covering the whole hemisphere. It has already begun constructive collaboration with industry on other issues, and can look forward to expanding these activities to include salt.

## OPENING

*James Hospedales, Lianne Vardy*

The meeting is jointly hosted by the Pan American Health Organization (PAHO) and the WHO Collaborating Centre on Chronic Disease Policy in the Public Health Agency of Canada (PHAC). Its purpose is to begin mobilizing organized action on population-wide dietary salt reduction in Central and Latin America and the Caribbean.

Cardiovascular disease (CVD) is the largest cause of premature death in the region and in the world. Treatment for common conditions such as chronic renal disease and heart failure is expensive, and the growing demand is overwhelming the health care budgets of many countries. Yet while hypertension is by far the most important risk factor for CVD, and while excessive salt intake is known to be the major cause of hypertension, the issue has been relatively neglected. The bulk of preventive efforts in most countries have emphasized factors other than salt, such as tobacco control and obesity.

If countries in the Americas can reach consensus about organized action on population-wide dietary salt reduction, the outcome will be an important step forward in the regional strategy for prevention of chronic disease.

## MEETING CONTEXT AND OBJECTIVES

*Barbara Legowski*

PAHO and the WHO Collaborating Centre on Chronic Disease Policy in PHAC co-lead the Chronic Disease Policy Observatory, launched in 2003 to serve the CARMEN<sup>1</sup> network of countries in the Americas. The Observatory provides key support to PAHO and CARMEN members in the implementation of the 2006 *Regional Strategy and Plan of Action on an Integrated Approach to Chronic Disease Prevention and Control*, in particular the Policy and Advocacy Line of Action in the Strategy. The support is provided through four Observatory functions: policy research, monitoring, dialogue for advocacy, and policy development. Highlights to date include:

- *Policy research* – The Observatory's first project involved the study of how specific nutrition-related policies in three CARMEN countries were formulated – Costa Rica (folic acid fortification of cereal and wheat flour), Brazil (national nutrition policy) and Canada (nutrition labeling, nutrient content and health claims regulation). A common research methodology used by all projects facilitated subsequent preparation and publication of a cross-case analysis, comparing and contrasting experiences in the three countries.

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<sup>1</sup> CARMEN is an acronym for Conjunto de Acciones para la Reducción Multifactorial de Enfermedades No transmisibles.

- *Policy monitoring* – In a new project, the WHO Collaborating Centre is working with PAHO and the Caribbean Epidemiology Centre in Trinidad to support the development of a business case for an infobase to capture chronic disease related epidemiological data together with chronic disease relevant policy and program information, for the English Caribbean sub-region.
- *Policy dialogue* – A key accomplishment was the fall 2007 meeting of heads of state for the Commonwealth of Caribbean Countries (CARICOM), which resulted in the Declaration of Port of Spain, addressing a range of issues relevant to chronic disease prevention and control. Also anticipated is Chile hosting a chronic disease policy dialogue in the fall of 2009.

Reduction of dietary salt intake was one of five strategic priorities identified at the May 2008 annual meeting of the Observatory in Montréal, along with increased fruit and vegetable consumption, physical activity, school health policy and development of the economic case for action on NCDs in Central and Latin America and the Caribbean. The following specific salt projects were proposed at the Montréal meeting:

- Preparation of a background paper on effective salt intake reduction policies and strategies including a survey of those underway or under development among PAHO member states. This has now been done; the draft paper, *Dropping the Salt*, will serve as a basis for discussion at this meeting.
- A survey of national nutrition policies relevant to salt intake in member states. This step is also complete; results will be reported later in the meeting.
- Beginning a dialogue between PAHO and the stakeholders implicated in reducing dietary salt, including food industry stakeholders, one objective for this meeting.
- Identification of policy options for salt reduction appropriate for the region, another objective for this meeting.

## BACKGROUND PAPER: HIGHLIGHTS

Lianne Vardy

The paper *Dropping the Salt* was commissioned to collect and synthesize available information on global efforts to estimate dietary salt intake and undertake population-based reduction. Translation into Spanish and Portuguese is under way. The following highlights were noted:

### *Recommendation and rationale*

The 2003 WHO/FAO recommendation for an average consumption of < 5 g/day of salt per day was based on strong evidence that no other single measure would be as cost-effective, or could achieve as much for prevention of hypertension and associated morbidity/mortality.

### *Pillars of action and 8 steps for change*

WHO recommends that salt reduction programs be implemented around three pillars of action:

- Consumer awareness / education campaigns
  - Clear, simple and coherent messaging
  - Population-specific messaging and means of communication
  - Education on how to read and interpret food labels
- Product reformulation, in countries where processed foods are a major source of dietary salt.
  - Identification and monitoring of salt content in commercialized foods and meals
  - Working with industry to reduce salt content
  - Dedicated staff and budget for reduction programs
- Environmental changes
  - Clear and achievable reduction targets
  - Pricing strategies
  - Labeling strategies

The WHO recommendations can be reframed into eight steps:

1. Organize support for change
2. Identify current levels and primary sources of high salt intake
3. Set targets
4. Develop campaigns and engage partners
5. Raise consumer awareness
6. Apply easy-to-understand and clear labeling
7. Negotiate salt reduction levels with industry
8. Monitor progress and continually evaluate

## *Europe*

### **Comprehensive approaches**

The UK, Ireland and Finland provide good examples of the 8 steps in action. These countries have developed comprehensive, salt-specific programs engaging a broad range of partners. Government and NGOs deliver broad-based consumer education and media campaigns and there are clear targets and ongoing monitoring.

### **Combination approaches**

France and Spain address salt reduction as part of wider healthy diet/lifestyle programs. These approaches are characterized by:

- More modest results than salt-specific programs;
- Targeted reduction in specific food products – e.g., bread;
- Non-specific, irregular monitoring and program evaluation.

### **Regional approaches**

The 2008 European Union (EU) Framework for National Salt Initiatives calls for a common salt reduction strategy across all member states, featuring:

- A clear decision to act on salt;
- Establishment of national data collection and analysis;
- A target of 16% reduction in average dietary salt intake over four years;
- Priority given to breads, meat products, cheeses and ready-to-eat meals;
- Increased public awareness;
- Action on product reformulation in collaboration with the food industry;
- Monitoring of (a) salt content in food, (b) population intake levels and (c) consumer awareness.

## *Asia and Australasia*

There is every indication that salt intake in Australasia and Asia significantly exceeds WHO recommendations. In some developing Asian countries, average salt intake appears to exceed typical levels in industrialized countries: for example, the estimated average intake in Korea is 13.5 g/day; in Bangladesh, >15 g/day and in Turkey 18 g/day. Advocacy NGOs such as WASH<sup>2</sup> (with a national division –

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<sup>2</sup> World Action on Salt and Health

AWASH<sup>3</sup> – in Australia) have taken a leadership role, providing good examples of the kinds of partnership possible between NGOs and the food industry.

### *Africa*

Activity on salt reduction is still in the beginning stages in Africa. Nigeria and South Africa have dietary guidelines for salt intake (2006, WHO Forum in Paris), and many countries have members in WASH.

### *Americas*

Salt related policies/activities are reported for Argentina, Brazil, Bolivia, Canada, Chile, Costa Rica, Ecuador, Guatemala, Panama, Paraguay, Uruguay and the US. In South America, there are notable examples of salt reduction programs in Brazil, Chile and Argentina. Otherwise, there is a diversity in levels of concern and strategic direction. There is rising political awareness about the health impact of excessive salt intake, and an overall alignment with WHO recommendations. In Canada and the US, reporting of sodium content of prepared foods is mandatory, and a voluntary approach to product reformulation is being taken. In 2007, Canada established a government-led Working Group on Dietary Sodium Reduction to plan a concerted strategy. The US, in contrast, is examining the possibility of legislative action, in order to introduce some restriction on the amount of salt that can be added by food processors.

### *Key issues in reducing dietary salt intake*

The following key issues were identified:

- Voluntary vs. regulatory approaches
- Mandatory vs. voluntary labeling, and the most effective type of labeling, for salt/sodium content
- Salt-specific vs. combination approaches, and the need for a clear commitment to change
- Partnerships among governments, NGOs and the food industry

## **SALT: FROM EVIDENCE TO IMPLEMENTATION IN THE UK**

*Graham MacGregor*

It was noted that UK researchers have recently published a summary of the evidence for salt reduction and related efforts worldwide, which should serve as a useful supplement to the background paper prepared for this meeting.<sup>4</sup>

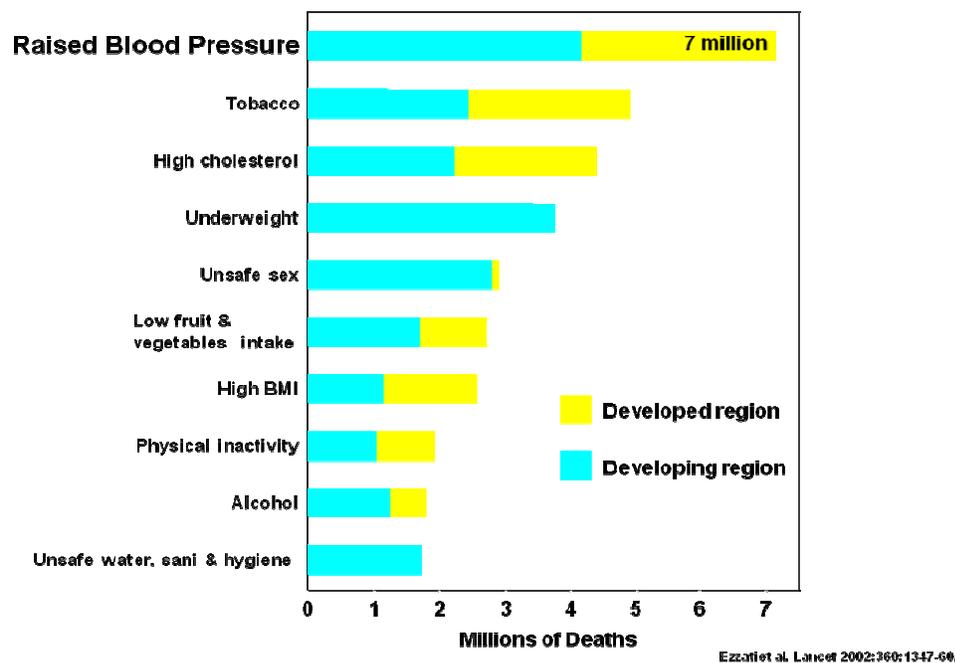
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<sup>3</sup> Australia – World Action on Salt and Health

Salt reduction in food products is potentially the easiest of all public health measures to implement, since the individual consumer has little or no control over salt intake. If the food industry – manufacturers, caterers, retailers, restaurateurs – can be persuaded to gradually reduce salt in the food they provide, tremendous public health benefits can be realized without any conscious effort on the part of the public. That this is possible has been shown conclusively in Finland, and is now happening in the UK.

As the following chart<sup>5</sup> shows, raised blood pressure is the most important single cause of death in the world accounting for some seven million deaths worldwide every year – more than any of a host of other conditions which typically receive much more attention from public health advocates.

## Major Underlying Factors causing Death - Worldwide



High blood pressure causes artery damage by accelerating atheroma and destabilizing plaque, causing death when the plaque on arterial walls ulcerates or ruptures. However, death can also result as a direct

<sup>4</sup> 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>.

<sup>5</sup> From Ezzati M et al. (2002). Selected major risk factors and global and regional burden of disease. *Lancet* 360 (9343):1342-1343.

effect of increased blood pressure (e.g. through aortic aneurysm, cerebral hemorrhage, heart or renal failure).

Certainly, cardiovascular disease has other modifiable risk factors, including high total and LDL, cholesterol, smoking, diabetes, lack of fruit and vegetable intake, low physical activity and obesity. However, high blood pressure is by far the most important, and may occur in combination with any other risk factors.

Contrary to popular understanding, the risks from high salt intake exists not only for people with hypertension but also for those with a wide range of “normal” systolic blood pressures, beginning at 115 mm Hg – which includes some 83% of the adult population. For “normal-range” pressures between just under 120 mm Hg to 135 mm Hg, there is a 3- to 4-fold elevation in the risk of death from stroke and heart attack.<sup>6</sup> In fact, the majority of deaths attributable to blood pressure occur in the upper range of normal.

### ***The case for salt reduction***

While several factors contribute to increased blood pressure, the most important single cause is excessive dietary salt intake, which is almost universal in modern world populations. High salt consumption is a relatively recent phenomenon. In early human history, salt intake was about 0.1 g/day, derived from the trace sodium content in naturally available foods. Today, intake levels of 10-12 g/day are typical.

Salt as a food additive was introduced as a preservative and a taste enhancer for tainted or unpalatable foods. However, it has long been superseded in this role by superior chemical preservatives and the advent of refrigeration/freezing techniques. Yet people continue to consume high levels of salt. In the UK, some 80% of salt intake is “hidden” in processed food products or food eaten outside the home. Only about 15% of salt is voluntarily added by individual consumers.

