

Why do we crave sweets? Are there times when you absolutely crave chocolates, candies, or cakes? The average American consumes well over 20 teaspoons of added sugar on a daily basis, which adds up to an average of 142 pounds of sugar per person, per year!<sup>1</sup> That's more than two times what the USDA recommends.

Below you will find information on natural sweeteners, all of which are less processed than refined white sugar, and create fewer fluctuations in blood sugar levels. Although these sweeteners are generally safer alternatives to white sugar, they should only be used in moderation.



### Agave Nectar

Agave nectar, or agave syrup, is a natural liquid sweetener made from the juice of the agave cactus. Many diabetics use agave nectar as an alternative to refined sugars and artificial sweeteners because of its relatively low effect on blood glucose levels<sup>2</sup>. However, agave is high in fructose and has been under much scrutiny due to possible manufacturing processes which are similar to that of high fructose corn syrup. Some research suggests that fructose affects the hormone leptin, which controls your appetite and satiety. Too much fructose may result in overeating and weight gain, so it's important to consume agave nectar in reasonable moderation<sup>3</sup>.

### Barley Malt

Barley malt syrup is a thick, sticky, brown sweetener and is about half as sweet as refined white sugar. It is made from the soaking, sprouting, mashing, cooking and roasting of barley. Many consumers prefer this natural sweetener because it moves through the digestive system slower than other refined sugars<sup>4</sup>. It contains approximately 65% maltose, 30% complex carbohydrate, 3% protein. Barley malt can also come in the form of powder.

### Birch Sugar

Also referred to as xylitol, this natural sugar substitute is derived from birch tree fiber, and occurs naturally in many fruits and vegetables. There have been many reported benefits of xylitol. Research suggests that this natural sweetener prevents tooth decay, improves bone density, increases white blood cell activity, and prevents streptococcus infections<sup>5</sup>. Birch sugar is also deemed as safe for diabetics because it is not easily converted to fat<sup>6</sup>. As with most sugar alcohols, consumption may result in bloating, diarrhea, and gas.

### Birch Syrup

Birch syrup is also very low on the glycemic index and is rich in vitamins and minerals, including vitamin C, potassium, manganese, thiamine and calcium. This syrup is made from the concentrated sap of birch trees, and it takes 100 gallons of sap to make 1 gallon of syrup. Unlike maple syrup, which is composed of the disaccharide sucrose, this syrup is composed of fructose, a monosaccharide. Monosaccharides are easier to digest because they are simpler sugar units, making birch syrup a gentler choice<sup>7</sup>.

<sup>1</sup> "Cut back, way back, on sugar, says heart group." *MSNBC*. N.p., 24 Aug 2009. Web. 22 Dec 2011.

<sup>2</sup> Tourney, Anne. "Agave Nectar Benefits." *Livestrong*. N.p., 06 Mar 2011. Web. 22 Dec 2011.

<sup>3</sup> Shapiro, A., Mu, W., Roncal, C.A. Fructose-Induced Leptin Resistance Exacerbates Weight Gain in Response to Subsequent High Fat Feeding. *Amer Journ Physiol*. 2008. 295: R1370–R1375.

<sup>4</sup> "What's the Deal With: Barley Malt." *FitSugar*. N.p., 06 Aug 2008. Web. 22 Dec 2011. <<http://www.fitsugar.com/Whats-Deal-Barley-Malt-1834291>>.

<sup>5</sup> Group, Edward. "10 Health Benefits of Xylitol." *Global Healing Center*. N.p., 21 Dec 2010. Web. 22 Dec 2011.

<sup>6</sup> Kikuko A, Hidekazu A, Takashi U, Makiko F. Effects of xylitol on metabolic parameters and visceral fat accumulation. *J Clin Biochem Nutr*. 2011 July; 49(1): 1–7.

<sup>7</sup> Hendrickson, Kirstin. "Sucrose vs. Fructose." *Livestrong*. N.p., 29 Mar 2011. Web. 22 Dec 2011. <<http://www.livestrong.com/article/311336-fructose-vs-sucrose/>>.

### **Brown Rice Syrup**

This product consists of brown rice that has been ground and cooked, converting the starches to maltose. Brown rice syrup tastes like moderately sweet butterscotch and is quite delicious. In recipes, replace each cup of white sugar with  $\frac{1}{4}$  cup brown rice syrup, and reduce the amount of other liquids. Brown rice syrup is made of 50% complex carbohydrates, 45% maltose, and 3% glucose. The small amount of glucose is absorbed into the bloodstream immediately, but the complex carbohydrates and maltose are much more slowly absorbed, providing a steady supply of energy<sup>8</sup>.

### **Date Sugar**

Date sugar consists of finely ground, dehydrated dates, utilizing this fruit's vitamin, mineral and fiber content. If you like the taste of dates, this will definitely appeal to you. Date sugar can be used as a direct replacement for sugar and comes in a granulated form; however, it can clump, and doesn't melt, making it an impractical substitution for certain baked goods and beverages.

### **Erythritol**

This sugar alcohol is a sweetener available in a powdered form. It is formed from the breaking down, fermenting, and filtering of sugar cane or corn starch. It has a cool taste that works well in coffee and tea. Erythritol doesn't affect your blood sugar or cause tooth decay. The cons of this sweetener are it may cause gas, bloating, and diarrhea if consumed in excess.

