



# The **sweet** **life**

More and more people are incorporating sugar substitutes like honey and agave nectar into their diets in the belief that these sweeteners are healthier than refined sugar. But are they? >6

Photo: DAVID PACEY/Flickr



Because refined white sugar has such a bad reputation, people are moving towards alternatives like honey and molasses. But the reality is, all these replacements contain about the same amount of calories as sugar. — Photos: Marco Verch/Flickr

By ABIRAMI DURAI  
star2@thestar.com.my

ON supermarket shelves, restaurant menus and in many homes, there has been an increasing shift towards healthier food options. And nowhere is this more evident than with refined white sugar. Long considered an evil villain in the fight against obesity and its twin scourge – diabetes – refined sugar is being usurped in favour of other options perceived to be healthier.

In Malaysia, this trend has been gaining momentum, especially as people are waking up to the reality that Malaysia is the fattest country in South-East Asia, with nearly half of the population either overweight or obese.

In the Malaysian Adults Nutrition Survey 2014, sugar ranked second in foods consumed daily among the Malaysian adult population living in both rural and urban areas. Based on the survey, average sugar and condensed milk intake daily was 75.5 g, which grossly exceeds the World Health Organisation's (WHO) recommendation of 50g of sugar (12 teaspoons) a day.

While sugar is not the sole contributor of the obesity epidemic, there is a strong connection between sugar consumption and weight increase.

In light of this, there has been a considerable shift in the means and methods of incorporating sugar into diets, with consumers, food producers and eateries rising to the task of making "healthier options".

Most notably, this has manifested in the increased use of sugar substitutes like honey, agave nectar, stevia, molasses, palm sugar, maple syrup and artificial sweeteners like Sweet 'N Low.

The end products can take many forms from artisanal granola sweetened with honey, cakes made with dates or molasses and carbonated drinks enhanced with stevia instead of sugar.

Many of these products are marketed as being healthier, and various websites and online articles substantiate these claims by pontificating about the virtues of different sugar substitutes. Over time, this, coupled with refined sugar's bad reputation, has led to the widespread belief that sugar substitutes are somehow healthier than sugar itself.

"Yes, there is a trend for individuals to choose sugar substitutes in the hope that these substitutes would dampen the effect of excessive sugar intake. Obesity and the increasing prevalence of diabetes in the country clearly are the driving force for individuals to seek healthier substitutes in their diet, as processed sugar has been termed the

## The truth about sugar substitutes

More people are turning towards sugar substitutes in lieu of refined sugar. But are these any healthier than the real deal?



Satvinder believes that people should be looking at reducing their sugar intake. — Dr Satvinder Kaur

culprit leading to obesity and diabetes," says Asst. Prof. Dr. Satvinder Kaur, the head of the nutrition with wellness programme at USCI University.

### Are sugar substitutes better?

According to Satvinder, in terms of calorie intake, there is very little difference between consuming refined white sugar (a disaccharide known as sucrose that is made from glucose and fructose and which contains 398 calories in 100g) and consuming substitutes like honey, palm sugar or maple syrup. "One teaspoon of any form of sugar pro-



Through a lot of trial-and-error, Yap has come up with a range of reduced sugar desserts. — YAP CHEE HONG/The Star

vides approximately 20 calories. So calorie-wise, it does not differ greatly from each other, thus using it as a 'healthier' substitute may be misleading.

"As for metabolism, our body metabolises glucose, fructose and galactose (which are all the simplest form of sugar) differently. While glucose requires the hormone insulin for metabolism, fructose is metabolised in the liver.

"As such, although the balance of glucose and fructose in refined sugar and sugar substitutes differs, the metabolism of table sugar and other sugar substitutes may not vary greatly as all share similar end products (glu-

cose and fructose) which are absorbed in the body," she says.

For people looking to reduce calorie intake, zero-calorie artificial sweeteners may be the way to go, although these sweeteners themselves have come under increased scrutiny, especially as a recent study (commissioned by WHO) and published in the *British Medical Journal* indicated that artificial sweeteners were no healthier than refined sugar.

Satvinder also cautions against over-consumption of sugar substitutes as the effects of consuming too much can be as harmful or worse than consuming refined sugar.

Citing honey as an example, she says, "Honey mainly consists of fructose and clinical studies have shown that excess fructose is often the culprit behind metabolic syndrome and weight gain, so high consumption would translate to obesity and metabolic irregularities.

"Despite honey having health benefits through antioxidant properties, intake should still be in the recommended amount as over-consumption would result in more harm than benefits," she says.

Ultimately, Satvinder says reducing sugar consumption should be the ultimate goal.

"Sugar substitutes should not be characterised as an alternative without also looking into the amount consumed. Often the amount of sugar consumed leads to higher rates of obesity and diabetes rather than the type of sugar consumed per se. Using less sugar is the way to tackle issues related to obesity and diabetes. This is because foods that have high sugar are normally energy-dense foods that contain little nutrients," she says.