Evidence for the connection between excessive salt intake and increased blood pressure is overwhelming. It includes evidence from more than 50 population-based epidemiological studies, as well as outcome trials (e.g. TOHP I and II), treatment trials, meta-analyses and dose-response studies, mortality and intervention studies. The connection is confirmed in a host of other work, including studies of migrating populations, genetic studies, animal and biomechanical studies. The DASH trial confirmed the damaging effects of salt in both normotensive and hypertensive individuals, while a subsequent meta-analysis of all trials in which sodium was reduced for four or more weeks demonstrated a clear dose-response relationship between intake and blood pressure. An average 5 mm Hg reduction in blood pressure was achieved for every 6 g/day reduction in salt (7 mm Hg in

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<sup>6</sup> MacMahon S et al. (1990). Blood pressure, stroke and coronary heart disease, Part I. Prolonged differences in blood pressure: prospective observational studies corrected for the regression dilution bias. *Lancet* 335:765-774.

hypertensives, 4 mm Hg in normotensives).<sup>7</sup> On this basis, it can be estimated that a population-wide reduction of 6 g/day will result in a 24% reduction of deaths due to stroke and 18% reduction in deaths from coronary heart disease – or avoidance of some 2.5 million deaths worldwide every year. An even greater potential benefit was predicted by a review of results of the Trials of Hypertension Prevention (TOHP I and II),<sup>8</sup> indicating that a 25% reduction in salt intake leads to 25% reduction in cardiovascular events.

The case for salt reduction is stronger still, in that raised blood pressure and other cardiovascular disease are not the only detrimental effects of excessive salt consumption. Salt has also been implicated in the development and/or severity of gastric cancer, renal disease, osteoporosis and asthma.

In summary, public health agencies worldwide agree that there is a strong case for salt reduction. Opposition chiefly comes from the food industry, but varies considerably by location: for example, food producers/distributors have embraced salt reduction to a far greater extent in the UK than in the US and Canada. This clearly is less a reflection of geographical differences than of differences in the national political environments.

### ***Development of the UK strategy***

Choice of a particular strategy for salt reduction depends on the chief sources of salt in the national diet. In the UK, the chief source is the “hidden salt” present in processed/packaged foods and food eaten outside the home. Hence, the UK strategy relies heavily on engagement with the food industry – the largest industry in the world. Since that industry is also the chief source of opposition to salt reduction, it was essential to recognize and address their needs and their views in a spirit of collaboration.

Since there are now superior alternatives to salt as a preservative, other reasons explain the continued reluctance of some food industry representatives to reduce salt in their products. In fact, added salt contributes to profitability in several ways:

- Salt permits the use of inferior ingredients. Many items such as fast-food meals and packaged “lunchables” or “snacks” for children have little real nutritional value, using cheap ingredients which would be tasteless or unpalatable without the addition of salt and other taste enhancers. This is particularly unfortunate in the case of children, who thus develop a preference for salty food early in life.
- Salt increases thirst, and thus increases demand for soft drinks, mineral water and other profitable thirst-quenchers. Often these drinks are marketed by the same companies that make and market the salty snacks.
- Salt is a cheap way to add weight to meat products. The addition of salt with polyphosphonates increases the capacity of meat to bind water, giving a 20%-30% increase in weight.

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<sup>7</sup> He F & MacGregor G (2002). Effect of modest salt reduction on blood pressure. *J Hum Hypertens*. 16(11):761-70.

<sup>8</sup> Cook NR et al. (2007). Long term effects of dietary sodium reduction on cardiovascular disease outcomes: observational follow-up of the trials of hypertension prevention. *BMJ* 334:885.

Still, it is perfectly possible to reduce salt levels without sacrificing profitability, as has been shown conclusively in the UK, where there has been no decline in sales of processed foods with lowered salt content. Unfortunately, there is still a wide and seemingly random variation in salt levels in similar products, and even in the same product marketed in different countries. Some of the reluctance to change within industry is based on honestly held but unsupported beliefs about the function of salt in a particular product; for example, representatives of a particular brand of cornflakes claimed that salt was essential to the product's colour. Once challenged, however, there was no evidence to sustain this position and reformulation took place without change in colour.

When the UK government refused to accept recommendations for salt reduction following threats from the food industry to withdraw political support, a group of specialists on salt and blood pressure formed the advocacy group Consensus Action on Salt and Health (CASH) in 1996. In its first years, CASH had considerable success in attracting media publicity to the issue and persuading some industry representatives to make a start on salt reduction. Other events provided further opportunity: A change in government found CASH well positioned to press for new policy, while the new Food Standards Agency (FSA) – which had been set up to deal with the BSE (“mad cow disease”) crisis – was in a position to extend its mandate, and could offer considerable expertise in collaborating with industry. Following successful lobbying efforts by CASH, the FSA assumed leadership for a national voluntary salt reduction and labeling program.

### ***Implementation***

The UK program calls for a reduction in total salt intake from all sources as follows:

- “Hidden” salt in processed/packaged foods – 53% reduction (9.5 g to 4.5 g)
- Table/cooking: 50% reduction (1.8 g to 0.9 g)
- Natural (0.6g): 0% reduction

This plan was based on an estimate of an average population intake of 12 g/day. Subsequently, measurement using urinary sodium excretion indicated a lower average intake – about 9.5 g/day. However, the latter may underestimate actual intake to some extent, since it does not account for sodium losses which occur through other mechanisms.

The plan provides for gradual, incremental reductions in salt content across the full range of available food products. People cannot detect a reduction of 15-20% in sodium content making the transition relatively painless for consumers. Assessments of sodium intake and the chief contributing foods was followed by classification of processed foods into some 80 categories and the setting of targets for each category, in collaboration with industry representatives. Stepwise reductions are planned to take place annually or biennially, coincident as far as possible with routine product reformulations. The overall target is reduction in salt content of 30%-40% *across all products to which salt has been added* to achieve an average population intake of < 6 g/day by 2012.

Manufacturers may choose to use the nutritional label (as shown in *Dropping the Salt*) which specifies the amount of salt per serving, or the front-of-package “signpost” (“traffic light”) label indicating whether salt content is “low”, “medium” or “high”.

Regular monitoring and revision of targets are integral parts of the program, which has already shown gratifying results. Between 2003 and 2006, there has been a drop in average 24-hour urinary sodium excretion from 9.5 g/day to 8.6 g/day – a 10% reduction, or an estimated 7,000 lives per year saved. Negotiations are now taking place for a new round of reductions.

### ***Toward global action***

The success of CASH in stimulating action on salt in the UK led to the formation of the larger WASH – World Action on Salt and Health, which now has more than 300 members in 70+ countries worldwide – as well as to CASH’s Australian counterpart, AWASH. Strong advocacy by these organizations has been an essential means for raising awareness and organizing for change at the global level. A new stage was reached in 2006, when the WHO Forum and Technical Meeting on Salt in Paris called for concerted action around the world.

The WASH mandate includes global monitoring of the salt content of foods, worldwide implementation of salt reduction plans, and support for a clear (“traffic light”) front-of-package labeling system. Within individual countries, WASH facilitates the formation of expert groups on salt, advocates with governments for action, and helps conduct public awareness campaigns. The information and support that nations need to demonstrate the benefits of salt reduction are now increasingly accessible.

In summary:

- Reducing salt intake will reduce blood pressure, and in so doing prevent strokes, heart attacks, heart failure, stomach cancer and osteoporosis.
- Salt reduction is the biggest improvement in public health since the advent of clean water and drains in the nineteenth century.
- Salt reduction is very easy to do, once the active collaboration of the food industry has been secured.

## PANEL: COUNTRIES INFLUENCED BY THE UK

### *Canada*

*Norm Campbell*

Canadian activities were reviewed in three stakeholder categories: health/science entities and NGOs, the food industry, and the governmental sector.

#### **Health/science/ NGOs**

- The Canadian Institute of Health Research (CIHR) has named Dr. Norm Campbell as the first Canada Chair in Hypertension Prevention and Control. One of the Chair's first steps was creation of a Sodium Strategic Planning Committee with representation from major national NGOs and professional associations.
- Blood Pressure Canada (BPC) is a large coalition of professional associations, NGOs and private sector organizations (primarily in the pharmaceutical industry) with an interest in issues related to blood pressure. Activities relevant to salt include:
  - Release of a policy statement prepared with assistance from the Sodium Strategic Planning Committee, which calls on government for the necessary action and oversight to see that its own recommendations on salt intake are acted on; on the food sector to reduce salt in consumer products; and on the health care sector to raise awareness among professionals and the public. The statement was signed by 18 national health care/science organizations, which together represent most of the nation's experts in this sphere.
  - Creation of a Working Group to prepare educational / promotional materials for patients, professionals and the public, ensuring consistent messaging on sodium.
  - Presentation of several awards for salt-related efforts, including one to the federal government for global efforts to prevent and control hypertension; one to Health Canada for its revision of Canada's Food Guide, giving prominence to salt; and a third to the Campbell Soup Company for providing industry leadership in reducing the salt content of its products.
  - Together with PHAC and the Canadian Hypertension Society, BPC is a supporting partner of the Canadian Hypertension Education Program, a national knowledge translation service for professionals and the public. Sodium was taken as a major theme in 2007.
  - Active participation in national and regional symposia relevant to blood pressure; contribution of numerous articles to professional and other journals.
  - Canadian health/science/NGO agencies participated in a variety of events focussing on sodium for World Hypertension Day<sup>9</sup> 2007; salt will also be the main theme for World Hypertension Day 2009.
- The Canadian Stroke Network, one of Canada's Networks of Centres of Excellence, is a well-funded entity focused on the promotion and support of research, but also providing a number

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<sup>9</sup> World Hypertension Day was introduced by the World Hypertension League in 2005.

of public educational and media resources. These include a website ([www.sodium101.ca](http://www.sodium101.ca)) with consumer information on salt; the Salt Lick “award” for highly salted consumer foods; and active involvement with the media regarding sodium-related news.

- The Heart and Stroke Foundation “Health Check” program permits products which meet defined criteria to display a front-of-package Health Check logo. The criteria have recently been revised to tighten the requirements for sodium. The Heart and Stroke Foundation also engages in regular media contact regarding sodium-related news.

### **Food industry**

- Food and Consumer Products of Canada (FCPC) an umbrella organization representing 60%-70% of Canadian food manufacturers, has agreed to collaborate with government and the health sector in voluntary sodium reductions. FCPC has established its own sodium committee to deal with technical and other issues surrounding salt reduction.
- The Campbell Soup Company has aired television advertisements in Canada which point out the health hazards of sodium in its own products, and emphasize its commitment to reduce salt content. In addition, the company has devoted considerable effort to across-the-board salt reduction, as well as to production of low-sodium products.
- Several companies have markedly increased their marketing effort for low-sodium products, but there continues to be less effort generally at across-the-board reduction in salt content.

### **Government**

- The Institute of Medicine Dietary Reference Intake for sodium was updated in 2004.
- Canada’s Food Guide was recently revised to increase the prominence of dietary sodium recommendations.
- The sodium analysis from the 2004 national food survey was expedited and the results published, together with a media release that emphasized excessive sodium intakes.
- Health Canada established a multisectoral Sodium Working Group to implement the Institute of Medicine Dietary Reference Intake.
- PHAC has provided a grant to aid development of professional and public educational resources.
- The former federal Minister of Health made a public commitment to salt reduction.
- The need to reduce salt is featured prominently in the National Cardiovascular Strategy, now in draft form.
- Several provincial governments are developing relevant regulations, especially in the area of children’s salt intake (e.g. school meals).

### **Progress: Is the problem solved?**

Despite the considerable amount of activity outlined above, a great deal of work remains to be done. The following outlines some of the remaining challenges and barriers:

#### *Health/science/NGO sector:*

- Strong conflicts of interest exist between the food sector on the one hand and the nutritional, clinical and scientific communities on the other. It can sometimes be difficult to determine if nutritional/scientific organizations represent industry or scientific interests. To address this, it is essential to collaboratively develop a set of ethical standards for interaction with all sectors.
- Successful sodium reduction will require sustained effort over the long term. Thus, sustained attention to professional and public education is essential.

#### *Food sector:*

- Population-wide salt reduction will require an across-the-board reduction in all food products. However, the current approach is often to reduce sodium in isolated products, leaving the onus on the consumer to make the “healthier choice”.
- Food companies are in a much better financial position than governments or NGOs to engage in social marketing regarding sodium reduction, and should take the lead on this.
- Food sector representatives need to become more sensitive to the detrimental social effects which ensue when they undermine the credibility of scientific organizations and clinicians.
- Government sector:
  - Much too often, governments set targets and do nothing more. It is essential that governments take responsibility for ensuring that national nutritional targets are met, establishing clear timelines and regular monitoring.
  - Governments must establish clear consequences for food companies that fail to meet their voluntary reduction targets.
  - More attention must be given to effective, easily understandable food labeling systems and clear, effective public communication strategies.
  - Governments must participate in developing ethical standards for interaction between the health/science/NGO sector, government and industry partners.

## ***Australia***

*Bruce Neal*

It is important to re-emphasize the fact that salt and blood pressure are issues that affect the whole population, not just that subset of people who have hypertension. The Global Burden of Disease Study showed clearly that half of death and disability attributable to blood pressure occurs in people who do not have hypertension.

