



FACTSHEET

Weight Control and Low/no Calorie Sweeteners

Weight control can be either losing weight to improve health, maintaining weight loss, or simply not putting on extra kilos. All of these situations require management of calorie intake and expenditure as part of a healthy diet and an active lifestyle.

In the current global challenge to lower high rates of obesity and diet-related non-communicable diseases (NCDs) such as Type 2 Diabetes, public health authorities worldwide advise reducing both calorie and free sugars intake. The World Health Organization (WHO) recommends that free sugars contribute no more than 5-10% of total calorie intake.¹

Free sugars are those added to food by cooks, manufacturers or at the table, plus those naturally present in honey, syrups and fruit juices.

Low/no calorie sweeteners can be a significant aid to weight control by helping reduce intake of excess sugars while lowering the calorie content of food and drink that contain them.

The effectiveness of sweetener use is confirmed in both short- and longer-term randomised controlled trials (RCTs – studies providing the highest quality evaluations of cause and effect) that demonstrate using low/no calorie sweeteners in place of sugars results in total calorie reduction and, in turn, weight loss over time.²

More effective weight loss

Systematic reviews and meta-analyses (a synthesis of all available evidence alongside a statistical analysis that combines the results of multiple studies) of RCTs highlight that replacing sugars with low/no calorie sweeteners results in average weight loss of 1-2kg.³⁻⁸

Additionally, long-term RCTs show that using low/no calorie sweeteners in sugar-reduced diets assists in sustaining weight loss over time by improving diet satisfaction and compliance to a healthy eating plan.^{9,10} This is key because keeping the weight off in the long term is one of the hardest challenges in weight management.

Mixed epidemiological evidence and opposing recommendations

Despite consistent trial evidence showing that low/no calorie sweeteners can support weight control, recommendations about their use vary. Much of this disagreement comes down to how different types of evidence from RCTs or epidemiological research (observational population studies monitoring what people eat and how it links to health over time) is weighted.¹¹

The WHO advises against using low/no calorie sweeteners for weight control, basing its guidance on low-quality epidemiological evidence.¹² However, several respected health and nutrition bodies take a different view. Organisations such as the UK Scientific Advisory Committee on Nutrition (SACN),¹³ the European Association for the Study of Diabetes,¹⁴ the American Diabetes Association,¹⁵ the British Dietetic Association, British Nutrition Foundation (BNF), and Diabetes UK¹⁶ agree that low/no calorie sweeteners can play a useful role in weight control and diabetes management strategies, particularly when they replace sugar as part of an overall healthy diet.

Notably, the WHO recommendation is a conditional (or weak) one, because it relies on low-quality evidence from observational studies, whereas its strong recommendation to reduce sugar intake is backed by robust scientific data.¹¹ A key limitation of observational studies is the risk of “reverse causation”: people who live with overweight or obesity turn to low/no calorie sweeteners as part of efforts to manage their weight rather than sweeteners being the cause of their overweight. In fact, trying to lose or maintain weight is one of the main reasons for using low/no calorie sweeteners.

To address the issue of reverse causation and clarify the mixed results from observational studies, an umbrella review compared findings from studies with different methodologies.⁴ The review found a clear split: simple (“naïve”) analyses of population studies often linked sweetener use with higher risks of obesity and chronic disease. In contrast, more rigorous, bias-adjusted analyses that accounted for the substitution of sugars with low/no calorie sweeteners, showed the opposite. When sweeteners are used to replace sugar and reduce overall calories, they are linked to lower body weight, reduced risk of obesity and related chronic diseases. Importantly, these findings align with the higher certainty evidence from RCTs.

All studies are not the same: Why RCTs are the best study design for evaluating cause and effect

A randomised control trial (RCT) is a type of study design in which participants are randomly assigned to one of two or more groups. The experimental group receives the intervention e.g. the low/no calorie sweetened food or drink, while the control group receives comparison condition, for example the standard sugar-containing food or drink, or water, or a placebo (dummy treatment).

Participants are then followed over time to investigate what effect the intervention had on a specific outcome of interest such as changes in body weight or blood glucose levels.

Because randomisation helps to minimise bias and control for confounding factors, RCTs are considered the most appropriate study design for determining whether a true cause-and-effect relationship exists, and they are often referred to as the “gold-standard” in clinical research. In contrast, observational studies can identify associations but cannot reliably establish causality.¹²

At a time when strategies are needed to combat the global challenge of obesity and its related health problems, the use of low/no calorie sweeteners can make a significant contribution in combination with physical activity and healthy diet.



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