

# **Report of the “Study on Sodium Content in Local Foods”**



**Trade Consultation Forum**

**28 September 2012**

# Salt/Sodium and health

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- ❑ Sodium: essential for normal functioning of the body
  - Excessive sodium intake: detrimental to health, increase hypertension risk → CHD and stroke (World Health Organization (WHO))
  - Salt and salted foods: may increase stomach cancer risk (World Cancer Research Fund)
- ❑ WHO recommendation: limiting daily sodium intake to 2 000 mg (5 g salt)
- ❑ Definition of high/ low sodium food:
  - Currently no international consensus
  - UK National Health Service
    - ❑ Food high in sodium: >600 mg/100g
    - ❑ Food low in sodium: ≤300 mg/100g

# Occurrence of sodium in locally available foods

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- ❑ Salt=Sodium Chloride (NaCl)  $\neq$  Sodium (Na); 1g NaCl  $\approx$  393 mg Na\*
- ❑ Sodium naturally present in foods and drinking water
- ❑ A local university report: Local people salt intake reached 10 g/day
- ❑ Major dietary source of sodium: salt, condiments and sauces (e.g. soy sauce, oyster sauce)
- ❑ Dietary pattern affects population's major sources of sodium intake:
  - Western diets: ~75% from salt in processed foods
  - Asian countries: salt added during cooking and at table
  - Traditional Chinese diet: >70% from salt added while cooking, remainder from soy sauce and salted vegetables

\*Nutrition labelling regulation criteria: sodium content of salt products labelled as 'reduced sodium' should be at least 25% lower than the regular counterparts

# Int'l approaches on reducing sodium intake in population (1)

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- WHO (July 2012) developed a set of indicators and voluntary global targets for the prevention and control of non-communicable diseases
  - Target: 30% relative reduction in mean population intake of salt
  - Aim: achieving a target of salt <5g/day
  - Target to be achieved by implementation of salt reduction interventions, e.g. reduced salt content in processed foods through product reformulation

# Int'l approaches on reducing sodium intake in population (2)

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- ▣ Many countries with salt reduction initiatives (e.g. Finland, Ireland, Japan and the UK) have documented positive, measurable results
  - Reducing sodium content of foods gradually, with or without using alternatives, allow the consumers' salty taste perception to be modified over time
- ▣ CFS has developed a set of 'Trade Guidelines on Reducing Sodium in Foods' to help traders to produce and promote healthy and safe food products with lower sodium or salt content

[http://www.cfs.gov.hk/english/food\\_leg/files/Trade\\_Guidelines\\_for\\_Reducing\\_Sodium\\_in\\_Foods.pdf](http://www.cfs.gov.hk/english/food_leg/files/Trade_Guidelines_for_Reducing_Sodium_in_Foods.pdf)

# Objective

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- ❑ To assess the sodium content in some local foods (both non-prepackaged and prepackaged), so as to arouse the awareness of the public and food traders about salt and sodium content when consuming and preparing food
- ❑ The findings can:
  - Provide some baseline data on the current situation of sodium content in a variety of foods likely high in sodium
  - Provide a benchmark for the trade to adopt when reformulating foods in different food categories to a lower sodium content version

# Scope

Food group	No. of non-prepackaged category (item)	No. of prepackaged category (item)
Condiments and sauces	5 (30)	10 (62)
Processed meat products	11 (80)	6 (40)
Processed vegetable products	3 (29)	3 (15)
Snacks	7 (81)	8 (66)
Bakery products	8 (80)	4 (36)
Soup (ready-to-eat and condensed)	4 (60)	3 (25)
Western fast foods	6 (67)	4 (23)
Asian foods & dim sum	13 (185)	4 (35)
Other foods*	2 (20)	2 (12)
<b>Total</b>	<b>59 (632)</b>	<b>44 (314)</b>

Red: generally found high in sodium from literature

Black: have overseas sodium reduction targets set by overseas authorities and highlighted in Trade Guidelines

\*Other foods: non-prepackaged (vegetarian foods; cold dishes/ appetisers); prepackaged (Breakfast cereal – cold/ hot served)

# Sampling

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- ❑ Between January and April 2012
- ❑ **Non-prepackaged** food
  - Ready-to-eat or take-away foods, **plain/ no salt added** versions included, if available
  - **Detailed study** of 8 selected **non-prepackaged** items, to facilitate the demonstration of **feasibility to reduce** sodium in the same food
    - ❑ **2** Western fast foods + **6** Asian foods & dim sum items
  - Purchased from supermarkets, dry good stores, fresh provision shops, and other eateries in different locations of HK, KLN, NT
- ❑ **Prepackaged** food
  - With valid nutrition labels
  - Ready-to-eat (e.g. potato chips) or require further preparation/processing (e.g. chilled dim sum), **low/reduced salt/sodium** products included, if available
  - Purchased from various supermarkets or convenience stores



# Chemical analysis and data analysis

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- ▣ Non-prepackaged foods (analysed by FRL)
  - Analyse samples as purchased (edible portions)
  - Chemical analysis of sodium content in **individual sample**
- ▣ Prepackaged foods (information from food label)
  - Data analysis of sodium content declared on nutrition label
  - Record sodium content **as sold**
  - Record nutrition claims related to sodium/salt

