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Fashionable Food Fears (part two)

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When it comes to food, even the simplest things can scare people. E-numbers, for example. Oh, what fear they inspire! Even if you don't know what they mean, you can be sure each one is a secret code for a noxious poison that'll give you cancer and turn your child into a monster. Let's take a look at some of those fearful food additives.

Last week, we [tackled some myths](#) about the dangers of salt, eggs, margarine and butter. Those were only the first few in a long list of food fears and fads. In this, the second in a series of as-yet-undetermined length, we'll push on with some more of the myths we raised.

There is a long tradition of public fear about substances we do not understand. A spike in concern about artificial colouring, flavouring and preservatives in food led to the establishment of a system for numbering food additives approved by the European Food Safety Authority. Known as E-numbers, the system began with food colouring in 1962, with later expansion to preservatives, anti-oxidants, emulsifiers, stabilisers, thickeners and gelling agents. E-numbers were supposed to ease the public's fears, but replacing scary chemical names with incomprehensible numbers did little to rehabilitate their reputation.

On the contrary: people [are now being told](#) that E-numbers in general are dangerous, and ought to be avoided. These fears date back to the 1970s, when a paediatrician, Dr Benjamin Feingold, claimed there was a link between food additives and childhood attention-deficit disorder and hyperactivity. Much research was conducted to establish whether such a link existed, but very little conclusive evidence was found.

One famous study, conducted in 2007 at the University of Southampton, tested six synthetic food colouring additives, along with sodium benzoate, a preservative. These colours – Tartrazine (lemon yellow, E102), Quinoline Yellow (E104), Sunset Yellow (E110), Carmoisine (maroon red, E122), Ponceau 4R (scarlet red, E124), and Allura Red (E129) – became known as the 'Southampton Six'. Even in non-alarmist circles, it is [recommended that these be avoided](#). Yet the European Food Safety Authority has repeatedly reviewed the study in question, and concluded that it could not be extrapolated to the general population, its results were inconsistent, and the [available scientific evidence does not substantiate a link](#) between the colour additives and behavioural effects.

Now check out [this list of 'symptoms'](#) that your child may be hyperactive as a result of food additives. Many of them constitute perfectly ordinary child-like behaviour, and the rest cover just about any condition a child might suffer. Any child whatsoever could be held up as 'evidence' that food additives are bad for you.

By such loose standards, any child could be held up as evidence for anything else, too, of course. You could make a similar list and blame it on air pollution, rock music, organic food, polyester clothes, television, and plastic toys – and in fact, many hyper-fearful safety nannies do. This isn't science. This is emotional scare-mongering.

Many food products, including in South Africa, contain these so-called E-numbers on the ingredient list. The fact that they are identified and numbered says that they have been tested and found safe for consumption. It certainly seems preferable to know the ingredients in foodstuffs, rather than not knowing them. Besides, many of the feared E-numbers are perfectly natural substances, such as paprika (E160c) vitamin C (E300),

vitamin E (E306-309), gum arabic (acacia gum, E414), gelatine (E441), beeswax (E901) and even oxygen (E948).

Besides, why don't we treat natural foods or additives with equal suspicion? In general, natural additives are not tested or regulated by food safety authorities. Besides for the inconvenient fact that many natural food colourings are inconsistent and add unwanted flavour, some may be just as dangerous as artificial additives. Carmine, a red colourant extracted from cochineal bugs, can [cause allergic reactions](#) ranging from mild hives and itchy skin to dangerous anaphylactic shock. An all-natural orange-red food colouring, annatto, [has been anecdotally linked](#) to irritable bowel syndrome. Caramel, which is one of the oldest and most widely-used natural food colourings, can contain 4-Methylimidazole, and there is [clear evidence](#) that this causes cancer in mice. It is produced by the [Maillard reaction](#), which is the process of browning when food is grilled, baked, roast or fried.

