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## *Commentary. The big issue is ultra-processing* **‘Nutrient profiling’, and** **‘fortified’ soft drinks for Africans**



**Carlos Monteiro**

**Centre for Epidemiological Studies in Health and Nutrition**

**University of São Paulo, Brazil. Email: [carlosam@usp.br](mailto:carlosam@usp.br)**

**Biography posted at [www.wphna.org](http://www.wphna.org)**

## Introduction



### Editor's note

This first commentary on ultra-processed foods this month, below, is a revised and updated version of the contribution that appeared as a column on the home and inside pages of the Association's website last month. From now on Carlos Monteiro's commentaries on ultra-processing will appear here in *World Nutrition*.

We all know now that we all are faced with three colossal interrelated crises from which the world and the human species might not recover. These are the fuel, finance, and food crises, with their outcomes, which include climate change, gross inequity, and mounting food insecurity. What I know about is the food crisis.

Every month from now on I will submit commentaries in ***World Nutrition***, following my first general commentary published in November. These will develop and illustrate the thesis I advocate, on the need now not to think of foods, and not of nutrients, so much as what is done to food, before we consume it (1-3). Food processing, and specifically what I and a team of colleagues at the University of São Paulo and elsewhere identify as 'ultra-processing', is the big issue.

### ***Down with UPPs? Not exactly***

We like to think that we are all free to make choices. In fact many of our actions are in effect chosen for us, and the more impoverished that people are, the more this is so. With food and drink, most of us, most of the time, choose between what is on offer. Specifically, I will continue to warn of the dangers of food systems and therefore diets containing a lot of ultra-processed products (UPPs), of which cheese-and-bacon burgers, shown above as the 'badge' of these commentaries, are just one of many thousands of examples. Most of them are well characterised by Michael Pollan as 'edible food-like substances' (4).

Of ultra-processing, am I saying 'Down with UPPs!' Not exactly. What the evidence shows, is that we should all advocate 'Down with UPPs' not totally, but in the sense

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of ‘a lot less’, within diets – and within food systems. We will also do well to ensure that our families and we ourselves follow our own advice.

Here I comment on two initiatives that sound wonderful, but that really are disasters. They misunderstand nutrition and its effect on health, because they fail to recognise the ill-effects of ultra-processing.

The first is ‘nutrient profiling’. This is a movement that has now become a craze shared by food technologists, regulators and industry and even (sorry to say) some of my fellow public health nutrition scientists in North America and Europe. The second is the marketing strategy, foolishly supported by some pediatricians, to penetrate ultra-processed sugary drinks ‘fortified’ with micronutrients, into Africa and other ‘emerging markets’ where undernutrition and hunger still prevail.

#### *Box 1*

### **Transnationals must be regulated in the public interest**

Before I start, I want to make one point very clear. I am not against industry and I am not against industry making profits. What I am against, is gigantic firms making vast profits at the expense of population health, with ultra-processed products that are by their very nature bad for human health, and that taken together undermine meals and thus family life, wreck local economies, displace traditional food cultures, and contribute to the ruination of the environment and the planet. What I am very specifically against, is Big Food and Big Drink, and Big Snack: transnational industries that do all this while at the same time claiming that what they are doing is healthy and responsible. It is not. The so-called ‘market’ has failed. The proof is here for us all to see: overweight and obesity, in particular among children.

Despite what they say, which is becoming increasingly believed, these firms, in fulfilling their obligations to their financiers and shareholders and thus to the bottom line, are behaving recklessly and irresponsibly, much as the international banking industry has done. Also yes, what they are doing does have a disturbing resemblance to the policies and practices of Big Tobacco. Big Food, Big Drink and Big Snack must be properly regulated in the public interest – and that means in the interests of those of us who are alive now, and also of our children and those who come after them. Regulation designed to encourage and enable communities, families and citizens better to enjoy their lives, is a fundamental responsibility of legislators concerned with public goods, of which public health is one.

I believe that all of us who work in public health nutrition have a responsibility to see what is going on, and to speak out as best we can, personally and collectively. Scientists are citizens too.

## Commentary. The big issue is ultra-processing 'Nutrient profiling' is a disaster

**GLACÉAU**  
**vitaminwater**

**formula 50**

50% daily dose

provides 50% of the many important vitamins you need every day (b vitamins, c, e + folic acid).

