

# Sugars Content of Some Non-prepackaged Food in Hong Kong

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# Content

- Sugars
- Initiatives in sugars reduction
- Previous studies related to sugars
- Methodology and main findings
- Recommendations

# Sugars

- Simple carbohydrates
  - Mono-saccharides: Glucose, Fructose, Galactose
  - Di-saccharides: Sucrose, Lactose, Maltose
- Source:
  - Naturally in foods
    - E.g. fructose in fruits, glucose in honey, lactose in milk
  - Add to foods during processing, preparation, or at the table
    - E.g. sucrose (sugar) in drinks
- Free sugars defined by WHO/FAO
  - all mono- and di-saccharides added to foods by the manufacturer, cook or consumer
  - sugars naturally present in honey, syrup and fruit juices in diets

# Roles of sugars in food processing

- Sweeten foods and beverages
- Improve palatability of foods
- Preservation purpose
- Provide functional attributes, such as viscosity, texture and browning capacity

# Sugars and health

- Sugars provide energy for the body
  - 1 g sugars → 4 kcal
- Getting too much sugars (including free sugars)
  - → lead to excessive energy intake, increasing risk of overweight and obesity
    - In turn increase risk of heart diseases and other chronic non-communicable diseases (NCD) including certain cancers
- Frequent excessive intake → increase the risk of dental caries

# Nutrient intake goals



- WHO / FAO (2002)
  - ❑ Consider that restriction of free sugars was likely to contribute to reducing risk of unhealthy weight gain
  - ❑ Nutrient intake goal for free sugars
    - < 10% of the daily energy intake per day
    - If an individual with a daily energy intake of 2000 kcal, free sugars intake should be limited to < 50 g/ day (about 10 sugar cubes)
- WHO (March 2014)
  - ❑ Draft guideline: sugars intake for adults and children
    - Proposes that free sugars should be < 10% of total energy intake per day
    - Further suggests that reduction to below 5% of total energy would have additional benefits in the dental caries

# Initiatives in sugar reduction

- WHO Global Strategy on Diet, Physical Activity and Health (2004)
  - Populations and individuals should limit the intake of free sugars in the diet
  - Private sector can be a significant player in promoting healthy diets
  - Initiatives by the food industry to reduce sugar, fat and salt content of processed foods and portion sizes can accelerate health gains worldwide

[http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy\\_english\\_w eb.pdf](http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_w eb.pdf)

# Initiatives in sugars reduction (2)

- Hong Kong
  - Nutritional Guidelines on Snacks for Students for Use in Primary and Secondary Schools (DH guidelines)
    - Issued by Department of Health in 2006 and revised in 2010
    - Food and drinks that are high in sugars content are strongly discouraged in school setting
      - Ready-to-eat prepackaged food (except fruit, chestnuts and dairy products) with > 15 g sugars/100g
      - Drinks (except milk and no added sugar fruit juice) with > 7.5 g sugars / 100 ml



# Initiatives in sugars reduction (3)

## ■ Hong Kong

- Trade Guidelines for Reducing Sugars and Fats in Foods (Nov 2012) (by CFS)
  - Provide general advice on producing and promoting foods with lower sugars content
- Working Group on Reducing Sugar in Prepackaged Beverages
  - Set up by CFS in Feb 2013
  - Comprise representatives from the food trade
  - To formulate the measures on reducing sugars in prepackaged beverages

# Previous studies related to sugars

## Common non-prepackaged beverages in HK (Apr 2009)

- Some beverages contained relatively high sugars contents ( $> 10$  g/100ml)
  - Icy drinks (red bean, pineapple, tri-colour icy drinks) and sour plum drink

## Prepackaged non-alcoholic beverages in HK (Nov 2009)

- Some beverages contained relatively high sugars contents ( $> 13$ g/100g)
  - Such as lactic acid beverages, some carbonated drinks, juice drinks and lemon tea

## Nutrient Information Inquiry System (NIIS)

- Bakery (e.g. cakes and bread) and desserts (including sweet soup) products contained relatively high sugars contents ( $> 10$  g/100g)

