Cardiosvascular Disease Prevention through Dietary Salt Reduction

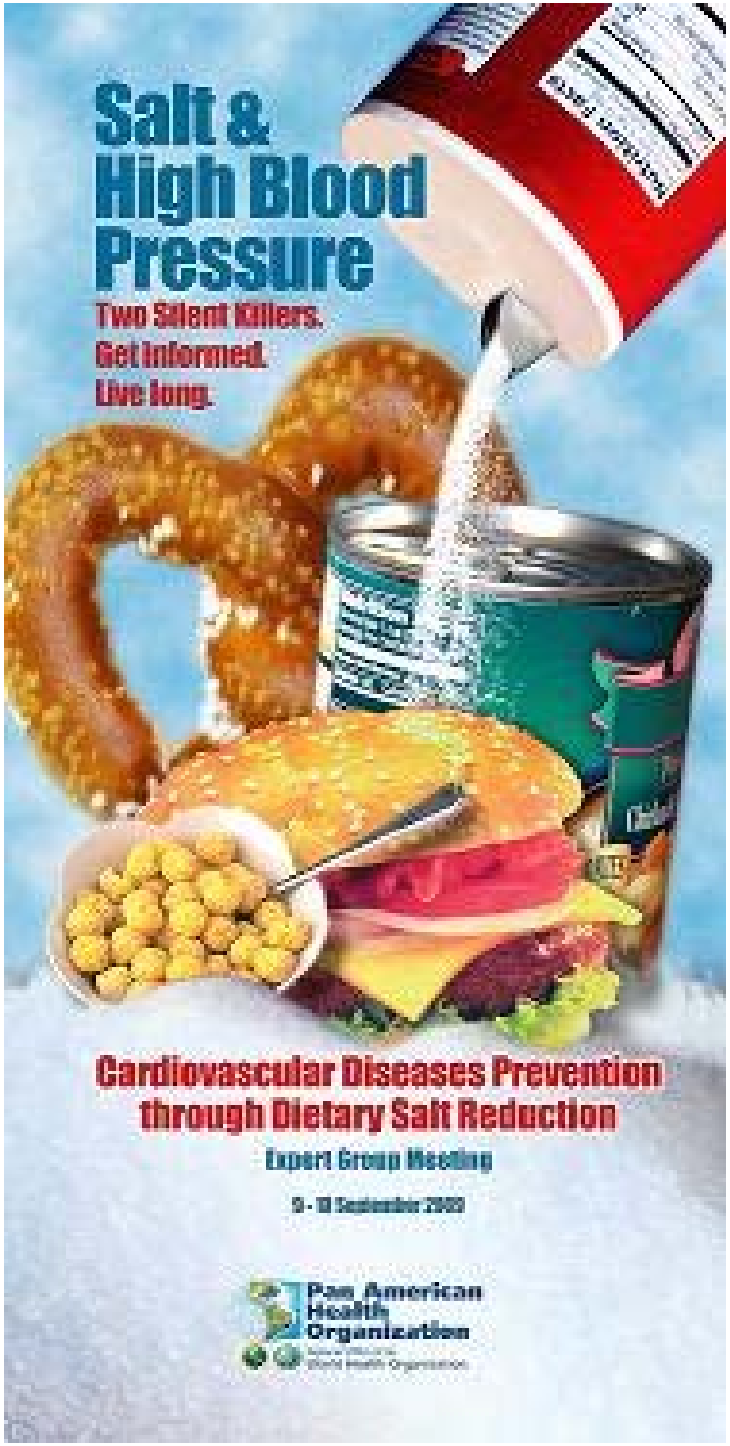
First PAHO Expert Group Meeting

Washington, D.C.

9-10 September 2009

Pan American Health Organization

Regional Office of the World Health Organization



Canadian Multi-Stakeholder Working Group on Dietary Sodium Reduction – An Update

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Chair, Canadian Sodium Working Group

PAHO Expert Group Meeting
Washington DC, Sept 9-10, 2009

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Outline

- Why sodium is a health issue in Canada
- Food intakes and sources of sodium in Canada
- The Sodium Working Group and its objectives and activities
- Current work underway

The Health Context

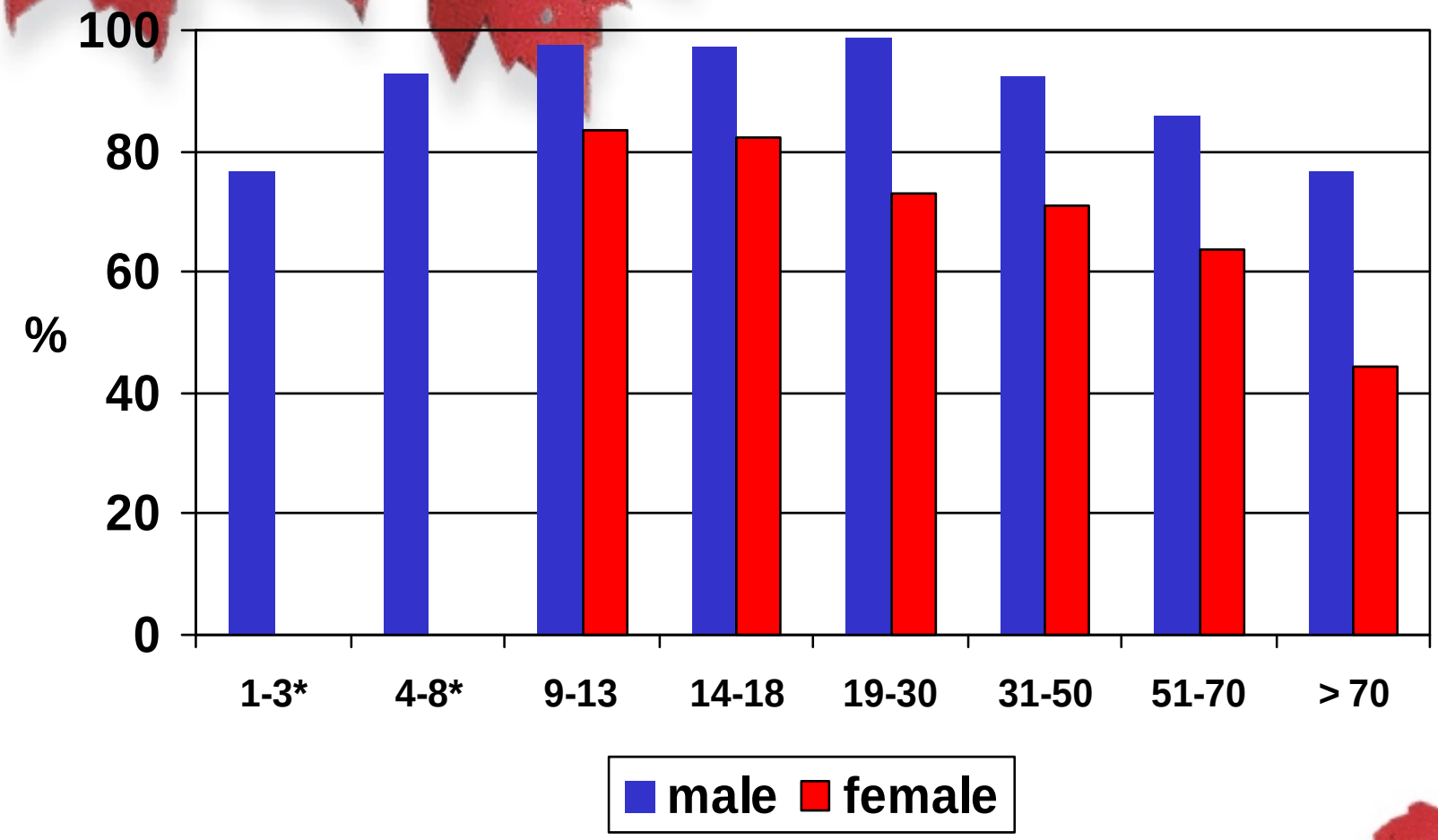
- Cardiovascular diseases are the number one cause of death for Canadians.
- High blood pressure is a major risk factor for cardiovascular diseases and affects 1 in 5 Canadians.
- Blood pressure relates to dietary sodium in a dose-dependant manner and high blood pressure is estimated by the WHO to be the leading risk factor for death in the world (Lopez et al., 2006)

