

A Position Statement by Diabetes in Asia Study Group on WHO Guidelines Regarding the Use of Nonsugar Sweeteners

INTRODUCTION

The latest International Diabetes Federation atlas estimates 537 million adults living with diabetes, with Asia alone accounting for 60% of the diabetic population of the world. The prevalence is projected to rise by 68% in South East Asia by 2045.^[1] The recent ICMR—INDIAB study showed that there are 101 million people with diabetes (PWD) and 136 million people with prediabetes in India.^[2] Lifestyle modification with restriction of simple sugars is the cornerstone of managing diabetes. PWD have been routinely using various nonsugar sweeteners (NSS) as a substitute for sugar. These NSS undergo toxicological assessments by various regulatory bodies to establish their acceptable daily intake (ADI). The US Food and Drug Administration (FDA) has approved many NSS for consumption by the general public, including PWD.^[3]

The recently released World Health Organization (WHO) guidelines on the use of NSS received a lot of media coverage, raising concerns among PWDs regarding the safety of their long-term use. This white paper is intended to alleviate their concerns and provide clarity regarding the use of NSS.

WHO GUIDELINES ON THE USE OF NSS

The WHO guidelines on the use of NSS^[4] are intended to complement other WHO guidance on healthy diet, particularly the WHO guidelines on sugar intake. Under the section on objective, scope, and methods, it has been clarified that “guidance on the management of diabetes in individuals with pre-existing diabetes is beyond the scope of this guideline.” It has been further clarified that “the guidance in the guideline may not be relevant for individuals with existing diabetes.” The WHO guidelines are based on a systematic review and meta-analysis in which studies specifically assessing effects on individuals with pre-existing diabetes or including only such individuals were not included.^[5]

Although the WHO guidelines raise concerns regarding the long-term use of NSS by individuals without diabetes, the strength of evidence is graded as low to very low. The guidelines further emphasize that individual NSSs are different chemical compounds and may have different effects. It has also been clarified that reverse causation might have a potential role in the adverse outcomes observed in prospective studies because individuals who

prefer consuming NSS are more likely to have a high risk of cardiovascular events at baseline.

SAFETY OF NSS

Extensive research and rigorous regulatory evaluations have been conducted to assess the safety of NSS. These evaluations involve comprehensive studies, including preclinical and clinical trials, toxicological assessments, and epidemiological investigations. Regulatory bodies such as the US FDA, the European Food Safety Authority (EFSA), and other global regulatory authorities carefully review the scientific data and evidence surrounding each NSS before approving their use in food and beverages. These evaluations consider factors such as ADI, no observed adverse effect level, potential side effects, and any potential risks associated with long-term consumption. The purpose of these evaluations is to ensure that NSS meets the stringent safety standards and poses no harm to consumers when consumed within recommended limits. The robust research and regulatory evaluation processes provide confidence in the safety of approved NSS for use by individuals, including those with diabetes. Joint FAO/WHO Expert Committee on Food Additives (JECFA) is an international scientific expert committee administered jointly by the Food and Agriculture Organization of the United Nations (FAO) and WHO to evaluate the safety of food additives, contaminants, naturally occurring toxicants and residues of veterinary drugs in food.

ROLE OF NSS IN DIABETES MANAGEMENT

NSS plays a valuable role in the management of diabetes. These sweeteners offer sweetness without increasing the calorie or carbohydrate content of meals, making them a suitable alternative to traditional sugar for individuals with diabetes. By incorporating NSS into their dietary choices, individuals with diabetes can enjoy a variety of foods and beverages. NSS provide the opportunity to satisfy the desire for sweetness, thus supporting adherence to a diabetes-friendly eating plan. They can be used as a useful tool to reduce the intake of high-calorie sweeteners, which may contribute to weight management efforts. Furthermore, NSS can provide flexibility in food choices, enabling individuals with diabetes to adhere to their dietary recommendations while still enjoying a range of sweet-tasting options. It is important to note that the use of NSS should be individualized and integrated into an overall well-balanced diabetes management plan,

considering personal preferences, overall diet quality, and healthcare professional guidance, and the upper limit recommended for their use should not be exceeded. The American Diabetes Association recommends the use of NSS as a replacement for sugar-sweetened products as long as there is not a compensatory increase in energy intake from other sources.^[6] EFSA panel on Dietetics Products, Nutrition and Allergies has earlier published scientific opinion on the substantiation of health claims related to various NSS and contribution to the reduction in postprandial glycemic responses and maintenance of normal blood glucose concentrations.^[7]

