

New EU label to warn against hyperactivity in children is based on unrealistic consumption levels, say scientists

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An EU regulation due to come into effect in January 2010, which imposes labelling restrictions on 6 food colours in the fight against hyperactivity among children, is based on unrealistically high levels of additive consumption, according to new research published in the journal *Food Additives and Contaminants* (Connolly et al 2009).

In the past couple of years, there has been intensive debate about the possible link between the consumption of food additives for colouring, and hyperactivity, in children. A double-blind randomised intervention study conducted by the University of Southampton, UK (McCann et al. 2007) suggested that the consumption of various mixes of colourant additives and the preservative sodium benzoate by children over one week may increase the risk of developing hyperactive behaviour in some children. The food additives used in the mixture were Sunset Yellow (E110), Carmoisine (E122), Tartrazine (E102), Ponceau 4R (E124), Allura Red (E129), Quinoline Yellow (E104), and Sodium Benzoate (E211). Following this study, a new EU regulation (EC) No. 1333/2008, due to come into effect in January 2010, which stipulates that any food on sale in the European Union which contains particular food additives (Sunset Yellow, 30 Carmoisine, Tartrazine, Ponceau 4R, Allura Red, and Quinoline Yellow) – be labelled to indicate that these additives “may have an adverse effect on activity and attention in children.”

Whilst not attempting to negate or contest the findings of that study, a team of UK and Irish scientists evaluated the probability of whether or not the pattern and level of consumption of the food additives used in the Southampton study could occur in a nationally representative sample of Irish children and teenagers. This study has recently been published in the *Journal Food Additives and Contaminants*.

To determine the composition of the food intake in Irish children and teenagers, the authors used two national dietary surveys (n=594 for children, n=441 for teenagers). The presence of food additives was determined with the Irish National Food Ingredient Database (INFID) that stores information on the ingredients of foods eaten in the Irish diet. The intakes of food additives in Irish children are likely to be representative of those children in the UK since food-consumption patterns for Irish children are comparable with those reported in the UK.

The authors adopted a conservative approach in the adolescent sample: for each additive intake, estimates were made assuming that the additive was present at the maximum legal permitted level in those foods identified as containing it.

The average age of the children in this study was 8.5 years, which is comparable to the 7–8-year-olds in the Southampton study, and 15.4 years for the teenagers.

Among the food products consumed, the vast majority did not contain any of the target additives (94.8%

for children, 96.2% for teenagers). No food consumed by either the children or teenagers contained all seven of the target food additives.

The frequency of food-eating occasions (including occasions to eat single foods or multiple foods) containing one or more of the target food additives was relatively low in Irish children (4.75%) and teenagers (6.24%). The majority of these occasions for both populations only contained a maximum of one of the target additives (3.8% for children, 3.1% for teenagers).

Mean intakes of the food additives among consumers fell far below the doses used in the previous study on hyperactivity. The estimated upper intakes for a very small proportion of Irish teenagers (n=45 for mix A, n=33 for mix B) and children (n=45 for mix A, n=24 for mix B) exceeded the intake levels used in the Southampton study on individual days, but never on seven consecutive days.

These results show that, in Irish children and teenagers, levels of exposure to specific food additives rarely, if ever, reach the levels used in the Southampton study. The authors of the Irish study highlight that the intake levels of food additives used in the Southampton study were not well established and hardly ever occur. They suggest that the risk-assessment process that followed from the Southampton study should be reconsidered.

For more information

[Connolly A, et al. \(2009\). Pattern of intake of food additives associated with hyperactivity in Irish children and teenagers. Food additives and contaminants: Part A. First published on: 10 December 2009 \(iFirst\).](#)

Reference

McCann D, et al. (2007). Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. *Lancet* 370(9598):1560–1567.