

Joint position statement on the use of low- or no-calorie sweeteners (LNCS)

Position statements set out our views on an important area in nutrition and may provide guidance to **researchers, regulatory agencies and policy makers, health professionals, the food industry and the media.**

This position statement was produced by expert scientists representing the involved organisations, and reviewed by the British Dietetic Association, the British Nutrition Foundation's Scientific Committee and Diabetes UK's Diabetes Lived Experience Advisory Committee.

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Executive Summary

- Approved low- or no-calorie sweeteners (LNCS)¹ are considered safe when consumed within established Acceptable Daily Intakes (ADIs)².
- LNCS can play a role in supporting weight management and diabetes management strategies but they are not a stand-alone solution. A healthy, balanced dietary pattern that is lower in sugars, saturated fats and salt, and high in fibre (including foods such as fruit and vegetables and wholegrains) remains key.
- For regular sugar-sweetened beverages (SSB) consumers, low- or no-calorie sweetened beverages (LNCBs) may be a useful alternative, particularly for individuals at higher risk of type 2 diabetes. While water is the ideal choice, LNCBs may support a gradual transition away from SSBs.
- Healthcare professionals (HCPs) should provide evidence-based, individualised guidance on LNCS use.
- Further research and improved data are needed to better understand LNCS consumption, particularly in the context of food and drink reformulation, as well as to evaluate their long-term health effects and behavioural outcomes.

Plain English summary:

Low- or no-calorie sweeteners are increasingly used in the food industry as a strategy to reduce the sugar content of products and meet reformulation targets aimed at improving public health. However, they should not be viewed as a “cure-all” solution. The primary goal remains the promotion of a healthy, balanced diet. For health professionals, this means providing personalised, evidence-based guidance on the appropriate use of sweeteners within the context of overall dietary quality. For food manufacturers, it involves developing products that not only reduce added sugar but also support broader nutritional goals, contributing positively to public health.

Low- or no-calorie sweeteners have been evaluated for safety for use within established acceptable daily intakes (ADIs). For example, based on current regulatory guidance, an adult with no other dietary sources of aspartame could theoretically consume up to 12 cans of soft drinks sweetened at the maximum permitted level daily without exceeding the ADI (see Appendix). However, this is a theoretical upper limit and not a recommended intake. Further research is needed to better understand actual consumption patterns and the potential long-term effects of these sweeteners on health and behaviour.

¹ **LNCS:** Low or no calorie sweeteners, LCNS are ingredients added to foods and drinks to provide a sweet taste without significant calories. FSA Approved LCNS include acesulfame potassium (acesulfame-K), aspartame, cyclamate, saccharin, sucralose, thaumatin, neohesperidin dihydrochalcone, steviol glycosides, neotame, aspartame-acesulfame salt and advantame. This statement focuses on LNCS only, excluding sugar alcohols/polyols like sorbitol or xylitol.

² **ADI:** The amount of a substance that can be consumed daily over a lifetime without risk.

Position Statement

Common abbreviations used in the statement are listed below:

ADI	Acceptable Daily Intake
DHSC	Department of Health and Social Care
FSA	Food Standards Agency
HCPs	Healthcare professionals
LNCS	Low- or no-calorie sweeteners
LNCS	Low- or no-calorie sweeteners
RCT	Randomised Controlled Trial
SACN	Scientific Advisory Committee on Nutrition
SSBs	Sugar-sweetened beverages

Low- or no-calorie sweeteners (LNCS) approved for use in the UK are considered safe when consumed within their acceptable daily intakes (ADIs). Whilst we may not have accurate estimates of consumption, current evidence suggests that average intakes across all population groups remain below these safety thresholds.

When used to replace added sugars, LNCS can contribute to reducing free sugar intake, support weight management efforts, and aid in blood glucose control. However, they should not become the central focus of dietary change and are not recommended for young children (the use of sweeteners is prohibited in all foods for those under 36 months). The primary goal should remain the improvement of overall dietary quality to support long-term health.