Dietary Reference Intakes for sodium

Age groups (y)	AI (mg/d)	UL (mg/d)
1 to 3	1000	1500
4 to 8	1200	1900
9 to 13	1500	2200
14 to 18	1500	2300
19 to 50	1500	2300
51 to 70	1300	2300
71+	1200	2300

- Adequate Intakes (AIs) for good health for people aged one year and over, range from 1000 mg/day to 1500 mg/day.
- Tolerable Upper Intake Level* (UL) for sodium for people aged 14 and over should not exceed 2300 mg of sodium per day, (IOM, 2004).

Sodium Intake in Canada: % with intakes above the Tolerable Upper Intake Level



*Males and females are grouped together for the 1-3 and 4-8 year olds.

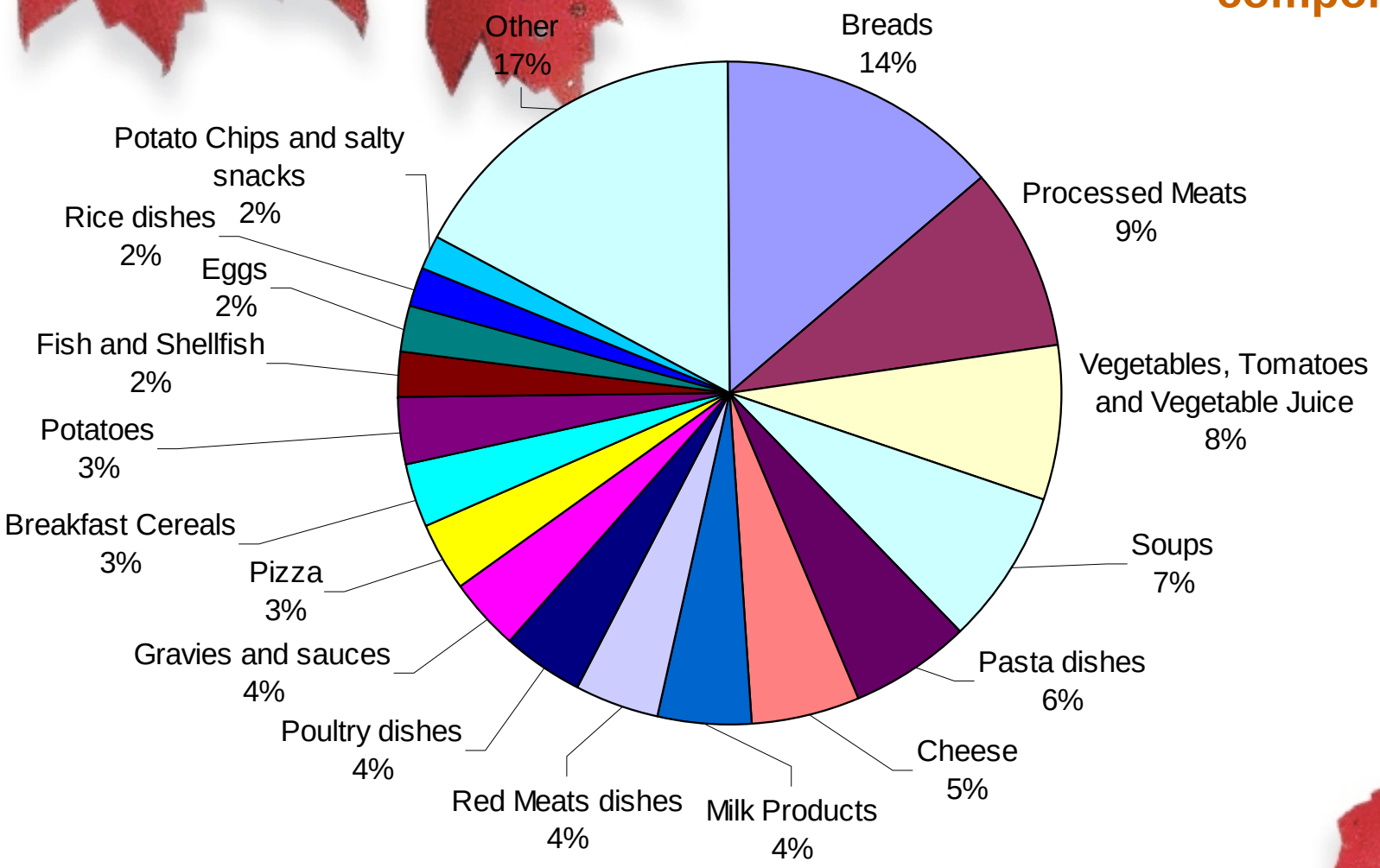
(Health Canada, 2008)

Sodium Intakes in Canada - Summary

- Canadians, aged 1+, consume on average about 3100 mg/day of sodium (7.9 g Salt), (CCHS 2.2, 2004*)
  - More than double the Adequate Intake
  - Mostly from processed foods
  - Does not include salt added in cooking and at the table, (an additional 10-15% on daily sodium intake)
- Over 90% of men and 66% of women, aged 19+, have sodium intakes exceeding the UL (CCHS 2.2)
- 76% of children aged 1 to 3, more than 90% of children aged 4 to 8, and 97% of adolescent boys and more than 80% of adolescent girls exceed the UL for sodium

*Canadian Community Health Survey-Cycle 2.2 on Nutrition, Statistics Canada

Percentage of total sodium consumed from major grouped-food sources by all respondents (sandwiches split into components)



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Sodium content in some foods sold in the Canadian Market

1357 mg of Na (57% of DV)
per 1 tray (320 g)

