



Artificial Additives Part I

Colouring of the Senses

Colouring in food and medicines is there for a reason. Nothing's new there. It adds interest and appeal; it masks variations of natural colours as well as enhancing those colours; it offsets colour loss due to light, air, moisture and temperature extremes; and it identifies flavour. This is done because adults and children of all ages appreciate colours.

Take a look around you – which colour is catching your eye? Is it a dull colour or bright one? When rushing up and down the supermarket aisles, which produce or product packaging can you recall most vividly? If you have a young child with you, which packaging does their little hand reach for – could it be because a bright comforting colour triggered their taste buds?

When it comes to food choices, most young children will choose the brightest coloured lollies and cordial. Young kids are not programmed to make choices based on nutritional values, the appeal for them lies in the shape and/or colour of a product. Parents make the choices for them and by setting an example, condition the child to make the right food choices ... eventually. Brightly coloured jellies have always been popular amongst children ... and some adults too. Fact is, adults are just as drawn towards colour-enhanced foods such as pet food, baked goods, beverages, pastries, lollies, jams and junk food when they have to make an instant choice.

Did you know that the skin of some Florida oranges are coloured with a Citrus Red colouring to attract the buyer?

Bottom line is: we love colour, we are attracted to it like bees to sugar water. We all have a favourite food colour, and so do children, and when planning our children's lunch boxes, we come up with practical options that are nutritious, colourful, affordable and attractive.

Generations ago people's lives were so different – produce came from the farm, fresh and in season, home-made grains were consumed. Home-grown fruit and veggies have a taste and colour of their own – visit your closest Farmer's Market to enjoy the smell and colour and taste of home-grown produce ... or wander through your own kitchen garden. No need to suspect artificial colouring of produce, it's mostly organic anyway. Colour has always been used to visually attract and

stimulate the senses, it excites us; it makes us feel good – so when a food item has a likable colour, it has to taste good and be good for us, doesn't it?

Using colour is a clever marketing tool, although most highly processed foods are packaged in bright colour packaging and is of low nutritional value and poor quality. Unfortunately it is not only food that contains artificial colourings, dietary supplements and medicines for children come in different colours too. Probably artificially sweetened, but you would not know as the lack of labelling makes it impossible for any parent to know what additives are present in children's medicine.

Over the years, hyperactivity, eczema, asthma and certain allergic reactions in children have been associated with artificial colourings in foods and medicines. In 1973, US paediatric allergist Benjamin Feingold MD presented extensive research to the American Medical Association linking food additives to learning and behaviour disorders. His research was

based on over 1200 cases and included over 3000 different food additives. Unfortunately, his work had been ridiculed and although many a study had been done to disprove Feingold's hypothesis, it became clear that food additives did play a major role in hyperactive behaviour in children (ADHD and ADD).

It was only recently when the research results from a 2007 Southampton University study were published in *The Lancet*¹ that serious attention was paid to this problem. What made these findings different from other studies is the fact that it was the first study to show the direct connection between food additives and hyperactivity. For the purpose of the study, psychology professor and senior author Jim Stevenson and his team trialled 297 children, dividing them into two groups – a group of three-year-olds, and a group of kids aged eight and nine. One was a placebo, one mimicked the effects of two 50-gram bags of lollies a day, and the other up to four bags. Over the six-week trial they found that children in both age groups who drank the drinks containing the additives displayed significantly more hyperactive behaviour, and a shorter concentration span was recorded.

As a result of the study, the UK Food Standard Agency (FSA) requested a voluntary ban on the use of the six artificial colourings tested as well as the preservative sodium benzoate (211/E211), which has been linked to cell damage in a previous study and found in carbonated drinks and many fruit and soft drinks. The FSA has also advised the European Food Safety Authority (EFSA) to implement the ban.



Let's take a look at the Southampton Six* that are in the firing line

- **tartrazine** – 102/E102, found in lollipops and carbonated drinks; lemon to yellow/orange.
- **quinoline** – 104/E104, dull yellow to greenish yellow; **banned in the US.**
- **sunset** – 110/E110, yellow, found in fruity drinks.
- **carmoisine** – 122/E122, red; often added to jams; found in jellies; **banned in the US.**
- **ponceau** – 124/E124, red, **banned in the US.**
- **allura red** – 129/E129, dark red food dye.

*To regulate additives each additive is assigned a unique number. Initially these were the "E" numbers used in Europe for approved additives. The Codex Alimentarius Committee has adopted the numbering scheme and extended it to be internationally identified regardless of whether all additives are approved for use, e.g. the artificial sweetener found in soft drinks and yoghurt, neotame, 961, is not approved for use in Europe (notice no "E" number), but is approved for use in Australia and New Zealand.