Data from the UK National Diet and Nutrition Survey show that average free sugar consumption remains above recommended levels. Sugar-sweetened beverages (SSBs) are a major contributor. For individuals who regularly consume SSBs, low- or no-calorie beverage (LNCS) alternatives may serve as a practical substitute, particularly when switching directly to water may not be acceptable. These alternatives can be beneficial if they contribute to reduced overall energy intake.

Regulatory bodies should continue to monitor emerging evidence on the safety and health effects of LNCS and communicate findings transparently to the public. Public health messaging can clearly convey that LNCS are safe within ADI limits and can be a useful tool within a healthy diet. Healthcare professionals should offer personalised, evidence-based advice on the appropriate use of sweeteners, tailored to individual health goals and preferences.

Further research, however, is needed to clarify the long-term health impacts of various LNCS types and their role across different food categories. High-quality, large-scale, and longer-term studies, particularly well-designed longer-term randomised controlled trials (RCTs), are essential to fully assess their effects on metabolism, energy balance and overall health outcomes.

There are notable gaps in current UK data on LNCS consumption. Existing research may not reflect recent reformulations, such as increased use of LNCS in response to sugar reduction initiatives (e.g. in soft drinks). As a result, current intake patterns may be underrepresented in available datasets.

Ongoing monitoring is essential to assess the long-term use of LNCS and their impact on diet quality. Although sweeteners must be declared on food labels (by function and by name or E-number), current food composition databases and dietary surveys lack detailed information on actual LNCS content in foods and beverages. More accurate, quantifiable intake data are needed to evaluate real-world effects and inform evidence-based policy. Data-sharing from manufacturers on LNCS quantities in products would significantly improve intake assessments.

Background

In May 2023, the World Health Organisation (WHO) published a [guideline](#) on LNCS (may also be termed non-sugar sweeteners, NSS). In response to the WHO Guideline, the [British Dietetic Association](#) (BDA), the [British Nutrition Foundation](#) (BNF) and [Diabetes UK](#) have reviewed the current evidence to update their joint 2018 position statement on this topic. The aim of this updated statement is to support healthcare professionals in their practice and to strengthen the evidence base for future policy and research. It includes updated recommendations for healthcare professionals, research, policy and the food industry, specific to the UK, while also identifying key research gaps.

Inconsistent and conflicting information about LNCS contributes to confusion and mistrust amongst consumers and healthcare professionals. In light of considerable reformulation of food and drinks in recent years (e.g. increased use of LNCS and sugar reduction in soft drinks), it is important to better understand intake levels and the potential health effects of LNCS consumption. The safety and utility of LNCS must be clearly communicated and should align with current UK regulatory standards and broader public health objectives.

The WHO guideline included the conditional recommendation that LNCS should not be used as a means of achieving weight control or reducing the risk of long-term health conditions, including type 2 diabetes and cancer. The Scientific Advisory Committee on Nutrition (SACN), the body that provides independent advice on nutrition and health to the UK government, has subsequently reviewed the WHO statement and concluded that, in relation to the use of NSS to reduce free sugars³ intake, the evidence suggests there may be some benefit in using NSS to help reduce weight gain in the short to medium term. SACN emphasised that they are not the only option and reiterated the importance of following UK government dietary guidance, as summarised in the Eatwell Guide to support weight maintenance and long-term health.

How did we develop this position statement?

The BDA, BNF and Diabetes UK LNCS working group developed this position based on:

- An initial development of scope, which included an agreed list of health and related outcomes for review⁴ that informed the planning and process of the evidence and insight review, and acted as a guide for the development of the recommendations.
- Reviewing the latest research evidence on LNCS in the areas identified, including the systematic review taken to inform the WHO guideline and developing an internationally peer-reviewed evidence-based insight document. (Please see the BDA website)
- Reviewing national and international guidelines on LNCS.
- Development and discussion of recommendations with careful consideration of the quality of the evidence available and its practical application.
- Engaging in discussion, review and consensus building with nutrition experts, academics, dietitians and individuals living with diabetes.

³ The UK definition of free sugars includes: all added sugars in any form; all sugars naturally present in fruit and vegetable juices, purées and pastes and similar products in which the structure has been broken down; all sugars in drinks (except for dairy-based drinks); and lactose and galactose added as ingredients. The sugars naturally present in milk and dairy products, fresh and most types of processed fruit and vegetables and in cereal grains, nuts and seeds are excluded from the definition.