In a study conducted 2-3 years ago, high blood pressure was found to be the second leading cause of death, after smoking, in Australia. Since smoking continues its steep decline, it is very likely that blood pressure is now in first place. It is also very likely that this situation is driven by high levels of salt consumption deriving mostly from processed foods, although Australia has few recent or representative national data. While lack of data is certainly an issue, it is important that Australia – and other countries in the same situation – do not concentrate on data collection at the expense of immediate action. Data from other countries are available, and much of it is highly generalizable.

While Australia has multiple recommendations for reduced salt consumption, there is no coordinated strategy for salt reduction and little has been done to meet targets. Efforts to date have relied on strong advocacy from health NGOs and professional associations. The Australian division of WASH (AWASH) was established in 2005-2006 with the declared aim of a population-wide dietary salt intake reduction to < 6 g/day by 2012 through an average 25% drop in salt content of processed foods, an average 25% reduction by the catering industry, increased public awareness of the benefits of low-salt diets, and advocacy for clear labeling that will make the salt content immediately apparent. AWASH receives core funding from the George Institute for International Health and the National Health and Medical Research Council of Australia.

Clearly, engaging industry is a primary objective. Industry is continually reformulating its products, and thus incremental salt reduction is a relatively inexpensive proposition for them. In fact, if the food industry reduces salt to reasonable levels, little or no other action would be necessary. There would be no need for expensive public awareness/education campaigns, or for complex labeling regulations. After all, labels are primarily valuable in assisting people to make healthy choices; however, experience has shown that relying on this approach is fairly ineffective from a population viewpoint. It would be far more useful to lower the salt content in all products across the board, so that consumers cannot help but make healthy choices.

## **Strategy**

The AWASH strategy aims to establish consensus, buy-in and action from the broadest possible range of stakeholders. In approximate order of importance, the target groups are:

- *Industry.* While an approach has been made to the Food and Grocery Council which represents food manufacturers, there are unfortunately no similar umbrella groups for catering or fast-food outlets in Australia.
- *Government and regulators.* To date, the Australian government has demonstrated little interest in the salt reduction effort; in fact, there has been little enthusiasm for regulation or even guidelines of any kind for industry. However, there has been a recent change of government, and there are now encouraging indications that priorities are changing.
- *Media.* AWASH has had notable success in its engagement with the media, using every opportunity to increase awareness of the dangers of salt in the Australian context. For example, AWASH used Salt Awareness Week 2008 to point out the very high levels of salt in the sausage sandwich; this “attack” on one of Australia’s favorite foods resulted in exposure on every major news channel in the country.
- Scientists.
- Non-governmental organizations.
- General population.

Achievements to date include:

- Wide consultations followed by development and launch (in 2007) of a coherent five-year national strategy (Drop the Salt!)
- Establishment of AWASH as the leading voice for salt reduction efforts in Australia
- Achievement of broad-based support from key national stakeholders, including industry; support from government is now growing as well.
- Formation of an effective organization, consisting of an executive body (the Secretariat, based at the George Institute) together with a much broader Advisory Group including representatives of industry, NGOs and science. Support from any and all other organizations with an interest in AWASH and its goals is encouraged.

Current work includes collaboration with industry to develop a strategy for across-the-board salt reductions in food products, and ongoing engagement with government and media. While research and monitoring is clearly a priority, resource limitations make this difficult or impossible at the moment. However, government is beginning to get involved, with plans for a national health and nutrition survey within the next two years.

In summary, the Australian approach has much in common with that of the UK. It is focussed on achieving consensus with government, industry and the health/scientific community for voluntary

action. A primary reason for the voluntary approach is speed: legislative change can take many years to accomplish, while voluntary action can take place immediately. Because government involvement is still in its initial stages, the main limitation at present is lack of resources.

## **Argentina**

*Marcelo Tavella*

### **Background**

Salt reduction efforts in Argentina are firmly based on the fundamental principle first developed in Finland with the North Karelia project, and articulated in the 2004 WHO Global Strategy for Diet, Physical Activity and Health: that health cannot be addressed simply by genetic or biological means, but must include attention to the physical, social and cultural environment. In the movement to reduce population blood pressure, the following factors must be taken into account:

- Motivation
- Knowledge
- Social support
- Tools
- Environmental support

### **Demonstration projects**

The PROPIA program (*Programa de Prevención del Infarto en Argentina*), based at the National University of La Plata, is currently running demonstration projects in six locations in Argentina, involving the following activities:

- Modification of foods to limit salt, sugar and fat – especially saturated and trans fat.
- Promotion of food products consistent with a healthy diet, including market incentives to promote development, production and marketing of healthy foods.
- Consideration of agricultural policies and their effect on national diets.
- School policies that improve health literacy and promote healthy eating.
- Introduction of fiscal policies to encourage healthy food choices.

All six demonstration projects began with a survey to determine a baseline of salt intake; four of them supplemented this with biological measures (though measures of urinary sodium were not performed in this phase).

Project achievements include creation of canteens that produce bread with 30% less salt, development of workshops for bakers, provision of advice to major bread production companies including Fargo, Granix and Workers' Cooperative of Bahia Blanca, and a study of vegetable oils as an alternative vehicle to deliver iodine. Additional activities have also taken place in collaboration with the new Healthy Shopping of Argentina initiative and the PAHO/NHLBI Health Promoters Project.

### **Governmental interventions**

The national Ministry of Health has formed a new division for prevention and control of non-communicable diseases. Achievements and activities include:

- Conclusion of an agreement between Buenos Aires province and CIPPA (Assn of Industry Bakers, Cake Sellers and Related Occupations) for development and transfer of technology for the production of salt-reduced bread and other baked goods.
- A survey of salt use in small-bakery products throughout the country, and provision of support for reformulation.
- Development and dissemination of National Nutrition Guides with guidelines for salt consumption.
- Healthy Argentina, a national strategy that integrates tobacco control, healthy diet/active living, the promotion of healthy environments and the regulation of products/services. This program includes some measures for reducing salt consumption.
- A bill to create a coordinated national plan for salt reduction and another to regulate the use of salt by the food industry are now before the national parliament.
- Advertising of packaged/processed foods that contain >30% of the RDA for sodium must include the warning: "High salt content – Consumption may be harmful for human health"
- Efforts to develop alternative salt products containing less sodium.

## DISCUSSION

The following points were raised in discussion:

- Until recently, blood pressure was thought of as an issue involving only the health sector, and only of concern to those individuals with hypertension. In Latin America and the Caribbean, salt was of interest chiefly from the viewpoint of delivering iodine. There has been a global shift in understanding: Salt and blood pressure are now seen as issues that affect everyone, and efforts to reduce dietary salt must extend to include industry, media and consumers.
- The level of salt consumption necessary for life is quite small; urinary excretion studies in at least one primitive society have estimated an intake of no more than 150 mg/day. The target for salt intake was set at 5-6 g/day not because this is the lower limit for health, but simply because it is believed to be readily achievable, and is a level which can realize great benefits.
- The UK Food Standards agency has collected a wealth of data on the salt content of foods that should be a valuable guide for other nations seeking to establish their own salt reduction programs. However, the data should be used with considerable caution outside the UK, since sodium content varies widely from one brand to another, and even between identical products marketed in different countries.
- Front-of-package “traffic-light” symbols for salt content may be of value primarily as an incentive for product reformulation, rather than as part of an effort to encourage consumers to make healthier choices. It has been found that manufacturers will go to considerable lengths to avoid having to display a red “high salt” symbol on their products, or conversely are keen to move from amber “medium” levels to green “low-salt” status. If the criteria for each category of warning are progressively shifted downward, the labeling system becomes a powerful tool for reducing the salt content in the overall food supply. This effect is achievable even in the absence of expensive campaigns to persuade consumers to buy “green” rather than “red” products.
- It is both appropriate and desirable to set lower targets for specific groups such as children. This can maximize benefits by avoiding the development of a preference for high levels of salt early in life.
- While it may be possible to use product reformulation to address potential deficiencies in nutrients other than iodine – such as calcium, potassium and magnesium – it was agreed that it is more reasonable at present to concentrate on the single task of reducing sodium. It has been noted in the UK that food manufacturers are much more amenable to the idea of removing salt than to adding other elements which might entail new obligations with respect to labeling, monitoring etc.
- Keeping a continuous check on the accuracy of labels is a difficult and very expensive endeavour. In Australia, AWASH maintains a database of sodium content in a wide variety of products, but must rely on the information given on the label. In Canada, the Food Inspection Agency regularly analyzes

a sample of products to ensure accuracy of the label. Agreement between the label and the analysis is usually quite good. Canada's Sodium Working Group is currently involved in a separate check of sodium content in product samples which were purchased at various times since 2000, with a view to identifying the top contributors to sodium intake. While a certain amount of "quality control" is necessary and certainly useful, nations with limited resources need not feel they must make major investments in analytic capacity before beginning salt reduction. Even where analysis is routine, every product in the marketplace or every restaurant meal cannot be analyzed; and in any case, there are much more effective ways to proceed.

- In dealing with industry, the emphasis must be on salt reductions across the full product line rather than the production of special "low-salt" products, which are typically rejected by consumers.

## **PANEL: EPIDEMIOLOGY AND IMPACT OF CHRONIC DISEASES RELATED TO SALT**

### ***North America***

*Norm Campbell*

This presentation relies chiefly on data relevant to Canada. Where necessary, multiplication by a factor of 10 will yield roughly equivalent figures for the US.

#### **Dietary sodium and health**

While most of the research on the effects of high salt intake has been directed at hypertension, there is some evidence that the following conditions may also be reduced or avoided by population-wide salt reduction:

- *Direct vascular and cardiac damage* (other than damage related to blood pressure).

Cardiac damage has been noted in animals.

- *Obesity and related diseases, such as diabetes*

High dietary sodium increases thirst and fluid consumption. Many of the fluids consumed contain simple sugars or alcohol, and contribute to caloric intake. It has been estimated that high-sodium diets contribute about 20%-30% of the excess calories consumed by children and adolescents through increased beverage consumption.<sup>10</sup> Therefore, high-sodium diets are likely to be a significant factor in the obesity epidemic.

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<sup>10</sup> He, FJ et al. (2008). Salt intake is related to soft drink consumption in children and adolescents: A link to obesity? *Hypertension* 51(3):629-634.

- *Asthma*
- The biological mechanisms for regulating smooth muscle tone in the airways is similar to that of the blood vessels. Concerns have been raised that high-sodium diets contribute to airway reactivity in asthma. Several small randomized controlled trials of different levels of dietary sodium on asthma severity have been conducted. A 2004 meta-analysis found a tendency for more airway obstruction among individuals on high-sodium diets and indications of “an improvement in pulmonary function” with low-sodium diets”.<sup>11</sup> While these findings did not reach the level of statistical significance, they clearly fail to establish the safety of high dietary sodium in persons with asthma.
- *Kidney stones*
- High dietary sodium increases urinary calcium excretion. Reducing urinary calcium excretion through reduced dietary sodium is one of the primary mechanisms of preventing and treating urinary calcium stones.<sup>12</sup>
- *Osteoporosis*
- High urinary calcium excretion associated with high dietary sodium has been suggested as a cause of osteoporosis. While there is inadequate data to prove this assertion, high dietary sodium cannot be excluded as a significant risk factor for this condition.<sup>13</sup>
- *Gastric cancer*
- High dietary sodium is associated with an increased rate of gastric cancer in a dose-related fashion. While at first it was thought that this was because high-sodium diets often also have high levels of carcinogens such as nitrates, more recent work has shown that high dietary sodium enhances the initiation and promotion of cancer in animals exposed to carcinogens. Hence, there is inadequate evidence to exclude high dietary sodium contributing to gastric cancer in humans.<sup>14</sup>
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<sup>11</sup> Ardem K (2004). Dietary salt reduction or exclusion for allergic asthma. *Cochrane Database of Systematic Reviews* 2004, Issue 2. Art. No. CD000436.

<sup>12</sup> Borghi L et al. (2002). Comparison of two diets for the prevention of recurrent stones in idiopathic hypercalciuria. *N Engl J Med* 346(2):77-84.

<sup>13</sup> Lau E & Woo J (1998). Nutrition and osteoporosis. *Curr Opin Rheum* 10(4):368-372.

<sup>14</sup> Panel on Dietary Reference Intakes for Electrolytes and Water, Standing Committee on the Scientific Evaluation of Dietary Reference Intakes (2004). *Dietary reference intakes for water, potassium, sodium, chloride and sulfate*. Washington DC: National Academies Press, 1-640.

### **Saving lives, saving costs: The Canadian context**

A study was conducted to estimate the effects of the current levels of dietary sodium on the blood pressures of Canadians, and to project the effects of lowering salt intake on a population basis.<sup>15</sup> The analysis was based on the following:

- *Current Canadian sodium intake:* Estimated from surveys to be 3500 mg/day, 3100 mg of it from processed food and 400 mg from salt added during cooking or at table.
- Estimated impact on blood pressure of reducing dietary sodium by 1860 mg/day to 1640 mg/day: This was calculated using the methods outlined in earlier meta-analyses.<sup>16</sup>
- *Blood pressure distribution and hypertension prevalence and control rates:* These were taken from the Canadian Community Health Survey (CCHS 1985-1992), supplemented with health care utilization and cost data from the Canadian Heart Health Survey 2003, IMS Canada and Ontario databases.
- *Association between blood pressure reductions and cardiovascular events:* This part of the analysis was based on methods used in two studies from the US and Finland, along with the Cook et al. meta-analysis of the TOHP I and II trials.<sup>17</sup>

The analysis indicated that a reduction in average Canadian dietary sodium intake from 3500 mg/day to 1700 mg/day could be expected to have the following results:

- A 30% reduction in the number of Canadians with hypertension (1 million fewer individuals).
- Almost double the rate of hypertension treatment and control, without any change in drug therapy.
- An annual savings of \$430-\$538 million in hypertension care costs (including physician visits, laboratory costs and drug costs).
- Five million fewer physician visits each year.
- A 13% annual reduction in cardiovascular events overall, resulting in an annual savings of more than \$1.38 billion in health care costs, and \$2.99 billion in associated indirect and direct costs.
- An 8% reduction in myocardial infarctions; a 12% reduction in strokes; and a 21% reduction in heart failure (the major reason for hospitalization in Canadians over 60 years of age).