650 mg of Na (27% of DV)
per 1 can (284mL)

100% Whole Wheat

309 mg of Na (13% of DV)
per 2 slides (71 g)

330 mg of Na (14% of DV)
per 50 g serving

620 mg of Na (26% of DV)
per 1 pogo (75 g)

280 mg of Na (12% of DV)
per ¼ cup (61 g)

480 mg of Na (20% of DV)
per 125 mL serving

SUBWAY

2120 mg Na (88% DV)
12-inch sub*

*with 6 grams of Fat or Less (include wheat bread (9-grain), lettuce, tomatoes, onions, green peppers, pickles and olives)

Motivators for action on sodium

- More than half of Canadians have intakes of sodium, mostly from commercially prepared foods, that put them at risk for high blood pressure
- During the development of the 2007 Canada's Food Guide to Healthy Eating it was almost impossible to design a diet with sodium intakes less than the UL using foods normally consumed by Canadians
- Initiatives around the world to reduce sodium intake have been encouraged by WHO

Motivators for action on sodium

- Since the main contributors to dietary sodium intake are commercially prepared foods, a major focus of interventions to reduce sodium intakes needs to be the reduction of salt and sodium-containing additives in these foods

- The proposal to develop a strategy for reducing dietary sodium was initiated at the request of the health sector and the food industry

The Sodium Working Group

Announced by the Minister of Health in October 2007

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SWG (from Terms of Reference)

- **Mandate**: To develop, implement and oversee a population-health strategy for the successful reduction of the sodium content of the diets of Canadians

- **Strategy**: Develop, implement and oversee a strategy to reduce the overall consumption of sodium by Canadians through a three-pronged approach:
  - Education/consumer awareness
  - Guided voluntary reduction of sodium levels in processed food products and foods sold in food service establishments
  - Research

Multi-stakeholder working group members

Member	Organization
Dr. Mary L'Abbé (Chair)	University of Toronto
Scientific and Health-Professional Community	
Dr. Peter Liu	Canadian Institutes of Health Research
Dr. Kevin Willis	Canadian Stroke Network
Dr. Katherine Gray-Donald	Canadian Society for Nutritional Sciences
Dr. Susan I. Barr	Dietitians of Canada
Dr. Eric Young	Council of Chief Medical Officers of Health
Health-Focused and Consumer Non-Governmental Organizations (NGOs)	
Dr. Norm Campbell	Blood Pressure Canada
Ms. Bretta Maloff	Heart & Stroke Foundation of Canada
Ms. Francy Pillo-Blocka	The Canadian Council of Food and Nutrition
Mr. Bill Jeffery	Centre for Science in the Public Interest
Dr. Nathalie Jobin	Extenso - Reference Centre for Human Nutrition

Member	Organization
Food Manufacturing and Food-Service Industry	
Mr. Paul Hetherington	Baking Association of Canada
Ms. Mary Ann Binnie	Canadian Meat Council
Mr. Don Jarvis	Dairy Processors of Canada
Ms. Phyllis Tanaka	Food and Consumer Products of Canada
Mr. Colin Farnum	Food Processors of Canada
Ms. Jackie Crichton	Canadian Council of Grocery Distributors
Mr. Ron Reaman	Canadian Restaurant and Foodservices Association
Government	
Ms. Chantal Martineau	Office of Nutrition Policy and Promotion, Health Canada
Ms. Lianne Vardy	Public Health Agency of Canada
Ms. Nora Lee	Food Directorate, Health Canada
Ms. Lisa Forster-Coull	Federal Provincial Territorial Group on Nutrition
Ms. Patti Wunsch	Agriculture and Agri-Food Canada
Ms. Charmaine Kuran	Canadian Food Inspection Agency

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Steps (from Terms of Reference)

- **Assessment Stage: ongoing, nearing completion***
  - Establishing a common knowledge base with respect to the issue, identifying and prioritizing data gaps, and
  - Obtaining input from the wider stakeholder community on sodium issue through a **(Questionnaire, Nov 2009; and public consultation session Feb 19, 2009)**
  - report on the consultation, and on the responses to the online questionnaire will be made available soon at HC web site
- **Development of strategic framework: May '09 through mid 2010**
  - Develop a Strategic Framework that includes goals, action plans to guide implementation, and methods of assessment to determine success
  - Consult the wider stakeholder community (as needed) to seek input and/or commitment to action for dietary sodium reduction
  - The approach will be evaluated for effectiveness and will include consideration of other policy options as required to achieve the goals.
- **Implementation Stage: start in 2010**
  - The SWG will oversee implementation and monitor progress according to timelines and methods of assessment outlined in the Strategic Framework.

** Two teleconferences (Feb 08 & Nov 08) and 2 meetings (May 08 & Feb 09)*

SWG meeting May 2009

- WG defined a process to establish a Canadian approach to dietary sodium reduction, including targets, an education/awareness strategy and a research agenda

- agreed on a set of criteria to be used in evaluating the components of the strategy

- Sub-committees of the WG were formed and are developing strategies in each of the 3 areas
  - Education and consumer awareness
  - Reduction of sodium in the food supply
  - Research needs

Developing a strategy for the food supply – the Canadian Approach

- A major focus of intervention to reduce sodium intakes will be on the reduction/removal of sodium from commercially prepared foods

- Data is currently being gathered on the ranges of sodium in foods in Canada:
  - These will be compared with targets used in the UK as a benchmark and used as starting points for discussion to develop initial targets for the Canadian food supply
  - Preliminary analysis using the UK targets plus other tentative targets indicated this would bring down the average sodium intake by about 900 mg per day

Developing a strategy for the food supply – the Canadian Approach

- Based upon UK experiences and success
- Broad stakeholder collaboration (government, industry, scientific and health-professional community, health and consumer NGOs)
- Set Targets (Action plan and timetable to be practical, feasible and result in making a difference in the health of Canadians)
- Goal: xx% Reduction in Sodium in x years (under development, not yet public)
- Voluntary sodium reductions for:
  - Processed food products
  - Foods sold in food service establishments
- SWG to oversee implementation and program to be evaluated for effectiveness – strategy to include a monitoring component

Moving Forward for Developing a Canadian Approach for Sodium Reduction

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Recommendations and estimate of intakes

	sodium (mg)	salt (mg)	year
AI	1500	3750	2004
UL	2300	5750	2004
Global strategy on health (WHO FAO)	<2000	<5000	2003
Canada	**3100**	**7800**	**2004**
USA	3435	8587	2006
UK	3440	8600	2008
Finland	3300	8316	2002
Brazil	3840	9600	2003
Finland	3300	8316	2002
Turkey	7200	18000	2008
Bangladesh	8400	21000	2008

