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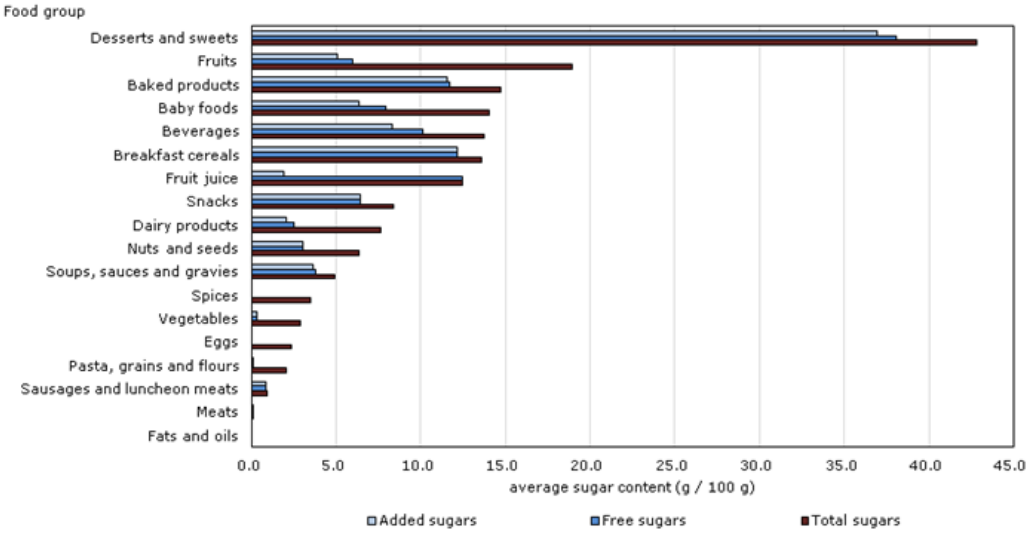
Sugar Is a Concern for Your Health – Part 1

Sugar is present in multiple food groups in varying quantities, and to our surprise, it is also present in items that are not sweet to our taste, such as breads, spice mixes, soups, and more (Government of Canada, 2020). Here, it is important to distinguish between added sugars versus naturally occurring sugars. To clarify, in this article series, we will be discussing the former and its effects on our health and the environment.

Figure 2
Estimated added, free and total sugar content (g / 100 g) of food groups in Canada



Source: Author's compilation based on the 2015 Canadian Community Health Survey - Nutrition content.

So…What *Is* Sugar?

In the scientific literature, the word "sugar" is a broad term used to describe any sweet-tasting and soluble molecule that can be added to or occurs naturally in our food and that provides living organisms with energy. The proper scientific term for sugar is "carbohydrate", and different types exist:

• Glucose	• Fructose	• Galactose
• Maltose	• Sucrose	• Lactose
• Starch	• Glycogen	• Fiber

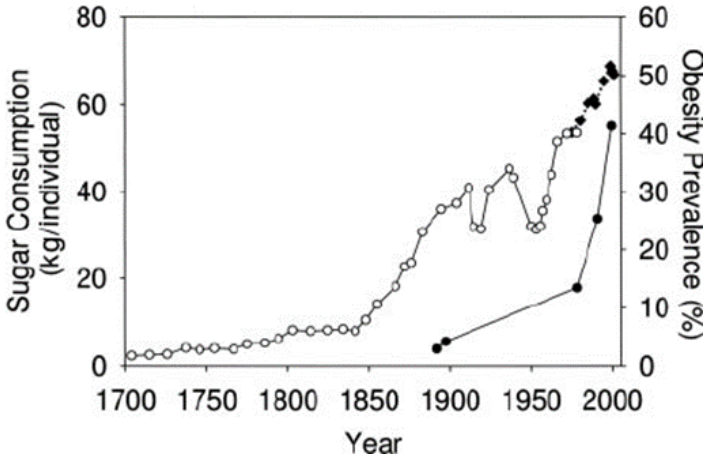
The first two columns are called "simple sugars" because they are simple molecules, whereas the third column represents "complex carbohydrates" which are complex chains of sugar molecules. If you are familiar with nutrition science or have encountered diet culture messaging, chances are that these terms sound familiar, and at this point, you may even recall that carbohydrates often get a bad reputation. There is a good reason for this, but a lot of the claims out there are inflated, false, and even hazardous to our mental and physical well-being.

A Brief History of Sugar

The first time that sugar was domesticated was in New Guinea where the indigenous people consumed it by chewing on sugar canes (*History of Sugar: Making Life Sweeter Since 8000 BCE*, n.d.). Around the same time, sugar canes were being cultivated in India and China, and these practices slowly spread to other regions of the world thanks to sea traders. In 350 CE, sugar was first crystallized in India, and in fact, multiple theories indicate that the word "sugar" was then coined – a term derived from Sanskrit that loosely means "crystal, candied sand".

