



The effects of foods on children's behaviour

» By Sue Dengate, Food Intolerance Network

Our food has changed dramatically since food processing became widespread in the 1970s. At that time, US allergist Dr Ben Feingold suggested that certain additives could contribute to hyperactivity in children¹ but his hypothesis was eventually discredited. The use of additives continued to increase and spread to 'healthy' foods such as bread, butter, yoghurt, juice and muesli bars as well as junk food. At the same time, children's behaviour and learning problems increased.

After 30 years of controversy, Dr Feingold's research was vindicated in April 2008 when UK food regulators decided to ban certain artificial colours due to their effects on children's behaviour. This decision followed the publication of a large government-funded study by scientists from the University of Southampton showing that food additives could contribute to inattention

and behavioural problems in normal, healthy children - not just children with attention deficit hyperactivity disorder (ADHD) as previously thought - thus reducing children's ability to benefit from schooling².

How many are affected?

Australian food regulators still say that only a small proportion of the population are affected by food additives, although the latest Southampton research suggests otherwise. In an unpublished UK study, when an entire class of six-year-olds at the Dingle school in Cheshire avoided additives for two weeks, parents of *nearly 60 per cent* reported improvements in behaviour, cooperation and sleeping patterns. Over the last two years, my food scientist husband Dr Howard Dengate and I have obtained similar results from additive-free trials in three NSW primary schools.

Allergy versus chemical reactions

Effects of food additives are related to dose, so the more you eat, the more likely you are to be affected. The youngest children are the most vulnerable because per kilo of body weight they eat the highest additive doses.

Unlike allergic reactions to proteins in foods such as peanuts - which can occur within minutes - additives trigger a chemical reaction like the side effects of a drug, occurring hours or even three days later. Yet research has shown that most people do not make the connection between foods and effects felt unless the reaction occurs within 30 minutes. When additives are eaten frequently, effects can build up gradually resulting in good days and bad days with no obvious cause. This is why most parents don't realise how much their children are affected until they eliminate additives from



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their diet for a few weeks or more.

Behavioural effects of additives (see Box 1) can lead to learning difficulties such as speech or reading delay. As well, additives have been associated with a range of health issues including eczema, hives and other rashes; headaches or migraine; reflux, stomach aches, bloating, constipation, diarrhoea or sneaky poos; bedwetting, urinary frequency; stuffy or runny nose and coughing or asthma.

Additives to avoid

There are about 400 approved additives in Australia that must be described by name or number on ingredient labels. Current safety testing procedures for food additives do not require behavioural assessment, although 60 of these so-called ‘safe’ additives have been associated with children’s behavioural problems³ (see Box 2).

As well, there are more than two thousand approved flavouring chemicals that don’t have to be described on food labels because they are considered to be trade secrets. Under the latest Food Standards Code (2002), manufacturers don’t have to distinguish between natural and artificial

flavours because there is not a lot of difference – flavour additives are usually man-made in huge chemical factories even when sourced from substances found in nature, so both natural and synthetic flavours can consist of the same chemicals.

Parents are often outraged to learn that additives don’t have to be listed if used in an ingredient that forms less than 5 per cent of the final product. For example, when small amounts of vegetable oil containing the antioxidant BHA (320) are used in products such as bread, biscuits or frozen oven fries, BHA doesn’t have to be listed, yet it is enough to cause children’s behavioural problems particularly if eaten frequently. Likewise, additives themselves may contain unlisted colours and preservatives, for example, ‘natural vanilla flavour’ may contain unlisted sodium benzoate (211).

Under Australian Organic Standards, sulphur dioxide (220) and sodium metabisulphite (224) are the only additives permitted from the behaviourally toxic list, and they are limited to wine. For flavours to be certified organic, the flavour must be obtained from organic sources and use organic processing aids. These guidelines mean that organic products are an excellent

way to avoid nasty additives.

However, parents of children with behavioural problems also need to know about some natural food chemicals.

