SUGARY SWEET ALTERNATIVES

LIFE EDUCATION
Learning with Harold

Summary

Sugar substitutes (or "alternatives") are substances we can use when we want to eat less sugar or no sugar. They still taste sweet but they have fewer calories (less energy). Most don't cause tooth decay. We find them in diet, no sugar, or low sugar foods and drinks.

Some substitutes are made of substances that are many times as sweet ("intense") as sugars. They include common sweeteners like aspartame and saccharin, as well as newer ones like stevia and monk fruit. Others are made from sugar alcohols, or are more like starchy carbohydrates: some common ones are sorbitol, glycerine, and maltodextrin.

Dried fruits, fruit sugars, and syrups all contain sugar – even if the pack says they are "natural". They have the same effect on our teeth and bodies as normal sugars.

What are they?

Most sugary sweet alternatives aren't sugars. They may be other carbohydrates (like sugar alcohols and dextrins), complex non-carbohydrates (like aspartame or stevia glycosides), or sugars that have been chemically modified in some way (like tagatose or sucralose). Some have numbers and count as food additives and they all get tested and have safe limits set for their use based on the best available evidence. Here are the names of some common substitutes and what sort of substance they are. You'll find these names in ingredients lists

Artificial or intense sweeteners	Substances like aspartame (951), cyclamate (952), saccharin (954), and sucralose (955). They're several hundred times sweeter than regular sugar, have virtually no calories, and don't add to tooth decay. They're in no-added, low sugar, reduced- or sugar-free soft drinks and sweets, and also in branded sweeteners for home use (like NutraSweet, Equal, and Splenda). They're even in some toothpastes!
Sugar alcohols	Include glycerine/glycerol (422), isomalt (953), xylitol (967), maltitol (965), erythritol (968) and sorbitol (420). They count as carbohydrates not sugars on NIPs*, are about 60% to 70% as sweet as sugar but have only 5% to 80% of the calories. They add bulk, taste better than intense sweeteners and don't cause tooth decay. Some, like xylitol, even reduce the growth of mouth bacteria. They're in foods like sugar-free, no-added or reduced sugar chewing gums and sweets and some branded sweeteners (like Naturals, Norbu, NatVia). Large amounts can cause gas, bloating and diarrhoea (runny poo).
Maltodextrins	These carbohydrates have more than two saccharide rings (rather than the 1 or 2 in mono- or disaccharide sugars). They range from starchy to sweet and are digested slowly, so are often added as thickeners or sweeteners and are common in sports drinks. They're counted as carbohydrates for NIPs* but with sugars for some nutrition claims: something "unsweetened" or with "no added sugar" can't contain them.
Novel sweeteners	Include newer substances like **stevia** plant extracts (stevia glycosides (960), often just called "stevia". Stevia is about 150 to 300 times as sweet as sugar, has no calories and won't add to tooth decay. It can taste bitter so is often mixed with maltodextrin or sugar alcohols for taste and bulk. **Monk fruit** (luo han guo) contains non-sugars called **mongrosides** that are 200-400 times as sweet as sucrose but without bitterness, calories or tooth problems. It's already approved for use in countries like the USA and Canada. **Tagatose** is a monosaccharide sugar usually made by heating dairy foods. It's nearly as sweet as sucrose but has only 40% of its calories and won't cause tooth decay. There are novel sweeteners in branded sweeteners (like Natvia, Naturals, Norbu), breakfast cereals, diet drinks and ice creams, sweets and chewing gums.

What about "natural sweeteners"?

Substances like Stevia and monk fruit extracts may also be described as "natural" sweeteners by manufacturers because they come from plants – but it takes processing to get them, so the term "novel" or "intense" is probably more accurate. Other sweetening substances that may look "natural" on packets but are still just sugars include:

Added sugars like agave nectar, maple syrup, date sugar (from ground up dried dates), raw sugar, cane sugar, brown sugar, coconut sugar, palm sugar, fruit juice concentrates,fruit juice purees, honey, maple syrup, treacle, brown rice syrup, and molasses. They range from being slightly sweeter than sucrose (agave and honey), to less sweet (molasses and date sugar). Most release similar amounts of energy to sucrose, but date sugar only releases about 70%. Large amounts will cause the same health issues as the sugars they contain. Some contain high levels of fructose (agave syrups can be 55% to 90% fructose).

Dried fruits: Products like scroggin, paleo bars or bliss balls made from whole or squished dried fruits need only list the fruit (e.g. as dates, apricots, raisins) in their ingredients. Their packaging can claim "no added sugars" or use of "only natural sugars" because these sugars are natural (or intrinsic) to the ingredients. But these concentrated natural sugars still count towards the **total sugars** we're getting so it's a good idea to check out that value on the NIP*. And because dried fruits concentrate their sugar and stick to our teeth, they can add to tooth decay every bit as much as "non-natural" sugary treats.

USEFUL LINKS

Ingredients with George Zaidan, 24 November 2016. "What Makes Sugar-free Gum Sweet?" Retrieved from: https://www.youtube.com/watch?v=hNHFxbTAJd8&index=11&list=PLivjPDIt6ApStHBU9Z_5vB7dM_tT_QjyX 5 September 2017.
Sugar Research Advisory Service, n.d. https://www.srasanz.org/ 12 September 2017.

"How to Digest Health and Nutrition Claims" "How to Digest Health and Nutrition Claims", "Tricky Ingredients, and "Sugary sweet alternatives" factsheets from Life Education.
* NIP = Nutrition Information Panel

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