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<sup>15</sup> Joffres MR et al. (2007). Estimate of the benefits of a population-based reduction in dietary sodium additives on hypertension and its related health care costs in Canada. *Can J Cardiol* 23(6):437-443; Penz ED et al. (2008). Reducing dietary sodium and decreases in cardiovascular disease in Canada. *Can J Cardiol* 24(6):497-501.

<sup>16</sup> The Cochrane Library 2006;3:1-41; Law MR et al. (2003). Value of low dose combination treatment with blood pressure lowering drugs: analysis of 354 randomised trials. *BMJ* 326(7404):1427-1434.

<sup>17</sup> Whelton PK et al. (2002). Effect of small systolic blood pressure reductions on deaths from stroke and coronary heart disease. *JAMA* 288:1882-1888; Karppanen H & Mervaala E (2006). Sodium intake and hypertension. *Prog Cardiovas Dis* 49:59-75; Cook NR et al. (2007). Long term effects of dietary sodium reduction on cardiovascular disease outcomes:observational follow-up of the trials of hypertension prevention (TOHP). *BMJ* 334:885-92.

Achievement of a greater reduction in dietary sodium intake would result in still greater benefits.<sup>18</sup>

<b>Reduction in dietary sodium</b>	<b>Predicted reduction in CV events</b>
1200 mg/day	9%
1860 mg/day	13%
2400 mg/day	19%

These estimates are likely to pertain to the United States as well, which has similar levels of dietary sodium and similar population distribution of blood pressures.

Limitations of this study include:

- The results are estimates. Some of the underlying data sources are old, or have substantial limitations. Results obtained in randomized controlled trials may not reflect those obtainable from population-based interventions.
- The effect of lowering dietary sodium on other conditions (e.g. gastric cancer, osteoporosis etc.) has not been considered. While current data are insufficient to make any reliable prediction about overall health effects, they still raise serious questions about the safety of high dietary sodium.

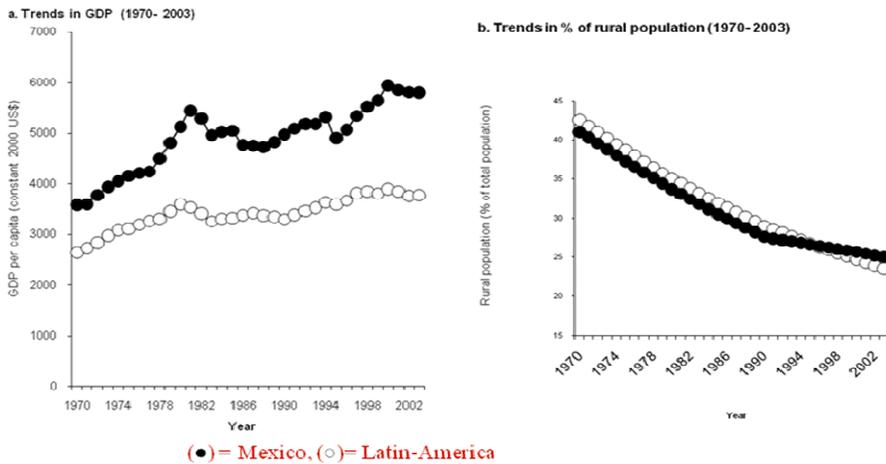
## **South America**

*Simón Barquera*

The Latin American and Caribbean region is in a state of epidemiological transition, in which the profile of population health evolves from one characterized by high mortality and infectious diseases (typical of poor countries) to one in which overall mortality rates are lower and noncommunicable diseases cause the majority of deaths (typical of wealthy countries). Between 1970 and 2003, GNP rose throughout the region while the proportion of residents in rural areas declined steeply; this was accompanied by characteristic changes in disease patterns.

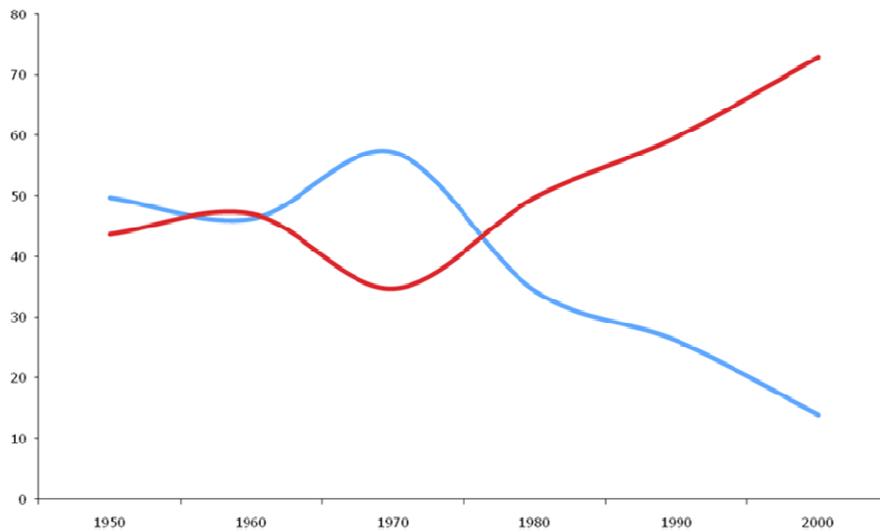
<sup>18</sup> He FJ & MacGregor GA (2004). Effect of longer term modest salt reduction on blood pressure. *Cochrane Database Syst Rev* (3): CD004937.

## GNP trends and % of rural population in Mexico and Latin America



Source: World Development Indicators, World Bank, 2005.

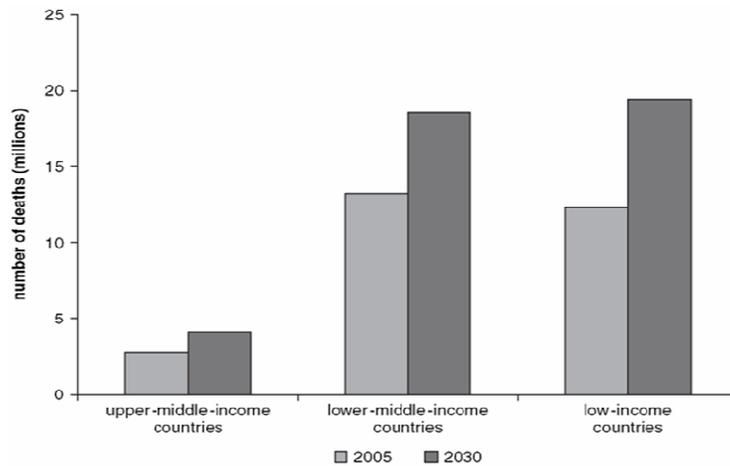
## Epidemiologic transition in Latin American countries



Not only is chronic disease on the rise in the region, but persons in middle- and low-income countries are much more likely to die of these diseases than in wealthy countries. This disproportionate burden of mortality is expected to worsen.<sup>19</sup>

<sup>19</sup> Lopez et al. (2006). WHO Global Burden of Disease Project.

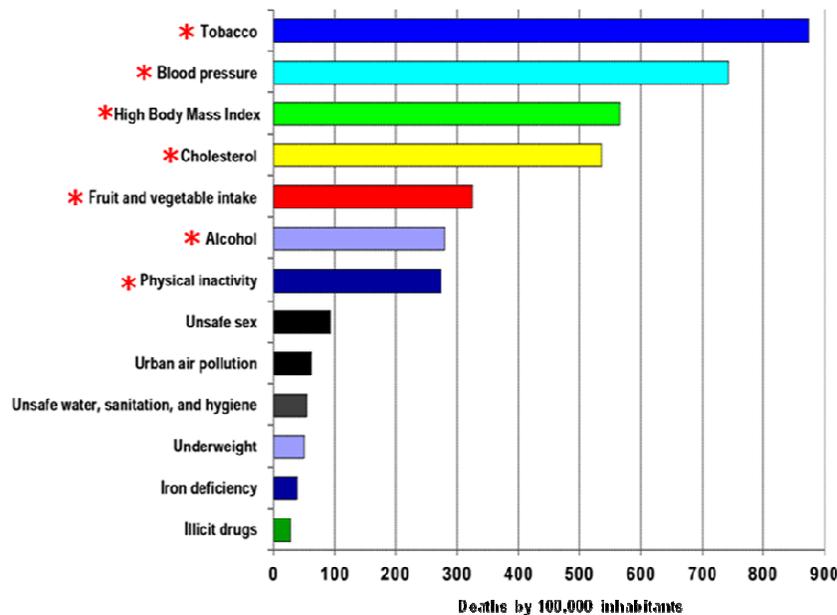
### Projected Deaths due to NCD by Country Income level, 2005-2030



Source: Lopez et al. Global Burden of Disease Project/VWHO, 2006.

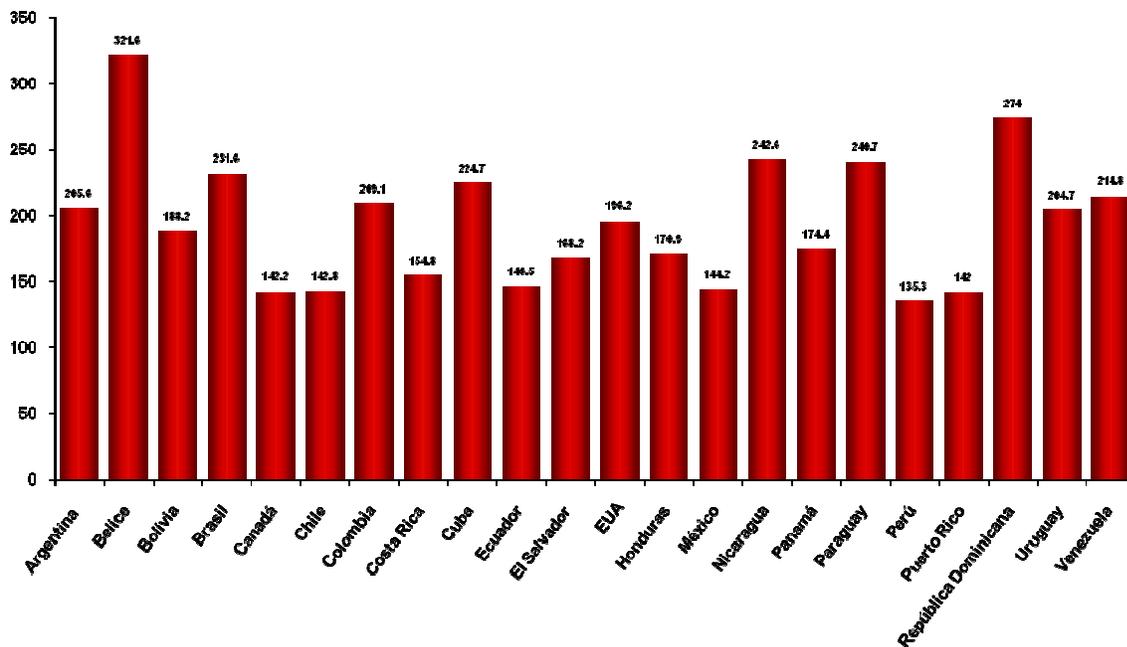
Patterns of chronic disease can be quite different in countries undergoing the epidemiological transition than in developed countries. For example, individuals at higher income levels in countries undergoing the epidemiological transition tend to have higher rates of obesity and chronic disease, which is the reverse of the situation in developed countries.

### Deaths by risk factor in the Americas



Source: WHO/PAHO, 2001

To add to the complexity, the epidemiological transition is uneven among countries and even within countries.<sup>20</sup> Despite its status as a middle-income country, total mortality in Mexico (and particularly in the Mexico City Metropolitan Area) was more similar to mortality in high-income countries than in other middle-income nations. The five leading causes of death in 2004 were ischemic heart disease, diabetes, cerebrovascular disease, cirrhosis of the liver, and automobile accidents. The southern region, by contrast, is at a markedly less advanced stage of transition and suffers from the largest burden of ill health in all disease and injury groups. In addition to the highest infectious disease burden, the southern region also had the highest noncommunicable disease and injury burden per capita.



