Assessment of dietary exposure in the French population to 13 selected food colours, preservatives, antioxidants, stabilizers, emulsifiers and sweeteners.

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Abstract
The results of French intake estimates for 13 food additives prioritized by the methods proposed in the 2001 Report from the European Commission on Dietary Food Additive Intake in the European Union are reported. These 13 additives were selected using the first and second tiers of the three-tier approach. The first tier was based on theoretical food consumption data and the maximum permitted level of additives. The second tier used real individual food consumption data and the maximum permitted level of additives for the substances which exceeded the acceptable daily intakes (ADI) in the first tier. In the third tier reported in this study, intake estimates were calculated for the 13 additives (colours, preservatives, antioxidants, stabilizers, emulsifiers and sweeteners) according to two modelling assumptions corresponding to two different food habit scenarios (assumption 1: consumers consume foods that may or may not contain food additives, and assumption 2: consumers always consume foods that contain additives) when possible. In this approach, real individual food consumption data and the occurrence/use-level of food additives reported by the food industry were used. Overall, the results of the intake estimates are reassuring for the majority of additives studied since the risk of exceeding the ADI was low, except for nitrites, sulfites and annatto, whose ADIs were exceeded by either children or adult consumers or by both populations under one and/or two modelling assumptions. Under the first assumption, the ADI is exceeded for high consumers among adults for nitrites and sulfites (155 and 118.4%, respectively) and among children for nitrites (275%). Under the second assumption, the average nitrites dietary exposure in children exceeds the ADI (146.7%). For high consumers, adults exceed the nitrite and sulfate ADIs (223 and 156.4%, respectively) and children exceed the nitrite, annatto and sulfate ADIs (416.7, 124.6 and 130.6%, respectively).

KEYWORDS: dietary exposure; food additive; occurrences; use level

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