⁴ Outcomes reviewed included safety, health outcomes -cancer, obesity, diabetes, cardiovascular disease, dental health, gut microbiome, reproductive health, intake, diet quality, sweet preferences, and sugar reduction.

Recommendations

These recommendations are intended to support healthcare professionals and have applications across clinical practice, research, policy development and the food industry.

Recommendations for healthcare professionals (HCPs)

HCPs should be:

- Equipped with training and resources to deliver up-to-date, evidence-based advice on LNCS consumption, tailored to individual dietary needs and mindful of both potential benefits and risks.
- Supported by transparent and clearly communicated research findings, with clarity on how evidence is selected and a balanced representation of different types of studies.
- Where appropriate, considering the inclusion of LNCS as a potential part of a stepwise approach to improving diet quality and reducing free sugar intake, while also promoting nutrient-dense food choices.

Applications to practice

For weight management (and supporting prevention of type 2 diabetes and cardiovascular disease):

- LNCS should not be used as the primary dietary modification to support weight management. Instead, dietary interventions should focus on improving overall dietary quality by:
 - Reducing intakes of foods high in free sugars (e.g. cakes, pastries, sweet spreads, confectionery) and replacing them with alternatives such as fruits, vegetables, unsweetened dairy products e.g. plain yogurt, and unsalted nuts.
 - Encouraging the consumption of water or other unsweetened beverages, including tea and coffee, replacing sugar-sweetened beverages (SSBs). For regular SSB consumers, LNCS may be a useful alternative, particularly for people at higher risk of type 2 diabetes.
- HCPs should encourage individuals to limit free sugar intake to less than 5% of total dietary energy and provide practical advice on how this should be achieved, whilst acknowledging the challenges posed by the current food environment, including the availability, accessibility and marketing of sugary foods and drinks.
- Infants and young children, especially those under 3 years old, should not be encouraged to consume products with LNCS.
- For children aged 5 years and older, LNCS may be an option to help reduce excess sugar and calorie intake based on individual dietary needs. Recommended drinks for children are water and milk (or unsweetened fortified milk alternatives). Unsweetened fruit/vegetable juices and smoothies should be limited to a maximum of one small glass (150ml) a day.
- HCPs should consider the diet quality of individuals choosing LNCS-containing products, to ensure no compensatory eating behaviours emerge (for example, consuming larger portions or choosing less healthy foods elsewhere in the diet under the assumption that LNCS “save calories”).

For diabetes management:

- Regular SSB consumers should be encouraged to replace these with water or other unsweetened drinks. LNCS may be useful as part of a gradual approach to reducing free sugar intake.

- Replacing free sugars, including those found in SSBs, with LNCS and LNGBs can be an effective strategy for reducing carbohydrate intake and managing post-prandial blood glucose levels.

Healthcare professionals should:

- Encourage people living with diabetes to monitor how replacing free sugars with LNCS affects their diabetes management and body weight.
- Support individuals in understanding food and drink labels, to increase awareness of how product reformulation may impact their blood glucose levels and overall diabetes management.
- Help to show people living with diabetes how to improve their diets by following a dietary pattern rich in whole grains, fruits, vegetables, fish, pulses, nuts, seeds, and unsweetened dairy or fortified unsweetened dairy-alternatives, while limiting red and processed meats, salt, refined carbohydrates, and sugar-sweetened foods and drinks.
- Refer individuals to a dietitian for personalised dietary advice and support when needed and appropriate.