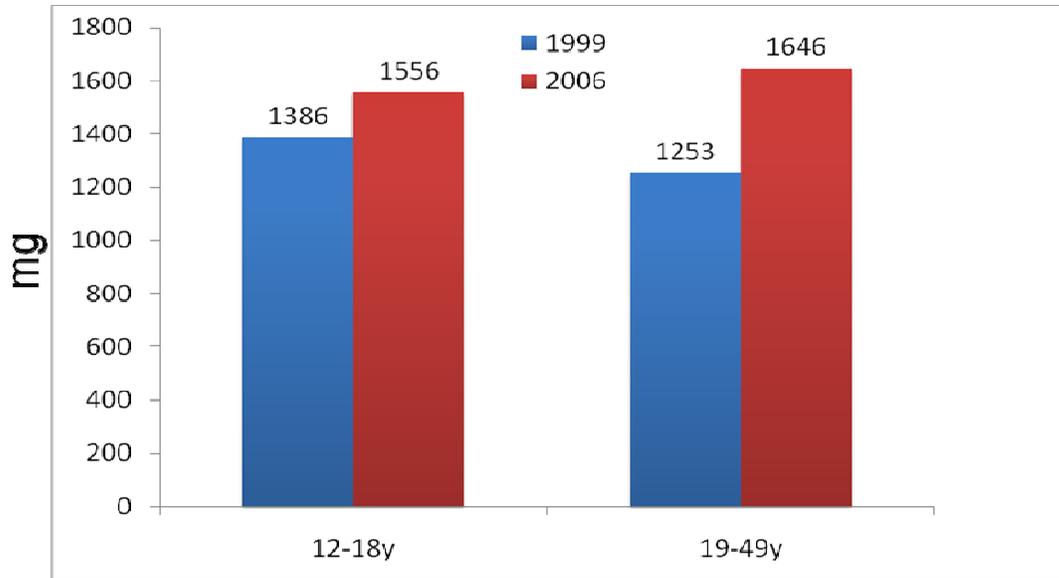
Cardiovascular disease and hypertension are rising at varying rates across the region. Some 30% of people in Latin America have hypertension. Studies of hypertension among Mexicans and Mexican-Americans have revealed some interesting patterns that undoubtedly reflect a very complex situation.<sup>21</sup> Hypertension prevalence is higher in Mexico than among Mexican immigrants to the United States; further, hypertension control is better for immigrants to the US, despite their relatively low access to

<sup>20</sup> Stevens G et al. (2008). Characterizing the epidemiological transition in Mexico: National and subnational burden of diseases, injuries and risk factors. *PLoS Med* 5(6):e125

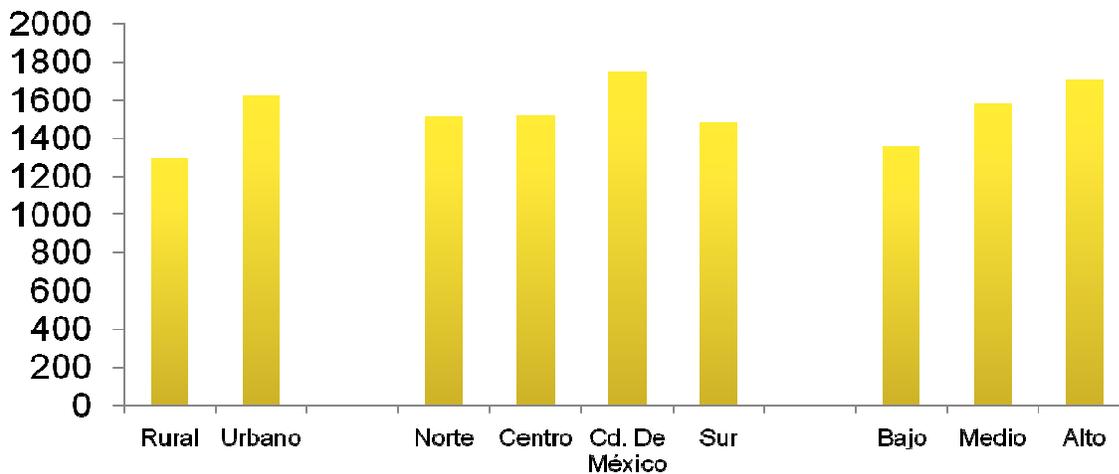
<sup>21</sup> Barquera S et al. (2008). Hypertension in Mexico and among Mexican-Americans: prevalence and treatment patterns. *International J Hypertension* 22(9):617-626.

health insurance. However, older women who migrate to the US are at increased risk for hypertension, while the reverse is true for their male counterparts.

## Sodium consumption trends in Mexico



Barquera et al. Preliminary data. Mexican Nutrition Survey 1999 and 2006



Data on sodium consumption in the region are not plentiful, and the need to address this situation is urgent. However, preliminary data from the latest Mexican Nutrition Survey indicate a high and rising intake since 1999. This is particularly alarming in that the figures, taken from survey data, almost certainly underestimate the true intake.

Effective treatment of only four conditions – obesity, hypertension, type 2 diabetes and dyslipidemias – could substantially decrease the burden of chronic diseases in Latin America and the Caribbean. It has been estimated that adequate treatment of high blood pressure alone could yield a 30% reduction in deaths from stroke and 20% fewer deaths from ischemic heart disease, for an overall 19% reduction in cardiovascular mortality.

From a preventive viewpoint, most countries in the region have taken action to address the rising burden of chronic disease. Among those interventions relevant to cardiovascular disease are the following:

- Latin America has developed a network for research and advocacy to regulate and suppress trans fats in processed foods.
- Mexico and the US have developed guidelines regarding consumption of caloric beverages.
- Most Latin American countries are developing or implementing programs to build and maintain healthy school environments, including attention to healthy eating.

In summary, Latin America and the Caribbean are facing a heavy burden of cardiovascular disease, which will rise as countries progress through the epidemiological transition – a transition which is also characterized by changing diets and rising average sodium intake. In view of the association between dietary sodium and blood pressure, and the substantial risk for cardiovascular disease even within the so-called “normal” range, policies to reduce sodium intake must be a priority. While lack of data is a problem in the region, action on salt reduction cannot await data collection and analysis; the two must proceed simultaneously.

## ***Discussion***

The following points were raised in discussion:

- The issue of salt fortification with iodine is important for many countries in the region. Current levels of fortification are based on an average salt intake of 10 g/day. There are several potential alternative vehicles, including bread, water, milk, edible oil and wheat flour. It was noted that salt added during food processing is typically not iodized. Some countries (notably Costa Rica and Uruguay) also fortify salt with fluorine to prevent dental caries.
- 24-hour urine collection is not just the gold standard for measuring sodium intake; it may in fact be the only method that can give a reliable baseline. For example, one food frequency survey in Australia was found to yield massive underestimates in salt consumption, with clearly erroneous intake patterns (e.g. adults consuming less salt than children). While there is some evidence of

correlation between spot urine testing and 24-hour collection results, a reliable methodology for comparison has yet to be developed. However, it was emphasized that action on sodium should not await completion of urinary measurements or indeed any data collection. While more evidence is certainly needed – especially in order to persuade policymakers of the need for action – a great deal can be accomplished even before the evidence is developed through strong advocacy, engagement with industry and adaptation of models which have proved successful in other countries.

- The danger of salt is just emerging as a topic in the Latin American-Caribbean region. Although many countries have conducted nutrition studies, many of these do not include information on salt consumption.
- Advocacy will be an important channel for action in Latin America and the Caribbean. The most effective publicity can often emanate from groups operating outside of government. For this reason, support for advocacy groups is an important function of governments wishing to take action on salt.
- One challenge in the Latin American – Caribbean context will be the high numbers of small food producers/distributors (e.g. small bakeries, street vendors) which account for a large proportion of total food consumed. These small enterprises will need considerable support if they are to conduct food testing or to meet labeling requirements. A start can be made by supplying them with tables of nutrient composition and educating them in their use.
- Political “lifespans” can be quite short, and crises such as infectious disease outbreaks demand immediate attention and can exhaust limited resources. Hence, arguments for salt reduction which rely on the potential for long-term savings in health care costs may be less than persuasive. Alternatively, it may be helpful to remind policymakers that the WHO Global Strategy on NCD is the product of agreement among Member States. Hence, each member government is already committed to provide, by 2013, accurate information to enable consumers to make healthy choices. Action on salt can be promoted as an essential component – and potentially the easiest and least expensive component – of that commitment. Publicity – good and bad – can also be a very powerful persuader.

## RESPONSES TO SODIUM QUESTIONNAIRE – COUNTRIES IN THE AMERICAS

*Barbara Legowski*

A questionnaire on data and activity relevant to salt reduction was circulated in November and December 2008 to CARMEN countries and two subregional centres (INCAP for Central America and Panama, and CFNI for the English Caribbean). The results, summarized below, are preliminary and have not been confirmed by respondents. All participants are asked to review the information for accuracy prior to final translation of the document.

### **Estimates of average dietary salt intake for the population (g/day/ person) and methods used**

Data sources for existing estimates included national surveys of health, nutrition and family budgets; statistics from the salt industry; and surveys of specific populations (e.g. school children in rural areas, adolescents, people living in metropolitan areas). A variety of estimation methods was used, including 24-hour food consumption recall; there was only one instance of urinary measurement of sodium excretion. Estimates ranged from 4 g/day to 19 g/day per person. Many studies measured only salt added during cooking or at table; others only the salt contained in processed foods (as opposed to salt consumed in meals eaten outside the home).

### **Current national recommendations for daily salt intake**

Five respondents (Argentina, Brazil, Chile, Costa Rica and Uruguay) reported quantitative recommendations. All but one of these recommendations call for an intake of < 5 g/day; the other recommends ≤ 6 g/day.

Four countries (Panama, Guyana, Grenada, St. Vincent) have qualitative recommendations for “moderate” or “limited” use of salt.

### **Chief sources of dietary sodium**

Research to identify sources of dietary sodium was reported by five countries (Argentina, Bolivia, Brazil, Chile and Ecuador). A variety of methods was reported, including surveys of food consumption, analysis of nutrient content in a sample of foods, surveys on consumption of high-sodium foods, and determination of sodium content of a limited number of commonly consumed food products (e.g. bread).

### **Government programs, policies and initiatives that address salt consumption**

Government actions specific to salt include:

- Population surveys to determine consumption of high-sodium foods (1 respondent)
- Research into sodium content of various foods (2 respondents)
- Development of national dietary guidelines for salt intake (5 respondents)
- Establishment of national working groups / task forces for salt reduction (3 respondents)
- Collaboration with the food industry with a view to product reformulation (3 respondents)
- Regulatory action relevant to sodium content (2 respondents – one of which actions is pending)
- Nutrition labeling/warning labels on packaged foods specific to salt (1 respondent)

Other relevant activities include:

- Research on nutrient content of various foods (2 respondents)

- Mandatory food labeling (3)
- Warning labels for high fat/sugar/salt content (1 respondent)
- Restrictions on the advertising to children of foods high in fat, sugar and salt (2 respondents)
- Restrictions on sale of foods high in fat, sugar and salt in schools (1 respondent)
- Healthy diet/healthy living consumer education campaigns (3 respondents)
- Treatment and control guidelines for chronic diseases related to nutrition (e.g. cardiovascular disease, hypertension, diabetes) (2 respondents)
- Training of health professionals in healthy diet/healthy living (4 respondents)

### **Industry-led actions**

Three countries (Panama, Chile and Costa Rica) reported industry-led activity in such areas as product reformulation, development of salt substitutes and lower-sodium salt, development of low-salt processed foods, and consumer campaigns promoting healthier products.

### **Civil society actions**

One country (Bolivia) reported healthy diet information and education programs at social clubs for older persons and people with diabetes, with the lead being taken by professional associations of nutritionists and dietitians.

## **PANEL: SPECIFIC MECHANISMS AND EXPERIENCES**

### ***Government initiatives***

#### **Canada: Food labeling; National Working Group on sodium**

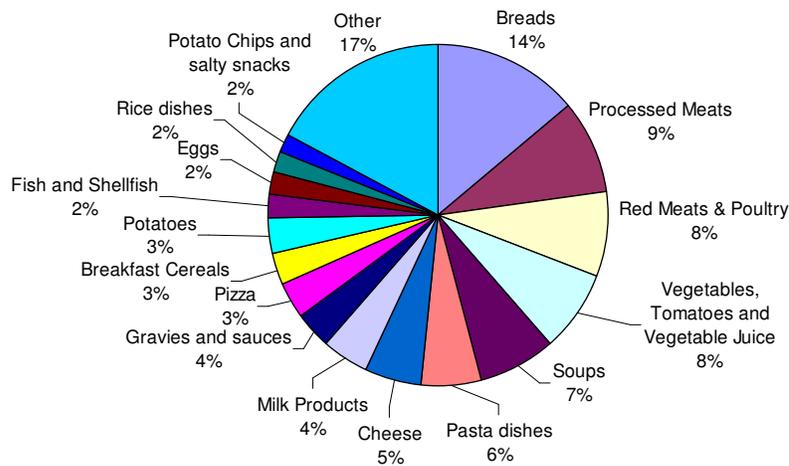
*Mary L'Abbé*

#### ***Sodium intake in Canada***

Canada has issued dietary sodium requirements for seven distinct age groups in terms of AI (“adequate intake”) and UL (tolerable “upper level” – understood as the highest level likely to pose no risk of adverse health effects). These classifications are in harmony with those used in the US. From survey data, it is estimated that Canadians over the age of one year consume an average 3100 mg/day of sodium (7.9 g/day of salt). This does not include salt added during cooking or at table, which would add 10%-15% to the total. A review of the usual intake distribution for men and women shows that virtually all Canadians (96.9%-100%) consume more than the AI for their age group. Most males consume more than the UL for their age group (98.8% of those aged 19-30, and 92.2% of those aged 31-50). Women

fare slightly better: 74.5% of those between 19 and 30, and 70.8 of those aged 31-50 consume more than the tolerable upper limit.

