

Jury is still out on aspartame, but let's focus on what we already know

A report that the WHO is set to declare the artificial sweetener a possible carcinogen is a timely reminder to pay more attention to what we consume.

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Many of my public health colleagues have been fielding queries from families and friends after a recently leaked report that the World Health Organisation (WHO) may declare aspartame as a possible carcinogen.

After all, the artificial sweetener has been declared to be safe for consumption by numerous bodies, including the United States Food and Drug Administration and the American Cancer Society.

Like most leaked stories, there is scant detail on what matters, other than the news that the International Agency for Research on Cancer (IARC), which is part of the WHO, will be making the announcement on Friday.

But the reason why this has led to numerous queries, as well as attention-grabbing headlines, is because aspartame is one of the most commonly used artificial sweeteners.

It is used as a sugar substitute in many low-sugar foods, including diet drinks, breakfast items such as cereals, beverage sweeteners and jams, as well as dessert offerings including ice cream, puddings and yogurts.

The fact that a common ingredient in foods marketed as low-calorie (and thus presumably better and healthier for you) is set to be declared as possibly cancer-causing is exactly why people are concerned.

In fact, it is not just consumers who are confused by what appears to be a U-turn. The food and beverage industry as well as national food regulatory agencies might also have been left wondering about the impact of the impending announcement.

ACCRUING EVIDENCE ON FOOD INGREDIENTS

There are generally two methods that scientists use to determine whether a specific ingredient or food compound can cause harm.

The first is by observing the lifestyle, including dietary choices, of large segments of the population over a substantial period of time, and to correlate consumption patterns with specific health events, such as the onset of cancers and diabetes.

Such observation studies typically stretch over decades, and can involve hundreds of thousands to even millions of participants, to identify possible risk factors to human health.

The very first inkling that tobacco use is actually detrimental came exactly from an observational study of British doctors back in the 1950s.

However, such a study design has its limitations when it comes to establishing the link between a disease outcome and a specific food ingredient.

The majority of us do not make exact measurements of what we eat, and this means observational studies run into the problem of determining how much of each specific ingredient or food compound is actually consumed, and at what frequency.

When it comes to artificial sweeteners, pinpointing a specific type, like aspartame, instead of sucralose or acesulfame-K, becomes even more challenging. In fact, I am willing to bet that most of us did not know what type of artificial sweeteners our favourite diet drinks contain until the recent hoo-ha.

In addition, observational studies tell us about possible associations, but provide scant insights on causation. So someone with an overall unhealthy lifestyle involving little exercise and a diet rich in ultra-processed foods may develop many health complications which cannot be easily attributed to specific aspects of that lifestyle.

This is why there is a second kind of research design that scientists use to investigate the harm of a food compound; this is done by exposing animals to high doses of that compound or at high frequency, and to monitor

the outcome.

Such animal studies usually provide strong evidence of causation, but run into the problems of extrapolating the relevance to humans. After all, the biology of humans is different from that of rats, mice or monkeys, and neither do we consume these compounds at such high dosages or frequencies.

DIFFERENT IARC CLASSIFICATIONS

Determining whether aspartame causes cancer in humans at the amount that we realistically consume is clearly not straightforward.

Special emphasis is placed on the phrase "amount that we realistically consume", because the IARC classification of cancer-causing agents does not consider the dosage and frequency of exposure.

There are four groups in the IARC classification, with the first three (groups 1, 2A, 2B) corresponding to varying degree of evidence linking to cancer.

Group 1 comprises agents that conclusively cause cancers in humans; these include tobacco, alcoholic beverages and Chinese-style salted fish.