After sugar cane cultivation spread to various Islamic and European countries, sugar became a popular commodity, sometimes even passing as a luxury back when sugar production was a tedious task. However, as manufacturing techniques improved, sugar became more readily available, and from here on, modern innovations led to the creation of sweeteners like high-fructose corn syrup, beet sugar, and much more.

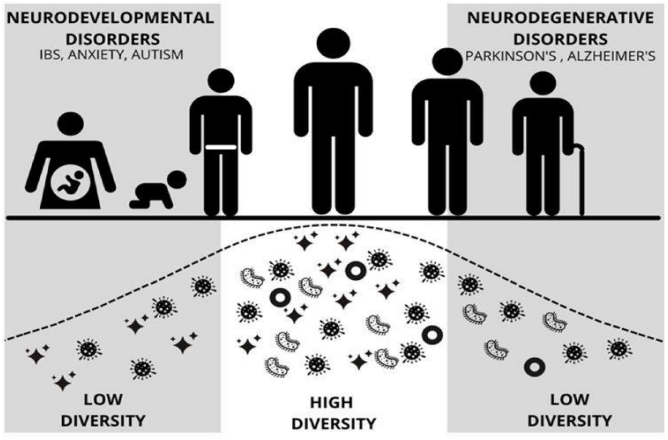
Today, sugar is cheap and present in nearly all of our foods, making its consumption all too easy. Although the data are not available for Canada, a series of health surveys conducted in the United States do a good job at revealing the increasing rates of sugar consumptions over the last couple of decades (see graph below).



What Sugar Does in Your Body

Before we begin, it is important to establish that sugar is important, and that carbohydrates are not bad. Although your body can extract energy from other nutrients such as fats and proteins, carbohydrates make up a quick and reliable source of energy for your cells. Energy aside, carbohydrates also provide you with additional health benefits that you would not enjoy with fats and proteins alone. For example, fibre is a vital complex carbohydrate that is digested by your gut microbiome (i.e., the bacteria living in your digestive system) and allows it to produce molecules that are beneficial for our health such as short-chain fatty acids (Cronin et al., 2021; Silva et al., 2020). Additionally, fibre expands the diversity of our gut bacteria, which is crucial for our overall health.

This being said, the current concern pertains to added sugars, which involves any sweetener that does not naturally occur in foods.



In small amounts, added sugars consist of a great way to enjoy some of our favourite foods; however, in large amounts, they can wreak havoc on the body. First, added sugars add to your daily caloric intake and a prolonged overconsumption can lead to weight gain and even obesity (Bentley et al.,

2020). Second, excess sugar causes an elevated number of triglycerides in your body, a type of fat that is associated with the risk of cardiovascular disease (Stanhope et al., 2011). Third, sugar can lead to tooth decay and cavities (Sanz et al., 2013). Other than these common consequences, added sugars have also been linked with:

- An increased risk of diabetes due to insulin resistance (Meng et al., 2021),
- Inflammation in the gut and the brain (Jamar et al., 2021),
- Depression symptoms (Hu et al., 2019) and,
- Accelerated aging (Gusarov & Nudlev, 2018).

Current Recommendations

At the moment, Health Canada does not have a quantitative suggestion for how much added sugars one should be eating per day; however, the general recommendation is to select foods with "little to no added sugars" (The Canadian Sugar Institute, n.d.). The World Health Organization, on the other hand, suggests that added sugars should only represent 10% of your daily caloric intake (World Health Organization, n.d.). This means that if you consume 2000 calories per day, only 200 of the calories should come from added sugars.

These are great guidelines to follow; however, for the average individual, calculating daily sugar intake is rendered difficult since it requires a lot of research, meticulous calculations, and more importantly, a lot of time. Thus, it is best to rely on general rules. Below are a few tips to help you get started:

- Reduce your consumption of processed sweet foods and favor other flavours. This will not only help you consume less sugar, but it will also condition you to lower your craving for sweets.
- Start inspecting food labels and read the ingredients list to see if you can identify any added sugars.
- To satisfy a sweet tooth, opt for fruits, or foods sweetened with fruits.
- Avoid introducing drastic changes into your diet, and instead, make gradual modifications. For example, instead of consuming two cans of soda per day, reduce to one and a half. As you get comfortable with the change, go further until you achieve your goal.

In the next article, we will take a deeper look at the sugar industry and how sugar production affects the environment, and ultimately, you.

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