The study results have put pressure on many ingredient companies, some which already have been looking into replacing synthetic colourings with natural ones (that are also more expensive). These companies are trying to avoid the E-numbering system because of its negative publicity. The largest single company in the natural colourings market, the Danish food production company Chr Hansen has launched its FruitMax range of natural colourings in 2007 which consists of 20 different shades derived from edible fruit, vegetables, spices and other plants. Fortunately there are other companies which are following suit and more food containing natural colourings are appearing on our supermarket shelves. Remember to read the labels.

The good news for the British consumer is that major supermarket chains in Britain no longer add the Southampton study colourings to their own brand products. In England, the two confectionary companies Cadbury and Nestle have pledged to remove all artificial colourings from their products.

The European Parliament is requiring warning labels on artificially coloured products by the end of this year. Yes, this is a fast move for any parliament. It is also reported that EFSA is reviewing food colourings (artificial and natural) other than the ones in the Southampton study. Interesting too, in February 2009 the European McDonald's chain has announced that they are complying with the voluntary ban requested by the FSA.

In the US, the Centre for Science in the Public Interest (CSPI) has taken an interest in the results of the 2007 Southampton study as they have previously requested the FDA to review and replace controversial synthetic colouring with natural alternatives. It is with relief though to notice major confectionary companies such as Mars Incorporated announcing to be the first

in the US to voluntarily implement Guideline Daily Amount (GDA) nutrition labelling on all of its products. It is similar to the European "front of pack" nutrition labelling system that places a nutritional value judgment on food and beverages, without a total diet approach. In New Zealand and Australia the preference is to use a "per cent dietary intake" labelling process, which regards single foods as part of an overall diet, letting the consumer select foods and beverages according to their own individual intake.

Food Standards Australia New Zealand (FSANZ) is the regulatory body who closely monitors the types and amounts of food additives that can be included in the food supply – this includes monitoring food colouring. They require food additives to be identified on the label by either name or code number and states in their report that **almost all** colours detected are listed on the food labels. They maintain there is no health risk for New Zealand and Australian children who, the FSANZ ⇒

states, are consuming low levels of food colourings and see no reason to change their viewpoint – the opposite reaction to that of their British and European counterparts. (Ref. *AFN Thought for Food Media Release; 11 December 2008*) FSANZ chief scientist Dr Paul Brent dismissed the claims of the Southampton study saying that the use of food additives are different in Australia. He does admit that the FSANZ recognises adverse reactions to foods and food additives occur in a small proportion of the population.

However, The Safe Food Campaign*, Soil and Health Association and Green Party as well as other groups in New Zealand and Australia are joining in the Kids First Campaign to pressure FSANZ and manufacturers to ban the Southampton Six from their products.

Activist parents and anti-food additive lobbyists in Australia had a small victory in the battle against the use of the Southampton Six. In Australia, the NSW Greens and KidsFirst Campaign managed, through extensive lobbying, to attract the attention of Nestle Australia regarding their use of potentially harmful artificial food colourings.



Nestle Australia has announced that, due to customer demand, the company has switched to less controversial food colourings, and closer to home, Nestle New Zealand has confirmed in an email to NZ Safe Food Campaign co-convenor Alison White that their new Smarties™, which are now without these six colourings, has been on the supermarket shelves since January 2009.

This small but noted victory over the canning of artificial colourings to a product should be marked on the calendar. Hopefully it will be the first of many. Food colourings that put any user at risk should not be allowed in products. The only way the consumer will be aware of their harmful effects is to be informed of research results (such as the Southampton study and Dr Feingold's study), and by having all nutritional information displayed on labels, whether it is a food, a dietary supplement or a medicine.

At the end of the day, do not discard your own observations, the caring parent does know their child best. 🐾

¹ McCann D; Stevenson J 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* Nov 3;370(9598):1560-7. *References available on request.*

To become more involved, visit:

- www.additivealert.com.au
- www.safefood.org.nz and join in the Kids First campaign
- Contact Alison White, ph: (04) 476 8607 or email: Alison@safefood.org.nz before 1 May 2009 to find out what you can do to help spread the word.

** The Safe Food Campaign is a nationwide organisation that provides consumers with information so that they can decide for themselves what is safe to eat. They encourage consumers to improve their diets and to grow and buy organic food. To join their email database and receive occasional news and updates, go to their website: www.safefood.org.nz*