# Study on Sugars Content of Some Non-prepackaged Food in HK

## Methodology and Main Findings

# Objectives



To measure the sugars levels in non-prepackaged foods in Hong Kong

To serve for continuous monitoring the changes of the sugars content in food available in the local market

- Especially in those cases where room exists for traders to reformulate the sugars content to a lower level

# Scope of study

Focus on 3 groups of food products

- (1) Non-alcoholic beverages**
- (2) Dessert products**
- (3) Bakery products**

Include also less sweet version if available

Only non-prepackaged food products likely to be with sugars added were selected

## Scope of study (2)

- Previous non-prepackaged beverages study revealed that energy mainly came from sugars in most beverages
- Situation for other product types is uncertain
- Apart from analysing sugars content, energy content in dessert and bakery products was determined
  - → to have an idea on the energy contribution from sugar for foods other than beverages

# Sampling

Food group	No. samples (No. products)
<b>Non-alcoholic beverages</b>	<b>160 (11)</b>
◆ Cold drink (regular and less sweet versions)	144 (9)
◆ Hot drink (regular version)	16 (2)
<b>Desserts*</b>	<b>84 (10)</b>
◆ Desserts (regular version)	80 (10)
◆ Desserts with less sweet #	4 (2)
<b>Bakery products*</b>	<b>40 (5)</b>
<b>Total</b>	<b>284 (26)</b>

\* *no less sweet versions can be sampled from the same premises where regular versions were collected*

# Samples were collected from 2 dessert specialty shops serving less sweet /low sugar version

# Laboratory analysis

- Conduct by Food Research Laboratory (FRL)
- Analysis on individual sample basis and “as purchase”
- **Apart from sampling, extract results from the recent study on Trans Fatty Acids in Local Food (2012)**
  - Cover non-prepackaged products, mainly bakery products
  - Sugars contents were also analysed in this study
  - Some items may fall within the scope of the current study
    - Results of 50 samples (9 products) of bakery products were extracted for the current study



# Main Findings

# Non-alcoholic beverages: sugars content

- 3 icy drinks
  - 7.1 – 13 g/100g for regular version
  - 5.1 – 11 g/100g for less sweet version
- 6 iced tea or coffee
  - 4.9 – 6.5 g/100g for regular version
  - 3.7 – 5.0 g/100g for less sweet version
- 2 hot beverages
  - 4.7 and 7.4 g/100g

## Non-alcoholic beverages: sugars contents (2)

- Icy drinks contained sugars content higher than iced tea or coffee
- Less sweet versions contained less sugars than their regular counterparts
  - 17 – 29% less sugars (mean: 24%)
- **Products with high sugars content** (mean > 7.5 g/100ml, ~ 7.2 g/100g)
  - **Red bean icy drink** (regular and less sweet versions)
    - All samples of regular version
  - **Pineapple icy drink** (regular and less sweet versions)
    - All samples of regular version
  - **Hot citron tea**

## Non-alcoholic beverages: sugars contents (3)

- Comparison with 2009 study
  - 60% of products
    - Sugars content was reduced by over 10%
  - Products with higher sugars content than 2009 study
    - Red bean icy drink (regular & less sweet versions)
    - Pineapple icy drink (less sweet version)
- May reflect that some food trade has implemented measures to reduce the sugars content in recent years

## Non-alcoholic beverages: possible sugars intakes

	<u>Regular version</u>		<u>Less sweet version</u>	
	Mean intake g/person/day	Contribute to recommended intake	Mean intake g/person/day	Contribute to recommended intake
<b>Icy drinks</b>	25 – 45	49 – 89%	18 – 37	36 – 74%
<b>Iced tea or coffee</b>	17 – 23	34 – 45%	13 – 16	26 – 33%
<b>Hot beverages</b>	12 – 19	23 – 37%	--	--

- Estimate based on the assumption that a person consumes a cup of the drink once a day
  - Average cup size: 350 g of cold beverage samples; 250 g of hot beverage samples
- The recommended intake refers to the WHO/FAO recommended daily free sugars intake of < 50 g if an individual with a daily energy intake of 2000 kcal