**formula 50**

grape

ingredients: vapor distilled/deionized water, crystal-line fructose, natural flavor, citric acid, ascorbic acid (Vitamin C), vitamin E acetate, fruit and vegetable juice (color), magnesium lactate (electrolyte), calcium lactate (electrolyte), niacin (B3), monopotassium phosphate (electrolyte), pantothenic acid (B5), pyridoxine hydrochloride (B6), cyanocobalamin (B12), folic acid.

enjoy cold. drink better water.  
the inside is natural, the outside is plastic.  
ME 5¢ DEP • CA REDEMPTION VALUE



**Nutrition Facts**

Serving Size 8 fl oz (240 mL)

Servings Per Container 2.5

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Amount Per Serving

**Calories 50**

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	% Daily Values*
<b>Total Fat</b> 0g	0%
<b>Sodium</b> 0mg	0%
<b>Total Carbohydrate</b> 13g	4%
Sugar 13g	
<b>Protein</b> 0g	

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	per serving	per bottle
Vitamin C	20%	50%
Vitamin E	20%	50%
Vitamin B3	20%	50%
Vitamin B6	20%	50%
Folic Acid	20%	50%
Vitamin B12	20%	50%
Vitamin B5	20%	50%

\*Percent Daily Values are based on a 2,000 calorie diet.  
contains less than 1% juice  
not a significant source of calories from saturated fat, cholesterol, dietary fiber, vitamin A, calcium or iron

### Box 2

#### 'Nutrient profiling': My view

Heavily advertised products are almost all ultra-processed. In general, the more money that is spent on advertising and marketing any food and drink product, the worse it is for human health, including our personal health and that of our families; and also for the health and future of the planet. I will be glad to know of exceptions to this rule.

I advise us all to reject and ignore nutrient profiling. Avoid food and drink products that make or suggest claims based on their 'nutrient profile'. In particular, do not buy such products for consumption by children. They are usually ultra-processed products (UPPs). What is typically significant about them is what is not included in the claims – such as high energy-density, heavy content of fat, sugar or salt, degraded basic ingredients, and use of chemical cosmetic and other additives to imitate real food.

Enjoy delicious meals and dishes prepared using fresh and minimally processed foods that are naturally rich in nutrients. Relish family meals. This advice is most important for the health of children, at the time and in later life.

### ***Profiling: the new craze***

For the last few years, journals of nutrition and food technology, and for the food and drink industry, have been full of papers, reports and features about 'nutrient profiling'. It's the New Thing, after functional foods. 'Beauty contest' presentations at nutrition and other conferences on rival nutrient profiling systems are themselves high-profile.

Committees involving industry executives, government regulators, consumer champions, and food technologists, have been set up to assess, approve, 'roll out' and 'scale up' nutrient profiling systems. In the jargon, nutrient profiling is seen as a 'win-win-win situation': meaning, good for customers (including parents), good for politicians, and good for trade. What is it all about? Here follows the abstract of a recent paper on the subject (5).

#### *Box 3*

#### **'Nutrient profiling': The conventional view**

*Abstract of a recent paper:* 'Nutrient profiling of foods, described as the science of ranking foods based on their nutrient content, is fast becoming the basis for regulating nutrition labels, health claims, and marketing and advertising to children. A number of nutrient profile models have now been developed by research scientists, regulatory agencies, and by the food industry. Whereas some of these models have focused on nutrients to limit, others have emphasized nutrients known to be beneficial to health, or some combination of both'.

*It continues:* 'Although nutrient profile models are often tailored to specific goals, the development process ought to follow the same science-driven rules. These include the selection of index nutrients and reference amounts, the development of an appropriate algorithm for calculating nutrient density, and the validation of the chosen nutrient profile model against healthy diets. It is extremely important that nutrient profiles be validated rather than merely compared to prevailing public opinion. Regulatory agencies should act only when they are satisfied that the scientific process has been followed, that the algorithms are transparent, and that the profile model has been validated with respect to objective measures of a healthy diet' (5).

Let me express this more clearly. Nutrient profiling is a way to rate foods and drinks, according to the amount of those nutrients they contain that are considered best to limit, and those that are considered healthy consumed in abundance. In effect, it is a development of nutrition labelling, of the type seen on processed products in the US,

Europe and many other countries, including Brazil where I come from. So far that sounds good, or at least innocuous.

### ***It's all about health claims***

But what drives nutrient profiling, is not public-spirited scientists and civil servants. Would this were so! The energy comes from food and drink manufacturers. They are not focused on small-print nutrition labelling, which gives rather cryptic information about calories, saturated fats, and so on, useful for customers with a magnifying glass, a calculator, a notebook, qualifications in biochemistry, and some knowledge of what 'dietary reference value' and such-like terms really mean. What manufacturers are interested in, is great big fat health claims, and the more and the stronger the claims they can make, the happier they are. Ching ching! – to mimic the sound of cash registers.

