

Out of the Box



Language is a theme of this column. We may think we know what we mean by 'breastfeeding', 'vegetables' and 'processed food', but unless we follow agreed definitions our work is blurred, and findings from different studies cannot be confidently compared. Vigilance is also needed. A quiet official decision to reclassify potatoes, and also fried potatoes, chips (French fries), crisps (chips) and munchibits using extrusions of potato as 'vegetables' would do spurious wonders for national 'healthy eating' profiles. Another theme here is image and reality, with wheat and apples as examples. Nutrition is complex; all the more reason to watch our language.

Terminology

Misleading names and descriptions

Words and terms can be powerful; and can mislead. Examples of double-speak and double-think to which we have become more sensitive lately are 'developed economies' to denote countries in which lots of money circulates irrespective of what it is used for, and 'the free market' as a label for unregulated capitalism.

Another tendentious term to be avoided is 'lifestyle'. This first became a buzz-phrase in the late 1970s after an influential Californian think-tank succeeded in marketing culture and beliefs as mere matters of self-centred preference, in order to sell politicians as products^(1,2). 'Lifestyle' then became adopted by food and drink manufacturers and their front organisations, and then academia, to indicate the cause of non-infectious diseases. New specialities such as 'lifestyle medicine' and 'lifestyle nutrition' imply that cancer and heart disease – not to mention childhood obesity, adolescent diabetes, appetite disorders, and tobacco and alcohol addiction – result from freely made unwise individual choices. The idea remains convenient for politicians who want power without responsibility. The appropriate term, when any is needed, is 'ways of life'.

References

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2. Schwartz P & Ogilvy J (1979) *The Emerging Paradigm: Changing Patterns of Thought and Belief. Values and Lifestyles Program, VALS Report no. 7*. Menlo Park, CA: SRI International.

Icons. Wheat. Causation. Coeliac disease

Watch out for wheat

Images also have power. The FAO and the International Union of Nutritional Sciences both use the image of an

ear of wheat to symbolise their mission. So does the Nutrition Society. Why? True, an ear of wheat is visually nice. It also looks a bit like the caduceus used as their logo by the WHO and medical bodies to symbolise healing. But wheat should not be used as a global symbol of food. It grows well only in relatively temperate climates, and so is not a natural starchy staple in most tropical countries and regions.

Wheat has become the leading global cereal for direct human consumption. The current world figure for wheat production is now around 650 million tonnes a year, which setting aside that used for animal feed and now for biofuel, may well average out at close on 90 kilograms a year for everybody on earth⁽¹⁾. As a result of aggressive industry policies and practices, an increasingly small number of strains of wheat continue to displace other grains, and also roots and tubers, as staple foods.

We do not, however, consume cooked ears of wheat. A big difference between rice and wheat is that, once cooked, rice is mostly eaten as such whereas wheat is milled and refined into flour, and then used as the main ingredient of breads, pastas, biscuits, cakes and some breakfast cereals, and in processed foods. It's everywhere. It's in any product bulked up with flour or starch, such as baby foods, peanut butter, pre-prepared chips (French fries); dairy products or substitutes such as cheese spreads, ice cream, margarines, non-dairy creamers, yoghurts; drinks such as instant coffee and tea; meat-based products such as hot dogs, sausages and sauces; vegetable-based products such as ketchups, salad dressings and sauces; and almost anything containing flour or starch.

Now consider why labels of many processed products now state 'contains gluten' or 'gluten-free'. This is guidance for sufferers from coeliac disease, which debilitates somewhere between one in 150 and one in 500 people in countries where the staple cereal product is wheat, and which is rare in countries and regions such as southern India, southern China and Japan where the staple cereal is rice.

The cause of coeliac disease is obviously over-consumption of foods containing wheat flour, often beginning with premature weaning on to wheat-based kiddieglop. Curiously though, I have not found this stated in textbook chapters. These discuss genetic and familial susceptibility, then the somewhat grisly pathology, and then treatment, with gluten-free diets. (As well as wheat, gluten is also found in barley, now mostly used for animal feed, and rye, not commonly consumed outside Central and Eastern Europe. Oats also contain gluten, but may be

harmless.) What is stopping nutrition scientists stating that coeliac disease is caused by over-consumption of wheat flour? Why can I find no recommendation for healthy people saying that coeliac disease is prevented by consuming a lot less foods containing wheat flour? Is any word against wheat taboo?

In any case, wheat should not symbolise food. It is better not to single out any one source of food, and instead to use a universal image such as a bowl with a spoon.

Reference

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Icons. Mythology. Apples

Give Eve a fig

Just as wheat is aggrandised, so are apples. Look at any guide to vegetables and fruits, and what you will see is apples, with a few other standard items established in and imported into Europe and North America, such as bananas and oranges, tomatoes and onions, cabbage and carrots.

This is not new – paintings of the temptation of Eve usually show her thinking about biting into a cultivated apple; but the book of Genesis does not specify the fruit. Besides, any apples in prehistoric Mesopotamia would have been hard, puny and sour; figs are luscious and more plausible. Think also of common expressions, such as ‘the apple of my eye’, ‘motherhood and apple pie’ and ‘an apple a day keeps the doctor away’. Like wheat, apples enjoy a terrific press.

Why have apples become the ‘master’ symbol for fruits? Most commercially attractive types of apple are dull eating, and relatively poor sources of any nutrient. They grow well in the tropics only in cooler upland locations. Like wheat, they are not a universal food, but are promoted – and exported – as if they are. Besides, fruits should not be represented by one or a few common choices. A good guide will show the rich variety of fruits that grow naturally and readily in the country and region, while also including some imported fruits. How about ‘a passion-fruit a day keeps the doctor away’?

