



SUGAR AND YOUR HEALTH

Sugar has been, over the years, important to the Caribbean as it is one of our major exports, made from the sugar cane grown in many of our countries. In addition to using it in sweetening drinks and in cakes, puddings and pastries, we use sugar in our own Caribbean confectionary such as peppermint candy, tamarind balls, coconut, peanut or almond drops, among many other uses. In this issue of Nyam News we look at sugar in the diet and whether indiscriminate consumption of sugar leads directly to persons becoming obese.

What is Sugar?

When the term sugar is used by the general public it usually refers to the common household item "table sugar". However, sugar refers to a class of carbohydrates made up of one or



two molecular structures or units. Sugars made up of one unit are called monosaccharides or simple sugars; examples include glucose, fructose and galactose. Sugars made up of two units are called disaccharides and include sucrose, lactose and maltose. Less commonly known sugars may have three units (trisaccharides or oligosaccharides) or four units (tetrasaccharides). There are also many and varying derivatives associated with sugars which may be natural or manmade. Among these derivatives of sugars are

dextrose, mannose, sorbitol, turbinated sugar (turbinado) and sucralose (Splenda).

Sources and Types of Sugars

Monosaccharides are the simplest sugars and the final breakdown products of carbohydrate digestion in humans. Although glucose may be best known for its commercial availability as a high energy item, it is also found in abundance in the human body. Fructose, also referred to as fruit sugar, is found in fruits, some vegetables and honey. Fructose is also a component of high fructose corn syrup (HFCS) which is frequently used in many processed beverages and baked goods. A third monosaccharide is galactose, found in milk.

Among the disaccharides, sucrose is the most common as it is used as table sugar. Sucrose may

be made from sugar cane, as is done in the Caribbean, or from beet. Other common disaccharides include lactose or "milk sugar" which is made up of a unit each of glucose and galactose; and maltose or "malt sugar" made up of two glucose units.

Use of Sugar

There are both physiological and commercial uses of sugars. Glucose is the body's main source of energy. During digestion, complex carbohydrates are broken down to glucose, which is then transported out of the gut and into the blood stream. The hormone insulin, secreted by the pancreas, stimulates the cells to take up this glucose as needed. Excess glucose is converted to glycogen in the liver and stored for future use, or converted to fat and stored in adipose (fatty) tissues.

Commercially, sugar is used in foods to enhance flavour and appeal. They are often added to fruit and vegetable dishes, milk products, cereals, desserts and baked products. The flavour and golden colour of baked goods are attributable in part to the sugar content. Sugar is used to enhance the aroma and texture of creamy desserts and beverages, canned fruits, and fruit jams and jellies.

Eating Sugar

Sugar is used during processing to lengthen the "shelf-life" of foods, and is also added to foods that have lost their flavour after being shipped long distances and then stored.

Dining out has become increasingly common among many Caribbean persons, especially in fast food or quick service restaurants. Without careful discrimination in food choices, eating out can significantly add to the amount of sugars consumed from sugary shakes, juices, drinks and desserts as well as sugars added during meal pre-paration. Large portions or super sizes further increase the amount of sugar that may be consumed.

Many everyday foods used at home can also contribute to high intake of sugars. These foods include:

- fruit drinks and juices – these may have natural or added sugar;
- condensed milk, sugary-coated breakfast cereals and baked goods;
- low-fat foods such as yogurts, which may contain added sugars to enhance palatability;
- chocolates, ice-cream and other comfort foods;
- condiments such as jams, jellies, syrups (pancake and waffle), salad dressings, sauces and ketchup.

Up to 50% of a person's daily calories can be consumed in beverages as they are less filling than solid foods, often leading to over-consumption of calories and under-consumption of other nutrients especially micronutrients. Snacking on sweetened treats during sedentary activities such as watching television, reading and playing electronic games also leads to over-intake of calories.

Sugar Content in 100 g of Common Foods

Food Item	Sugar Content (g)	Food Item	Sugar Content (g)
Cake, frosted	57.4	Peanut butter	9.2
Condensed milk	56.4	Soda (pop)	9.0
Cookies, sandwich typed	39.3	Orange juice	8.4
Frosted flakes	38.7	Corn flakes	7.8
Cake, no icing/frosting	35.5	Fruit flavoured yogurt	7.0
Tomato ketchup	22.8	Bread	5.8
Salad dressing (Thousand Island/French)	16.0	Cranberry water	4.6
Cookies, shortbread	15.1	Coconut water	2.6
Orange	9.4	Tomato	2.6
		Pumpkin	1.0

The table before is a comparison of the sugar content of some commonly consumed foods.

How Much Sugar is Enough?

One gram of sugar provides approximately 4 calories. That is equivalent to 20 calories in one teaspoon. The World Health Organization has recommended that no more than 10 percent of an adult's total caloric intake should be in the form of sugar added to food and drinks and sugars naturally present in honey, syrups and fruit juice. For example, a woman requiring 2,000 calories to meet her energy needs should get no more than 200 calories from sugar; this is approximately 10 teaspoons (50 g or 1¾ ounces) of sugar. This recommendation has been adapted for many countries in the region and usually forms part of a series of general dietary guidelines aimed at reducing the risk for chronic diseases.

Why the Concern About Sugar?

High sugar foods and drinks are often deficient, or comparatively lower in other nutrients making them empty calorie/energy dense foods. These high sugar foods also provide little satiation (feeling of fullness). Excessive consumption of these energy dense or "empty calories" foods encourages further

eating to satisfy perceived needs (cravings) and actual nutritional/functional requirements. This increases the likelihood of indiscriminate eating leading to weight gain and obesity.

Foods and beverages loaded with sugars have a high glycaemic index and it is thought that this promotes excessive intake of foods in general. Such high glycaemic index foods increase blood insulin levels, and trigger insulin-induced fat synthesis and storage. It should be noted, however, that other non-carbohydrate foods, such as proteins and fats, also elicit insulin responses.

Of concern, also, is the time spent watching television, which increases the exposure to commercials which advocate the consumption of sugary foods like candies, chocolates, gums, cookies and sweetened beverages. An Australian study showed that the majority of such unhealthy food advertisements were aired at a time when children were most likely to be watching. These children are less likely to opt for fruits, vegetables and whole grains if allowed to choose.

Indiscriminate eating and inadequate physical activities are the two main contributors to obesity accepted by the scientific community. Over excess of sugar results in a high caloric intake, which can lead to obesity, especially

when coupled with a sedentary lifestyle. Sugar is also of particular concern for persons with diabetes, who must be very careful about their intake.

Here are a few tips for reducing sugar intake.

- Read food labels and choose less sweet alternatives. Look out for these sugars and sugary substances in the list of ingredients – fructose, dextrose, glucose, lactose, maltose, syrup, molasses, honey, corn syrup.
- Reduce the amount of sugar added to drinks, porridges, cakes, puddings, desserts, etc.
- Spice up dishes with ginger, pimento, cinnamon, vanilla, nutmeg, cloves and other spices.
- Use more fruits and less sugar in cakes. Dried fruits such as raisins and prunes give a sweet "bite".
- Use dried or fresh fruits in cereals and porridges e.g. raisins or ripe banana.
- Don't over-do your intake of sweet fruit juices. Use smaller amounts and dilute with water or vegetable juice.
- Choose sweet snacks less often.
- If you choose to use foods sweetened with sugar alternatives, make certain they do not have added fats to improve the taste and texture.

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