



How to sensibly sweeten

'Diabetics need to choose more wisely when it comes to sugar than others because most sugars or sweeteners contain natural and unrefined sugars. This has a direct impact on their blood sugar levels – a crucial matter in a diabetic's life. Above all else, the possible diabetes-related complications and long-term consequences should be kept under a watchful eye. So, what can diabetics use which still regulates their blood sugar levels and which takes into account possible long-term effects?' asks Dr Geert Verhelst.

Diabetics are known to have irregular sugar processing. Their blood sugar levels are too high because the pancreas produces too little or no insulin (the blood sugar level-lowering hormone), and/or the body cells do not take enough sugars from the bloodstream. Diabetes I will therefore have extra insulin injected and Diabetes II will have to take oral medication to keep their blood sugar levels low. Regulating the blood sugar levels is important to keep the risk of diabetes-related complications, such as cardiovascular illnesses and nervous system failures, at bay. That is why 'fast', concentrated sugars found in sweeteners from beet sugar, cane sugar, honey, maple syrup and any other possible foods containing these sweeteners, should be avoided.

But many diabetics will shrug at this. They know that it helps to increase the insulin injection dosages (with Diabetes I) or taking more oral medication (with Diabetes II) to regulate their blood sugar levels if they do use these sweeteners. It is an option, but this is not necessarily a well thought-through decision. The more sugar peaks you experience because of unregulated sugar intake and unrefined sugars robbing the body of its needed nutrients, the bigger the chance of cardiovascular diseases (hypertension, heart attacks, strokes and constriction of the arteries), loss of vision (retina disintegration) or neurological problems (loss of feeling, constant pins and needles, bladder and digestive problems).

Fructose & artificial sweeteners

Other diabetics, who realise the importance of regulating their sugar levels, often use artificial sweeteners, which have the same sweet taste, but don't or only slightly increase the blood sugar levels. Artificial sweeteners such as aspartame, acesulfaam K, saccharin and cyclamate, and fructose (also laevulose and fruit sugars) are used as part of a doctor's prescription as sweeteners. But this is a rather shortsighted vision.

Dieticians, nutritionists, doctors or scientists who studied, without any bias, the dossier of artificial sweeteners, would probably wonder why artificial sweeteners are still allowed and seen as 'safe' in today's standard dosages. We don't have enough space in this edition to uncover and delve into that dossier, and it is also not our intention to put aspartame in front of the inquisition. But it would probably interest you to know that a recent study at the University of Bologna has shown that only half of the current allowed dosage of aspartame already increases the risks of cancer. But the Scientific Committee on Food (SCF) has shoved this

under the table – or an industry with billions to back itself has shown how it works its way through legislation.

You have to keep in mind that diabetics have a lower sugar exchange than non-diabetics, meaning they are more susceptible to possible toxic reactions to aspartame:

They are, for instance, more prone to nervous system illnesses (or 'neuropathy') and by taking aspartame they can experience a feeling of lifelessness or pins and needles in their limbs, decrease in memory functions, confusion and mood changes.

Because they have a natural tendency towards elevated cholesterol levels and cardiovascular illnesses, they can also account for high blood pressure, arrhythmias, chest pressure and impotence.

With regular cases of worsening vision, aspartame can increase the possibility of vision problems, hazy vision, burning and tearing eyes to add to the discomfort.

Aspartame can also contribute towards complaints of fatigue, thirst and hunger, a dry mouth, constipation and a higher risk of infections.

Well-known endocrinologists found that aspartame can enhance certain diabetes-related problems, such as retina disintegration, cataracts, nerve problems and strokes, as well as contributing to the difficulty in controlling the blood sugar levels (having a higher HbA1).

With regards the other artificial sweeteners – saccharine, cyclamate and acesulfame-K – they are 100% foreign elements to your body and there are not enough guarantees on the safety of these products in the long run.

Several studies have shown side-effects experienced by guinea pigs.

Even fructose is not always the healthiest option for regular use by diabetics. Because of its synonym, 'fruit sugar', we have a false sense of security, but unfortunately fructose is never taken from fruit. Chicory and corn are mostly the source of fructose and are still very much refined products. By refining the products, it removes the agents guiding the fructose and putting it in the same category of beetroot and cane sugar: 'empty' calories.

And that is exactly the reason why diabetics commonly use fructose, with its sweet taste, since it doesn't raise the blood sugar levels. But considering the fact that fructose has an interesting part in a diabetic's diet, the following problems may occur with the excessive use of fructose: Chronic illnesses develop faster, as with refined sugars: osteoporosis, curias, lessened immunity, allergies, auto-immune diseases, ADHD, artose, arthritis, fibromyalgia, CVS, Candida, MS and cancer.