It has been estimated that 77% of the sodium in the average North American diet is contained in processed and restaurant foods. A review of data from the Canadian Health Survey (Cycle 2.2 – 2004) breaks this down into major categories:



Clearly, it is not easy to target one or a few food categories for immediate action. The top five food sources (in terms of sodium content) contribute about 39% of total sodium intake, while the top 20 account for 81%.

### ***Nutrition information and labeling***

Nutrition information may be understood as comprising three classes: Nutrition labeling, nutrient content claims, and health claims.

- ***Nutrition labeling***

In Canada, nutritional labels (“Nutrition Facts”) has been mandatory on most pre-packaged foods (with some exceptions) since 2005. The label must include information on total calories and 13 core nutrients, including sodium. Additional nutrients must appear if they are subject to a nutrient content or health claim.

- *Nutrient content claims*

Six specific claims relevant to salt content are regulated:

- “salt-free” = < 5 mg / serving of sodium
- “low in sodium” = <140 mg/serving
- “reduced in sodium” or “lower in sodium” = at least 25% less sodium than the regular product
- “no added sodium or salt” = no added salt, other sodium salts or sodium-containing ingredients which function as a substitute for regular salt
- “lightly salted” = at least 50% less added sodium than in the similar reference food

- *Health claims*

Only one health claim is specific to sodium: “A healthy diet containing foods high in potassium and low in sodium may reduce the risk of high blood pressure, a risk factor for stroke and heart disease.” In order to display this claim, a product must meet the requirements to display either the “salt-free” or “low in sodium” content claim. Foods which display the health claim for fats must also meet a requirement regarding sodium: they must contain 480 mg or less of sodium per reference amount and per serving.

Outside the regulatory framework, two types of front-of-package symbols relevant to sodium are frequently seen in Canada. These are the “Health Check” logo available from the Heart and Stroke Foundation and the “SmartSpot” symbol (PepsiCo) for products which meet certain criteria. The Health Check criteria for sodium have recently been updated (effective November 2010); under the new plan, for example, breads must contain less than 360 mg sodium per serving (instead of 480 mg) in order to display the logo.

Canada’s Food Guide<sup>22</sup> also contains several recommendations relevant to salt.

### ***Sodium Working Group***

A national Working Group was formed in 2007 to develop, implement and oversee a population health strategy for dietary sodium reduction using a three-pronged approach of research, consumer awareness-raising programs, and voluntary sodium reduction in packaged food products and restaurant/catered meals. The Working Group includes representatives of the scientific and health professional community, health-focused and consumer NGOs, the food manufacturing and food service industry, and government.

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<sup>22</sup> This is the second most frequently accessed federal government document, after the income tax guide.

Work on the assessment stage is under way, together with extensive national consultations. Next steps will include development of a strategic framework which will be evaluated for effectiveness prior to implementation. The framework will contain timelines and a process for regular monitoring. The next Working Group meeting is scheduled for 18-20 February 2009, and a public consultation will take place 19 February 2009.

### **Chile: National Task Force for the reduction of salt consumption**

*Maria Cristina Escobar*

Mortality attributable to high blood pressure and excessive salt intake is very high in Chile, with cerebrovascular mortality in particular occurring at almost double the rate of the US. It is estimated that a reduction of 4 mm Hg in average systolic blood pressure would avoid 1,254 deaths a year, for a saving of 35,281 DALYs; this compares to 2,704 deaths and 31,550 DALYs for a 13% drop in tobacco use, and 1,380 deaths/105,063 DALYs for a 20% drop in alcohol use.

On average about 60% of the Chilean population is aware of the dangers of hypertension; however, treatment rates for hypertension are only about 20%, and control rates are significantly lower (about 12%), amounting to only about 1/3 of the US control rate. Awareness, treatment and control are significantly lower for men than women in Chile.

The government's National Health Objectives for the Decade 2000-2010 is the main instrument that guides health policy development. It contains explicit goals relevant to cardiovascular disease prevention, but there is no specific mention of salt. In general, strategies have been designed to operate at the individual rather than the population level (e.g., guidelines for regular health examinations, recommendations specific to hypertension treatment).

One important initiative in 2007 was publication of a set of explicit health guarantees: for example, the population is guaranteed access to testing and treatment of hypertension, with reasonable waiting times. 70% of the population has access to treatment at no cost, while a parallel private system provides services at very low cost. In addition, a 2008 Summit on Nutrition and Health culminated in several recommendations applicable to healthy living, physical activity and environmental changes to promote healthy dietary choices. However, cost-effective population-wide approaches for prevention of hypertension in the first place, as recommended by WHO-CHOICE, have been virtually ignored so far.

To address this situation, a multisectoral National Task Force was formed in November 2008 for the reduction of salt intake in the Chilean population, with representation from the Ministry of Health, PAHO, industry, academia/scientific societies, NGOs and consumers. Its objectives are to develop evidence to document the current situation and to define lines of action. By March 2009, it will release a plan of action for the next three years.

At the first meeting, it was estimated on the basis of salt sales figures that the average per capita consumption of salt was about 12 g/day, about half of which is consumed outside the home. The salt industry has also taken the initiative to work with a number of bakers as well as producers of margarine, baby food, soups and other foods to lower salt content. The food industry has also led the way in voluntary reductions to the salt content of poultry and marinated meat products, with development of defined “best manufacturing practices”. Representatives of the bread industry expressed a preference for mandatory regulation and/or financial incentives, believing that in a strictly voluntary program those companies which reduced salt would be placed at a competitive disadvantage. Overall, however, there is every indication that a successful collaboration with the food industry can be established in Chile.

Other stakeholders are contributing other pieces of the puzzle. In an independent study using food labels, the Chilean Consumers’ Association found that popular brands of cookies consumed by children were extremely high in salt; the results garnered a great deal of media attention and provided further impetus to the work of the Task Force. Meanwhile, the Universidad Iberoamericana de Ciencias y Tecnología has analyzed and compared sodium content of various foods by brand, and has expressed interest in working with industry; the University of Chile’s Instituto de Nutrición y Tecnología de los Alimentos is also active in analytical work, and the Chilean Academy of Medicine has offered to place its authority behind recommendations to the population. The Foundation of Cardiology has contributed materials and resources for information-sharing and education, and a new book on sodium and potassium has been published by the Chilean Hypertension Foundation.

The Task Force also plans to perform urinary sodium excretion measurements through spot collections as part of Chile’s 2<sup>nd</sup> National Health Survey, to take place in 2009. It is anticipated that Chile’s first national food consumption survey will also take place before the end of 2010.

From a strictly governmental viewpoint, salt is addressed within the Global Strategy Against Obesity. National dietary guidelines do exist, but are qualitative in nature and fail to emphasize the dangers of “hidden salt” in processed foods.

Nutritional labeling has been mandatory on packaged foods since 2006. Six core nutrients, including salt, must appear on the label, and products making nutrient claims must meet defined criteria:

- “salt-free” = < 5 mg sodium /serving
- “very low in salt” = <= 35 mg /serving
- “low in salt” = <= 140 mg / serving
- “reduced in salt” = at least 25% lower than the reference product.

Health claims are also regulated.

Proposed legislation for the regulation of nutrition, which includes several provisions relevant to salt – including restrictions on advertising high-salt foods to children, is now before Congress, classified as a matter of “simple urgency”; this means it must be decided within three years.

### ***Food industry initiatives***

#### **Argentina: Compañía de Alimentos Fargo**

*Maria Helena Fellner O’Toole*

As an active supporter of the WHO Global Strategy on NCD, Fargo has been a leader in Argentina in the elimination of trans fats from its bread products, an initiative that involved a working collaboration with scientists and health professionals. Now, it plans to use that experience to support the need for salt reduction.

Most bread consumed in Argentina is not “packaged”, but comes from small independent “artisan” bakeries. Consumers report that the two attributes most important to them in choosing a bread are taste and freshness. Salt is an essential ingredient, providing elasticity and helping to maintain freshness while enhancing taste and texture.

Fargo has tested a variety of formulations for its three most popular varieties – “diet double bran” bread, milk bread and white bread – in the effort to reduce salt without sacrificing quality and sales. The aim was to ensure that change would be imperceptible to the consumer. Proposed new formulas were followed by assessment of ingredient and process interactions; once processing was complete, the test products were assessed for shelf life, consumer appeal and overall production cost. Next, each bread was subjected to a second modification in an attempt to reduce the sodium content even further.

The final results were:

	<b>Original sodium content</b>	<b>1<sup>st</sup> modification</b>	<b>Reduction from original</b>	<b>2<sup>nd</sup> modification</b>	<b>Reduction from original</b>
<b>Diet double bran bread</b>	519 mg	435 mg	16.2%	297.4 mg	<b>42.7%</b>
<b>White bread</b>	477 mg	396 mg	17.0%	381.1 mg	<b>20.1%</b>
<b>Milk bread</b>	413 mg	361 mg	12.6%	290.2 mg	<b>29.7%</b>

The success of this work has been gratifying. For example, the original bran bread contained 11% of the recommended daily allowance for sodium (2400 mg); the new product contains 6.2% of the RDA. Fargo has shown that not only can salt (and other sodium-containing additives) be reduced in bread, but that it can be reduced well beyond the manufacturer's original expectations.

The finished products are now awaiting official approval from Argentina's Food Institute, followed by preparation of new nutritional labels prior to marketing. Fargo is eager to continue its collaboration with the salt reduction strategy. The company believes that sodium content in these breads can be lowered still more, but any further change will take place in gradual steps to avoid alarming consumers.

### **US: Grocery Manufacturers Association**

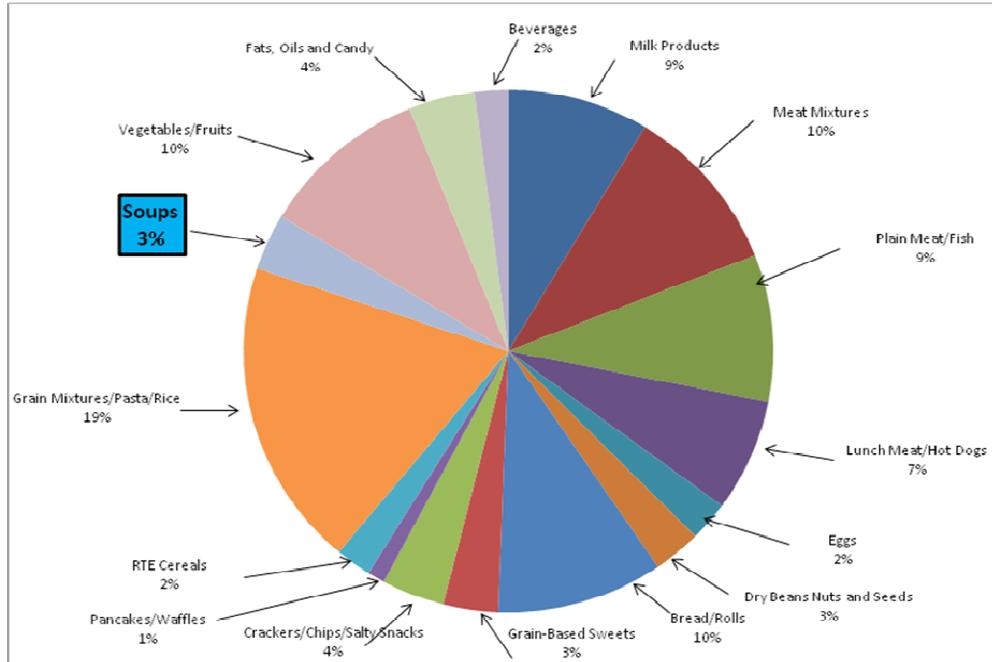
*Robert Earl*

Based in Washington DC, the Grocery Manufacturers Association (GMA) represents some 300 leading food, beverage and consumer products companies, many of which are multinational. At a recent meeting, the GMA outlined its vision for salt reduction:

*Industry, government and NGOs will collaborate to execute national approaches to dietary improvement through voluntary salt reduction, consumer education and scientific research that will benefit Americans and global populations.*

Prior to the 1970s, there was no labeling requirement for foods sold in the US, and little information on salt content was available. In 1973, a voluntary labeling program began; however, sodium was not included on labels until the mid-1980s. In the 1990s, nutritional labeling was made mandatory. Requirements are in harmony with those described earlier for Canada.

Sources of dietary sodium in the US are shown below, using data from 2003-2004:



Source: NHANES 2003-2004; Courtesy of General Mills/Bell Institute

The top 20 sodium contributors have been calculated taking frequency of consumption into account, as was done for Canada. It was noted that vegetables, fruits and whole grains are largely absent from the list. Further, more than half of the top 20 have < 480 mg of sodium per serving, meeting the FDA definition of “healthy”.