In theory, nutrient profiling can be used to promote what I term 'type 1' fresh and minimally processed foods. In practice this is not what it is for. Everybody knows that vegetables, fruits, legumes (pulses), fresh lean meat and fish, are healthy. Relatively very little money is spent promoting such foods, because that's not where the big profits are. The same applies to processed ingredients sold directly to consumers and cooks, such as vegetable oils, flours, and sugar ('type 2' processed ingredients). The bottom lines of transnational and other big food companies depend on ultra-processed ('type 3') products.

The intention of advocates of nutrient profiling who do not work for industry, is that it will enable customers and consumers to make distinctions between relatively healthy ultra-processed products, and relatively unhealthy ultra-processed products. This also sounds good. But actually nutrient profiling, in practice, is a disaster which, as it steadily gains traction, is likely to have the effect of further deterioration in public health. Here is why.

### ***A babel of claims***

First, unless national governments and the United Nations at top level step in and insist on one formula for nutrient profiling, international as well as national, the various systems used will amount to a big mess – a babel of claims and misinformation. But in 'free market' economies such as the US, rival nutrient profiling consortiums have been set up, involving companies with a special interest in promoting some nutritional aspect of their products – calcium, say, or iron, or various cocktails of added vitamins and minerals. They work with scientists and technicians who support the value of such nutrients or supplements, or who actually devise or modify the formulations, which can be protected by copyright. More ching, ching! In practice, different systems will be favoured by companies whose products

happen to suit specific nutrient profiles. This is a potential shambles. Without international enforced standards, any shopper in any supermarket will be bewildered.

### ***Health claims for unhealthy products***

Second, it would be nice to think that some ultra-processed products might have or gain a nutrient profile that was close to immaculate – that tick all the nutrient boxes, as it were. But there is no such thing as an ultra-processed product that is altogether well-balanced nutritionally.

Any such notion misunderstands the basic nature of ‘type 3’ ultra-processed products. These are typically energy-dense, ‘fast’ ‘convenience’ branded ready-to-eat or to-heat dishes or snacks. Their main ingredients are typically some combination of ‘purified’ or ‘refined’ starches, fats/oils, sugars, or salt, and sometimes processed animal foods, to which may be added relatively small amounts or just bits and pieces of fresh or minimally processed foods. They are now increasingly often ‘fortified’ with synthetic micronutrients. This has been one powerful marketing strategy to penetrate them into ‘emerging markets’ where undernutrition and hunger are endemic and often increasing. (See the next example below, ‘Fortified’ Coke™, Pepsi™, for starving Africans?).

What I am saying here is not theoretical. If you live or work near a supermarket, or if you shop in supermarkets, walk in and look around. You will find prominent claims made on the labels and advertising of all sorts of ‘premium’ – usually more expensive – ultra-processed products. These may say that the products are high in dietary fibre, or contain no *trans*-fatty acids, or be ‘low-fat’ (more on this below), or contain lots of added vitamins and minerals. Indeed, product claims for such products may and often do include statements or hints about protection against obesity, diabetes, or heart disease, and even undernutrition, or promotion of healthy active ‘lifestyles’.

But even if such claims have some real basis, they don’t really apply to the products, which also won’t be generally healthy. What manufacturers do, is to pick the bit of any nutrient profile that best suits their product, and boast about that. What they don’t do, for example, is brag about how their products are liable to make you fat – instead, they refer to their calorie-bombs as ‘giving energy’, or advertise them as great for active children and for fitness-conscious adults.

### ***High profiles make bigger profits***

Third, it isn’t nutrition scientists or other people like us, who agree the rules that determine whether or not the ‘nutrient profile’ of any ultra-processed product can generate claims. Dream on, colleagues! It’s regulators from government and government agencies, working together with industry. Such committees may include

a couple of token consumer representatives or independent scientists, pre-vetted as having no record of being difficult.

The rules determining when products can claim to be 'low-sugar' or low-fat' or 'low-salt' or 'high-fibre' are negotiated in such committees. In practice, such terms applied to sugar, fat or salt usually, by any sensible definition, really mean 'rather less high'. (What 'high-fibre' may really mean is too complicated to go into here). The rules on 'fortification' are more or less pre-determined by international or national guidelines on daily requirements for micronutrients.