Classification

What are ‘vegetables and fruits’?

Practically everybody now agrees that food supplies and thus diets relatively high in fruits and vegetables are healthy. But most expert reports do not define ‘fruits’ or ‘vegetables’. All that the 1990 WHO report on the prevention of chronic diseases⁽¹⁾ says is that ‘potatoes, other tubers, and cassava’ do not count, but that for the

purposes of following the report’s recommendation on quantities, pulses (legumes), nuts and seeds do count⁽¹⁾. The current 2003 report⁽²⁾ simply says that ‘the category of tubers, i.e. potatoes, cassava’ does not count. But cassava (or manioc) is a root, and besides, if any swollen root is defined as a tuber, what about sweet potatoes, yams and taro, all of which are traditional staple foods in some parts of the world?

Also, what about the phrase? Three reports on cancer prevention published in 1997, 2007 and 2009^(3–5) all use the term ‘vegetables and fruits’ rather than ‘fruit and vegetables’. This unusual phrase is meant as a reminder that increased production and consumption of vegetables as a central part of meals matters more than the promotion of fruits as extra healthy snacks. This is better science and better public health.

So, what are ‘vegetables’ and ‘fruits’? The term has to take into account food cultures and cuisines all over the world and salient nutritional properties, and to make reasonable botanic and culinary sense. The 2007 cancer report properly says that vegetables include the edible cultivated or gathered leaves, roots, stalks, bulbs and flowers of plants, but exclude all starchy roots and all tubers, and that fruits are the parts of plants that contain their seeds. Examples are given, and categories are specified, such as green leafy and allium vegetables, and citrus fruits. Berries are of course fruits.

So, non-starchy roots are classified as vegetables, whereas starchy roots, and tubers, are not. Also, plantains are grouped with starchy roots, whereas bananas are fruits. These nice examples are important. Wikipedia states that annual world production of potatoes is currently around 325 million tonnes, which at 125 grams a potato is more than a potato a day for everybody on earth; and bananas currently amount to around 75 million tonnes a year, which, at around 100 grams a banana is roughly two bananas a week for everybody on earth.

That’s not all, though. What about fungi? We don’t think of them as vegetables, but they are important in traditional Japanese and some Mediterranean cuisines, and that’s where they belong. What about herbs and spices? Even in cuisines where they are used abundantly, they don’t supply significant bulk or energy, because of their culinary and medicinal potency. Protocols devised in countries familiar only with salt, pepper and occasional sprinklings of *fines herbes* that exclude herbs and spices or categorise them as ‘miscell.’ are also making a mistake. They too should be grouped with vegetables.

Nuts and seeds also are usually categorised as miscell., no doubt because the current convention is that ‘fruit’ means those parts of fruits that are relatively low in energy, which is why food’n’health guides get twitchy about olives and avocados. This is bad cuisine, bad botany, bad public health. Nuts and seeds are intrinsic parts of fruits and should be categorised as such. It is

good to fill up on vegetables and fruits, properly defined, and the sooner we all embrace and enjoy this idea the better.

References

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Food frequency questionnaires

In a stew

Until all substantial epidemiological studies agree on what are vegetables and fruits, and follow a well-reasoned UN-sponsored protocol, judgements and recommendations derived from literature reviews and meta-analyses will be shaky.

Worse is to come. The studies whose findings are usually regarded as the most accurate in detecting relationships between foods and drinks and the risk of disease survey vast numbers of people, and so seem to show the range of food intakes in representative populations. This is made possible by the use of 'food frequency questionnaires' (FFQ) mailed to people in the study, who fill them in and return them.

Some⁽¹⁾ but not all⁽²⁾ investigators who use FFQ are satisfied. Others avoid them, for they are stuffed with problems⁽³⁾. People don't always remember what they have been consuming, and tend to be better at recording food they believe to be healthy. Overweight people underestimate their intake especially of energy-dense processed food. Uncompleted questionnaires may be filled in by assistants who guess what the answer should have been. The big studies using FFQ are carried out in the USA and some other high-income countries where diets are relatively homogeneous. FFQ typically contain around 100–125 items, plus some questions about portion sizes, preparation and purchasing, and exclude uncommon foods. This is why reviews and analyses of bunches of these studies say practically nothing about berries, fungi, herbs, nuts and seeds. Also, many foods and dishes are lumped together, and information about processing is fairly rudimentary.

Estimates of consumption of vegetables and fruits in these studies are not just derived from information about fresh and minimally processed foods. They include estimates of the amount of vegetables and fruits in broad categories of meals and dishes, including pies and ready-to-heat products made to all sorts of recipes. Inaccuracy aside, do we know that the benefits of a serving of broccoli in a pre-prepared ready-to-heat lasagne dish, or of a dollop of strawberry mush in a fruit yoghurt, are the same as the benefits of the same amount of the fresh vegetable or fruit? No, we do not.

No wonder studies using FFQ seem to show that the protective effect of vegetables and fruits is unimpressive. For public health purposes, I think 'vegetables and fruits' should be defined to include only those that are fresh or minimally processed, and should exclude ingredients. So then, 'minimal processing' needs definition.

You probably agree that we need to define our terms clearly. Here I have given examples of key words and phrases. What's needed is general agreement, so that all studies of dietary fibre say, or of vegetables or physical activity, use the same definitions. This implies consensus conferences with agreed outcomes. Here is the problem. To be credible, such conferences need to be funded and controlled by influential institutions and scientists with no direct commercial or other financial or vested interest in the findings of the conference. Sorry to say, this is probably impossible.

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