



## **Sugar**

Authors: Franziska Buttgerit  
Submitted: 18. April 2021  
Published: 3. May 2021  
Volume: 8  
Issue: 3  
Affiliation: Theater Freiburg, Germany  
Languages: English  
Keywords: Sugar, Health, Insulin, Chocolate, Immune System  
Categories: Medicine, News and Views  
DOI: 10.17160/josha.8.4.751

### **Abstract:**

Sugar has many negative effects on the body, as it has the ability to make one limp, listless, tired, depressed, and sick. However, sugar is also of vital importance to the human organism. Not all sugar is created equal. For instance, table sugar is harmful, while natural sugars — such as those found in fruits, vegetables, or “whole” foods — are healthy.

# **JOSHA**

[josha.org](http://josha.org)

**Journal of Science,  
Humanities and Arts**

JOSHA is a service that helps scholars, researchers, and students discover, use, and build upon a wide range of content



# Sugar

Franziska Buttgerit



## Abstract

Sugar has many negative effects on the body, as it has the ability to make one limp, listless, tired, depressed, and sick. However, sugar is also of vital importance to the human organism. Not all sugar is created equal. For instance, table sugar is harmful, while natural sugars — such as those found in fruits, vegetables, or “whole” foods — are healthy.



Sugar can trigger the following symptoms or be involved in their development: inexplicable fatigue, lack of drive and energy, depression, anxiety, hair loss, skin diseases, fungal attack, menstrual cramps, nervousness, sleep disorders, poor concentration, mental confusion, and stomach/intestinal problems such as bloating, flatulence, diarrhea, and constipation.

## Reasons for consuming sugar

There are several reasons one may want to consume sugar. First of all, breast milk is quite sweet, and secondly, sugar is a popular tool used to reward children for good behavior, and as a result it can often maintain peace at home.

For reasons such as these, we get used to sugar from an early age, even though the body does not need table sugar physiologically. The sugar component glucose, which the body needs for the muscles and the brain, can easily be obtained from fruits, vegetables, rice, bread, potatoes, and meat.

## First, the good news - sugar is a remedy

Some doctors use it to treat wounds - the quick healing results are said to be overwhelming, especially for burns. Additionally, where antibiotics sometimes fail, sugar can be used as an excellent wound healer, and it even has the potential to suppress infection.

That is why it is also used in high doses (as much as 50%) for the production of fruit preserves such as jam. The sugar preserves the food, as unwanted microorganisms such as bacteria or mold spores no longer have the slightest chance of survival.



## What is the recommended daily maximum for sugar consumption?

It depends on how much you move. Those who are regularly and intensely physically active can, of course, eat many more carbohydrates — which, in turn, means more sugar — than those who are less active. This is how you build up muscle memory, and sugar can be used as a direct source of energy. For the work of the brain, for the red blood cells, and for the nerve cells — that is, the organs and systems that are dependent on blood sugar for a short time in order to function — about five (5) grams of glucose per hour are needed, which adds up to 120 grams per day.

However, that does not mean that you can eat 120 grams of dextrose every day, because these 120 grams of glucose, which are necessary for the maintenance of the body, can also be produced by the body itself. Protein is a common source of sugar, for example. In the end, it is about the total amount of energy consumption (calories). A maximum of 10% of one's calories should come from sugar. For instance, take a person who consumes 2,000 calories per day. 10% of this total equates to 200 calories. One (1) gram of carbohydrates contains about 4 calories, so that would be a maximum of 50 grams of sugar per day. However, that is the absolute upper limit for someone who is rather sedentary.

Finally, this calculation pertains to dextrose, because unlike table sugar (sucrose), it is found in the blood, and thus can be produced by the body itself.



## What happens in the body when you eat too much sugar?

### Insulin release:

Sugar — and with it all isolated carbohydrates, including flour and starches, such as mondamine — triggers the production of a large amount of insulin when it arrives in the bloodstream, which is where sugar goes just a few short minutes after it is consumed.

Insulin is a hormone of the pancreas, the main task (hormone) of which is to remove sugar from the blood and distribute it to all the cells/organs of the body, which then obtain their energy from it.



If sweets, i.e. sugar, are consumed again and again, this leads to a chronically increased insulin level. On the one hand, this has an inflammatory effect on the body and thus accelerates the development of many chronic diseases.

On the other hand, so-called hyperinsulinemia in the body leads to a lack of insulin in the brain, which can lead to forgetfulness and even more severely, Alzheimer's disease.

Insulin, however, also activates the formation of a certain substance, which then creates serotonin in the brain. Serotonin is sometimes also referred to as the happiness hormone, as it can conjure up cheerful serenity and even euphoric impulses.

It is common for people with depression or anxiety to suffer from a permanent serotonin deficiency. Incidentally, cocoa contains another substance similar to serotonin, and it can even trigger feelings of infatuation. This is why chocolate, as a combination of sugar and cocoa, leads to the best "drug trips".



