# S U G AR the special report 



## MIRA DESSY, NE THE INGREDIENT GURU

# Sugar The Special Report 

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## INTRODUCTION

Sugar is a very tricky ingredient in our food supply. Manufacturers want to include it because we are predisposed to like sweet foods. Unfortunately, this often means that sugars are added to things that don't need them, leaving us with a higher sugar intake and, often, a misguided palate when it comes to understanding what our food should taste like.

Sugar is highly addictive. Studies show that when we try to reduce sugar consumption we can go into withdrawal, similar to that of an addict withdrawing from drugs. Studies also show us that the more sweetened foods we consume, the higher our "set-point" is when it comes to thinking that things taste sweet. Common examples of what I call sugar adulteration include adding sugar to things that are already sweet and really don't need added sugar, like applesauce. Or manufacturers add sugar to things that don't really require it. Examples include savory foods such as ketchup or crackers.

Our love affair with sugar is revealed in the telling statistic that close to $70 \%$ of America is overweight, with fully one-third of the population categorized as obese. This sobering fact is highlighted by looking at consumption levels over the last 90 years.

In 1822 the average American consumed approximately 45 grams of sugar every five days, or just slightly less than the amount of sugar 14 ounces of Coca-cola. Fast forward to 2012 and Americans consumed 756 grams of sugar every five days, the equivalent of nearly 3,000 calories, which adds up to 130 pounds of sugar a year. As we have grown as a country (in more ways than one), sugar has continued to play an increasingly more prominent role in our food.

Unfortunately, it's not just sugar that's killing us but scientifically manufactured "sugar" as well. The only way to truly be aware of what we're eating when it comes to added sugars is to read the label.

There are two important sources of information when it comes to identifying added sugars in your food. The upper part of the nutrition label is called nutrition facts. This is where the calories, fat, and other nutrition items are located. Remember that when making your calculations you need to keep in mind the number at the very top, the serving size. If you eat more than a single serving (often easy to do) you'll need to recalculate all of the numbers on the panel to get the correct number. Fortunately, sugar grams are listed as part of the nutrition facts. Obviously, you want to choose items that have less grams of sugar for whichever product you are purchasing.

But identifying how much sugar is in something does not identify how many sugars or what they are. One trick that manufacturers use to manipulate the ingredient list is using multiple sources of sugars. Because most of us know that the higher up on the ingredient list the more of that ingredient is in the package, manufacturers don't want any form of sugar as the first ingredient. So they split the sugars up by using a little fructose here, corn syrup there, barley malt extract at the end. By the time you count up all the different types of sugars it can be much more than you realize.

When looking at the ingredients list be aware that certain items contain natural sugars, fruit and dairy being the primary ones, and we are not focusing on those but rather on added sugars.

Sugar, honey, maple syrup, agave, brown rice syrup, molasses, and barley malt, corn syrup, high fructose corn syrup and fruit juice concentrates are all forms of sugar that are fairly simple to identify by name. Sugar itself is processed into different forms from the lowest process, sucanat (which stands for SUgar CAne NATural) to the most highly processed white, or table, sugar. In between are other processed sugars such as turbinado, muscovado, demerara, evaporated cane juice crystals, and date sugar. When identifying sugars on the label it's important to know that in the United States the majority of brown sugar is nothing more than highly refined white sugar with a little molasses added for color and moisture.

As a side note, if you have a family member who is vegetarian or a vegan, be aware that many of them will not eat white sugar as it is typically processed through bone char.

## HIGH FRUCTOSE SWEETENERS

Excess fructose is overwhelming to the system. It has been linked to rising rates of diabetes, insulin-resistance, and elevated cholesterol and triglycerides. This sweetener can only be processed by the liver making it an unhealthy choice on a variety of levels; high amounts of fructose have been definitively linked to a condition known as Non-Alcoholic Fatty Liver Disease. Fructose has also been linked to an increased risk of incidence of gout and that it may cause overeating as it does not appropriately impact satiety, or fullness, sensors in the brain. It should be avoided.

## High Fructose Corn Syrup



Most people are well aware of the controversy regarding high fructose corn syrup. In addition to being made from genetically modified corn and often contaminated with arsenic, HFCS is approximately $55 \%$ fructose by volume. There are a number of different forms of fructose that you need to be aware of.