A key step toward effective collaboration was taken in 2007 with a national Salt Conference hosted jointly by the GMA and the Center for Science in the Public Interest, a leading nutrition advocacy agency. The conference was attended by representatives of government and the food manufacturing and service industries as well as consumer advocates, health professionals and academics. The following points raised at the conference were highlighted by the GMA:

- Messages about food, diet and health should be positive.
- The focus should be on overall dietary patterns rather than on individual nutrients.
- Industry should be encouraged to continue its progress with incremental sodium reductions and varied product offerings.
- Change must be sustainable.
- The need to change consumer behavior should be addressed through effective social marketing.
- The ultimate goal should be to move consumers toward healthy diets such as those used in the DASH trials or featured in the US government’s MyPyramid Food Guide.

GMA activities to address these objectives include:

- *Ongoing data collection and publication of reports* (e.g. GMA 2007 Industry Report on Health and Wellness, reporting data from 2004-2006). The GMA Health and Wellness survey found that 98% of food companies are actively reformulating and introducing new products. Many of these reformulations involve nutrition changes; recent efforts focused on trans fat, while other areas of attention include portion size, calories, sodium content and sugar.
- *Take a Peak into MyPyramid*: This GMA initiative, developed in collaboration with the Food Marketing Institute and MatchPoint Marketing, aims to leverage the marketing power of the food industry to move government recommendations for healthy eating (*MyPyramid*) into local grocery stores, making health-related information part of the everyday decision process for consumers. It relies on simple, point-of-purchase messages along with weekly specials, coupons and other promotional tools to encourage healthier eating in small, easy steps. Featured products must meet defined requirements – for example, they must contribute to the recommended daily intake of one or more of the “required food groups” within a 2000-calorie diet, while not exceeding FDA-defined “ceiling” levels for sodium, trans fats, saturated fat and cholesterol.

In summary, the GMA and the US food industry in general supports positive change toward healthier eating. However, the following points were emphasized:

- Sodium should not be addressed in isolation, but as part of a broader healthy eating / healthy living initiative. Policies should be prioritized so that manufacturers are not faced with fragmentary, inconsistent expectations.
- Efforts to reduce sodium in foods must take science into account – not just health science, but the science of food production and processing. Unlike trans fat, sodium is an essential nutrient, and performs a valuable function as an ingredient in many products. Negative changes to other nutrients must be avoided in reformulation.
- Sodium reduction initiatives should take care to avoid putting individual companies at a competitive disadvantage.
- Programs, including sodium reduction strategies, should be national in scope and take an integrated approach, involving government, NGOs and all industry stakeholders including branded and private-label manufacturers, restaurants/delis/bakeries, institutional caterers, etc.
- Change should take place in gradual, incremental steps, and industry should be given credit for recent achievements in reducing sodium content.
- Sodium reduction programs must take into account population health variables (e.g. urinary sodium levels, chronic disease risk) as well as sodium content in foods.
- Intersectoral collaboration is required for research into consumer taste, salt alternatives and effective means of consumer education.

## ***Civil society initiatives: The World Hypertension League***

*Arun Chockalingam*

The World Hypertension League launched World Hypertension Day (WHD) in May 2005 as a way to spark action and raise global awareness about the connection between salt and hypertension, and the role of high blood pressure in causing and aggravating major cardiovascular and renal diseases. WHD is an official “partner” of World Kidney Day and the WASH-sponsored World Salt Awareness Week.

The 2009 theme for World Hypertension Day is “Two Silent Killers” – salt and high blood pressure. Promotional materials will emphasize that halving salt intake would prevent 2.5 million deaths worldwide from stroke alone. Some 85 countries are expected to participate.

## ***Discussion***

The following points were raised in discussion:

- ***Small producers:*** While the epidemiological transition means that people in Latin America are eating more and more packaged foods, bread is a notable exception. Many people do not buy packaged bread at all, but buy it fresh-baked each day from small, independent bakers. Since bread is typically one of the top contributors to sodium intake, this fact poses a special challenge for effective monitoring and needs to be considered in the regional approach. It was noted in response that providers of packaged bread can serve as a model for the smaller enterprises, showing that it can indeed be done. In Argentina, small bakers are already emulating Fargo’s approach on trans fats and there is every expectation they will do so for salt as well. In a situation where small enterprises must be reached, consumer demand for healthier food becomes a deciding factor; thus it may be that consumer education will take a more prominent role in the region than elsewhere. Alternatively, it may be possible to negotiate with associations of small producers where these exist.
- ***The approach to industry:*** It is important to remember that the food industry cannot and should not be painted as a “villain” along the lines of the tobacco industry. The food industry is an essential partner; it provides products and services that are essential to life and health; it is interested in health, and is willing to listen and to negotiate. The experience in Argentina as well as in the UK shows that manufacturers at first are apt to believe drastic salt reductions are “impossible” – but it also shows that, when salt reduction is taken as a challenge, industry can and does take pride in producing much healthier products without sacrificing consumer appeal. In the UK, at least one manufacturer reduced salt in its cheapest breads at first, believing that people would choose its saltier, more expensive offerings; in fact, the opposite happened.
- ***“Imperceptible” change:*** Fargo may be expressing a view common to many others in industry in its preference for “undetectable” changes that need not be announced or explained to consumers,

while maintaining its active collaboration with the health sector. The elimination of trans fat from bread also took place in this “quiet” way. While consumers clearly do not wish to be harmed by the foods they eat, eating per se must remain one of life’s pleasures.

- **Holistic vs. salt-specific:** While US industry preference for a holistic approach to diet has been noted, the decision to target salt is simple logic: salt must be handled differently, because salt intake is largely outside the control of the consumer. For years, salt has been added to foods unnecessarily by industry, with the result that people are consuming many times the salt they actually need; if salt were reduced by half across the board, it would have a profound effect on the public health. In the meantime, integration with wider health programs will be accomplished by inclusion of all relevant stakeholders, from all relevant sectors, in action on salt.
- **Health professionals:** Communication to health professionals of the importance of salt reduction remains a priority. In Australia, popular opinion among health professionals still ranks salt well below trans fat as a health issue. One powerful argument is the 2007 *Lancet* article by Asaria et al. which compared the public health effects of salt reduction and smoking cessation, showing that the first is not only far easier to accomplish, but has greater potential benefits.<sup>23</sup>
- **Timetable for change:** While gradual change is desirable for many reasons – not least the need for consumers’ taste to adapt to lower salt levels – the Australian Sodium in Bread study showed that the transition can in fact take place relatively quickly: in a matter of weeks rather than years. However, it is probably wiser to move more slowly than this, in order to harmonize salt reduction efforts with the routine reformulation schedules of industry. It was noted that a different pace of change may be required for different products, depending on shelf life/turnover time. For industry, reduction in salt typically requires additional formula changes, retraining and reorganization of production in order to produce a product with the same quality and same cost while avoiding waste. Typically, nutrition is not an important factor in consumers’ choice of food. However, they do respond to “a tasty product”, and it is important not to put them off by delivering anything less. Once a new formula has been chosen, it must be registered with the national food authority; where labeling is mandatory, packaging changes must take place as well. All this takes time. Fargo’s original timetable for salt reduction in its three top-selling breads was two years; it actually accomplished the task in six months, but the products have not yet come to market.
- **Voluntary vs. regulatory approach:** While the voluntary approach has much to recommend it – including its strong record of success in the UK – the regulatory approach also has advantages: it is sometimes the most efficient, effective way to get things done. The optimal choice may depend upon the particular issue at hand. Labeling regulations, for example, are an extremely important tool for salt reduction efforts. Where labeling is mandatory (and even in some cases where it remains voluntary), it can provide a strong incentive for manufacturers to reformulate their

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<sup>23</sup> Asaria P et al. (2007). Chronic disease prevention: Health effects and financial costs of strategies to reduce intake and control tobacco use. *Lancet* 370(9604):2044-2053.

products. Labels may well have more value in this role than they do as vehicles for informing consumers. In addition, manufacturers use label information to compare their own progress with that of competitors. Labels are also important for the movement as a whole, in that effective media publicity is often based on label comparisons between one brand and another. In Canada, many provinces are also considering regulation for salt reduction, especially for vulnerable populations such as children in schools. On the other hand, the voluntary approach may well be the most effective and practical method to bring about change in the sodium content of manufactured foods across the board. Legislation would require clear decision on a long list of issues: should requirements be set at “average” or “maximum” levels? How should the needs of special populations be handled? What should be done about imported foods? It has been noted that the legislation regarding salt in Chile will not take effect for three years; action on salt as a whole cannot wait so long. While the possibility of legislation should remain there to encourage industry compliance, and remains the most effective means by which entire populations can have equitable access to the benefits of salt reduction, it was noted that publicity (both favourable and otherwise) is a very powerful tool in its own right.

- **Trade issues:** The use of tariffs may be especially important to the Latin American/Caribbean region since so many foods are imported. Hence, government trade departments are crucial players in the region, as opposed to Canada, the US or European countries where departments of agriculture are more important.
- **Advocacy:** The tremendous change in attitudes toward tobacco could not have taken place without strong advocacy. The work of WASH and other advocacy organizations will be equally important in the movement to reduce salt intake. One important current role for WASH is facilitating industry collaboration by approaching multinational companies about salt. For its part, the World Hypertension League is hosting a major meeting with industry in March 2009, jointly with the US National Forum.
- **Effect of recession:** Many people in the Caribbean, at least, have responded to the economic downturn by eating fewer fresh meat products and more salted fish and corned beef. Clearly, there are issues in some countries which will overshadow the need to reduce salt. Where processed food forms a large part of the national diet, targeting the cheapest products for the first reductions may help; after all, it is the lowest-income people who bear the greatest burden of cardiovascular disease.
- **The right to health:** Many Latin American countries have already made formal commitments to their peoples’ “right to health”. This can be an effective legal and ethical argument for policy change.

## REPORT: US INSTITUTE OF MEDICINE MEETS ON SALT REDUCTION, 13 JANUARY 2009

*Darwin Labarthe*

The US Institute of Medicine's new Committee on Salt Reduction has just met in Washington with a view to holding government accountable for its long-standing recommendations to reduce salt intake.

It was noted that of the three steps in good public health practice – assessment, policy development, and assurance – the last step has been conspicuously missing in the US. There have been multiple official recommendations regarding salt intake, but little or no effort to assure compliance. In the meantime, high blood pressure is a major uncontrolled epidemic, and prevalence is steadily increasing. The level of hypertension control remains low.

Hypertension prevalence patterns reflect major disparities in health, striking minorities such as African-Americans and Mexican-Americans at substantially higher rates than others. These vulnerable groups also have a lower rate of successful hypertension control. These facts provide the rationale for positioning salt reduction as part of the existing national commitment to eliminate disparities in health. Even under the most favourable circumstances, some 1/3 of hypertensive patients remain uncontrolled. These people have failed to reap the benefits of recent scientific advances in treatment, and their existence is a clear sign that a much more aggressive approach – including reduction of salt intake – is essential.

Another important reason for action is implicit in the US official dietary guidelines, which were last updated in 2005. It is recommended that the general population consume no more than 2300 mg/day of sodium, while the upper limit (UL) for "special groups" is 1500 mg/day. However, "special groups" includes all middle-aged or older people, along with all individuals with hypertension. Together, these "special groups" account for more than 68% of the US population. This fact is unknown to most of the public, as well as to most health professionals and policymakers. Nor is it reflected on nutritional labels, which misleadingly reflect sodium content as a proportion of the 2300 mg UL for the "general population". Meanwhile, various estimates place average sodium intake at about 3400 mg/day.

The new IOM committee will review the evidence, including guidelines, and produce a report with specific recommendations for action.

DAY 2

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## MODERATOR'S SUMMARY OF DAY 1

*Branka Legetic*

From presentations and discussions on the first day of this meeting, the following points stand out:

- Salt is an issue for everyone, not just for those with hypertension.
- A modest reduction in salt intake results in major improvements in public health.
- A stepwise, gradual approach is best.
- Salt reduction is not just an issue for health departments. It is an emerging issue for a number of government departments (trade, industry), food processing industries, and civil society, requiring a multifaceted approach.
- There is an urgent need for data pertinent to Latin America and the Caribbean, with special attention to the epidemiology of chronic diseases, national and regional dietary patterns, national and regional patterns of food provision, distribution and consumption, and special attention to the issue of salt fortification, particularly with iodine and fluoride. However, action must not await the collection of data, but advance in parallel with it.
- In designing salt reduction strategies, consideration must be given to the special needs of certain subgroups, such as children and pregnant women.
- Nutritional labeling is of value in a great many ways, including as a motivational tool for industry.
- The trade sector is likely to have special importance for salt reduction in the PAHO region.
- The cost effectiveness of salt reduction is especially important as an argument for motivating policy makers in government.
- A particular issue for Latin America and the Caribbean is the prevalence of small enterprises, including street vendors, in the food industry. This "atomization" of food provision poses special challenges for engagement, effective collaboration and monitoring. Small enterprises are likely to require concrete assistance with issues such as labeling.

## INTRODUCTION TO DAY 2

*Enrique Jacoby (Moderator)*

The initiative to eliminate trans fats is the immediate precedent for action on salt reduction in the region, and will serve as a useful model for planning.

