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How did stevia get mainstream?

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A naturally-sourced sugar substitute called stevia apparently has no calories, no carbohydrates, and does not raise blood sugar levels. Is it too good to be true?

Mention "stevia" to someone and you may well get a quizzical look, as if you're failing to grasp some unknown language.

But stevia - a plant used as a sweetener for centuries in Paraguay and Brazil - can now be found in many British supermarkets. In the US, it's even more common.

It has been heralded as a "miracle sweetener" and the "holy grail for the food industry", because of its natural origins and **claimed health benefits**.

Although stevia has been sold in Japan for about 40 years, stevia-based products have only been approved as a food additive since 2008 in the US, and 2011 in the EU.

Companies have been quick to capitalise. There was a 400% increase globally in new stevia-based products between 2008 and 2012, with a 158 per cent rise from 2011-2012, according to

Mintel.

British vitamin retail chain Holland & Barrett says it has witnessed a 50% sales rise for stevia products in the last four weeks, compared with the same period last year.

Coca-Cola dared to alter the recipe for Sprite in the UK, re-launching a new stevia-inspired version in March and claiming a 30% calorie reduction.

Even sugar giant Tate & Lyle has responded with a sugar-stevia hybrid. You can now find stevia-based sweeteners in products as varied as yoghurts, chocolates, and even beer, says Mintel's global food and drinks analyst David Turner.

Refined sugar is now regularly linked in the media to obesity. And obesity is now widely described as an epidemic.

More than 60% of adults in the UK are overweight or obese, with associated health problems **costing the NHS an estimated £5bn annually**, according to the latest government statistics.

Stevia has the potential to help with weight management, dental health, and diabetes, says Dr Laura Wyness, senior nutrition scientist at the British Nutrition Foundation.

So far, so grail-like.

Except that these possible medical benefits are also true of the artificial low-calorie sweeteners that have been around for years, such as aspartame or saccharin.

"The big deal about stevia is that it has a natural source," says food writer and TV presenter Stefan Gates. "That doesn't mean it isn't incredibly highly processed by the time it gets into your drink or food... but that's what everyone is craving."

Stevia is extracted from the stevia plant in a similar process to sugar, says Dr Margaret Ashwell, who is on the scientific advisory board of the Global Stevia Institute.

"The extraction process involves steeping the dried leaves of the plant, like you would tea, and then separating or purifying the best tasting sweet compounds, which are known as steviol glycosides."

The concentrated extracts are about 300 times as sweet as sugar.

The steviol glycosides remain intact and chemically unchanged throughout the whole process, she says.

In contrast, artificial synthetic sweeteners such as aspartame - used in soft drinks like Diet Coke - have long been the subject of controversy.

Although some people have said there could be a link between aspartame and cancer, a series of reviews **have found no scientific evidence that this is the case**. But people remain wary of the word "artificial" when it comes to food, says Gates.

"There's a desperation in the food industry to be able to list things as having 'no added x'," says Gates. "If you can label your product 'free from' something, you have a massive advantage in the marketplace because people are swayed by news stories that whip up paranoia about food."

The British Dietetic Association and Diabetes UK make no distinction between their advice for artificial sweeteners and stevia.

"As a dietician, I support and promote the use of sweeteners in cooking and diet," says Sioned Quirke, a spokesperson for the British Dietetic Association.

"There is no evidence to suggest that low-calorie sweeteners, such as saccharin, aspartame and sucralose, are harmful or bad for you," although she advises stevia use only as a sweetener and believes that the evidence for the claimed health benefits is insufficient for an endorsement.

"We have a dearth of data," says anti-sugar advocate Dr Robert Lustig, author of *Fat Chance: The Bitter Truth About Sugar*, who refuses to endorse alternative sweeteners for this reason.

The Food and Drug Administration (FDA), in the US, and the European Food Standards Authority (EFSA) only require acute toxicity studies, which test whether something will poison you in the short-term, explains Lustig.

What we don't know are the long-term effects of sweeteners like stevia, he says, such as whether these compounds affect hormones that alter brain function.

We don't know how the body responds to being primed for an influx of sugar that it never receives, he adds. "It may be that it fools your brain into thinking that it needs to release more insulin," Lustig suggests, potentially negating any supposed weight-loss benefits.

And since the FDA and the EFSA do not demand these studies, then there is no incentive for the food industry to do them, says Lustig. "We're at an impasse."

In the meantime, Turner expects the stevia market to continue growing strongly, both in pre-prepared food and as a table top sweetener.

But there remain two obstacles if stevia is ever to replace sugar as the nation's sweetener - taste and price.

"As with artificial sweeteners such as sucralose or aspartame, when they first appeared there was a distinct aftertaste," says Turner. "In stevia's case this is often described as a little aniseed-like."

Using my own undistinguished palate, I was unable to taste the difference in a stevia-sweetened bar of chocolate. But an informal office taste test suggested that there is still a notable difference to some, which may be enough to put off consumers.

"The food buying public is naturally very conservative," says Gates. "There are lots of people who hate the idea of change.

"I can't see it ever replacing sugar in the kitchen."

The stability of stevia under high temperatures could also give it a potential edge over artificial sweeteners such as saccharin when it comes to cooking, its advocates say.

But cost is a downside, explaining why hybrid products are popular at the moment.

The price of 1kg of granulated sugar at Tesco is 99p, while 270g of one stevia product costs £4.99. Even 450g of Tate & Lyle's sugar and Stevia blend is priced at £2.49.

At these prices, it's unlikely that too many people will switch to stevia unless it's either a medical requirement or they can afford to be so health conscious.

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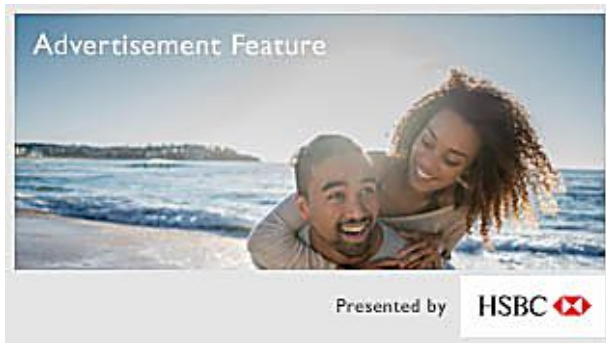
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