## Agave Nectar



Agave nectar has become highly popular both at the grocery store and in an increasing variety of food products such as energy drinks, sweetened teas, and protein bars. Part of its popularity lies in the fact that it is a low glycemic sweetener, meaning it doesn't impact blood sugar very quickly. While it may be low glycemic, it's actually high in fructose, providing approximately 70\% fructose by volume, making this sweetener not a healthy choice.

## Crystalline Fructose



This deceptively named sweetener appears to be somewhat innocuous, crystals of fructose. The truth is it's not as benign as the name would have you believe. The simplified explanation for this sweetener is that it is essentially dehydrated high fructose corn syrup which can be as much as $90 \%$ fructose. However because it is processed differently it is allowed to appear on the label under a different name. Found frequently in sports drinks and self-serve frozen yogurt, among other food items, it should be avoided at all costs.


## IDENTIFYING SUGARS

In most cases the sugar molecule is identified by the ending -ose. Here's what you need to know about different forms of sugar:

## Glucose

Naturally occurring in plants and fruits, our bodies can burn glucose as energy or convert it into glycogen (essentially fuel for the liver and muscles).

## Fructose

Fruit sugar, this comes primarily from fruit but can also be found in cane sugar, corn, and honey.

## Sucrose

Found primarily in sugar cane and sugar beets, it is also available from coconut palms, date palms, sorghum, and sugar maples.

## Lactose

This is the sugar found in milk. The presence of lactose explains why something like one cup of plain yogurt can have 9 grams of sugar. It's not an added sugar, it simply exists as part of the milk.

Lactose intolerance is the inability to break down the milk to release this lactose sugar.

## NON-CALORIC SWEETENERS

## Sugar Alcohol

Sugar alcohols, which do not have as much effect on blood sugar and insulin levels, primarily end in -ol. Examples would be sorbitol, mannitol, erythritol, xylitol, and others. Isomalt is one sugar alcohol that does not follow that rule.

The newest sugar substitute to hit the market is allulose. Unfortunately with the name ending in -ose, many people may be fooled into believing that this is a full-bodied sugar. Similar to fructose or sucrose. But it's not entirely true. The FDA released new guidelines with the director of the FDA's Center For Food Safety and Applied Nutrition, Susan Mayne, Ph.D., saying, "The latest data suggests that allulose is different from other sugars in that it is not metabolized by the human body in the same way as table sugar. It has fewer calories, produces only negligible increases in blood glucose or insulin levels, and does not promote dental decay. As such, we've issued guidance
today stating that we intend to exercise enforcement discretion to allow allulose to be excluded from the total and added sugars declarations on the Nutrition Facts and Supplement Facts labels when allulose is used as an ingredient. Allulose will still count towards the caloric value of the food on the label - but the guidance document issued today states our intent to exercise enforcement discretion to allow the use of a revised, lower calorie count. As with other ingredients, allulose must still be declared in the ingredient list. This is the first time the FDA has stated its intent to allow a sugar to not be included as part of the total or added sugars declarations on labels, a reflection of our flexible and science-based approach to food product labeling. This guidance is one of several that the FDA has already released or will soon be releasing to assist manufacturers in complying with new labeling requirements."

In other words, the total sugar and added sugar counts will no longer be valid if allulose is on the label.

While allulose can be a natural sweetener and does occur in foods such as raisins, figs, molasses, and wheat, it may also be created in a laboratory.

Before you think that "data suggests that allulose is different...not metabolized by the human body" is a benign statement I'd like to remind you about the hype surrounding olestra when it first came out.

Created as a non-metabolized fat blocking substance, olestra wound up causing a whole host of health issues, including a condition referred to as "anal leakage." The words "not metabolized by the human body" should be a warning not an invitation.

Additionally, there are people who seem to not be able to eat allulose due to bloating, gas, and digestive upset. Because it has not been extensively tested and the results are not clear, allulose may not be a good choice for health.

I am not strictly opposed to sugar alcohols (unlike artificial sweeteners). However, because sugar alcohols are highly processed and can have a laxative effect if ingested in excess (or if you have a sensitive system), I feel that they should be used with caution and in strict moderation.

If you are going to use sugar alcohols in your diet, I recommend either xylitol or erythritol as long as both are properly sourced to be non-GMO.