Natural food chemicals can cause problems too

Most consumers are unaware that some naturally occurring food chemicals can cause the same problems as additives if consumed by sensitive people or in large doses. For problems serious enough to see a doctor, or conditions such as ADHD, oppositional defiance or autistic spectrum disorder, parents need to know more about natural chemicals called salicylates, amines and glutamates.

First linked to children’s behaviour by Dr Feingold, salicylates are natural pesticides produced by plants to protect themselves against pests and diseases. Salicylates are increasing in our food supply, due to strong flavour additives such as fruit, mint, spice or tomato in processed foods as well as increased availability of out-of-season high

Behavioural effects of food

The quiet ones

- are inattentive, forgetful or lethargic
- are grizzly, miserable, anxious or depressed
- have mood swings or panic attacks

The restless ones

- are irritable, restless, fidgety, easily distracted or overactive
- have difficulty falling asleep, frequent night waking, restless legs
- talk too much, make silly noises

The defiant ones

- are touchy, easily annoyed, argumentative, angry or resentful
- have tantrums or temper outbursts
- refuse requests, defy rules or deliberately annoy others

salicylate fruit and vegetables. Foods high in salicylates include citrus, strawberries, kiwifruit, sultanas and other dried fruits, tomato sauce and broccoli. Amines are particularly high in cheese and chocolate and glutamates occur in tasty foods such as soy sauce. Salicylate sensitivity can be triggered or worsened by medications such as aspirin and other NSAIDs (non steroidal anti-inflammatory drugs) such as Nurofen and lotions including anti-arthritis creams or salicylate-containing teething gel.

People rarely realise that they are affected by salicylates or amines unless they eat a very large dose in a short time, for example at Easter, or until they reduce their intake. One mother wrote: 'I cut back my five year old daughter's intake of fruit to about a quarter of what she normally had. Within days we saw dramatic changes. Her behaviour evened out ... she was more sensible and obliging, less aggressive and defiant - and altogether much more pleasant to live with.'

A smaller number of children experience behavioural symptoms in response to dairy products and even fewer to wheat or gluten. Contrary to popular belief, sugar does not cause children's behavioural problems. A child who appears to be affected by sugar is probably reacting to additives or salicylates.

PHOTO SUPPLIED BY THE ORGANIC BABY FOOD CO PTY LTD T/A ORGANIC BUBBS: EATING 'POTS FOR TOTS'



Times are a-changing

Western consumers are increasingly less accepting of additives. On a recent author tour for my seventh book in 14 years, I experienced considerably larger audiences and more interest in this topic than ever before. In the UK, although not in Australia, artificial colours are being removed as a result of the Southampton research. Five major UK supermarket chains and several large confectionery manufacturers are removing artificial colours from their own brand products to meet the 2009 ban deadline set by the UK Food Standards Agency. Smarties switched to natural colours two years ago and Coca Cola UK recently announced plans for the removal of one of the additives in the Southampton study (preservative 211, sodium benzoate) from Diet Coke. Although reduction of nasty additives is occurring at a much slower rate in Australia, there are signs that manufacturers are prepared to listen to consumers, for example, bread preservative (calcium propionate 282) has been removed from most breads due to consumer concerns.

Parents who would like to reduce their children's additive intake can take the following easy steps: read ingredient labels, buy organic where possible, choose preservative-free bread, colour-free yoghurts, icecreams and sweets such as caramels and toffees. Buy plain rather than

flavoured chips, crackers and noodles. Throw away flavour sachets. Bake your own muffins. Encourage children to drink water as their main drink. For children with a condition such as ADHD, the Food Intolerance Network can supply names of dieticians to supervise a three week trial of a diet free of additives and low in salicylates and amines to find out exactly which food chemicals are contributing to problems.

References

1. Feingold B, *Hyperkinesis and learning disabilities linked to artificial food flavors and colors*. Am J Nurs. 1975; 75(5):797-803.
2. McCann M et al, *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. 2007;370(9598):1560-7.
3. Clarke L et al, *The dietary management of food allergy and food intolerance in children and adults*. Australian Journal of Nutrition and Dietetics. 1996;53(3):89-94.

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For more information visit the website www.fedup.com.au

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