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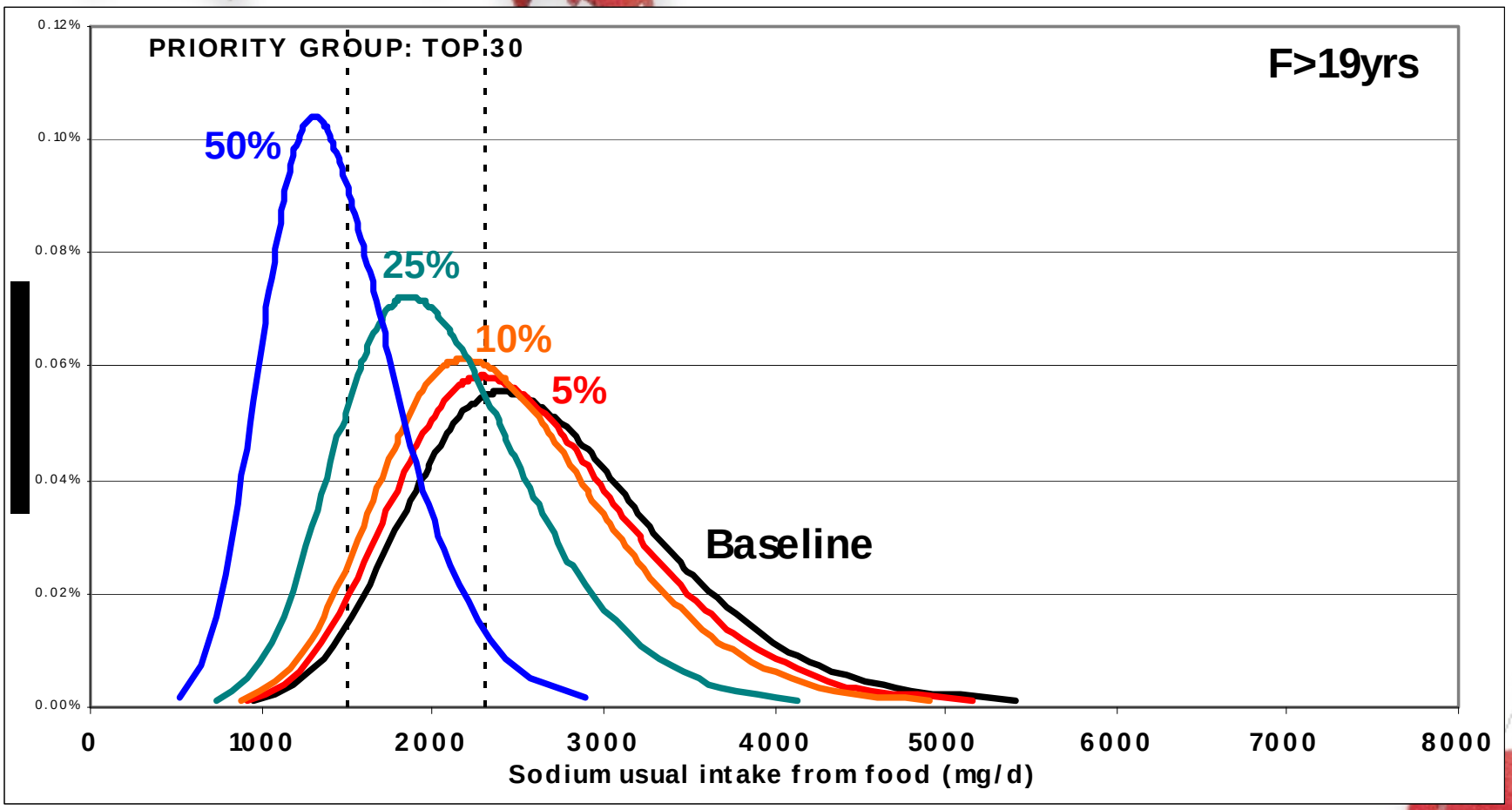
Impact on sodium usual intake distribution of reduction levels (5%, 10%, 25%, 50%) to top 30 food contributors - Females >19 years