### A growing trend

Satvinder's view about reducing sugar is echoed by Victor Yap, the owner of local healthy eatery Fittie Sense.

Yap is a seasoned baker who has created a



Yap's reduced-sugar desserts make use of sugar substitutes, as he says there is a growing trend of people requesting for low-sugar desserts. — YAP CHEE HONG/The Star



While many people think sweeteners like honey are healthier than refined sugar, even honey can cause obesity if consumed in excess.

range of reduced-sugar desserts that incorporate sugar substitutes like raw molasses, honey and coconut sugar, in line with the growing demand for these options.

But Yap consciously uses less of these substitutes, opting to cut sugar levels overall in all his desserts. Some of the most popular cakes in his eatery include an apple cake sweetened with dates and a carrot cake which incorporates the use of honey.

"The most common questions we get asked at the restaurant are, 'How sweet is this?' or 'Does this have less sugar?' So it's either a trend or consumers are more aware of sugar and want to be more careful with what they eat and how much they eat," he says.

Yap says when using sugar substitutes, less is more as a lot of these sweeteners are naturally sweeter than sugar.

"You can definitely use less. Our carrot cake uses half the amount of sweetener than the traditional recipe, but if you taste

it, you can still get away with it. Our cakes don't taste so sweet, which nowadays a lot of our customers appreciate," he says.

Because refined sugar has become such a taboo ingredient, many people are led to believe that they are making better choices when they opt for a cake sweetened with molasses or honey but Yap says he is careful to avoid the "guilt-free" tag.

"For our restaurant, our strategy is that we do not use refined sugar purely because it is highly processed. We try not to market our cakes as healthier but people will label that for us. We call our cakes alternative cakes," he says.

Ultimately, when it comes to baked goods, Yap says there is a simpler solution than sugar substitutes: use less refined sugar.

"You don't have to follow recipes to a tee. If it's an American recipe, cut the sugar in half. I know it sounds drastic, but it will be fine for the Asian palate - in fact, some people will still find it too sweet," he says.

## Sugar substitutes 101

### Agave nectar

Made from agave plant leaves that contain more fructose than glucose. The plant goes through a lot of processing, which strips it of its natural fibres. It contributes 310 calories for 100g of syrup.

### Brown sugar

Brown sugar contains molasses and can be found in crystallised form. As there is more molasses in brown sugar, it contains very minor nutritional value (not enough to provide tangible health benefits) over white sugar. In 100g of brown sugar, there is 377 calories, which is similar to white sugar.

### Maple syrup

It is a sucrose with water molecules attached and it provides 260 calories for 100g. However, most available maple syrups are imitation products that may not be made of genuine maple sap. Most commercially available maple syrup contains high fructose corn syrup instead of maple syrup, thus, it would provide higher calories.

### Honey

A sweet substance produced by bees that contains glucose and fructose, with the latter being the most. In 100g of honey, there is 304 calories.

### Date sugar

It is naturally present in dates and commercial date sugar is processed from dates. Calorie contribution is similar to white sugar, about 398 calories in 100g of date sugar.

### Stevia

It is obtained from the leaves of the Stevia rebaudiana plant that is the sweetest of other stevia species plants. Its active compound is known as steviol glycosides which elicits sweetness factors that can be 100-300 more than table sugar. Stevia has no calories and is metabolised in the liver and excreted through urine. Individuals seeking to substitute sugar, either to reduce calories or improve glucose control may benefit from it. However, research is not entirely conclusive on its long-term side effects to human health.

### Brown rice syrup

This is also known as rice malt and is produced through a liquefaction process involving enzymes. Rice malt has a high glycemic index so consumption would lead to a spike of blood glucose in a short period of time. In terms of calories, it is about 320 calories for 100g.

### Corn syrup

This syrup is produced from corn starch. High fructose corn syrup (HFCS) is used in most commercial products. Enzymes convert glucose to fructose in the production of HFCS and it is more preferred due to higher solubility and sweetness. HFCS is metabolised in the liver and has been regarded as one of the leading causes of obesity due to its effect in suppressing hormones regulating satiety and appetite.

### Palm sugar

Palm sugar is derived from the palm tree and has several variations. Malaysia's famous gula Melaka is a type of sweetener that is obtained from the sap of a palm tree. Palm sugar has a low glycemic index and is rich in vitamins and minerals but calorie-wise, it provides the same calories as white table sugar, about 398 calories per 100g.

### Artificial sweeteners

Artificial sweeteners provide little or no calories and are added into foods in an effort to reduce the total calories. It is most widely used in carbonated diet drinks, low-calorie yogurts or ice-creams. Its component are not carbohydrate-based and generally used to replace table sugar in beverages and foods. Research has shown that excessive consumption of artificial sweeteners can lead to obesity.

Source: Assistant Professor Dr Savinder Kaur, UCSI University Kuala Lumpur

