## Canadian health professionals' understanding of sugar's functional roles in foods

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## Canadian Sugar Institute Nutrition Information Service

- Inform and educate Canadians about sugars and healthy eating and advocate for science-based nutrition policies


## Linked in <br> Groups

- Staffed by nutrition professionals:
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- Laura Pasut, MSc, MBA, RD, Director of Nutrition
- Flora Wang, PhD, Manager of Nutrition \& Scientific Affairs
- Chiara DiAngelo, MPH, RD, Manager of Nutrition Communications
- Guided by Scientific Advisory Council:
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- Donna Vine, PhD, University of Alberta


Sugars and Health the Current Science

## Background: Media Perception

- The presence of sugar (sucrose) in food products has garnered both media attention and calls from health groups for reformulation to reduce the added sugar content of foods.

Sugar Is Just Empty Calories-but That's the Whole Problem
Sugar makes you fat - and it may be killing you

As Canadians we are eating too much 'added sugar.' Sugar gives us energy but not much else.
Consuming too much sugar puts us at risk for heart disease, stroke, obesity, diabetes, high blood
cholesterol, cancer and of course cavities.

## THE CANADIAN PRESS ${ }^{\text {雨 }}$ <br> Eating Sugar Causes Massive Health Problems, Says WHO

## Background: Functional Properties of Sugar in Foods

- However, sugar contributes important sensory, microbial, chemical and structural properties to foods, in addition to providing sweetness.

| Sensory | - |
| :--- | :--- |
|  | - |
|  | - Flaveetness |
| Microbial | - |
|  | - |



## Objectives

The objective of this study was to:

- Assess health professionals' knowledge regarding the functional roles of sugar in foods; and
- Identify knowledge gaps.



## Methods

- Questionnaires voluntarily completed by health professionals at two Dietitians of Canada conferences and the International Diabetes Federation conference in 2015
- A total of 377 health professionals completed surveys
- Questionnaires included five questions on topics pertaining to functional roles of sugar in different types of foods
- Microsoft Office Excel 2013 was used to conduct data analysis.



## Results: Participants' Area of Practice



## Results: Roles of Sugar in Baked Goods

Q1. In baked foods, which of the following features is/are linked to the use of sugar (sucrose)? Check all that apply.
$\checkmark$ Flavour
$\checkmark$ Longer shelf life
$\checkmark$ Proper rise of the dough
$\checkmark$ Yellow-brown colour


## Results: Lesser Known Roles of Sugar in Baked Goods



## Results: Roles of Sugar in Tomato-Based Sauces

2. Sugar is added to tomato-based sauces (e.g. BBQ sauce) to $\qquad$ . Check all that apply.
$\checkmark$ Balance the natural acidity of tomatoes
$\checkmark$ Heighten the tomato flavour
$\checkmark$ Improve consistency
$\checkmark$ Contribute to the browning process




## Results: Roles of Sugar in Breakfast Cereals

## 3. In ready-to-eat breakfast cereals, which of the following features is/are linked to the use of sugar (sucrose)? Check all that apply.

$\checkmark$ Flavour
$\checkmark$ Improved surface porosity
$\checkmark$ Increased crispness
$\checkmark$ Longer shelf life




## Results: Sugar Replacements for Texture

4. In sugar-free products, the consistency/texture is usually maintained by replacing sugar with which of the following ingredients? Check all that apply.
$\checkmark$ Starches
$\checkmark$ Gelatin
$\checkmark$ Polydextrose
Vegetable oils


## Replacing Sugar Functionality

- To reduce sugar but still maintain a product's consistency and texture, other Caloric ingredients (e.g. starches, polydextrose, gelatin) are often added, which may not reduce the total energy content of the foods.

| Function | Replacement ingredients |
| :--- | :--- |
| Sweetness | High intensity sweeteners, polyols (xylitol) |
| Mouthfeel/texture | Hydrocolloids (gums, starch, gelatin), polyols, sugars |
| Flavour | Flavours (additives) |
| Preservation | Preservatives (additives) |
| Colour | Colours (additives) |
| Structure | Bulking agents (starches, maltodextrin), polyols, fibres (inulin) |

## Results: Sugars Claims Misconception

## 5. Please indicate how much you agree with the following statement:

Products with the claim "Reduced In Sugar" are lower in Calories compared to the products not "Reduced In Sugar".


## Food Drug Regulation B.01.513:

Reduced in Sugar Claim: The food is modified to contain at least $25 \%$ less sugars, totalling at least 5 g less than the standard product per reference amount, or per 100 grams

## "Reduced in Sugar" =/= "Reduced in Calories"

## Original Vanilla Ice Cream

| Nutrition Facts |  |
| :---: | :---: |
| Serving Size $=$ Per $1 / 2 \mathrm{Cup}(125 \mathrm{~mL}$ ) |  |
| Amount | \% Daily Value |
| Calorie (120) |  |
| Fat 6 g | 9\% |
| Saturated 3.5 g <br> + Trans 0.2 g | 18\% |
| Cholesterol 20 mg |  |
| Sodium 40mg | 2\% |
| Carbohydrate 17 g | 6\% |
| Fibre 1g | 4\% |
| Sugars 11g |  |
| Protein 1g |  |
| Vitamin A | 6\% |
| Vitamin C | 0\% |
| Calcium | 4\% |
| Iron | 0\% |


| Nutrition Facts <br> Serving Size $=$ Per $1 / 2$ Cup (125mL) |  |
| :--- | ---: |
| Amount | \% Daily Value |
| Calories 120 ) |  |
| Fat 7 g |  |

## Ingredients:

Modified Milk Ingredients, Cream, Maltitol Syrup, Skim Milk Powder, Mono and Diglycerides, Guar Gum, Locust Bean Gum, Cellulose Gum, Carrageenan, Natural Flavour, Sucralose, Lactase.

Sweetened with Maltitol and Sucralose.

## Conclusions

- This survey revealed knowledge gaps in health professionals' understanding of sugar's functional roles in foods.
- Flavour was the most frequently known function for each category.
- While almost half ( $40 \%$ ) of respondents recognized products with the claim "reduced in sugar" are not always lower in Calories compared to products not "reduced in sugar", very few (3\%) could correctly identify the three major Caloric replacement ingredients.



## Conclusions

- 2016 CSI projects have focused on developing innovative and interactive resources to help address knowledge gaps and support health professionals communicate science-based nutrition information related to sugars to the media and the public.

SUGAR BEYOND SWEETNESS
a Workshop and Interactive Food Demonstration with Chef Claire Tansey

April 18, 2016
Beyond Sweetness: The Functional Roles of Sugar in Foods and the Challenges in Replacing/Reducing It


## Questions?



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