## Artificial Sweeteners



Many people turn to artificial sweeteners as a means of weight control. The fact is that artificial sweeteners have been shown to potentially increase weight rather than decreasing it. In addition to using artificial sweeteners for weight control, those with some form of blood sugar instability often tend to rely on them to sweeten foods or beverages.

The following list is both the common and chemical names for those artificial sweeteners currently allowed for use in food.
-acesulfame potassium
-advantame
-alitame
-aspartame
-cyclamate
-equal
-neotame
-nutrasweet
-nutrinova
-saccharine
-splenda
-sucralose
-sweet-n-low
-twinsweet

These zero or low-calorie sweeteners are not a healthy choice. Although they do not have a lot of calories many of them are known to be carcinogenic, meaning they can cause cancer. They also have the potential for other negative health effects such as migraines, insomnia, etc.

## Plant-Based Sweeteners



There are other low-to-no calorie sweeteners which are purely plant based. The first of these is stevia. Made from the Stevia rebaudiana plant, it is 300 times sweeter than sugar and has zero calories. Because it does not raise blood sugar levels, stevia is a popular choice. Unfortunately, there are also now several chemical versions of stevia available. The two biggest are purevia and truvia. These are not stevia, instead they are laboratory created versions of stevia.

Both purevia and truvia should be considered an artificial sweetener and avoided as much as possible.

One potential issue with stevia is that for some people it has an unpleasant aftertaste. To compensate for this producers tend to combine the stevia with another sweetener in order to cut that unpalatable flavor. The most common additive is dextrose which is made from corn. Dextrose is an ingredient which tends to be genetically modified, and therefore not a good choice. And for those who can tolerate the taste of stevia there's still a downside. In the gut stevia is converted to steviol which has been shown to change DNA.

The other plant based sweetener currently on the market is luo han guo, or monk fruit sugar. With just 2 calories per teaspoon it's very popular and appears in a wide variety of products. Sourced from the Asian gourd, Siraitia grosvenorii, monk fruit does not appear to have the same DNA altering possibilities as stevia. For some people, however, monk fruit can cause gas, bloating, or digestive upset. One new monk fruit-based sweetener blend is Lakanto, made by mixing the monk fruit with non-GMO erythritol. For those with a sensitive system, this combination can increase the potential for digestive issues.

## SUGAR METABOLISM

Our bodies are not designed to deal with an excessive amount of sugar in our diet. When we eat sugar the body has two only options. Either burn it for energy (as a cheap, quick fuel source) or save it for later (store it in adipose or fatty tissue). The higher your sugar consumption, the more fat you can accumulate as your body tries to efficiently store it for future need. When we consume sugar it triggers the pancreas to release insulin to deal with excess sugar. Insulin regulates blood sugar levels; the higher the level of blood sugar, the more insulin is released.

Insulin then helps to store the excess glucose, if necessary in fat tissues. The more often this happens, the more likely it is to develop insulin resistance and the body does not respond as well to insulin. It also means that the body can start to shift sugar directly to fat storage, bypassing it's use as an energy source.

Reducing sugar and re-stabilizing blood sugar levels is critical to avoid a continuing downward spiral of insulin spike and resistance.


Excess sugar consumption can lead to insulin resistance, metabolic syndrome, and diabetes. When managing blood sugar for those who have dysregulation issues there are several guidelines to follow:
-choose natural, low process sugars and consume these only in moderation
-if you are going to consume any form of sugar spread it out throughout the day rather than "saving" it all for a big dessert or other treat
-when having sugar in the diet it is important to make sure that you are also getting some protein to help balance the effect of the sugars in your system
-eating smaller meals more often, every $21 / 2-3$ hours is often helpful for many people to keep a more stable blood sugar
-get protein at every meal
-reduce simple carbohydrates, white flour products, white pasta, white rice, these are easily broken down by the body to sugars
-reduce alcohol consumption, this is easily converted by the body
-eat foods lower on the glycemic index*
-if you are overweight losing weight can help with blood sugar management
-staying physically active is important
-don't ignore your blood sugar, if necessary work with a doctor or nutrition professional to help you properly manage your blood sugar levels**
*The Glycemic Index is how much sugar foods have in them.

