International Sweeteners Association



FACTSHEET

Diabetes and Blood Sugar Control with Low/no Calorie Sweeteners

Diabetes is one of the fastest-growing health challenges worldwide with its prevalence having nearly tripled since 2000. According to the International Diabetes Federation (IDF), around 589 million adults – approximately 1 in 9 globally – are living with diabetes, most of whom have type 2 diabetes.[1] If current trends continue, this number is projected to rise to 853 million by 2050. In addition, around 1.8 million children and adolescents under the age of 20 are living with type 1 diabetes.[1]

Maintaining good blood glucose (blood sugar) control can help reduce the risk of long-term complications associated with hyperglycaemia (high blood sugar levels). Managing dietary carbohydrate and sugar intake is an important part of diabetes care and effective blood glucose management.[1]

Type 2 Diabetes

Type 2 diabetes occurs when the body does not use insulin effectively and/or the pancreas does not produce enough insulin. Insulin helps move glucose from the bloodstream into the body's cells, where it is used for energy. Excess body weight, unhealthy diets, and physical inactivity are among the main risk factors for developing type 2 diabetes.

± 1 in 9 adults worldwide



≈ 589 million people now living with diabetes

Low/no calorie sweeteners do not affect blood sugar control

Studies show that, unlike carbohydrates and sugars, low/no calorie sweeteners do not raise blood glucose levels and can be used safely by people with diabetes.[2]

This benefit has been recognised by the European Food Safety Authority (EFSA) which authorised the health claim that low/no calorie sweeteners used as a replacement for sugars induce a lower blood sugar rise after consumption compared to sugar-containing foods and drinks.[3] This claim may be used in the EU on labels of low/no calorie sweeteners-containing food and drink and in their advertising.[4]

What the evidence shows: trials versus observational studies

Evidence from meta-analyses of randomised controlled trials (RCTs) – the highest-quality study design for determining cause and effect – has consistently shown that approved low/no calorie sweeteners do not adversely affect blood glucose control or insulin secretion in people with or without diabetes.[5-7] Meta-analyses of RCTs provide the most robust evidence because they combine results from multiple studies, reducing the influence of chance findings from any single trial.

Evidence from observational studies has been less consistent and of lower certainty.[8] Some studies have reported an association between higher consumption of low/no calorie sweeteners and an increased risk of type 2 diabetes. However, this may be explained by reverse causation, whereby people who are already at higher risk of metabolic diseases, such as diabetes, are more likely to choose products containing low/no calorie sweeteners as part of efforts to reduce their sugar intake. When researchers account for such sources of bias, the observed association with diabetes is no longer evident, and low/no calorie sweetener use has been associated with favourable cardiometabolic outcomes.[9]

Aid for weight management and blood sugar control in diabetes

The role of low/no calorie sweeteners in helping individuals to reduce sugar intake is recognised by diabetes, nutrition, and health organisations around the world.[10-15] By providing sweet taste without raising blood sugar levels, they can help people with diabetes enjoy a wider variety of foods and drinks while managing their condition. Because they provide little to no calories, low/no calorie sweeteners may also support weight management when used to replace sugars as part of a healthy diet.

European guidelines for the dietary management of diabetes support the use of low/no calorie sweeteners as an alternative to sugars in foods and beverages.[10] Similarly, the American Diabetes Association (ADA) recommends that people with diabetes and those at risk for diabetes can use low/no calorie sweeteners in place of sugar-sweetened products to help reduce overall calorie and carbohydrate intake.[11]

In the UK, the British Dietetic Association (BDA), the British Nutrition Foundation (BNF), and Diabetes UK recognise that low/no calorie sweeteners can play a role in supporting weight and diabetes management strategies when used as part of a broader healthy lifestyle, rather than as a stand-alone solution.[12]

Likewise, organisations in Latin America conclude that low/no calorie sweeteners are safe when consumed within the Acceptable Daily Intake (ADI – the amount that can be consumed daily over a lifetime without appreciable health risk), and can be a useful dietary tool for calorie reduction, weight management and glucose control, when they replace sugars in a healthy dietary plan.[13-15]



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