



SPANISH ASSOCIATION OF PAEDIATRICS

Use of sugars and sweeteners in children's diets. Recommendations of the Nutrition Committee of the Spanish Association of Paediatrics[☆]



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Abstract The term "sweetener" refers to a food additive that imparts a sweet flavour and usually provides no or very low energy. It is used to sweeten foods, medicines and food supplements with no nutritional purposes. For years, no-calorie sweeteners have been used as substitutes for all or part of the sugar content in foods and beverages. In recent decades its consumption has risen to prevent tooth decay, or as an aid in weight control, obesity and diabetes and, in general, to achieve an optimal energy balance. However, consumption of sugary or sweetened food and soft drinks is high, making this situation of special interest in calorie intake and in the poor behavioural pattern of eating habits in children. In addition, questions remain among consumers about the risks to health associated with their use, whether they are artificial or natural. The "artificial sweeteners" are the group of greatest interest in research in order to demonstrate their safety and to provide firm data on their possible therapeutic effects. The aim of the present document is to increase information for paediatricians on the characteristics of different sweeteners, and to advise on the choice of sweeteners, based on their properties.

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◇ The members of the Comité de Nutrición de la AEP are presented in [Appendix A](#).

PALABRAS CLAVE

Edulcorantes;
 Infancia;
 Azúcares;
 Obesidad;
 Caries

Uso de azúcares y edulcorantes en la alimentación del niño. Recomendaciones del Comité de Nutrición de la Asociación Española de Pediatría

Resumen El término edulcorante hace referencia a aquel aditivo alimentario que confiere un sabor dulce y que, habitualmente, no aporta o proporciona muy poca energía. Se utiliza para endulzar alimentos, medicamentos y complementos alimenticios cuando se persiguen fines no nutritivos. Desde hace años, se han empleado edulcorantes acalóricos como sustitutos de todo o parte del contenido en azúcares en comidas y bebidas. En las últimas décadas, se ha incrementado su consumo para prevenir la caries y para el correcto cumplimiento de la dieta en casos de control del peso corporal, obesidad y diabetes y, en general, como coadyuvantes para conseguir un balance energético adecuado. No obstante, el consumo de alimentos y de bebidas azucaradas y/o edulcoradas es elevado, reflejando o un aporte calórico importante, o un patrón de hábitos alimentarios inadecuados en los niños. Por otro lado, sigue habiendo dudas entre los consumidores sobre los riesgos para la salud asociados al uso de edulcorantes, ya sean artificiales o naturales. El principal interés en investigación sobre seguridad y los posibles usos terapéuticos se centra en los «edulcorantes artificiales». El objetivo de este documento es proporcionar información a los pediatras sobre las características de los distintos edulcorantes para aconsejar en la elección de un determinado edulcorante sobre la base de sus propiedades. © 2014 Asociación Española de Pediatría. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Sugars and sweeteners: concepts

Carbohydrates (CHs) are the nutrients that constitute the main source of food energy. They are notable for their structure and pleasant taste, which in some cases, such as sugars, is sweet, making other foods more palatable, for their ability to satiate the appetite and, in some, for their high fibre content.¹ CHs should provide between 45% and 60% of total dietary energy intake in children older than one year of age.² CHs from food are presented in the form of complex molecules (polymers or polysaccharides), especially starches, dextrans and fibre, or simpler ones, commonly called sugars. The main dietary sources of sugars are fruit and fruit juices, some vegetables, milk, and processed foods with added sugars, especially sucrose or hydrolysed starch (glucose or fructose syrups), such as soft drinks, pastries, sweets and confectionery.^{1,2} Sugars are used to sweeten or enhance the flavour of many of them, to modify the freezing and melting point or to colour foods naturally, and to preserve them. Balanced intake of sugars in the daily diet has important properties, as it facilitates the rapid supply of glucose, an indispensable carbohydrate for the development of cognitive functions and physical activity, to the brain and muscles. Sugar should be consumed in a natural form with the foods that contain it, since this also provides other micronutrients. In the twentieth century, however, questions began to be raised as to whether excessive consumption of sugars, particularly associated with processed foods, might be related to diabetes or obesity, and research has continued up to the present.³⁻⁵

Additives are substances deliberately added to foods to perform certain technological functions and the result is that both the additive itself and its byproducts become components of those foods. Additives are not consumed as foods or used as typical ingredients in the diet, regardless of whether or not they have nutritional value.

Monosaccharides, disaccharides or oligosaccharides, or foods containing them, are not regarded as food additives. The term *sweetener* refers to a substance used to impart a sweet taste to foods (Regulation (EC) No 1333/2008). Thus foods such as honey or ordinary sugar, fructose or glucose are not considered sweeteners, since they have other functions apart from sweetening.⁶

Low- or no-calorie sweeteners (LNCSs) have been used for years to replace all or part of the sugar content in foods and drinks, but in the last few decades their consumption has increased both in adults and in children. Their use is linked to dietary alternatives for weight control or diabetes, but also to preventing tooth decay. Although some studies question these possible benefits, both in adults and in children,^{7,8} systematic reviews and meta-analyses on this subject conclude that the use of sweeteners is beneficial in weight-control and diabetes programmes associated with a healthy lifestyle.⁹

The purpose of this document is to provide paediatricians with information on sweeteners and health-related issues, in order to give appropriate advice to patients and their families.

Consumption of sugars and sweeteners and its relationship with health

To assess this consumption we have to take into account not only added sugars and sweeteners, but also sugar incorporated as an ingredient in precooked/processed foods. European adolescents consume some 384 kcal per day from drinks, of which 30.4%, 20.7% and 18.1% comes from sugar-sweetened beverages, sweetened milk and fruit juice, respectively.¹⁰ Various cross-sectional studies have concluded that there is no association, or even that there is a negative association, between consumption of sugars and weight gain.^{11,12} However, there is a widespread debate on

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