

## Intense sweeteners in beverages: what is the risk for our children?

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Artificial sweeteners are being increasingly used in a wide range of food products, mostly beverages and yogurts. The list of authorized sweeteners is regularly revised by the European Commission but each EU Member States must establish national surveys to monitor sweetener consumption, to ensure proper complying of existing legislation. These surveys must include both the analytical control of type and amounts used, together with an estimation of their consumption levels.

The objective of the present work was to assess the intake of artificial sweeteners from beverages among children (6-12 years). For the purpose an illustrated catalogue was compiled, perceptible to the younger children, with a total of 132 products, 30 of them artificially sweetened. Of a total of 702 children that have accepted to participate in the study only 22 (3 %) declared the consumption of beverages with artificial sweeteners within the last 24 hours. Despite the positive identification of several other products present in the catalogue, only 10 artificially sweetened beverages were ingested.

Simultaneously, the artificially sweetened beverages were analyzed for label compliance and sweeteners amount. The samples were analyzed by SPE/HPLC/ELSD for nine high intensity (non-nutritive) sweeteners, six approved (acesulfame-K, aspartame, cyclamic acid, saccharin, sucralose, neohesperidine dihydrochalcone) and three non-authorized (alitame, dulcin and neotame). Aspartame was the most frequently reported additive (65% of the samples), followed by acesulfame-K (53%), cyclamates and saccharine (38% each), being sucralose and neohesperidine dihydrochalcone detected in only two samples each. Only approved sweeteners were found and all used within EU maximum concentration limit. Nevertheless, cyclamic acid was frequently at the border line. Several irregularities were found in the labels, including the presence of additional undeclared sweeteners and the use of different strategies to reduce the perception of their presence by the unaware consumers, namely a reduced letter size. Of special concern is the increasing number of non-carbonated juice brands, traditionally consumed by children, with artificial sweeteners added, not easily perceived on the label.

Based on these findings, and taking into account the low frequency of consumption among the selected group of children, no safety issues are to be expected. Nevertheless, an accurate control of labelling should be implemented together with more information among industrials to avoid the use of this additives in products designed for children.

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