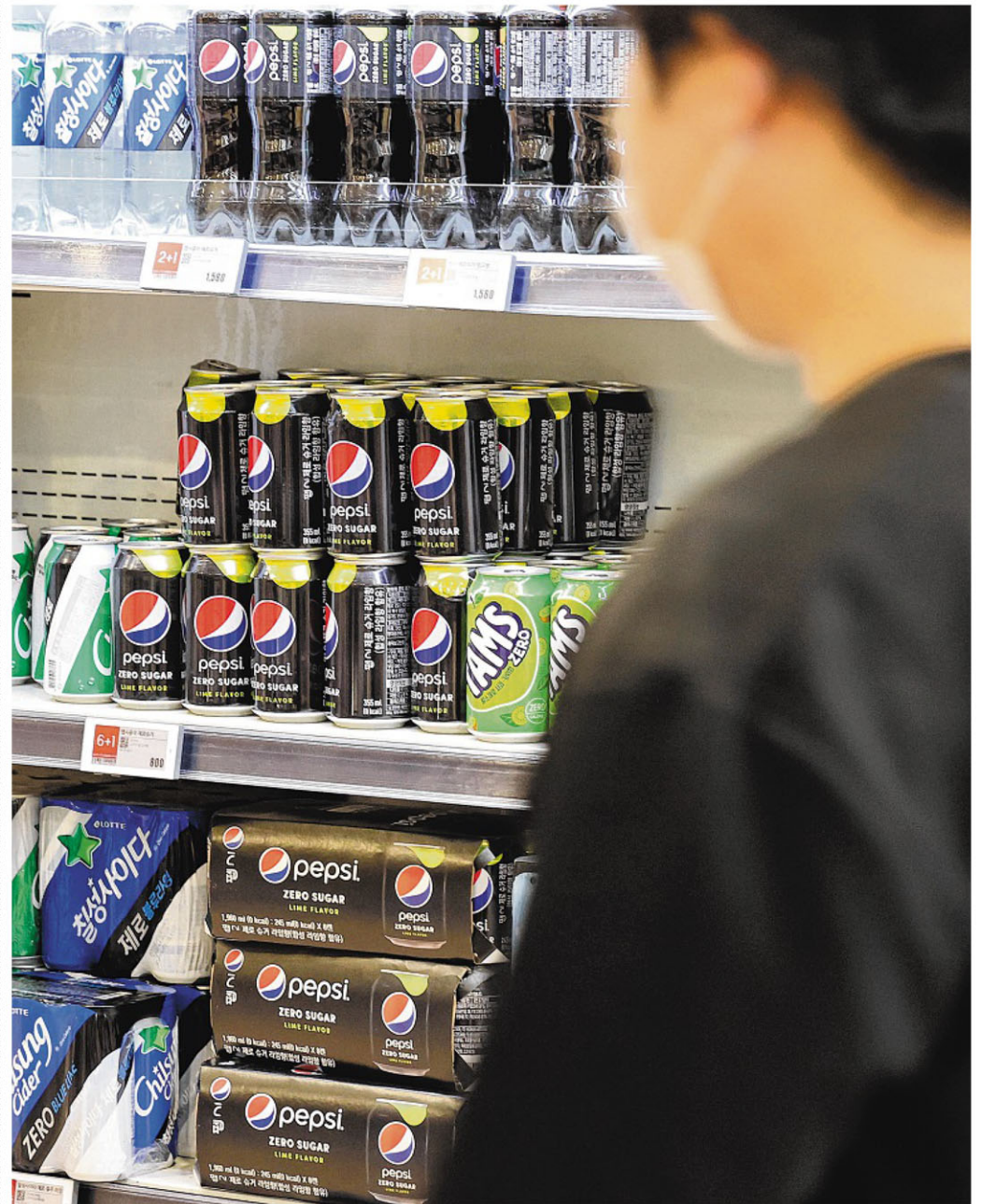
Group 2A refers to agents that probably cause human cancers, and these include the consumption of red meat such as beef, lamb and pork.

Group 2B, which is where aspartame will purportedly be reclassified under, refers to agents that possibly cause cancers in humans. Notably, this group includes aloe vera extract and traditional Asian pickled vegetables.

A food compound can find its way into Group 2B even if there is limited evidence that it causes cancers in humans, as long as there is sufficient evidence that the way it causes cancers in animals is likely to be relevant to humans.

It is important to know whether the amount of aspartame that we consume is already sufficient to cause harm. This is where a separate committee known as the Joint FAO/WHO Expert Committee on Food Additives comes in.

This committee is jointly managed by the United Nations Food and Agriculture Organisation (FAO) and the WHO, and performs risk assessments



There is concern over the news that aspartame, an artificial sweetener often used as a sugar substitute in food and beverages, may be designated as possibly carcinogenic to humans by the World Health Organisation. PHOTO: EPA-EFE

and recommends upper limits on the amount of food additives that are safe for human consumption.

The present guidelines for the safe use of aspartame are at a level that most of us will not exceed, for example requiring an excessive daily consumption of more than 18 cans of diet soft drinks or more than 70 packets of artificial coffee sweeteners.

THE REAL FOCUS?

For consumers like you and me, what we need to pay attention to is whether the announcement on Friday is accompanied by new evidence to lower the safe consumption limits of aspartame, which may then prove to be a bigger behavioural nudge to eating habits.

If anything, this is a timely reminder for us to review our overall dietary preferences, especially in relation to ultra-processed food.

In addition to artificial sweeteners, ultra-processed foods tend to contain preservatives and food colourings – ingredients that we would normally not include in home cooking.

Higher consumption of ultra-processed foods has already been linked to increased risks of developing human ailments, including cancers, cardiovascular

and coronary heart diseases.

Instead of worrying about a single ingredient such as sweetener, it may thus be wiser to review the intake of ultra-processed foods as an overall strategy.

For example, does your grocery list regularly include ultra-processed items where you cannot visibly tell what the actual constituents are, such as chicken nuggets, hot dogs, potato crisps, breakfast cereals or sweetened beverages?

Or does it include more items that are minimally processed, such as vegetables, fruit, grains, meat, eggs and milk?

If anyone is worried about the potential cancer-causing effect of aspartame, surely it makes more sense to consume more natural foods that have been minimally processed.

For national regulators, it may be worthwhile dissecting the evidence that will be presented on Friday, to determine whether there is a need to adjust existing policies around sugar-intake reduction.

Several countries have implemented taxes on sugar-sweetened beverages, or control policies, including Singapore, which has a suite of different policy measures aimed at minimising unnecessary intake

of added sugars.

Even the current Nutri-Grade and Healthier Choice classifications have specific components determined on the basis of sugar content.

These sugar control policies have motivated global reformulation efforts, leading to an increased use of non-sugar sweeteners, mostly comprising artificial sweeteners.

Should the new evidence prove compelling enough for regulators to take action, we may see the industry exploring and pivoting towards the use of natural sweeteners such as stevia.

The important question is, will the new evidence be so compelling? We will have to wait to find out.

There are many known health hazards out there, including alcoholic drinks that were resolutely classified as cancer-causing in 2012.

While some may choose to shun any dietary item that is even remotely linked to any disease, the timeless adage of "eating in moderation" may perhaps be the most sensible, and certainly a lot less confusing.

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