

# Chemical Food Additives - Are They Slowly Killing Our Children?

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Let me start by saying a chemical additive doesn't necessarily 'appear' to be a problem immediately after ingestion. Quite often the effects are cumulative; a gradual build-up in the body produces roller-coaster days, some good, some bad. Some children are more sensitive to food chemicals and display immediate effects soon after ingestion of additives, colours in particular. In small amounts additives are not harmful. Effects are dose related and, tragically, dose for weight, children are consuming several times more additives than the acceptable daily intake (ADI). Before we get into the details of the most common problem foods, it is necessary to understand the testing and approval process, with emphasis on those factors that may confer the level of risk of toxic additives in infants and young children's diets.

The standard application and approval process put forward by the Food Standards Australia New Zealand (FSANZ) includes a requirement that the manufacturers provide sufficient scientific evidence to support the safety of an additive. Generally, additives are tested on two species of animal. Test animals are then observed for any effects on DNA, detectable links to cancer, major vital organ damage, etc. If any signs of the aforementioned effects are observed at high doses then a non-observable effect level is established by slowly reducing the level of additive until the animal displays no 'noticeable effect'. This reduced level is considered a 'safe level' for human consumption. The concept of a safe level is based on the average adult intake. At present, there is no separate ADI for children. Consequently, dose for weight our children are getting horrific amounts of these toxic additives in everyday snacks and meals (1).

What is even more disturbing about this approval process is that additives are tested in isolation. The reality is humans consume innumerable and frightening cocktails of additives in combination.

How these additives react in combination has only become of interest to scientific fields in recent years. In March 2006, the Soil Association and Organix brands presented the results of a three-year study, on the effects of combining four common food additives. The results propose that the tested combinations can have a neurotoxic effect.

The toxic effects on nerve cells were examined by using a combination of the following four common food additives: E133 Brilliant Blue with E621 monosodium glutamate (MSG) and E104 Quinoline Yellow with E951 L-aspartyl-L-phenylalanine methyl ester.

The mixtures of the additives had a much more potent effect on nerve cells than each additive on its own. The effect on cells was up to four times greater when Brilliant Blue and MSG were combined, and up to seven times greater when Quinoline Yellow and

Aspartame were combined.

The study shows that when the nerve cells were exposed to MSG and Brilliant Blue or Aspartame and Quinoline Yellow the additives stopped the nerve cells from normal growth and interfered with proper signalling systems.

The experiments were done in laboratory conditions and the additives were combined in concentrations that theoretically reflect the compound that enters the bloodstream after a typical children's snack and drink (2).

Risk of toxic additives, in isolation or in combination, is evidently most high among infants and children. Age is an important susceptibility factor, with infants and young children being most vulnerable to chemical carcinogens. Scientific risk assessment data suggests that infants (newborns) have a limited capability to detoxify due to premature development of the liver and drug-metabolising enzymes, furthermore their extremely small body weight may provoke toxicity.

The fact that young children have higher nutritional requirements, smaller body masses and their diet is less varied than those of adults suggests that they may have the greatest susceptibility to toxic effects. For example, their soft drink and dairy consumption alone may be as much as 16 times greater than that of adults (3).

There are many more factors that promote increased susceptibility of infants and young children to toxic additives, all of which have been recognised in health and science fields for well over a decade but has not been given a moment of thought when determining ADI levels for additives! To date, all additives are passed for approval without being tested for any effects they may have on children's behaviour and learning.

Clearly, it is up to the general population of adults to be calling for stricter regulation and more caution to be taken with food additives in an effort to protect the vulnerability of future generations. Children have little control over what they eat, they are less informed than the adults around them and therefore rely mainly on adults for making informed decisions and taking precautions to protect their precious lives. As a parent/carer/teacher every effort should be made to identify toxicities that could potentially harm our children and put a stop to the plethora of toxic additives going into their tiny bodies.

References:

1. Food Additives; Food Standards Australia New Zealand; ([www.foodstandards.gov.au](http://www.foodstandards.gov.au))
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([www.riskworld.com/Nreports/2004/Iyaniwura.htm](http://www.riskworld.com/Nreports/2004/Iyaniwura.htm))

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