### **Honey**

One of the oldest natural sweeteners; honey is sweeter than sugar. Depending on the plant source, honey can have a range of flavors, from dark and strongly flavored, to light and mildly flavored. Raw honey contains small amounts of enzymes, minerals and vitamins. It's also said that consuming local honey can help build up your immunity to common allergens in your area – by introducing your body to the bee pollen.<sup>9</sup>

### **Maple Syrup**

Maple syrup is made from boiled-down maple tree sap and is a great source of manganese and zinc<sup>10</sup>. Approximately 40 gallons of sap are needed to make one gallon of maple syrup. It adds a pleasant flavor to foods and is great for baking. Be sure to buy 100% pure maple syrup and not maple-flavored corn syrup. Grade B is stronger in flavor and said to have more minerals than Grade A.

### **Maple Sugar**

Maple sugar is created when the sap of the sugar maple is boiled for longer than is needed to create maple syrup. Once most of the water has evaporated, all that is left is the solid sugar. Maple sugar is about twice as sweet as standard granulated sugar, but much less refined.

### **Molasses**

Organic molasses is probably the most nutritious sweetener derived from sugar cane or sugar beet, and is made by a process of clarifying and blending the extracted juices. The longer the juice is boiled, the less sweet, more nutritious and darker the product is. Molasses imparts a very distinct flavor to food. Blackstrap molasses, the most nutritious variety, is a good source of iron, calcium, magnesium and potassium.

<sup>8</sup> Ingalls, Lindsay. "The effects of brown rice syrup on blood sugar." *Livestrong*. N.p., 20 Jun 2011. Web. 22 Dec 2011. <<http://www.livestrong.com/article/474520-the-effects-of-brown-rice-syrup-on-blood-sugar/>>.

<sup>9</sup> O'Connor, Anahad. "Can Eating Local Honey Cure Allergies." *NY Times*. N.p., 09 May 2011. Web. 1 Feb 2012. <[http://www.nytimes.com/2011/05/10/health/10really.html?\\_r=1](http://www.nytimes.com/2011/05/10/health/10really.html?_r=1)>.

<sup>10</sup> "Maple Syrup." *World's Healthiest Foods*. N.p., n.d. Web. 22 Dec 2011. <<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=115>>.

### Rapadura

This brand-name product is made from a process of extracting juice from the sugarcane plant, evaporating the water from the juice, and then grinding the results into a fine powdery texture. Rapadura is organic, unrefined, and rich in vitamins and minerals like iron.

### Stevia

This leafy herb also known as honey leaf has been used for centuries by native South Americans. The extract from stevia is approximately 100 to 300 times sweeter than white sugar. It can be used in cooking, baking and as a sugar substitute in most beverages. Stevia has been shown to have a positive effect on blood sugar levels by increasing insulin production, and decreasing insulin resistance<sup>11</sup>. Stevia is available in a powder or liquid form, but be sure to get the green or brown liquids or powders, as the white and clear versions are highly refined.

### Sucanat

Short for *sugar cane natural*, this brand-name product consists of evaporated organic cane juice made through a mechanical rather than a chemical process. It is, therefore, less refined and retains many of sugarcane's original vitamins and minerals. It has a grainy texture and can be used in place of white sugar.

### Turbinado

Turbinado sugar, also known as demerara, is crystallized sugar made from sugar cane extract. It is similar to brown sugar, although paler with larger crystals, and may be used interchangeably. It comes from the initial pressing of sugar cane, where white sugar is further refined. It is often sold in the United States as Sugar in the Raw. Though it is slightly less processed than white sugar, it still has the same negative health effects as white sugar.

### Vegetable Glycerin

Vegetable glycerin is a colorless, odorless liquid with a very sweet taste and the consistency of thick syrup. It is derived from coconut and palm oils. As a sweetener, it is ideal for those afflicted with candida because it does not contain sucrose.

## Using Natural Sweeteners

Natural sweeteners can be used to replace sugar in any recipe. Here is a guide to substituting these products for sugar. The amount indicated is equivalent to 1 cup of sugar, and the third column details what it is best to use for.

Sweetener	Amount = 1 cup Sugar	Use
honey	1/2-2/3 cup	all-purpose
maple syrup	1/2-3/4 cup	baking, desserts, sauces
maple sugar	1/2-1/3 cup	baking, candies
barley malt syrup	1-1 1/4 cups	bread and baking
brown rice syrup	1-1 1/3 cups	baking, cakes, sauces
date sugar	2/3 cup	bread, baking, candies
coconut sugar	1 cup	all-purpose
blackstrap molasses	1 to 1 1/3 cups	all-purpose
stevia	see manufacturer's label for quantity and usage, as they vary	

### Selection

These sweeteners can be found in natural food stores. Having a couple of different natural sweeteners in your kitchen will ensure that you have one for every need. Coconut sugar is wonderful in tea because it tastes great and

<sup>11</sup> Chen, TH. Mechanism of the hypoglycemic effect of stevioside, a glycoside of stevia rebaudiana. *Planta Medica*. 2005.

dissolves easily. Brown rice syrup works well in your favorite cookie recipe. Use organic sweeteners when possible. Be a food detective and check labels of processed food to see what type of sweetener is being used. There are many cereals, snack foods, soymilks and sauces that use these natural sweeteners in place of sugar.

**Benefits**

Each sweetener has its benefits. Honey, maple syrup/sugar and date sugar contain nutrients that white sugar does not. However, they are still simple sugars that enter the bloodstream fairly quickly, causing a burst of energy followed by a drop off. Use these sweeteners in moderation. Barley malt, brown rice syrup and coconut sugar are slower to enter the bloodstream and are more suitable for those with blood sugar issues. Stevia does not affect the bloodstream, and can be up to 300 times sweeter than sugar depending on the form (liquid or powder).