Fructose intolerance can occur, experiencing gas, colon cramps, constipation and diarrhoea.

Liver failure: enzymes in the liver break down fructose, but with a fructose process capacity that is individually limited, it can result in liver failure and also brings the energy production in the liver into danger.

Increased cholesterol and triglyceride levels: research shows that fructose adds to the excessive forming of cholesterol and triglycerides, even more than normal sugars, resulting in cardiovascular diseases.

Cataracts: it has been shown that a diet rich in fructose increases the growth of cataracts on the eye lens, resulting in a hazy vision. It seems that sorbitol, an alcoholic-sugar created in the lens because of an excess of fructose, is responsible for the cataracts. And diabetics are a bit more prone to increasing loss of vision.

Hypertension is also related to a high intake of fructose.

Early age-related illnesses: with the excessive fructose intake, we see an increased incidence of the so-called Milliard-reaction, where refined short sugars lessen the quality and function of body proteins and thus attribute to early old age-related diseases and cardiovascular illnesses.

Gout: high fructose intake has been shown to increase the levels of urine acid.

The following is a list of sweeteners that will help regulate the blood sugar levels and inhibit diabetes-related complications.

Stevia: it is very difficult to make the first suggestion and choice of a perfect sweetener, which does not increase blood sugar levels, has no calories and even influences the sugar exchange positively, as it is banned from Europe. Stevia has not been banned because of health risks, but because it poses a threat to the multi-billion dollar sugar and aspartame industries. You can, however, grow your own plant and use the leaves fresh or dried, but this won't give you the true sweet taste found in the other forms of stevia: stevia concentrate, liquid stevia tincture and powder stevia extract. **Stevioside** is an isolated glycoside, but sometimes has a bitter aftertaste. **Rebaudioside A** is another isolated glycoside from stevia, or a stevia extract with a high quality Rebaudioside A. This has a true sugary taste. Stevia extract in an insulin carrier looks like sugar, has the same 'volume' as sugar, tastes like sugar and, in conjunction with the insulin, even has extra health-enhancing factors.

TIPS

Buy the pure stevia concentrate skin products, but use them as sweeteners, or buy the extracts over the internet.

1 Use alcoholic sugars (polies, semi-artificial sugars) with care. These sugars include: maltitol, lactitol, xylitol, sorbitol, mannitol, isomalt and erythritol. These sugars are not foreign to the body and will only increase blood sugar levels slightly. They are found naturally in fruit, but in limited quantities and isolating them would be very expensive. That is why they are made from existing sugars such as maltose, lactose and xylose and transformed via a chemical modification (hydrogenation) into, among others, maltitol, lactitol and xylitol.

Unfortunately, they are not sold as separate products, but can be found in sweets specially made for diabetics

– waffles, sweets and diabetics' chocolate. But use them in limited amounts because they are still partly artificial. They are made from isolated refined sugars, although the polias don't have such a high impact on the pancreas as refined sugars (because they have very little impact on blood sugar levels) and therefore carry less glucose without nutrients. This does vary from person to person, but the alcoholic sugars can lead to gas and diarrhoea. Keep to the recommended amounts, on average 20g per day, spread out evenly throughout the day.

Among these sugars, rather avoid sorbitol, which has been associated with cataracts and increases glucose levels more than previously thought. Try erythritol for the lowest in calories and with slight to nil laxative and gassy side-effects.

2 Use within limits: unrefined sources of fructose, such as agave syrup. We know that although fructose is very sweet, it does not influence blood sugar levels too much. But, as mentioned above, there are certain side-effects of fructose over-use – which should be best avoided by diabetics. By far the best unrefined source of fructose, as found in chicory or corn, is agave syrup.

3 Use within limits: wheat syrups, such as barley malt, wheat malt, rice malt and corn malt syrups. Although it is very difficult to get exact numbers from the glucose index (the amount by which they raise blood sugar levels), we know that these mild sweeteners do not have as big an influence on blood sugar levels as unrefined sugars from cane sugar, beet sugar, molasses, maple syrup, honey and fruit concentrates.

4 Tagatose, Lo Han Guo fruit extracts (mogroside), Brazzaines, Thaumatin, Neohesperidines DC: these sweeteners do not increase blood sugar levels and are natural or only semi-artificial. Therefore they are worth considering, although some might not be as sweet, such as the Lo Han Guo, Thaumatin and Neohesperidines DC. Note that Thaumatin is heat unstable and tagatose must still be proven in the long run. **□**