The PAHO/WHO Task Force for Trans Fats Free Americas was convened in 2007 at a time when the issue was of increasing interest in the media. It had already received wide international attention. Some cities, led by New York, had launched initiatives; several countries, including Canada, the US and Argentina had developed strategies of their own. At the time, Chile was considering action, while Costa Rica had taken steps to deal with trans fats even before 2007. Industry found itself in a weak position: while it was beginning to accept that products would have to be reformulated, there was a great unwillingness to admit that existing products and methods were in any way “bad” or “unhealthy”. While this defensive stance has not disappeared, industry has in fact accomplished a tremendous amount. While many stakeholders had been skeptical of the power of self-regulation, the trans fats initiative proved that it could in fact work. While work remains to be done, heartening progress continues to be made.

A particular challenge in Latin America is the relative absence of well-established food regulatory agencies with the strength to influence government and the capacity to take effective action. There are some exceptions to this – notably the agencies in Brazil, Chile, Costa Rica and Mexico – but in general, there is little effective balance for the strong influence of private industry on government policy.

On the positive side, the region can take advantage of the strong momentum provided by the global movement for salt reduction. Establishment of a regional task force on salt with qualified, experienced people will be an important first step, as it was for trans fats. But while PAHO can provide leadership, it is up to individual countries to take up the work. The small-group discussions during the current meeting will begin the task of identifying which countries are ready to act, which can take a leadership role, and which can help others with technical or capacity challenges. They should also give some insight into the key elements needed for action and make a start on planning.

## GROUP DISCUSSION SUMMARY: GOVERNMENTS/PUBLIC AGENCIES

*Godfrey Xuereb*

*Principles*

- In Latin America and the Caribbean, it is essential to “build the ship while you sail it”. That is, multiple lines of action must be undertaken in parallel. Action cannot await the completion of datasets and analyses.

- Many countries in the region are starting at a very low level with respect to capacity, public awareness and the ability to effectively negotiate with industry. It was agreed that “baby steps” are acceptable in such situations, as long as each step is made in the right direction.
- One very useful first step would be production of a country-specific baseline report within the next few months, with the main dietary salt contributors identified; such a report would serve as a sound basis to get the scientific community more actively involved.

*Organization and planning*

- A regional task force should be supplemented by national task forces or committees with a mandate to establish realistic goals and objectives.
- A regional task force should stimulate and coordinate formulation of national action plans, with buy-in from all stakeholders.
- A regional task force should establish specific Working Groups for planning, communications, scientific/technical issues and monitoring/evaluation. All should maintain a focus on practical action. The scientific/technical group would be responsible for providing a strong evidence base for salt reduction in the region, and for assisting the scientific bodies in individual countries with their analyses and messaging.
- Regional and national task forces should concentrate their efforts in three areas:
  - Product reformulation
  - Consumer awareness (especially through labeling)
  - Integration/leveraging of existing programs, without losing specific focus on salt. For example, salt-related objectives could be added to existing healthy-food programs for schools.
- An initial environmental scan at country level should include:
  - *Epidemiological data on hypertension, cardiovascular disease and mortality:* As much information as possible should be gleaned from data and tools that already exist. Many countries already know their rates of hypertension, CVD, mortality etc.; countries without such rates may be able to use the “steps methodology” to help with estimating.
  - *Salt intake:* Some countries have food consumption data from surveys; others may be able to use FAO food availability data. From this, it should be possible to tentatively identify the most commonly used foods and chief contributors of dietary salt.

### *Challenges and solutions*

- Messages about salt reduction must not clash with the good work that has been done on salt fortification.
- One or more countries may have analyses or information on salt content of particular ethnic/specialty foods that could be shared with other countries where similar foods are popular.
- Because many Latin American countries import much or most of their foods, it is essential to get salt on the agendas of regional political / trade bodies.
- National and regional “champions” for salt reduction – e.g. experts, politicians – should be identified.
- Many small/medium enterprises, including street vendors, are engaged in food provision in the region. Therefore, a national task force must engage not only large multinational industries, but also small/medium enterprises. At the regional level, the task force should take care to work with the smaller industries that have strong regional/sub-regional markets.
- A particular challenge in Latin America and the Caribbean is the lack of a strong, organized voice for consumers, or for civil society in general. It is therefore essential to build the involvement of consumers and civil society into active roles, and to maintain close contact with the media.
- Steps must be taken to put salt reduction on the agendas of all stakeholders and potential partners: for example, taking advantage of meetings or events sponsored by NGOs with an interest in health; regional/national/local health professional associations; food and nutrition faculties in universities; medical student groups; community nurses’ groups. All these contacts / interactions can then provide opportunities to increase media coverage.

## **GROUP DISCUSSION SUMMARY: CIVIL SOCIETY**

### *Beatriz Champagne*

- NGOs can often be most useful when there is declining interest in a program, or when barriers arise to effective government action. They have what governments and public agencies lack: the power for strong advocacy. The public also sees them as “independent”, hence trustworthy,
- In Latin America, the advocacy role of NGOs is still poorly developed. Most are focused solely on service provision to patients with particular conditions. Many are underfunded and small; some are very medically oriented; few have experience with population-based action. On the plus side, many have existing relationships with industry and can help bring these key players to the table.
- When efforts for tobacco control began, there was little real progress as long as the issue remained in the purview of “the experts”. Once NGOs got involved, action moved ahead very quickly.

Potential roles for NGOs on the issue of salt reduction include:

- Collaboration with PAHO and national governments at regional and state levels.
- Advocacy.
- Raising awareness about the strong evidence for salt reduction.
- Assuming a “watchdog” role to review, criticize, support, or oppose public programs and activities as necessary.
- Putting the salt reduction message in the spotlight at NGO events and conferences.
- Contributing expertise to essential areas such as communications, legal, health and economic matters.

Challenges include the following:

- Coalition-building can be sensitive and difficult.
- Most NGOs do not yet have salt reduction on the agenda. Many will need help to build capacity and to develop the advocacy role. Many will also require assistance to take on an initiative outside their original workplan.

## ***Discussion***

The following points were raised in discussion:

- Governments tend to focus on legislation, but independent monitoring is also essential. To this end, health ministries in the region need to recognize the potential that exists with NGOs and civil society and build their own capacity and that of NGOs and professional associations to work collaboratively. The health ministry in Costa Rica has had three years of experience in working with an organized consumers’ association, which is represented on a commission dealing with nutritional issues. As such, the association is actively involved with legislation, regulation, publicity/advertising, and many other issues.
- Civil society needs motivation to organize and get involved. Events such as WASH’s World Salt Awareness Week and World Hypertension Day can provide that opportunity.

## TOWARD A COLLABORATIVE ACTION PLAN

*Enrique Jacoby*

While politicians and governments come and go, civil society is there to stay. Thus, it is a crucial source of ongoing support, and one that can help counter the power of vested interests such as industry. Even NGOs whose immediate interests are not directly related to salt reduction can embrace this campaign as a movement “for the greater good”. The key message must be that no other single action would have so great a public health benefit as reducing population salt intake by half over the next five years.

The need for action is urgent, and the time is ripe. There is a global trend toward healthier food, and multinationals are already involved. If the public sector fails to seize the moment, industry is likely to do it instead. That may or may not be the best thing for our countries and our populations.

Salt reduction will not “just happen” without deliberate action. Nor will it happen as the result of a single event, but as a series of events. Several upcoming events/venues in the region were proposed during this meeting as opportunities to raise awareness and launch action on salt reduction. One of the first opportunities will be the meeting of Central American Ministers of Health to take place two weeks from now; PAHO will ensure that salt reduction is highlighted on their agenda.

It is essential that everyone involved maintain open communications and ensure that key information is circulated as widely as possible, keeping stakeholders and potential partners in the loop and stimulating their interest and support.

## CLOSING REMARKS / NEXT STEPS

*James Hospedales, Lianne Vardy*

Civil society may be defined as that part of society between family and government, but not including the private sector. Besides professional associations and health-oriented NGOs, it includes labour unions, churches, consumer associations and many other kinds of groups. Civil society organizations remain relatively unempowered in Latin America and the Caribbean. Most see themselves as service providers, rather than watchdogs or advocates. But they are awakening to their potential within the region. Globally, many of the most influential NGOs are small organizations with a talent for public relations. In the UK, the pivotal point leading to the national salt reduction strategy was undoubtedly when a small group of professionals, frustrated by government disinterest, joined to form CASH (Consensus Action on Salt and Health, the forerunner of WASH).

### ***Next steps***

PAHO stands committed to advance the work done during this meeting on salt reduction in the Americas. Next steps will include the following:

- PAHO will establish a regional task force with a defined term (e.g., two years) and a mandate to develop the evidence base for salt reduction, to make projections of costs/benefits for review by national governments, and to carry on related activities. Since many countries in the region lack solid data on salt intake and diet, it may be possible to stimulate interest among universities, research institutes etc. to conduct the necessary studies.
- The task force will produce a report with proposed targets for the region for presentation to the Directing Council of PAHO, together with a detailed plan for the campaign.
- The task force report will be shared with industry, with a view to getting solid commitments from the major players. Large transnational companies will be encouraged to make commitments covering the whole hemisphere. For smaller enterprises, it is anticipated that consumer education will be very important.
- The task force will work to engage national governments, all major food agencies and the various professional and food institutions to which they relate.
- Capacity for labeling is lacking in many countries. Hence, a medium- to long-term goal should be to develop a competent food agency in every country.
- A strong framework for monitoring/evaluation is essential.
- As a first step toward engaging civil society in the region, the report of this meeting and all other relevant information will be circulated as widely as possible. The following specific entities were mentioned as key partners and events:
  - The new salt committee of the US Institute of Medicine
  - The Health Canada Working Group on Dietary Sodium Reduction
  - International Society of Hypertension (upcoming meeting in Puerto Rico, June 2009)
  - Latin American Nutrition Society (meeting in Santiago, Chile in November 2009)
  - Medical schools / Association of Medical Schools

## **Discussion**

The following commitments, plans and upcoming events were noted in closing discussion:

- **Mexico:** The national food agency in Mexico should be in a position to provide some baseline information in a short time, possibly together with a locally-relevant study of the potential benefits of salt reduction on mortality such as was presented for Canada.
- **Argentina:** With its new chronic disease division within the ministry of health and its experience in collaborating with industry and civil society partners to eliminate trans fats, Argentina is also well poised for action on salt. Efforts are under way to facilitate the establishment of a Working Group on salt sometime this year.

- **Costa Rica:** In Costa Rica, relevant documents including the report of this meeting will be shared with a wide variety of groups and institutions, including NGOs and the Consumers' Association. In addition, data from the national nutritional survey will be re-examined to glean as much information as possible on salt consumption patterns, with identification of some of the chief sodium contributors for laboratory analysis.
- **Brazil:** The health ministry in Brazil has a subgroup that has taken responsibility for work related to salt reduction. Immediate action will be taken to collate existing evidence and to identify and engage NGO partners, including the Consumers' Association and the health professional associations.
- **Ecuador:** In Ecuador, the health ministry will contact the Cardiology Society to collaborate on salt reduction and to work on identifying essential partners from industry and civil society.
- **Caribbean:** In the Caribbean, there is an extra step to perform before action can be taken: each country has to be informed about the plans being made. The Caribbean Food and Nutrition Institute will take the responsibility of providing information and assistance for mobilization to its member countries. PAHO will also contact the Director of CFNI to discuss next steps for the sub-region.
- **Paraguay:** Paraguay has been working on several related issues such as nutritional labeling and the sugar content in processed foods, making this a fortuitous time for action on salt.
- **Upcoming events:** In the fall of 2009, Brazil will host an event promoting the consumption of fruits and vegetables which will involve a number of ministries and may be a particularly valuable venue to raise awareness on salt. Other opportunities include the March 2009 meeting of health and education policy makers in the Caribbean; the June 2009 meeting of the International Hypertension Society in Puerto Rico; and the November 2009 meeting of the Latin American Nutrition Society in Santiago, Chile.

Special note was made of the following issues:

- **The need for integration:** PAHO has many initiatives that are closely related, and countries – many with very limited resources – need to find rational ways to put everything together in a way that makes sense and is efficient. Consideration should be given to identifying opportunities to harmonize the message on salt with existing healthy-eating programs, including promotions of food and vegetable consumption, campaigns against obesity, etc.
- **Resources:** Several participants raised the issue of resources. It was noted that too often countries look to PAHO. On the other hand, there may be opportunities to leverage funding from industry – for example, perhaps a small percentage of industry profits or industry association funds could be earmarked for salt reduction. In Japan, 1% of the total gross income of more than 200 large industries goes to some health promoting activity that they themselves identify as a priority. In Latin America, civil society and industry could collaborate to initiate such a program, to avoid placing the

whole burden on PAHO or on national governments. It was noted that Argentina is considering legislation establishing “patrons” for certain projects, scientific or otherwise, that are in the public interest, much as is done in Spain. Another potential source of funding could be formation of partnerships with other ministries with a stake in salt reduction. The Inter-American Development Bank was also mentioned. However, it was emphasized that a definite proposal, perhaps a joint proposal, with a specific plan of action is needed before a credible case for funding can be made to potential supporters.

- **Momentum:** It was pointed out that while all the planning and networking under discussion are certainly valuable, reducing salt may in fact prove to be remarkably easy. The food industry is already poised for action in most of the world; it will not take much more pressure to get things moving in Latin America and the Caribbean as well. It was noted that PAHO has already begun constructive collaboration with industry, and looks forward to expanding these activities.

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