# Sodium content among 9 non-prepackaged food groups

Food Group	n	Sodium (mg/100g)			
		Avg	Std Dev	Min	Max
Condiments and sauces	30	1 183	1 137	310	4 600
Processed meat products	80	1 225	1 250	280	6 800
Processed vegetable products	29	5 784	4 397	380	17 000
Snacks*	81	935	1 630	0	9 800
Bakery products	80	315	176	1	660
Soup (ready-to-eat and condensed)	60	343	132	160	810
Western fast foods*§	67	488	167	130	850
Asian foods & dim sum*§	185	362	141	3	900
Other foods	20	715	359	300	1 400
Total	632				

\* item(s) with no salt added or with sauce served separately has been included, if possible from the same shop, e.g. French fries, nuts, and steamed rice roll

§ mean of 8 items with 8-12 samples from various shops included

# Sodium content within 8 selected non-prepackaged food items

Food Item	n	Sodium (mg/100g)			
		Avg	Std Dev	Min	Max
Asian foods & dim sum					
Fried rice with diced chicken and salted fish	12	401	58	280	520
Steamed rice with satay beef	10	269	67	150	400
Fried noodles with preserved vegetable and spare rib	10	519	131	370	770
Siu mai	9	598	138	330	800
"Pan-fried turnip cake" **	10	415	55	320	520
"Ha gau"	10	473	96	340	650
Western fast foods					
Hamburger	8	445	128	340	720
Meat sauce spaghetti	8	310	76	200	400

A plate of 'fried noodles with preserved vegetable and spare rib' weighs 510-840g; consuming ½ plate (~300g) would have sodium intake reaching WHO's recommended limit of 2 000mg/day

\*\* some item(s) may have sauce served separately and the sauce was not analysed

# Sodium content among 9 prepackaged food groups

Food Group	n	Sodium (mg/100g)			
		Avg	Std Dev	Min	Max
Condiments and sauces (salt excluded) <sup>^*</sup>	53	3 585	3 859	275	16 807
Processed meat products <sup>*</sup>	40	1 078	1 085	61	6 800
Processed vegetable products	15	2 177	2 626	500	10 100
Snacks <sup>†</sup>	66	1 120	1 254	167	8 121
Bakery products	36	399	234	52	1 211
Soup (ready-to-eat and condensed) <sup>†*</sup>	25	2 183	3 278	58	10 110
Western fast foods <sup>*</sup>	23	483	227	164	1 230
Asian foods & dim sum	35	1 228	956	187	3 616
Other foods	12	295	198	12	623
<b>Total</b>	<b>305</b>				

<sup>^</sup> 4 salt items and 5 seasoned salt items are included as salt in the 'Condiments and sauces' group

<sup>\*</sup> Including products with nutrient content claims and/ or nutrient comparative claims on salt/sodium

<sup>†</sup> Including products with different series of varied sodium content, or products that sodium-containing sauces/ seasonings can be added by consumers separately

# Sodium content of prepackaged salt products – nutrition information of individual samples

Salt	Sodium (mg/100g)
Reduced sodium salt	13 800
Sea salt	37 900
Iodised salt	38 758
Table salt	39 000
<b>Average</b>	<b>32 365</b>

Seasoned salt	Sodium (mg/100g)
Flavoured pepper	21 400
Garlic salt	29 161
Salt pepper seasoning	30 909
Seasoned salt	31 667
Onion salt	37 900
<b>Average</b>	<b>30 207</b>

Nutrition information

Per 100g / 每100克

Energy / 能量	0kcal / 千卡 (0kJ / 千焦)
Protein / 蛋白質	0g / 克
Total Fat / 總脂肪	0g / 克
- Sat. Fat / 飽和脂肪	0g / 克
- Trans Fat / 反式脂肪	0g / 克
Total Carb / 總碳水化合物	0g / 克
- Sugars / 糖	0g / 克
- Fibre / 膳食纖維	0g / 克
Sodium / 鈉	39000mg / 毫克



# Sodium reduction of salted vegetables after rinsing/soaking

Salted vegetables	n	Sodium content before treatment (mg/100g)	Range of percentage of sodium reduction after treatment (%)		
			10 seconds rinsing	5 minutes soaking	30 minutes soaking
Preserved Sichuan mustard	3	4 900 – 6 500	2.1 – 4.4	1.5 – 5.6	13 – 19
Preserved leaf mustard	3	2 000 – 2 600	3.5 – 21	9.1 – 14	21 – 29
Preserved cabbage/"Dong Choy"	3	6 500 – 7 700	26 – 37	17 – 30	57 – 62
Preserved "turnip"	3	6 500 – 7 000	5.3 – 6.6	24 – 27	54 – 63
Salted preserved mustard	3	7 800 – 8 700	10 – 25	31 – 39	48 – 55
Sweet preserved mustard	3	6 200 – 8 200	9.6 – 17	34 – 45	56 – 66
Preserved mustard greens	3	3 600 – 4 200	14 – 17	21 – 24	29 – 49

When preparing common local dishes with “preserved vegetables products” (e.g. ‘Steamed ground beef with Dong Choy’, ‘Noodles with preserved Sichuan mustard and shredded pork’), rinse/soak the salted ingredients into water at least 5 minutes can effectively reduce the sodium content of salted vegetables. The longer the time, the greater the reduction.