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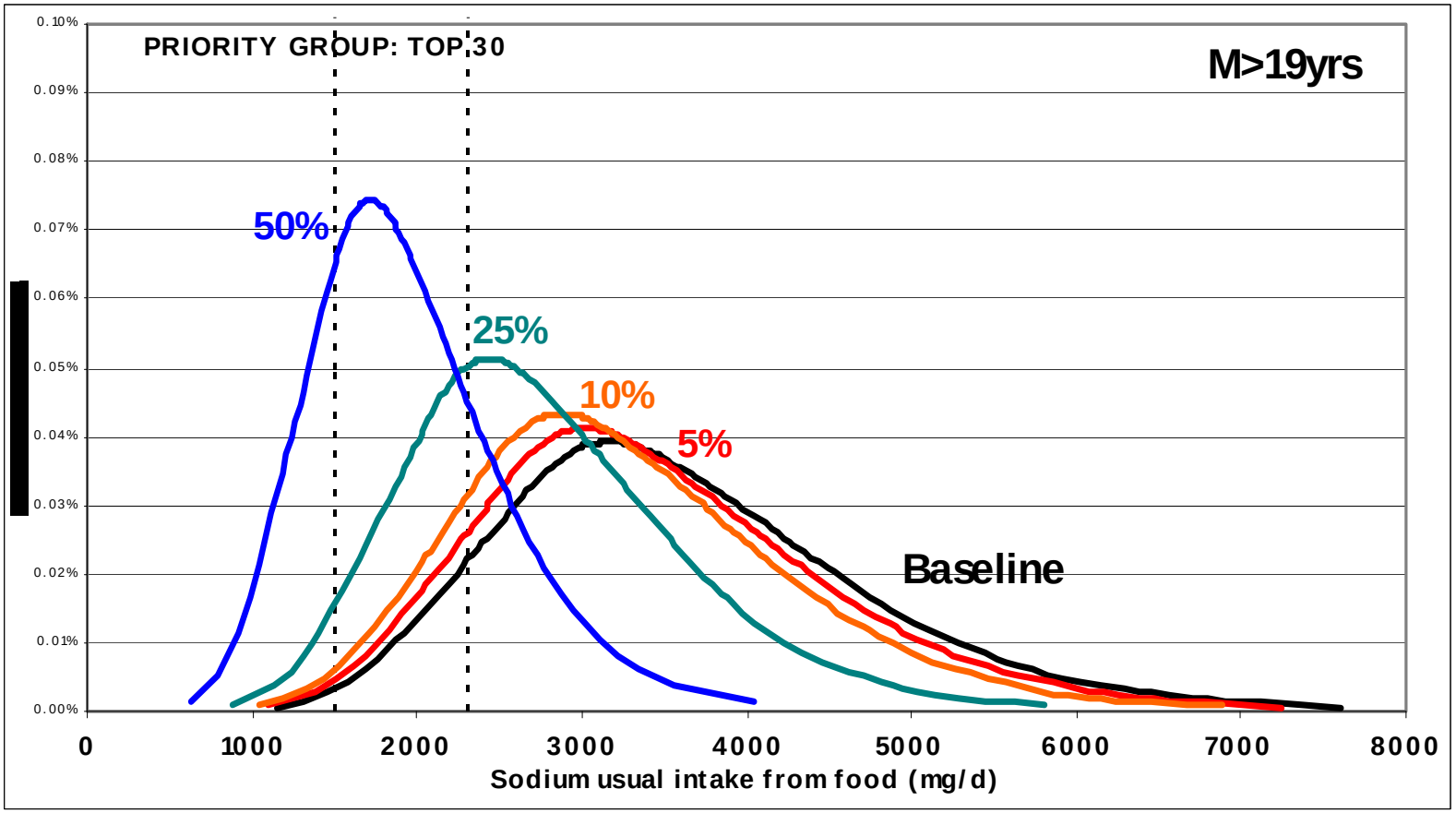
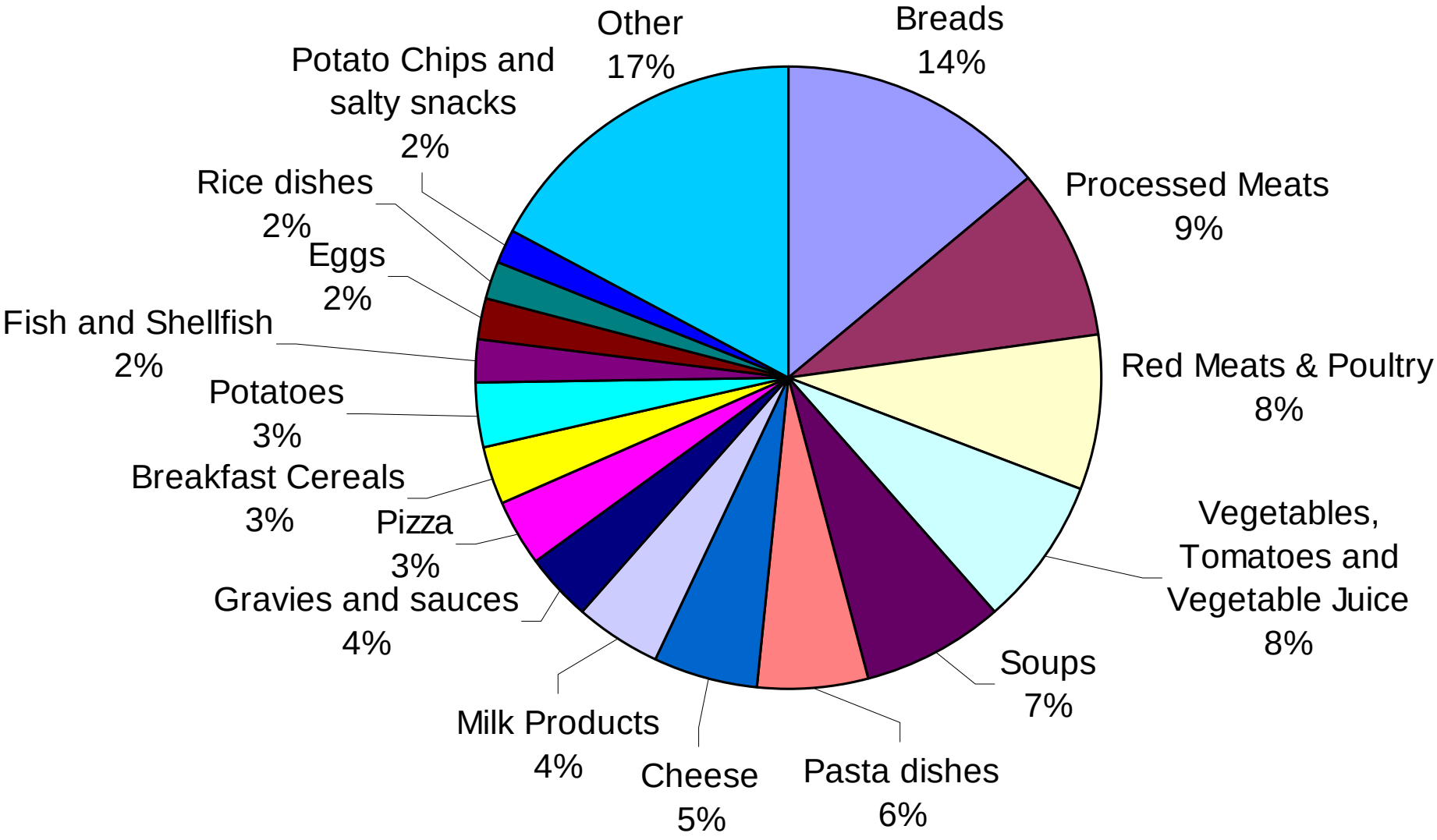
Source: CCHS 2.2, Statistics Canada, 2004

Impact on sodium usual intake distribution of reduction levels (5%, 10%, 25%, 50%) to top 30 food contributors in Males >19 years



Source: CCHS 2.2, Statistics Canada, 2004

Percentage of total sodium consumed from major grouped-food sources by all respondents (sandwiches split into components)



Data are based on the Canadian Community Health Survey - Cycle 2.2 on Nutrition, Statistics Canada, 2004.

Proposed Canadian Approach for Setting Targets

- Selection of foods based on sodium content and consumption patterns
  - Data from the 2004 Canadian Community Health Survey (CCHS 2.2) were used to determine the food group contributors of sodium in the diet)
- Select food products which contribute about 50-60% of sodium to the diet of Canadians
- Assess the variability on sodium levels in a food category and determine the range of sodium content
  - Assess manufacturer's sodium levels in various foods (e.g. bread products, cheese products)
- "Best in class" approach
  - Potential monitoring tool for setting baseline and tracking changes in sodium levels over time

Methodology of "Best in class" approach

- An internal Health Canada database has been created for 27 food categories
  - Sodium content from the food labels of about 2000 pre-packaged foods
- Selection of the individual products within each food category was based on market share sales data (Nielsen)
  - Most data based on latest available 52 week period ending December 20, 2008
  - used to identify the individual products to be collected
  - represented 80 to 99% of market share in category
- How the data was collected:
  - Food labels are being collected in various stores across Canada and delivered to HC
  - Information gathered directly through a specific company or
  - Information posted on Internet (verified by the company afterwards)

Examples of food categories for which HC is gathering sodium data

Main Category	Sub-category
Bakery products	**Prepackaged bread products** (Baguette, Cinnamon Raisin Bread, Crusted Bread-White, Diet Bread, Garlic Bread, Multigrain Bread, Other Bread, Rye Bread, Whole Wheat Bread, White Bread)
	Prepackaged rolls and buns (Bagels, Croissant, Dinner Roll, English Muffin and Crumpets, Hamburger, Hot Dog Bun, Hot Cross, Kaisers/Vienna, Miscellaneous Rolls, Naan, Pizza crusts, Pita, Salad Rolls, White Hamburger/Hot dog buns, Whole Wheat Hamburger/Hot dog buns)
	Cracker (Cheese Cracker, General Crackers)
	Cookies (Chocolate chip/chocolate covered, Fruit filled cookies, Marshmallow, Other cookies, sandwich type, Shortbread, Social tea/sugar type, Sugar wafer)
	Prepackaged baked desserts (Brownies, Cakes, Dessert with fruit, Cheesecake, Donuts, Fruit Pie, Mousse type dessert, Muffin, Pastry snack cake, Puff pastry, Snack cakes, Sugar pie type, Sweet rolls cinnamon)