The more processed a food is the higher its glycemic load, or impact on blood sugar. As an example:
-apples - glycemic index 38 (low)
-applesauce (unsweetened) - glycemic index 53 (medium)
**Typical blood sugar levels for non-diabetics are:
-fasting (before a meal) - less than $83 \mathrm{mg} / \mathrm{dl}$-post-prandial (after a meal) less than $100 \mathrm{mg} / \mathrm{dl} 1-2$ hours after eating

## SUBSTITUTING SUGARS

When using processed sugar in the home there can be more substitutions which are reasonable choices. Be aware that they are still sugar and still provide excess calories. It is a good idea to eat less of these foods and to reduce their use in those foods you make at home.

## Coconut Sugar



Also referred to as coconut nectar, or coconut palm sugar, this natural sweetener is made from the nectar, or sap, of the coconut palm tree. It looks like brown sugar and has a lower glycemic index than table sugar. This sweetener also has some fiber, known as inulin, in it which makes it a good choice for supporting gut health, in moderation of course. The substitution is $1-1$. Some people find that the flavor of coconut sugar is less sweet than table sugar. However, this doesn't mean that you should add more.

## Sugar



For most baking substitute SUCANAT (SUgar CAne NATural, the lowest process sugar you can get) unless making something more delicate like scones or lemon cookies, etc. The substitution is one for one, ie, if the recipe calls for one cup sugar use one cup sucanat. If you cannot use sucanat because the flavor will overwhelm what you are making, consider either evaporated cane juice crystals or demerara. Both are more processed than sucanat but far less processed than white sugar. They are sometimes also found as raw sugar. Again the ratio is one for one.

## Brown Sugar



Consider using either turbinado or muscovado sugar. It is possible to use sucanat with a spoonful of molasses mixed in but turbinado is moister and has less calories.

## Cinnamon Sugar



Cinnamon sugar is typically made with highly processed white sugar and cinnamon. I have found the following ratio to be a delicious alternative. Substitute a 7-1 ratio: 7 Tablespoons sucanat to 1 Tablespoon cinnamon.

## Confectioner's Sugar



Use sucanat or evaporated cane juice crystals blended in a food processor to make it very powdery. For each cup of powdered sucanat add 1 tablespoon organic cornstarch. [use organic cornstarch to avoid the genetically modified corn potentially found in conventional cornstarch to prevent caking]

## Date Sugar



Although it's called a sugar, this sweetener is actually made from dehydrated and ground up dates. Because it's made directly from dates, this sweetener has a lot of fiber. Date sugar tends to be a bit moister, making it a better substitute for brown sugar than white in a recipe. It also has a lot of nutrients which can make it a good choice. However, it is also a somewhat higher carbohydrate choice and should be used in moderation. It can be substituted 1-1 for regular sugar.

It is possible to make a syrup from raw dates and use that as a substitution for other liquid sweeteners such as honey or maple syrup. To make date syrup involves boiling 1 pound of dates in 4 cups of water and reducing the heat until it's the consistency of honey. You would then use the instructions for honey as a sugar substitute in baking.

## Honey



If you want to use honey instead of sugar in a recipe, use $3 / 4$ cup honey for each cup of sugar. Then reduce the remaining liquid by $1 / 4$ cup, add $1 / 4$ teaspoon baking soda (to help neutralize the honey) and reduce the heat by 25 degrees $F$ (honey tends to make things darker when baked, reducing the temperature will help keep it from over-browning).

## Maple Syrup



If you want to use maple syrup instead of sugar in a recipe, use $3 / 4$ cup maple syrup for each cup of sugar. Reduce the remaining liquid by 3 Tablespoons and add 1/4 teaspoon baking soda (to help neutralize the syrup).

## Artificial Sweetener



I do not recommend the use of any of the artificial sweeteners. These include Nutrasweet, Splenda, Equal and Sweet-n-Low.

## Stevia



A non-caloric sweetener. It can be extremely difficult to work within baking. The general theory is that 1 cup of sugar is replaced with 1 teaspoon stevia liquid or $1 / 2$ teaspoon stevia concentrate or 18 stevia packets. To replace the missing bulk, for every 1 cup of sugar swapped, add $1 / 3$ cup of liquid (like yogurt, unsweetened applesauce, egg whites (no yolks) fruit puree, unsweetened fruit juice or water).