INDIVIDUALIZATION AND MODERATION

The responsible use of NSS is crucial for individuals with diabetes. While NSS can provide a safe and viable alternative to sugar, moderation is key. It is important to adhere to recommended daily limits and be mindful of the overall dietary composition. NSS should be used as part of a well-balanced eating plan that includes a variety of nutrient-rich foods. Reading food labels carefully can help identify products that contain NSS and understand the appropriate serving sizes. It is also important to consider the overall quality of the diet, focusing on whole foods, fruits, nonstarchy green leafy vegetables, lean proteins, and healthy fats. NSS should not be viewed as a license to consume excessive amounts of sweet-tasting foods or beverages.

Several NSSs like Acesulfame Potassium, Aspartame, Saccharin, Sucralose, Neotame, and Stevia are currently available. They vary in terms of their metabolism, sweetness equivalence, ADI, and regulatory approvals in various countries. Carcinogenicity concerns have been raised from time to time, specifically with Acesulfame, Saccharine, and Aspartame. Aspartame hazard and risk assessment results were recently released by WHO. Citing “limited evidence” for carcinogenicity in humans, the International Agency for Research on Cancer (IACR) classified Aspartame as possibly carcinogenic to humans (IACR Group 2), while the JEFCA reaffirmed that it is safe for a person to consume aspartame within the ADI of 40 mg/kg body weight.^[8] The user can make an informed decision regarding his choice of NSS based on available information in consultation with the healthcare professional.

CONSULTING HEALTHCARE PROFESSIONALS

The role of healthcare professionals and adherence to guidelines is of utmost importance when considering the use of NSS for individuals with diabetes. Healthcare professionals, such as registered dietitians, diabetologists, and diabetes educators, possess the expertise and knowledge to provide personalized guidance on the appropriate use of NSS. They can help individuals understand the potential benefits and risks, recommend

suitable NSS, and incorporate them into a comprehensive diabetes management plan. Healthcare professionals can consider factors such as an individual’s specific health needs, medication interactions, and personal preferences to tailor recommendations that align with their overall diabetes management goals. Adhering to established guidelines and recommendations ensures that NSS is used in a responsible and informed manner. Collaborative decision-making between individuals with diabetes and healthcare professionals fosters an open dialog, allowing for questions to be addressed and personalized strategies to be implemented. By working together, individuals with diabetes can receive the necessary support and guidance to make informed decisions regarding the use of NSS, ultimately optimizing their diabetes management and overall well-being.

CONCLUSION

We understand the concerns raised by the recent WHO guidelines regarding the use of NSS by the general population. However, a critical analysis of these guidelines reveals the need for clarification and context. It is important to note that the guidelines primarily focus on the use of NSS by the general population for weight control and are not meant for individuals with diabetes.

Extensive research and regulatory evaluations have consistently supported the safety of approved NSS when consumed within recommended limits. While we acknowledge the caution raised by the WHO guidelines, it is crucial to consider the robust evidence that supports the safe use of NSS as a viable alternative to sugar for individuals with diabetes.

It is essential to highlight that diabetes management should be personalized and consider individual needs and preferences. Moderation remains key when using NSS. Consulting healthcare professionals, such as registered dietitians or diabetologists, can provide personalized guidance and ensure the appropriate and responsible use of NSS in diabetes management.

In conclusion, this white paper reaffirms the safety of NSS sweeteners for individuals with diabetes. It encourages an informed and balanced approach to their use while acknowledging the need for individualization and professional guidance. By clarifying the recent WHO guidelines and addressing concerns, we aim to provide reassurance and support individuals with diabetes in making informed decisions about their dietary choices.

DISCLAIMER

This white paper is intended for informational purposes only and should not replace professional medical advice. Individuals with diabetes are advised to consult their healthcare professionals for personalized guidance on the use of NSS in their diabetes management.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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