This now is where the bonanza for manufacturers of ultra-processed products is. They are free to add all sorts of cocktails of synthetic vitamins and minerals, thereby enhance their nutrient profile, and make health claims for products that are essentially unhealthy. Nutrient profiling systems enable manufacturers to develop 'premium' products moderately loaded with processed starches, fats/oils, sugar or salt, and as 'compensation', 'enriched' by 'fortification' with vitamins, minerals or other ingredients accepted as 'positive'. This is what nutrient profiling is really all about. It's not about public health. It's about ching, ching.

### ***The case of Vitaminwater™***

Very well. Now please look at the label of the product at the beginning of this month's example. Coca-Cola paid \$US 4.1 billion to take over the company that first manufactured and marketed Vitaminwater™. Many industry commentators thought this was a fantastic sum for what was, only a few years before the sale, a niche product. It all makes sense when you see that the Coca-Cola company wants to get as close as it can to owning, controlling, branding, and patenting, vitamins with water.

Let me make clear that the Coca-Cola company states emphatically that Vitaminwater™ is not promoted as a healthy product. In response to a recent lawsuit brought against them by the US Center for Science in the Public Interest, lawyers for Coca-Cola stated that 'no consumer could reasonably be misled into thinking that Vitaminwater™ was a healthy beverage'.

They did lose the case though, perhaps not surprisingly. The judge decided that actually the product was promoted in terms of its nutrient profile. As its name indicates, most of the various 'brands' of Vitaminwater™ are made of water, 33 grams of sugar in the form of fructose in every 20 oz bottle, some fruit or herb juices or flavours – and also, in the case of the products shown above, eight vitamins. In effect, as a range they are rainbow variants of 'classic' brown Coke™, without the classic herb and spice formula, and instead with different formulations – and, selling per unit at the price of cheaper brands of wine. Clever stuff! The genius is in the



name – because it suggests that the product has a healthy nutrient profile, which, as Coca-Cola acknowledges in court, it does not.

Nutrient profiling fails to detect many other bad aspects of ‘type 3’ ultra-processed products, whether ‘regular’ or ‘premium’. Ultra-processed foods are not perishable (as vegetables and fruits are) and do not require preparation or cooking (as grains and meat do). This is why they are correctly termed ‘convenience foods’ or ‘fast foods’. Consumption of such products cause eating patterns known to harm the human ability to regulate energy balance, and so increase the likelihood of excess eating and drinking and thus obesity. Such unhealthy eating patterns include snacking instead of having regular meals, eating while watching television, and consuming a lot of calories in liquid form. Ultra-processed products are intrinsically harmful to human health. All this is reinforced by the typically very heavy and aggressive advertising and marketing of such products.

Nutrient profiling in practice enables manufacturers to make or indicate health claims for unhealthy products. Worse, dietary recommendations based on nutrient profiling implicitly accept that diets are or should be mainly made up from ultra-processed products. Do you still think that nutrient profiling is likely to improve public health? The response facility is at the end of this commentary.

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*Commentary. The big issue is ultra-processing*  
**‘Fortified’ Coke™, Pepsi™,  
for starving Africans?**



*Box 4*

**‘Fortified’ UPPs to prevent undernutrition? My view**

The one and only reliable and sustainable way to reduce undernutrition and where possible to eliminate hunger and starvation, is to give the communities and the countries most affected, the ability to look after themselves. This can only be fully achieved after the elimination of unfair foreign debt burdens, most of all of African countries. Meanwhile all support needs to encourage and enable national, local and community self-reliance. ‘Band aid’ approaches, including the use of food ‘fortification’ and supplementation, may work in the short-term, but are liable to erode and even destroy the ability of impoverished governments and communities to become food- secure and self-sufficient.

The giant transnational ultra-processed product (UPP) manufacturers all share a global strategy. This is to maintain their ‘market share’ of ‘saturated’ high-income countries and regions, and to increase their penetration of lower-income ‘emerging markets’ in impoverished continents and countries. You don’t have to take my word for this: access any transnational company annual report on the internet.

'Premium' UPPs usually cost more. They are usually promoted using prominent health claims. Such claims are particularly potent when they are addressed to the mothers and carers of children. The general strategy of the transnational food and drink manufacturers and caterers, is steadily to replace traditional and established food systems, with their branded ready-to-consume and ready-to-heat products, and in particular snacks. Products with a claimed high nutrient profile, often because 'fortified' with synthetic micronutrients, are part of this plan. The vision of the most diversified transnationals is to 'teach the world to snack' – to bring about a world in which meals and foods (and families) are replaced by branded ultra-processed snacks, purchased and consumed from the age of weaning and then by individuals throughout life. Again, if you feel this is exaggerating, please access the freely available on-line industry literature.

I ask my fellow health professionals, very sincerely, to become aware of such contexts, in which we all work.