We don't demand labels on apples that discloses they contain amygdalin, which, when digested, breaks down into hydrogen cyanide, also known by its notorious Nazi name Zyklon B. [They did the math](#), and the ground-up pips of 18 average apples could kill a 70kg man, if that man was stupid or unlucky enough to eat them. The chemical warfare agent ricin [is made of castor beans](#), and was famously used as the poison on the tip of an umbrella used by the KGB to assassinate a Bulgarian dissident in London. Nutmeg is a powerful psychedelic drug. If you can find a way to [consume about 35 grams of it](#), you'll be tripping for days, although along with the hallucinations you may experience nasty side-effects like nausea, vomiting, dry mouth, flushing, a racing heart, and painful urination.

The point is that there is no fundamental difference between natural and synthetic chemicals. Either can be dangerous, and many are, in large enough doses. If you test them for carcinogenicity, they'll pass your test about half the time, either way. Usually, it's the dose that makes a substance toxic, not its basic nature.

High-fructose corn syrup is another additive many people fear. [There is no evidence](#) (to date) to suggest that it is worse for you than sugar, honey or agave syrup. It is no less natural. All of them consist of fructose and sucrose in roughly equal proportions, all are metabolised in the same way, and all have the same caloric content. All of them can cause obesity, if consumed in excess.

At the risk of stating the obvious, go easy on the sweets and soft drinks, because all the sugars add up quickly. If, however, you keep your sugar (or honey, or corn syrup) consumption below 10% of your daily calorie intake, you'll be just fine, no matter what form that sugar takes.

Sugar, like salt, is a critical ingredient in cooking. It makes a great many otherwise dull foods taste delicious, and plays an important role in preventing food-borne illnesses. But if you're afraid of consuming too much of it, you could try artificial sweeteners. The problem is, they're subject to a range of fears of their own.

I've told [the story of saccharin](#) before. Because of a rat study that was not applicable to humans, it became the subject of a cancer scare and mandatory warning labels, scaring the bejeezus out of millions of mothers who thought it was a great alternative to teeth-rotting sugar. It wasn't until more than 20 years later that it was [officially vindicated](#) by the bureaucrats who decide what we are and aren't allowed to eat.

Saccharin now lives a quiet life on the shelf as E954, approved as a food additive but unwanted by anyone, since better sweeteners have been developed since.

Each of these alternatives has been subject to claims that they cause cancer, too. This typically happens when lab tests that involve stuffing rats full of the highest tolerated dose for the duration of their lives throw out positives for cancer. That such tests do not match

real-world human consumption doesn't stop researchers from making alarming 'cancer link' claims that they know will be picked up by the tabloid media.

The most notorious of these is aspartame, which one paper linked to a rising incidence of brain tumours, and another study linked to more lymphomas and leukemias in rats fed staggering amounts of the stuff. The first study turned out to be a weak correlation with a trend that began long before aspartame was introduced, precluding causation. The second was weak with inconsistencies, and drew conclusions that were not supported by its data.

The US Food and Drug Administration made [a clear statement](#) at the time: "Since it was first approved for use in the United States, the safety of aspartame has been questioned by some. To date, however, the agency has not been presented with scientific information that would support a change in our conclusions about the safety of aspartame. Those conclusions are based on a detailed review of a large body of information, including more than 100 toxicological and clinical studies regarding the sweetener's safety."

There's always a brave band of heroes, combating the government-corporate conspiracy to hush up the deadly consequences of additives like aspartame. According to blogs and e-mail chain letters, it causes a range conditions other than cancer, including multiple sclerosis, lupus, obesity and birth defects. I couldn't do a better [debunking of this paranoid conspiracy](#) than Dr Steven P. Novella, a medical doctor and academic clinical neurologist at the Yale University School of Medicine.

Similar arguments hold for xylitol, sucralose and other artificial sweeteners. [None of them cause cancer](#).

The constant fear that toxic chemicals in food will cause cancer or mental disorders, combined with the belief that scientists, journalists and public health regulators cover up these dangers to protect the profits of big corporations, betrays unhealthy levels of anxiety and paranoia. Such fear will do you far more harm than a few drops of red, blue or yellow food dye.

Neurotic rejection of broad swathes of food ingredients, based on a complete lack of knowledge beyond the fact that they are known by E-numbers, or worse, based on the nonsensical distinction between 'natural' and 'artificial', distracts from the real goal: simply enjoying a balanced, nutritious, affordable and tasty diet. **DM**