Examples of food categories for which HC is gathering sodium data

Main Category	Sub-category
Processed meat products	**Wieners** (All Beef, Chicken, Low Fat, Regular, With Cheese)
	Bacon and substitutes (Back Bacon, Chicken /Turkey Bacon, Reduced Sodium Bacon, Regular Bacon, Skillet Strips)
	Prepackaged deli meats (Beef, Bologna, Chicken /Turkey Slices, Luncheon Meats, Pates and Spreads, Pepperoni, Reduced Fat Products, Salami, Sausage Coils, Sliced Beef, Sliced Ham)
	Prepackaged sausages (Chicken/Turkey Sausage, Pork and/or Beef Sausage, Smoked Sausage)

Examples of the food categories that HC is gathering sodium data

Main Category	Sub-category
Soups	**Ready-To-Serve soups** (Bean and Lentil Soup, Beef Chunky, Broth, Chicken Vegetable , Cream of Tomato, Cream of Vegetables, Cream Soup, Other cream coup, Other Soup, Vegetable Soup)
	Canned condensed wet soup (Chicken Noodle, Cream of Vegetable, Cream Soup, Cream Soup, Other Cream Soup, Other Soup, Vegetable)
	Bouillon (Beef Bouillon, Bouillon/Soup base, Regular- Ready To Serve, Chicken Bouillon/Soup Base, Concentrate, Other Bouillon/Soup Base, Vegetable Bouillon/Soup Base)
	Dry soup (Instant soups)

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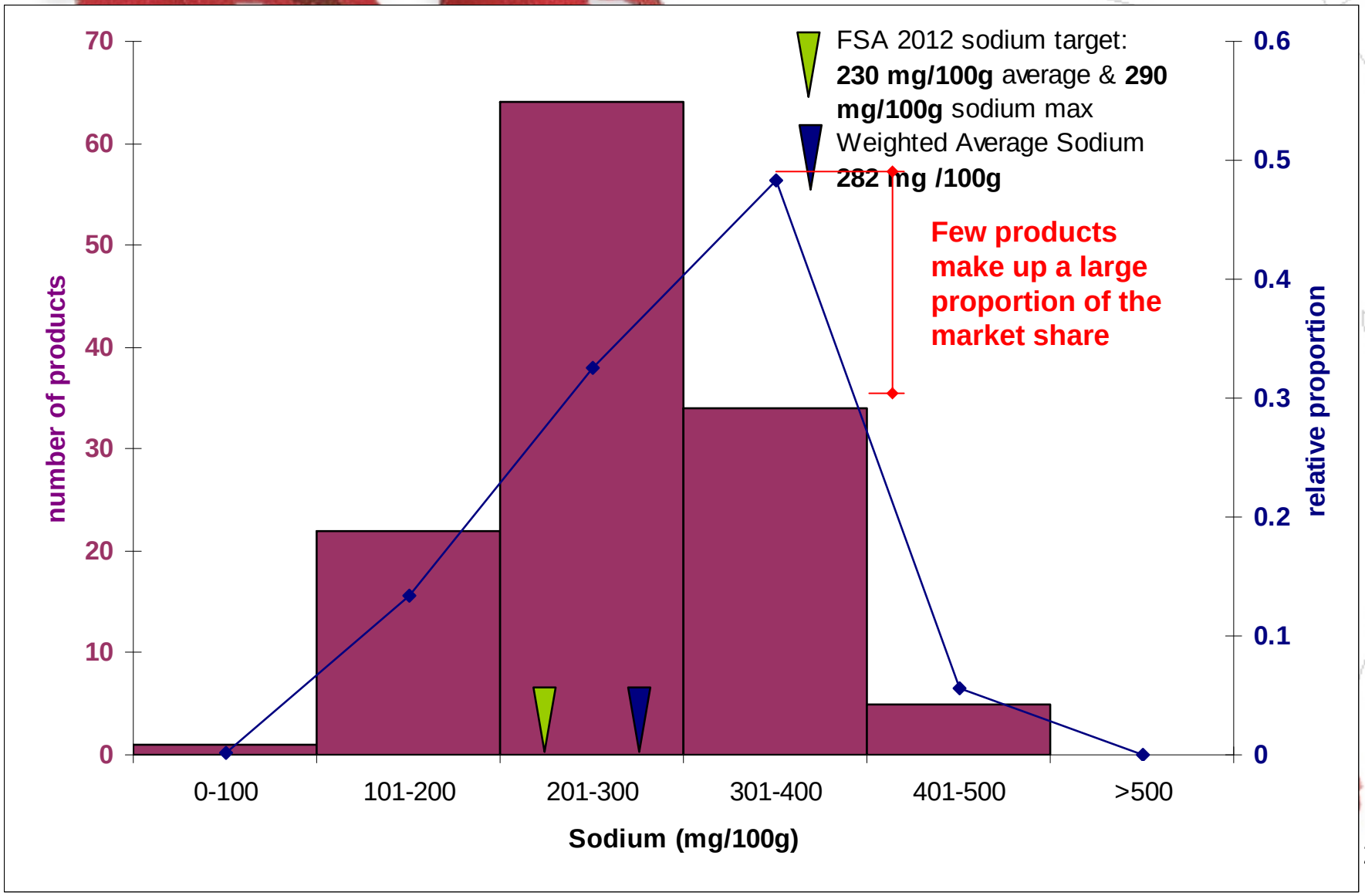
Example of label data that was collected.