'Fortification' of ultra-processed products (UPPs) in order to improve their 'nutrient profile', is very big business indeed. You can see this by looking in supermarkets at the labels of leading products aimed at children.

Recently I came across a story of the type that New York University professor Marion Nestle characterises as 'you couldn't make it up'. We responded at <http://pediatrics.aappublications.org/cgi/eletters/peds.2010-0461v1>

This was the story. The transnational soft drink industries can help to prevent and treat child undernutrition and hunger, if they 'fortify' their soft drinks with micronutrients, and truck them to the most impoverished parts of Sub-Saharan Africa. The proposal was made in the leading international scientific journal *Pediatrics*, by two academics from the University of California at San Francisco (1). Could this be a joke? No, it was serious.

The arguments in support of this bizarre proposal are so fragile that commenting on them in detail is perhaps not necessary. One point will do. The case of the West Coast academics depends on their assertion that soft drinks and other bottled products are affordable by African people living in poverty and misery. To 'prove' this, they say: 'Costs of Coca-Cola products are kept low in African markets (~20 - ~30 cents), less than a cost of a newspaper, so that they are affordable for the population'. But people existing virtually without money, or on the equivalent of a US dollar a day or less, do not buy newspapers. Their needs are more fundamental.

True, the proposal is not new. Industry constantly presses it. Thus, the claim that the transnational food and drink manufacturers could fight hunger and undernutrition in impoverished countries, by marketing ‘fortified’ versions of their ultra-processed snack, drink and other products, was recently made by Derek Yach, Vice-President of PepsiCo’s global nutrition policy, and Pepsi-Co colleagues (2,3).

But impoverished populations in Africa and elsewhere in the world, whose food supplies are insecure and who are constantly hungry and undernourished, cannot afford industrially processed foods and drinks, although they may dream of consuming them, as a badge of ‘the good life’. In Africa, as well as in Latin America and Asia, the transnational food and drink companies’ market target for their ready-to-heat and ready-to-consume energy-dense ‘fast’ and ‘junk’ products, many of which are already ‘fortified’ and make health claims, is middle-income and low-middle-income families rather than the extremely poor (3).

Worse, if ‘fortified’ branded products made by transnational companies with massive marketing muscle are promoted as helping to save the lives of small children, impoverished parents might indeed be induced to drive their families closer to destitution by making a habit of buying such products. This would be more likely if industry propaganda included supportive statements from pediatric health professionals. Worse yet, if any branded product gains the reputation of being a life-saver, families are liable to remain loyal to the brand, and to any or all available ‘fast’ and ‘junk’ snack and other fatty, sugary or salty ultra-processed products made by the company owning the brand, life-long. The result would be an ‘extra help’ to the obesity pandemic, with all that implies, including intolerable burdens on health services for treatment of serious obesity-related chronic diseases.

The result would also be persistence of undernutrition, food insecurity, and at worst hunger and even starvation. There is no ‘magic bullet’ or ‘band aid’ or ‘technical fix’ solution to world hunger. In any case, as everyone knows (or should know) the nutrition and health of young children does not depend just on their micronutrient status (4). It is of course true that acutely and seriously undernourished populations need immediate medical and nutritional support and other forms of care (3).

What the impoverished populations of Africa, Asia and Latin America and elsewhere need, are the means with which to lead a decent life. These include secure local food systems and supplies, access to safe water and adequate sanitation, adequately resourced primary health care services, ability to produce and prepare meals from local resources, universal primary education, and empowered mothers and other caretakers. Substantial reduction of child undernutrition can be achieved in a short period of time with improved income distribution, population and community self-determination, and public investments in public goods such as education, health,

social security, water supplies and sanitation (5-7). The persistence of undernutrition is a sure sign of a 'world order' that has gone wrong.

The business of transnational industries is to make profits, which they do by penetrating and controlling markets, partly by making their products with the cheapest possible labour and from the cheapest possible materials, and partly by means of driving national and local industries out of business. If the transnationals are seriously interested in improving the nutrition of impoverished populations, they should press the governments of rich countries in which they have headquarters and branches, to increase the programme funding of relevant United Nations agencies, and health professional and civil society organisations, and, also, to cancel the outrageous foreign debt of impoverished countries, most of them in Africa. That will be the day

Meanwhile, the continued privatisation of public health and of public goods, can only increase inequity, instability, disturbance, and even more serious ill-effects of desperation and hopelessness.

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## **Acknowledgement and request**

*Readers are invited please to respond. Readers may make use of the material in this commentary, provided acknowledgement is given to the authors and the Association, and WN is cited.*

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