# Non-alcoholic beverages

- Non-alcoholic beverages, particularly the icy drinks (both regular and less sweet versions)
  - Contain high sugars content
  - Contribute a lot to the sugars intakes
    - Highest contribution:
      - Red bean icy drink (regular version)
        - 89% of the recommended intake
- Effort should be made to further reduce the sugars content, particularly the icy drinks

# Dessert products: sugars content

- Products with high sugars content (>15 g/100g)
  - Macaron (39 g/100g)
    - All samples contained high sugars content (27 – 51 g/100g)
    - Also high in energy content (460 kcal/100g)
  - Molten chocolate cake (19 g/100g)
    - Also high in energy content (430 kcal/100g)
  - Soufflé (16 g/100g)

# Dessert products: sugars content (2)

- Two dessert products with less sweet version from specialty shops serving less sweet/low sugar desserts
  - Caramel egg custard
  - Glutinous rice ball with sesame filling
    - Sugars content lower than the regular counterparts
    - 8.3% and 19% less sugars



# Dessert products: energy and sugar

- Energy content
  - Two items, macaron and molten chocolate cake
    - 460 and 430 kcal/100g
  - Remaining items
    - 77 - 300 kcal/100g
- % of energy contributed from sugars
  - 12 – 38%
- Energy may contribute from other ingredients in the dessert products
  - Such as butter and flour
- Apart from sugars content, attention should also be paid on the energy content of the dessert products

# Dessert products: possible sugars intake

Products contributed close to or over half of the WHO/FAO recommended intake

	Average weight per piece/ unit (g)	Mean content (g/100g)	Mean intake (g/person/day)	Contribute to recommended intake
Red bean sweet soup	390	6.7	27	53%
<b>Soufflé</b>	170	16	26	52%
<b>Molten chocolate cake</b>	120	19	25	49%

- Estimate based on the assumption that a person consumes a piece or a unit of such food once a day
- The recommended intake refers to the WHO/FAO recommended daily free sugars intake of < 50 g if an individual with a daily energy intake of 2000 kcal.

- **Soufflé and molten chocolate cake contained high sugars contents and also contributed a lot to the sugars intake**

## Dessert products: possible sugars intake (2)

### ■ Macaron

- Contain the highest sugars content
  - Mean: 39 g/100g
- Possible intake from a piece of this product contributed 11% of the WHO/FAO recommended daily intake
  - Due to the smaller in unit size (mean: 14 g)
- Possible sugar intakes depend on the unit size of the samples
- If an individual consumes more than 1 unit of such food, the intakes will increase proportionally

# Bakery products: sugars content

## ■ Products with high sugars content

(Mean >15 g/100g)

- ❑ Plain cake (24 g/100g)
- ❑ Spongy cake (20 g/100g)
- ❑ Coconut tart (19 g/100g)

All samples  
> 15 g/100g

- ❑ Muffin (19 g/100g)
- ❑ Cookies (16 g/100g)
- ❑ Swiss roll (16 g/100g)

A wider range  
within samples  
(some ≤ 15  
g/100g)

# Bakery products: sugars content (2)

- 3 sweet bread items contained sugars content higher than white bread but lower than cake items

- ❑ Pineapple bun 菠蘿包 (13 g/100g)
- ❑ Coconut and cream bun 椰絲奶油包 (13 g/100g)
- ❑ Cocktail bun 雞尾包 (15 g/100g)

Vs white bread (5.2 g/100g)

Vs 4 cake items\* (15 – 24 g/100g)

\* Include plain cake, spongy cake, Swiss roll and cheese cake

# Bakery products: energy and sugar

- Energy content
  - 280 – 500 kcal/100g
    - Higher than desserts
    - 77 – 460 kcal/100g in desserts
- % of energy contributed from sugars
  - 7.5 – 27%
- Energy may contribute from other ingredients in the bakery products
  - Such as butter and flour
- Apart from sugars content, attention should also be paid on the energy content of the bakery products

