The use of low or no calorie sweeteners

Position Statement (Updated: December 2018)

Why have we produced this position statement

Low or no calorie sweeteners (LNCS) receive much publicity and controversy remains amongst both consumers and healthcare professionals surrounding their use. This in part explained by the inconsistent and sometimes contradictory information that is presented in relation to their safety, role in weight management and link to other health conditions.

We aim to review the current evidence and provide a set of recommendations, as well as identify the gaps in research.

How did we develop this position?

We developed this position through knowledge and insight gained from:

- Reviewing the relevant literature on low or no calorie sweeteners
- Reviewing national and international guidelines on low or no calorie sweeteners
- Discussions with nutrition experts, dietitians, academics and people with diabetes as part of a consensus group (see below)

What we say about this issue

Recommendations:

LNCS and safety

- The use of LNCS remains safe with current intake levels within the ADIs. Any new safety issues arising from new research are regularly monitored.
- Public health messages around the safety of LNCS need to be given to consumers in a clear and consistent way and from reliable, trustworthy and evidence-based sources.
- Information for consumers explaining the ADIs for LNCS in the context of the food and drinks they buy and consume could be helpful, as well as reassurance that when sweeteners are used they must be labelled on products as a result of EU regulation - both by function (i.e. sweetener) and by name or E number.
- The safety of LNCS are currently regulated by EFSA. Continued regulation of the safety of LNCS, particularly of newer LNCS is important in the future, i.e. post-Brexit.

The use of LNCS in reformulation

- Businesses should continue to reduce free sugars in their products.
- Public health messages around the role of LNCS in reduction of free sugars, as part of reformulation activities, may be helpful in the wider context of reducing energy intake.
- As businesses may not always report change of formulation and/or alert consumers to the use of LNCS in their products, practical information for consumers about where to find this information (i.e. on food labels and company websites) may be helpful.
- Healthcare professionals should be aware of the different types of sweeteners (both caloric and non-caloric that are available, what their benefits are and how they are best used (eg some LNCS are better for baking) so they are able to give practical advice to people wanting to use LNCS to help reduce their free sugar and calorie intake.
- In order to understand trends, the Government should monitor changes in intakes of both caloric and non-caloric sweeteners.The EU instructs member states to maintain systems to monitor the consumption and use of food additives. The food industry should also monitor the use of free sugars and LNCS in products.

The role of LNCS in weight management

- Substituting LNCS for free sugars (especially in sugar sweetened beverages) may be a useful, relatively simple, strategy (or a 'stepping stone') to help reduce calorie intake and assist with weight management.
- This strategy may be particularly helpful and practical for people who regularly consume sweet foods and drinks and prefer a sweet taste.
- The use of LNCS to aid weight loss should be in the context of an overall healthy diet and a wider weight management programme.
- Healthcare professionals should first assess an individual's free sugar and LNCS intake and then give individually tailored advice. If appropriate, they can offer practical ways to use LNCS as part of a healthy eating plan while monitoring for emergence of any compensatory behaviours.
- In the long term, healthcare professionals should continue to take an individualized personalised approach, whilst considering the whole diet.

The role of LNCS in diabetes management

- Replacing free sugars with LNCS can be a helpful strategy to aid glucose management.
- Healthcare professionals should give tailored, individualised advice about how LNCS can be used to aid glycaemic and, if relevant, weight management in people with diabetes.
- The effect of the Soft Drinks Industry Levy has led to reformulation of many brands and an increase in availability of drinks with reduced levels of free sugars; healthcare professionals need to be aware of these changes and communicate this to people with diabetes as it could reduce the effectiveness of some products as treatments for hypoglycaemia.

LNCS and the risk of Type 2 diabetes

- Currently, there is not enough evidence to say that LNCS consumption increases the risk of developing Type 2 diabetes.
- Further high quality human trials are needed, especially looking at the effect of frequent and long-term consumption of LNCS on glucose metabolism, appetite control and gut microbiota.

LNCS and cardiovascular disease

- There is not enough evidence to say that the consumption of LNCS leads to the development of hypertension, stroke or dementia.
- Future research is needed to investigate the mechanisms underlying the reported associations from some observational studies and whether any link is causal.

LNCS and children

- LNCS are safe for children to consume up to the ADIs.
- LNCS (particularly substituting sugar-sweetened beverages with LNCS sweetened beverages) can be a useful strategy for children with diabetes to aid their glycaemic management.
- LNCS can be recommended to children as a weight management strategy (or a 'stepping stone') to reduce calorie intake and aid weight loss, particularly in those who have a high intake of sugary foods and drinks and/ or have a 'sweet tooth'. When replacing sugars, LCNS can also help protect against tooth decay.
- Healthcare professionals should give individually tailored and practical advice when recommending LNCS as part of a healthy eating plan to children who regularly consume sugar-sweetened beverages. It is also important to consider overall diet quality and monitor for the emergence of any compensatory behaviours and to highlight that fizzy drinks may contain acids that can be harmful to teeth and that some of these drinks contain caffeine.

LNCS and diet quality

- Healthcare professionals, such as dietitians, should assess overall diet quality and lifestyle in people who regularly consume sugar-sweetened beverages or LNCS sweetened beverages.
- LNCS can be used as a "stepping stone" to reduce intake of sugar in the diet as part of an overall healthy eating pattern.

Conclusion

LNCS are shown to be safe and they can be a used as part of a strategy for adults and children in the management of weight and diabetes. In particular, LNCS sweetened beverages may be helpful when they are used as a substitute by regular consumers of sugar-sweetened beverages and as long as substitution doesn't lead to later

compensation with increased energy intake. This approach may be particularly helpful for people who are accustomed to a sweet taste and for whom water, at least initially, is an undesirable option (Johnson, 2018).

As there are some gaps in current knowledge, long-term studies are needed to examine the physiological effects of LNCS on metabolism and energy balance (Winther, 2017). New independent, larger, longer, good quality research is warranted to explore the long-term risks and benefits of different types of LNCS and their role in different food and drink products, as well as an understanding of the mechanisms (e.g. on appetite or food preferences).

As a result of reformulation, it will be important to monitor LNCS consumption and long-term use, in particular there is a need for studies that investigate the cumulative effect of routine LNCS consumption over long periods. It will also be important to ascertain the impact of increased LNCS use on overall diet quality.

Public health messages focusing on safety and appropriate use of LNCS in the context of a healthy diet should also be communicated, especially considering their increased use in beverages. Advice from healthcare professionals needs to be clear, unbiased and consistent, as well as practical (Harricharan, 2014).

Further information

Sugar, sweeteners and diabetes:

www.diabetes.org.uk/Guide-to-diabetes/Enjoy-food/Carbohydrates-and-diabetes/Sugar-sweeteners-and-diabetes

For full review see 'The use of low or no calorie sweeteners – insights gathered'.

https://www.diabetes.org.uk/professionals/position-statements-reports/food-nutrition-lifestyle/use-of-low-or-no-calorie-sweetners

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References

- Diabetes UK (March 2018). Evidence-based nutrition guidelines for the prevention and management of diabetes. Available at: https://diabetes-resources-production.s3.eu-west-1.amazonaws.com/resources-s3/2018-03/1373_Nutrition%2uidelines_0.pdf
- Harricharan, M, Wills J, Metzger N, de Looy A, Barnett J. Dietitian perceptions of low-calorie sweeteners. European Journal of Public Health, 2014. Vol. 25, No. 3, 472–476
- Johnson et al (2018). Low-Calorie Sweetened Beverages and Cardiometabolic Health: A Science Advisory From the American Heart Association. Circulation