## WHAT TO EAT?

At this point you may be wondering what sugars are a good choice and if you can include any in your diet. The answer is yes you can. You simply need to remember that sugar should be consumed in moderation. The good news is that it is possible to change your sugar set-point, how much sugar it takes for you to think of something as sweet. The optimal choices are lower processed sugars like coconut, sucanat, or cane juice crystals, honey or maple syrup, xylitol, erythritol, stevia, or monk fruit but in moderation. Remember, even if a sugar is "better" that doesn't make it good. Especially if you eat a lot of it.

If you're going to add more fruit to your diet in an effort to have less processed sugars remember to choose the low glycemic fruits so you're not overwhelming your body with lots of fruit sugars. The low glycemic choices include cherries, grapefruit, peaches, nectarines, pears, apples, plums, strawberries, grapes, kiwi, and blueberries.

Here are a couple of tips to help reduce the amount of sugar you are eating. Start with one tip and add others one at a time. You'll eventually find yourself eating far less sugar than you used to. Plus you'll feel better too.

Cut back on sugary drinks - this includes smoothies, energy drinks, and fruit juice

Change up your dessert - consider fresh fruit, dark chocolate, or even a few dates instead of those cookies or cake

Skip the low fat - often when making lower-fat foods, producers add more sugar to make up for the loss of mouthfeel; choose whole fat and you feel more satisfied

Read the label - lots of processed, packaged, and canned foods have added sugar

Make sure you're well-hydrated - often when we're dehydrated we may reach for sugar not realizing we're actually thirsty

Get enough protein - eating enough clean protein can help reduce sugar cravings


## RECIPES

I didn't want to leave you without just a few ideas for dessert. These are delicious treats that make it easy to still have a little something sweet without going overboard.

## Frozen Fruit Sorbet



Ingredients

- 1 pound frozen fruit (peaches, raspberries, blueberries, your choice)
- 1 can full-fat coconut milk (I prefer Native Forest organic)
- $1 / 2$ teaspoon vanilla extract


## Instructions

1. Add all ingredients into a high-speed blender and blend until fully mixed together (about 1-2 minutes)
2. Serve immediately

## Ricotta "Pudding"



Ingredients

- 1 cup full fat organic ricotta
- $1 / 2$ teaspoon lemon zest
- 1/2 teaspoon lemon juice
- $1 / 2$ teaspoon maple syrup or honey


## Instructions

1. Gently fold all ingredients together
2. Chill for 1 hour before serving

## Pumpkin Cookies



Ingredients

- 2 Cups Almond Flour
- 1/2 Cup Organic Pumpkin
- 1 Large Egg
- $1 / 2$ cup organic butter, softened
- 1 tsp Pure Vanilla Extract
- $1 / 2$ tsp Baking Powder
- $1 / 2$ tsp Pumpkin Pie Spice
- 1 tsp maple syrup


## Instructions

1. Pre-heat oven to 300
2. Add all ingredients to a mixing bowl and mix until well combined.
3. Flatten with a wet fork onto parchment paper
4. Bake 12-15 minutes

Optional: add $1 / 2$ cup Enjoy brand mini chocolate chips for a treat

## Baked Apple



Ingredients

- 1 Apple
- $1 / 2$ tsp butter
- Chopped walnuts
- Cinnamon or Cardamom


## Instructions

## 1. Core an apple

2. Put into a bowl or ramekin
3. Top with $1 / 2$ tsp butter, chopped walnuts, and a sprinkle of cinnamon or cardamom
4. Bake 350 F for 15-20 minutes until apple softens
5. Eat while warm

## Avocado Mousse



Ingredients

- 2 ripe avocados
- 1/2 cup cocoa powder
- $1 / 2$ cup coconut sugar
- 4 tablespoons full fat coconut milk
- $1 / 2$ teaspoon vanilla extract
- $1 / 2$ teaspoon sea salt


## Instructions

1. Blend all ingredients together until well combined
2. Chill for 2 hours before serving

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## ABOUT THE AUTHOR



Mira Dessy is The Ingredient Guru. A holistic nutrition professional, author, and a popular public speaker, she knows that it's not just what you eat, but what's in what you eat. Dessy is a Board Certified Holistic Health Practitioner whose mission is to educate and empower consumers.

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More books by this author:

- The Pantry Principle: How to Read the Label and Understand What's Really in Your Food
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