GRP1	GRP2	Source (Label/Web /Direct from Company)	Sodium/ Salt Claim (Free/Low/ Lower or Reduced)	Serving Size (g)	Sodium (mg)	% Daily Value	sodium (mg/100 g)	Average sodium (mg/100 g)	2012 FSA Target (average)	2012 FSA target (max)	% Reduction to attain FSA max target	% Reduction to attain average
Snack food	Potato chips	Label	None	40	220	9	550	682	550	650	**0***	19
Snack food	Potato chips	Label	None	50	480	19	960				**32**	
Snack food	Potato chips	Label	None	28	160	7	571				**0***	
Snack food	Potato chips	Label	None	55	190	8	345				**0***	
Snack food	Potato chips	Label	None	50	190	8	380				**0***	
Snack food	Potato chips	Label	None	50	290	12	580				**0***	
Snack food	Potato chips	Label	None	50	820	34	1640				**60**	
Snack food	Potato chips	Label	None	50	240	10	480				**0***	
Snack food	Potato chips	Label	None	50	490	20	980				**34**	
Snack food	Potato chips	Label	None	50	450	19	900				**28**	

*Food is already below the FSA 2012 maximum sodium target

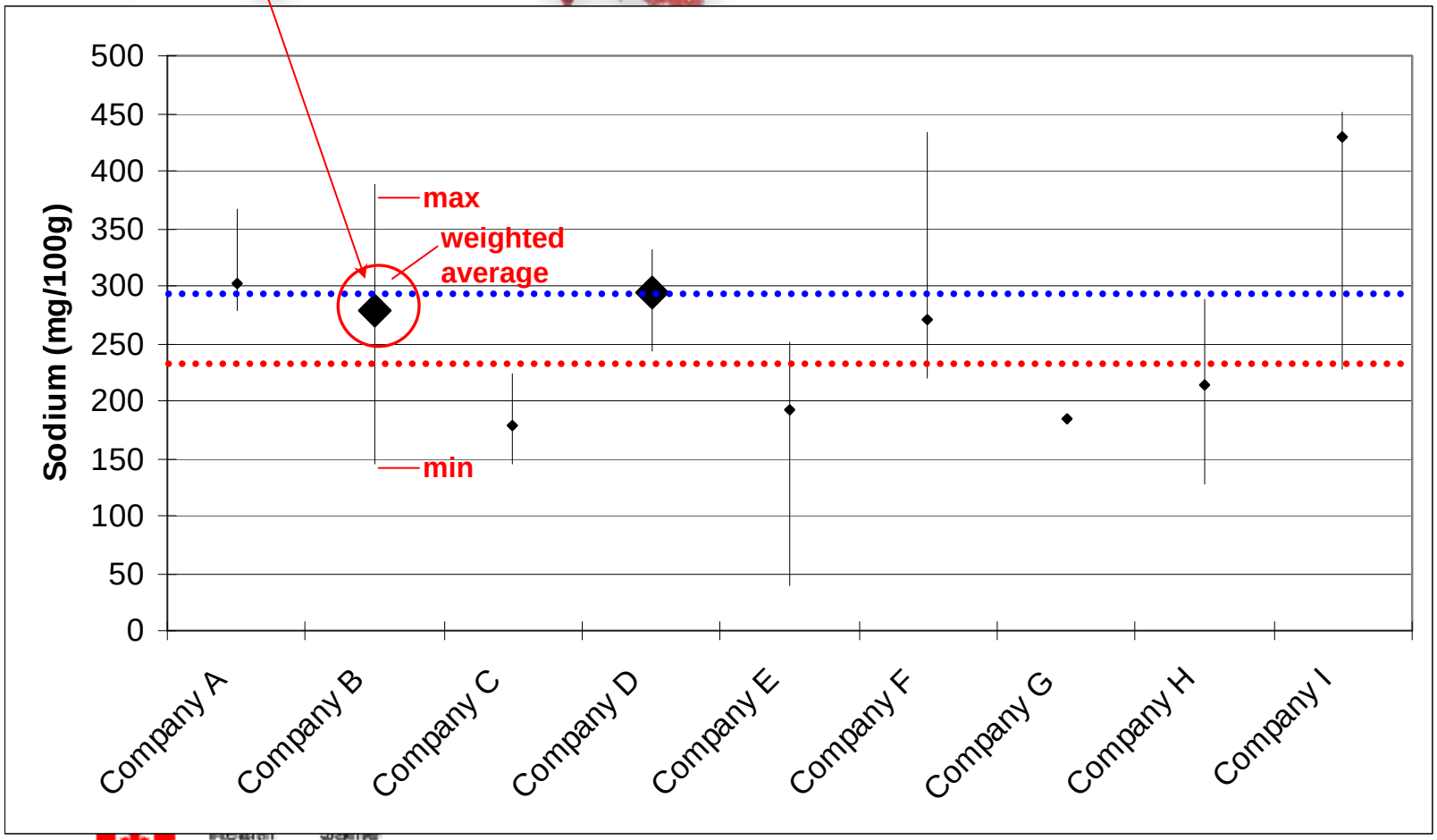
Not all potato chips are listed in this table but calculations are based on the complete list of potato chips.

Example - Sodium distribution and sales proportion for RTS soup



Sodium Content Ranges for Ready to Serve Soups by Manufacturer

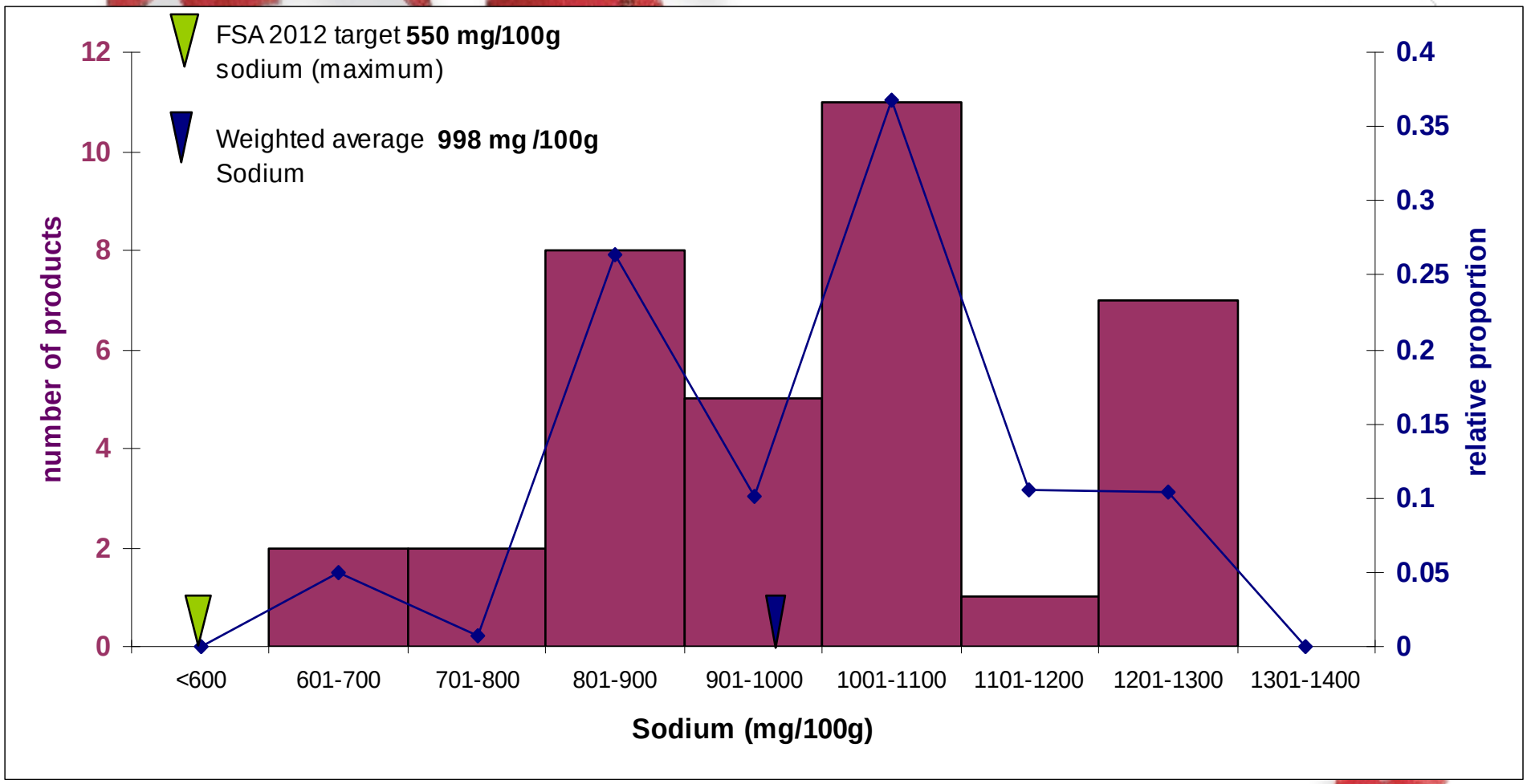
Large data points represent companies with greater than 10% of the item share