## Happy through sugar!



Sugar is not only effective externally, but also internally. The idea that sugar provides an immediate burst of energy is well known throughout the world. With the help of the entertainment industry and mass media campaigns, nearly everyone nowadays consumes some form of sugar before, during, and/or after any strenuous activity, be it mental or physical. Chocolate bars, energy drinks, and the like have only gained in popularity in recent years.

You can feel the rush immediately after consuming sugar. A feeling of lightness and well-being takes over as your ability to concentrate increases and nervousness disappears.

You feel temporarily strong, productive and maybe even a little happier than before!



## World Health Organization recommendations

The WHO issued new recommendations on sugar consumption in March 2015. Children and adults should get less than 10% of their energy intake from sugar every day. Anyone who manages to reduce their sugar consumption to less than five percent a day, i.e. 25 grams or 6 teaspoons of sugar, supports their health in the long term.

## What chocolate triggers in the body



It is not so easy, unfortunately, to reduce sugar consumption if you are used to it, but why is that? In the instance of chocolate, our muscles and brain get an extra boost of energy. In addition, the brain's ability to absorb the protein tryptophan is enhanced, which is then converted in the brain into the hormone serotonin, which puts you in a good mood.





## Bowel problems

According to nutritionists, intestinal problems are the most common issue associated with excess sugar consumption, because too much sugar only serves to feed the bad, non-physiological intestinal bacteria. This could lead to an imbalance between good and bad bacteria in the gut, which can then result in a permeability of the intestinal wall, whereby substances from the intestine get into the bloodstream, "which actually have no place there". This fuels the subliminal inflammatory reactions in the body.



## Weakened Immune System

There are sugar substances that come from intestinal bacteria and go directly through these open areas in the intestinal wall, so-called lipopolysaccharides. These irritate the immune system, cause it to overreact. Sugar also plays a role in



some blood cells. If it is constantly present in high concentrations in the blood, the energy metabolism can no longer function as well.

The subliminal inflammatory reactions discussed above also have far-reaching consequences. However, if something is added from the outside, like the novel coronavirus now, for example, then this disease could become more severe than it might have been if there hadn't already been an inflammation level in the body.

Too much sugar causes many symptoms, but it is still not necessary to completely avoid sweet foods, says nutritionist Uwe Schröder. Sugar shouldn't be demonized, because it is simply a matter of portion control. "If I use sugar as muscle fuel, it's necessary. But if I am one of the 60 percent who do not move as much as the World Health Organization recommends as a minimum, then regular sugar consumption can increase the risk in many areas."

## About the Author



Franziska Buttgerit (Mezzosopranistin)

Franziska Buttgerit erhielt 1995 ihren ersten Blockflötenunterricht an der Jugendmusikschule Dreisamtal.

2000 wechselte sie in die Blockflötenklasse von Frau Prof. Agnes Dorwarth.

Von 2000-2010 gewann sie diverse Preise bei verschiedenen Wettbewerben, u.a dem Flötenwettbewerb in Bruchsal und „Jugend musiziert“ in verschiedenen Kategorien: Solo, Ensemble

und Alte Musik.

Darunter 2007 den 1. Bundespreis in der Kategorie Alte Musik sowie den Sonderpreis der Manfred Vetter-Stiftung als auch den 2. Preis für Alte Musik beim Händelwettbewerb in Karlsruhe.

Zudem nahm sie von 1998-2010 Querflötenunterricht bei Constanze von Bauszner und Susanne Hopfer.

2005 begann Franziska Buttgerit im Kinderchor als Ensemblemitglied des Stadttheaters Freiburg zu singen, was sie auch zu vielen kleinen solistischen Rollen in diversen Kinderoperen brachte.

Den ersten Gesangsunterricht erhielt sie 2007 bei Frau Prof. Ingeborg Möller und Lini Gong.



Es folgten weitere Wettbewerbe und Preise im Fach Gesang, u. a. der 1. Bundespreis in der Kategorie Kunstlied Duo beim Wettbewerb „Jugend musiziert“ und der WESPE Sonderpreis des Bundesministeriums für Familie, Senioren, Frauen und Jugend für die „beste Interpretation eines Werkes einer Komponistin“.

Diese Preise wiederum brachten Franziska nach Lübeck zu Meisterkursen bei Prof. Christiane Hampe und Michael Gehrke.

Seit 2010 ist sie Mitglied des Extrachores des Theater Freiburg und 1. Vorstand desselben seit 2017. 2015 begann sie ihr Studium für Gesang bei Prof. Christiane Libor an der Musikhochschule Schloss Gottesaue in Karlsruhe.

Bis heute folgen Kooperationen mit der Hochschule und dem Stadttheater Freiburg, was ihr u. a. zu einer kleinen Rolle in den Vorstellungen sowie der gleichnamigen DVD-Produktion „Cendrillon“ von Jules Massenet verhalf.

Neben ihren Auftritten auf der Musiktheaterbühne widmet sich Franziska Buttgerit leidenschaftlich dem Oratorien- und Konzertrepertoire, womit sie regelmäßig als Solistin auftritt.