## Bakery products : possible sugars intakes

<u>Products contributed ~ or &gt; 25% of WHO/FAO recommended intake</u>	Average weight per piece/ unit (g)	Mean content (g/100g)	Mean intake g/person/day	Contribute to recommended intake
<b>Muffin</b>	91	19	18	37%
Cheese cake	110	15	17	34%
<b>Spongy cake</b>	71	20	14	29%
<b>Coconut tart</b>	70	19	13	27%
Cocktail bun	88	15	13	26%
Coconut and cream bun	93	13	12	24%

- Estimate based on the assumption that a person consumes a piece or a unit of such food once a day
- The recommended intake refers to the WHO/FAO recommended daily free sugars intake of < 50 g if an individual with a daily energy intake of 2000 kcal.

# Bakery products

## ■ Muffin, spongy cake and coconut tart

- ❑ Contain high sugars contents
- ❑ Contribute a lot to the sugars intake

## ■ Plain cake

- ❑ Contain the highest sugars content (mean: 24 g/100g)
- ❑ Possible sugars intake was not high (9.8% of WHO/FAO recommended intake)
  - Due to smaller in unit size (mean: 21 g)



# Limitations of study

- Include only some of the non-prepackaged products commonly found on the market
  - A large variety of these products available in HK
  - A number of them not being covered in this study
- Smaller in sample size
  - Only 5 – 8 samples collected for each product
  - Variability in the sugars content in food
    - Sugars content varies as they may have different ingredients and recipe formulations
- Laboratory analysis
  - Analyse the total sugars content in food
  - → Free sugars content in food may be lower than the analysed one

# Conclusion

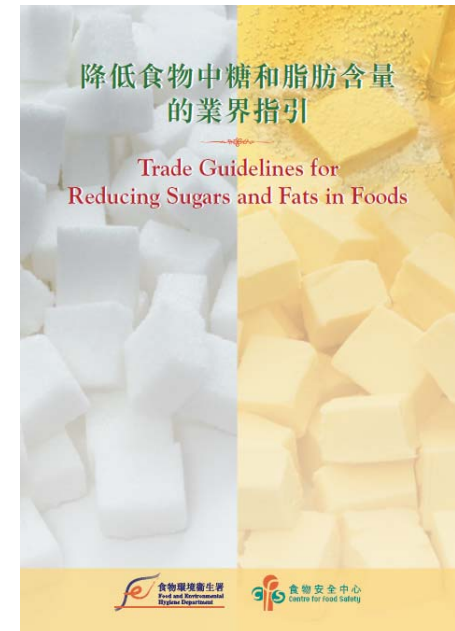
- The findings indicated that some food trade has implemented measures to reduce the sugars content in the non-alcoholic beverages in recent years
  - But some kinds of non-alcoholic beverages, even the less sweet version, dessert and bakery products still contained high sugars content
- Less sweet versions of dessert and bakery products were less common in the market as compared to the non-alcoholic beverages
- Effort should be made to further reduce the sugars content in the food products and provide less sweet version of dessert and bakery products for consumers' choices

## Conclusion (2)

- Dessert and bakery products
  - Contain high energy content
  - Energy may come from other nutrient such as fat in the dessert and bakery products
- Apart from the sugars intake, attention should also be paid on the energy intake from dessert and bakery products

# Advice to trade

- Take reference to the Trade Guidelines in producing and promoting wholesome and safe products with lower sugars content
  - E.g. the trade can consider providing more reduced sugars content options and offering a range of portion sizes of products or smaller dishes for consumers to choose



# Advice to public

- Have a balanced and varied diet
- **Limit the consumption of foods and drinks with high amount of added sugars**
  - Such as icy drinks, macaron and plain cakes
- Choose products with lower sugars and content and smaller in portion sizes
- Order less sweet products whenever available
- Ask for syrup/sugar to be served separately

# Publicity

- Study report
  - Upload in the webpage of CFS
- Sugars content in the food products
  - Upload onto the NIIS



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# The End

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