

# Sugar, the Sweet Poison Fueling an Epidemic

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## Key points:

- Introduction to Sugar as an Epidemic
- What really happens when you eat sugar
- Should fruits and honey be also avoided

## Introduction

Sugar, the silent killer, right in front of our eyes yet still ignored. It is present in nearly every item on the shelves of our supermarkets, its impact slow and insidious, deeply woven into our lives. From obesity and diabetes to heart disease and neurodegenerative disorders, sugar is at the core of a global epidemic claiming millions of lives. And the irony? These deaths are labeled as “natural causes.” But there is nothing natural about the modern, highly processed sugar that has caught the world in its web.

If it's such a big killer, how did we, as a society, allow it to become a daily staple? To answer that, try looking at how big corporations put profit first and health second, how food regulatory authorities and investigative bodies can be influenced, but the truth cannot be hidden forever. Unfortunately, we, as a society, have become numb to such realities. So although sugar is now fueling a global health crisis that rival's pandemics of the past, we still allow it to reach our children under the pretense of not living “too strictly” and “enjoying life”, ironically, the same argument is used by drug addicts.

It's not all the common man's fault. In a society where nearly everything on the market is bad for you, people eventually stop caring which product is worse or which ones to avoid. Actually, not everything is bad; it's mostly the processed food. But then again, everything

is processed these days with sugar as a necessary ingredient? The solution, though simple, requires decisive action and a simple decision, the decision to want better for yourself and your family. After that, a gradual process begins, leading to better choices regarding life and health. This here is yet another attempt to expose sugar for what it truly is, hoping that people around the world will find the courage to fight this pandemic, for themselves and for their families.

## Eating Sugar, What Really Happens

Blood sugar fluctuations, increased stress and inflammation, neurotransmitter imbalances, weakened immunity, heightened hunger, and disruptions in the gut micro biome, not to mention the numerous heart diseases that stem from it. Consuming too much sugar can lead to spikes and crashes in blood sugar levels, which result in less energy, depression, and so on. Sugar hijacks the brain's reward system, flooding it with dopamine, almost like addictive drugs. Over time, this leads to dopamine resistance, making it harder to feel pleasure from real achievements. Instead of reinforcing discipline and effort, the brain craves easy dopamine from sugar, killing motivation and weakening willpower. As dopamine receptors downregulate, natural rewards like productivity and long-term success feel dull, while sugar-fueled cravings take over. This rewiring fuels procrastination and fatigue, bringing about a reliance on instant gratification, robbing people of their ambition and drive.

Sugar isn't just damaging health; it's destroying motivation at its core.

A multinational study on adults found that regularly eating processed high-sugar foods was linked to a higher risk of depressive symptoms across participating countries. Its excessive intake is associated with an increased risk of obesity, type 2 diabetes, and hypertension. It also inhibits the function of the hypothalamic-pituitary-adrenal (HPA) axis, a crucial part of the neuroendocrine system, leading to stress and metabolic disorders such as, yes, obesity and diabetes. These conditions contribute to oxidative stress and inflammation, thereby leading to depression.<sup>1</sup>

Coming to heart disease and the leading culprit behind it, sugar, fueling chronic inflammation, high blood pressure, and arterial damage. Its excess intake leads to insulin resistance, causing the body to store more fat, which surrounds vital organs and increases cardiovascular risk. It raises triglycerides, lowers beneficial HDL cholesterol, promotes the buildup of plaque in arteries, and increases the chances of heart attacks and strokes. It triggers oxidative stress and inflammation, which further weaken blood vessels.

An article investigated how dietary components influence the loss of protective intestinal Th17 cells, focusing on the role of high-fat diets and sugar content. Experimental findings indicated the presence of an inhibitory component, sugar. Sugar intake was linked to reducing segmented filamentous bacteria (SFB) and Th17 cells. A sugar-free high-fat diet was subsequently used to confirm the harmful effects of sugar.