# Sodium reduction of salty appetisers after rinsing

Salty appetisers	n	Sodium content before treatment (mg/100g)	Range of percentage of sodium reduction after treatment (%)	
			rinsing + draining (total 5 seconds)	rinsing + draining (total 10 seconds)
Kimchi	3	680 – 870	12 – 28	22 – 25
Seasoned kelp	3	640 – 730	16 – 23	25 – 27



Rinsing salty appetisers in water can remove its sodium content to about 30%.

# Individual traders provide foods with different sodium level - Examples

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- ❑ Sodium in 100g of food (individual items)
  - French fries – plain 55mg vs salt added 200mg
  - Crisps – lightly salted 250mg vs ordinary 500mg
  - Canned soup – 3 versions: 342mg, 542mg and 691mg
  
- ❑ Seasonings and food separated and amount of sodium in seasoning declared on nutrition label
  - Dim sum snack: + 5g seasonings = 192 mg
  - Extruded snack: + 2g seasoning = 150 mg



# Compare with overseas' sodium reduction targets: Non-prepackaged foods

- ❑ Overseas sodium reduction targets from
  - Health Canada
  - New York City Department of Health and Mental Hygiene
  - Food Standards Agency of the United Kingdom
- ❑ Based on overseas sodium reduction targets, there is still large room for improvement on these non-prepackaged foods:

Non-prepackaged food	Sodium (mg/100g)			
	Local data			Range from overseas reduction target references
	n	Avg	Max	
Western preserved sausages (e.g. Cheese sausage, Cervelat)	4	933	1 000	450-550
Fried potatoes (e.g. French fries, hash browns)	13	370	690	240-290
Burgers	16	528	760	300-460
Pizza	10	594	790	460-500

# Compare with overseas' sodium reduction targets: Prepackaged foods

- Based on overseas sodium reduction targets, there is still large room for improvement on these **prepackaged** foods:

Prepackaged food	Sodium (mg/100g)			
	Local data			Range from overseas reduction target references
	n	Avg	Max	
Salad dressing	5	828	1 200	500-760
Tomato paste/Ketchup	5	1 208	1 353	660-860
Western preserved meat (e.g. Bacon, Ham)	5	2 353	6 800	610-1 470
Western cookies (e.g. Shortbread, Choco chips)	12	292	530	240-260
Canned baked beans	4	455	860	100-310

# Overseas' sodium reduction targets - Implication

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- ▣ Taking into consideration of food safety, quality and consumer acceptance:
  - Trade to start **monitoring** sodium content in the above-mentioned foods as sodium reduction priority
  - Trade may use these sodium reduction targets to **reformulate** or as a guide to **import** some prepackaged foods with lower sodium content

# Limitations

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- ❑ Cannot estimate dietary sodium intake
  - Excluded generally low sodium foods (e.g. oils/fats, dairy products, fresh fruits/vegetables, beverages, sugary/ confectionery products)
  - Limited food samples collected in each food category
  - Seasonal foods - low availability, SVE in NL
- ❑ Direct chemical analysis of **prepackaged** foods not conducted

# Conclusion

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- ❑ Observed that sodium content of many food items, especially burgers, Western preserved meat, sauces and condiments, etc., was rather high. Based on some overseas sodium reduction targets, still large room for improvement.
- ❑ A wide range of sodium levels was found within same food group, indicates that reformulation is feasible for many foods.
- ❑ Rinsing or soaking salted vegetables in water could reduce their sodium content.
- ❑ CFS encourages food traders to adopt suggestions in the Guidelines and support WHO's policy on reducing population sodium intake, and to consider providing consumers with more choices of lower sodium, healthier counterparts within the same food group, e.g.
  - Provide more choices of food with lower sodium content,
  - Serve foods with no salt/seasonings added or with seasonings provided separately at the point of sales.

# Advice to consumers

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- ❑ Read nutrition labels and choose foods that contain lower sodium content.
- ❑ Change the dietary habit to minimise adding salt or sodium-containing seasonings to food, e.g. consider removing salt shakers or sodium-containing seasonings from the dining table, so as to allow the taste buds to gradually adapt to the light flavour of foods.
- ❑ Consume less preserved salted vegetables or salty appetisers.
- ❑ Rinse and/or soak them in water before using them in recipes or before consumption to cut down on sodium intake.

# Advice to the trade

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- ❑ Develop affordable quality food products with low sodium content.
- ❑ When formulating foods with lower sodium, use the local data collected in the study by CFS and the overseas sodium reduction targets as reference.
- ❑ Establish a database of the company products so as to monitor the sodium levels of foods and use portable salt meters to gauge the amount of salt in non-prepackaged food products such as soups, sauces and condiments.
- ❑ Rinse or soak salted vegetables in water to reduce some sodium content before using them in food preparation.

# Thank You!