Recommendations for research

- Standardised methods should be developed to accurately monitor both total and individual intakes of LNCS intakes over time. This will support comparisons with ADIs and help identify high consumers. Efforts should include improved and validated nutritional assessment tools and the use of biomarkers through urinary analysis.
- There is a clear need for publicly available, regularly updated food composition databases that reflect product categories and reformulation trends. All dietary sources (not just beverages) must be included, and dietary modelling should be used to assess the potential impact of LNCS on reducing free sugar intake across the total diet and evaluate the role of LNCS in sugar reduction strategies.
- Research should examine both short- and long-term effects of LNCS, across diverse population groups including variations by ethnicity, age (including infant and young children), sex, life stages (including pregnant and lactating women) and pre-existing health status (such as those living with obesity or with diabetes). Behavioural changes linked to long-term conditions should also be considered.
- Further research is needed to understand biological mechanisms, including the:
 - long-term impact of LNCS on energy balance, appetite, satiety and glucose metabolism, using high-quality RCTs to control for confounding variables;
 - effect of food matrices (e.g. liquid vs. solid) on the physiological processing and utilisation of LNCS;
 - distinct metabolic pathways of individual LNCS compared to collective (in combination) effects, and the potential 'cocktail effect' of different sweeteners when used in combination.
- Research should explore consumer perceptions of different LNCS types, including perceived benefits versus perceived risks, and the impact on dietary behaviour.
- Studies should assess HCPs' understanding of LNCS, including their views on benefits and risks, to support objective, evidence-based dietary guidance.
- Research funding should prioritise research that supports healthy, balanced diets and sugar reduction strategies.

Recommendations for policy

Authoritative bodies (such as SACN, DHSC and FSA) should:

- Evaluate the impact of sugar reduction policies on LNCS intakes.
- Continue to monitor the safety of LNCS through regular reviews of emerging research.
- Provide timely and clear responses to influential publications on LNCS, including WHO guidelines, to inform stakeholders such as the public, HCPs and procurement bodies.
- Track intake levels and consumption patterns, including total and specific LNCS types. Enhanced data collection within the *National Diet and Nutrition Survey* and inclusion within the national composition database would support this. This is particularly pertinent in light of government sugar reduction targets, the 2018 NPM's focus on free sugars, and SACN's precautionary advice on sweeteners. With this clear need for robust consumption data, exploring mechanisms to share commercially sensitive information on the presence and quantity of LNCS in commonly consumed foods and beverages would support both policy evaluation and evidence-based risk assessment.
- Improve public communication and food labelling by providing clear, consistent public health messages on LNCS safety and explaining ADIs in the context of typical consumption levels (See Appendix).

Recommendations for the food industry

The food industry should:

- While acknowledging commercial sensitivities, disclose quantitative details of LNCS used in products and report sales data in a similar manner to sugar. LNCS should be included in metrics reporting for transparency initiatives like the Food Data Transparency Partnership.
- Continue efforts to reduce the quantity of free sugars in products, while exploring innovative and consumer-accepted approaches to improve nutrient density.
- Collaborate with academic researchers under transparent guidelines that mitigate bias and ensure full disclosure of funding sources and conflicts of interest.

Further Information

Sugar, sweeteners and diabetes:

<https://www.diabetes.org.uk/living-with-diabetes/eating/carbohydrates-and-diabetes/sugar-sweeteners-and-diabetes>

For the full insight review refer to BDA, BNF and Diabetes UK insight document which can be found on the BDA website.

Appendix

Illustrated quantity of intake of soft drinks needed to exceed ADIs

LNCS	ADI	ADI Equivalent if sweetener used at the maximum permitted level
Aspartame	0-40 mg/kg bodyweight	For an adult, without any other source of aspartame in the diet, this is equivalent to drinking 16 standard 250ml glasses (around 12 cans) of soft drink sweetened with aspartame at the maximum permitted level every day throughout their life. Soft drinks frequently contain aspartame at less than the maximum permitted level
Sucralose	0-15 mg/kg bodyweight.	For an adult, without any other source of sucralose in the diet, this is equivalent to drinking 12 standard 250ml glasses (around 9 cans) of soft drink sweetened with sucralose at the maximum permitted level every day throughout their life.
Steviol Glycosides	0-4 mg/kg bodyweight.	For an adult, without any other source of steviol glycosides in the diet, this is equivalent to drinking 12 standard 250ml glasses (around 9 cans) of soft drink sweetened with steviol glycosides at the maximum permitted level every day throughout their life.

The ADI is the estimated amount per kg of body weight that a person can consume, on average, every day, over a lifetime without risk. ADIs are set 100 times lower than the smallest amount that may cause health concerns.

Source: British Soft Drinks Association https://www.britishsoftdrinks.com/media/js2lw4et/bsda_sweeteners_pamphlet.pdf

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