FSA 2012 target = 290 mg/100g (maximum)

FSA 2012 target = 230 mg/100 g (Average)

Sodium distribution and sales proportion for Wieners



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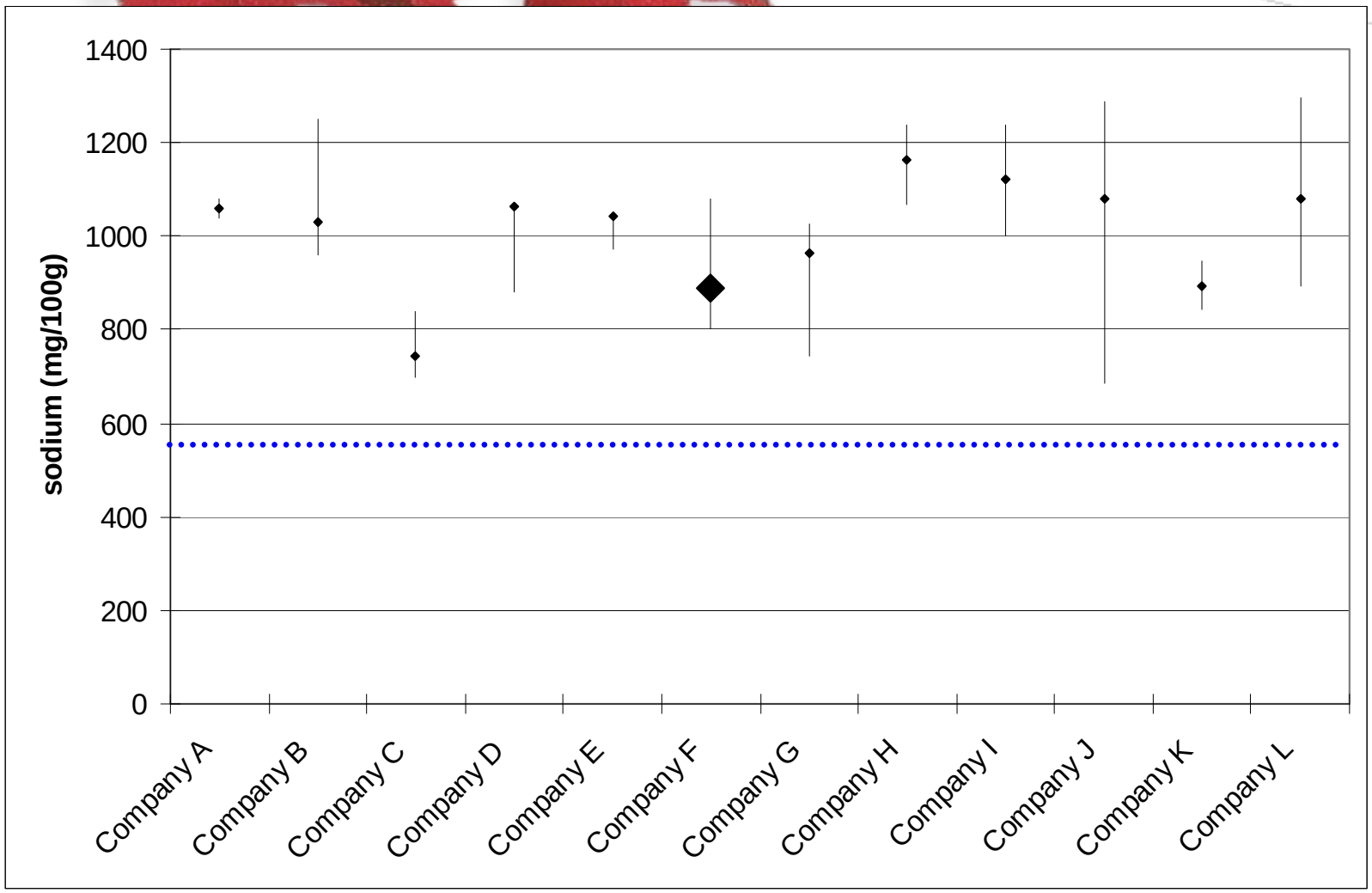
Sodium Content Ranges for Wieners by Manufacturer



FSA 2012 target = 550 mg/100g (maximum)

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Developing strategy for the food supply

- Meetings are being planned with the food industry to ensure they are aware of and understand the issue and to start discussions on Canadian sodium targets
- Input also being collected on possible regulatory and other tools to help support sodium reduction efforts, for example:
  - labelling options for food products with reduced sodium content when the reduction is < 25%
  - regulatory amendments to food standards to facilitate innovation in product development/reformulation
  - improving the timeline for regulatory approval of new food additives
  - standards and guidelines for foodservice operations
  - educational tools for industry to support sodium reduction

Some learnings so far

- Intakes of sodium are high, and it is distributed throughout the pre-packaged food supply and foods consumed outside the home
- Simple across the board reductions for all products are not likely feasible
- The Canadian food supply and levels of sodium in foods sold in Canada are different from other countries, i.e. UK – therefore targets will likely have to reflect the Canadian marketplace
- Companies have already begun to reformulate products, in most cases reducing sodium levels gradually
- A monitoring program will be important to track and sustain progress
- Education and increasing consumer awareness will be important contributors to a successful reduction strategy
- Research will be need to support the changing food supply and to understand consumer preferences, taste, food choice decisions etc

Thank you

- Health Canada Website links:
  - Sodium => http://www.hc-sc.gc.ca/fnan/nutrition/sodium/index-eng.php
  - Sodium - It's Your Health => http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/food-aliment/sodium-eng.php

- Mary L'Abbé – mary.labbe@utoronto.ca

Acknowledgment and thanks to HC staff who have conducted much of the sodium analyses and the Food Supply Subcommittee

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