Examination of a published human personalized diet-micro biome dataset (Johnson et al., 2019) revealed that increased sugar consumption was associated with a decrease in the relative abundance of Th17 cell-inducing microbes in human volunteers. SFB-induced Th17 cells are both necessary and sufficient to protect against excessive lipid accumulation and obesity during the early stages of high-fat diet by preventing

excessive intestinal lipid absorption through the suppression of the fatty acid transporter CD36 in the intestinal epithelium. Further investigation found that the actual cause of the loss of protective Th17 immunity and intestinal SFB levels was dietary sugar (at least 10% sucrose or malt dextrin), rather than high-fat content or low fiber. Findings also suggested that sugar-induced changes in the host-microbe relationship and the loss of protective Th17 immunity set the stage for high upper gut lipid absorption in the context of an HFD, accelerating the development of obesity associated metabolic dysfunction. The combined effect of dietary sugar and fat in disrupting the intricate balance between commensal bacteria, intestinal immunity, and metabolism in mice was also studied.<sup>2</sup>

Another emerging research highlights the strong connection between excessive sugar consumption and neurodegenerative diseases, particularly Alzheimer's disease (AD), now also referred to as "Type 3 Diabetes." Insulin resistance in the brain disrupts neuronal energy balance, impairs cognitive function, and fosters the accumulation of toxic beta-amyloid plaques and tau protein tangles, hallmarks of AD. Furthermore, insulin dysfunction, as mentioned previously, contributes to oxidative stress, neuroinflammation, and mitochondrial impairment, creating a vicious cycle of brain degeneration. Studies suggest that the same metabolic imbalances underlying Type 2 Diabetes, such as insulin resistance, advanced glycation end products (AGEs), and chronic inflammation, also play a critical role in Alzheimer's pathogenesis.<sup>3</sup> Similarly many other brain diseases are also linked to sugar.

Sugar is also a significant risk factor for coronary heart disease (CHD). Research indicates that high consumption of total glucose equivalents (TGE), which include glucose from added sugars and starches, increases CHD risk by promoting insulin resistance, inflammation, and lipid imbalances. A prospective cohort study found that individuals with the highest intake of TGE had a 31% higher risk of CHD compared to those with the lowest intake. Additionally, fructose

from added sugars and fruit juices was also linked to elevated CHD risk, whereas fructose from whole fruits and vegetables showed no such association. The study emphasizes that replacing added sugars and refined carbohydrates with healthy fats or whole food sources can significantly reduce CHD risk.<sup>4</sup>

Sugar also fuels a vicious cycle of hunger, starting with a rapid blood glucose spike, followed by a crash that leaves the body desperate for more, resulting in never-ending cravings. It disrupts Leptin, the hormone that tells your brain when you're full, dulling its response, while simultaneously increasing ghrelin, the hunger hormone, keeping appetite unnaturally high. This imbalance leads to overeating, obesity, and a chain of disasters. By altering the gut micro biome, it feeds harmful bacteria that drive cravings. It is no exaggeration to say that sugar is the root of at least 70-80% of modern diseases, and that figure is backed up with actual data. Sugar isn't just damaging health, it is keeping people trapped in relentless hunger and addiction.

### **Should Honey and Fruits be also be avoided**

What About the Sugars God gave us? Let's take honey and fruits as the example here. Honey has long been valued as a natural source of energy and nutrition. Rich in carbohydrates, particularly fructose and glucose, it provides quick and sustained energy, emphasis on sustained, which makes it beneficial for athletes during endurance training and recovery. With a lower glycemic index (around 50 vs. 80 for table sugar), honey leads to a slower rise in blood sugar levels and may help regulate blood sugar due to its higher fructose content, antioxidants, vitamins, and minerals. Some studies suggest it could improve insulin sensitivity in individuals with type 2 diabetes. Additionally, honey supports immune function, aids in wound healing, and promotes cardiovascular health by lowering blood pressure, LDL cholesterol, and total cholesterol while increasing HDL cholesterol. Its antimicrobial properties make it effective against

various bacteria, including antibiotic-resistant strains. Plus, it never goes bad. What other super food can you think of that doesn't even go bad? To experience the magical effects of honey, try drinking a glass of water with a spoon of honey mixed in it every morning.

Fruits, while being highly nutritious, provide essential vitamins, minerals, fiber, and antioxidants, making them a vital part of a healthy diet. Unlike processed sugar, which is stripped of nutrients and quickly spikes blood sugar, fruits contain natural sugars, fructose and glucose, that are absorbed more slowly due to their fiber content. This fiber helps regulate blood sugar, improves digestion, and also promotes gut health. Additionally, fruits are rich in polyphenols and other bioactive compounds that have anti-inflammatory and disease-fighting properties. The combination of fiber, water, and essential nutrients makes them come close to a super food.

### **Conclusion, the choice is ours**

The real danger lies in processed sugar and the bulk of processed foods that dominate our diets. Sugar (industrially processed sugar) is a silent epidemic, impacting millions worldwide, but unlike past pandemics, this one is within our control. The solution is simple: start small, reduce processed sugar, and prioritize whole, nutrient-rich foods. In the end, the choice is ours, health or habit?

### **References**

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